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* John L. Berry in his 16’ Old Town, “Traveller IV,” on the Canyon section of the Cheat River below Albright, West Virginia. Photo by Bob Harrigan.
How to Write to American White Water

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THANK YOU.

Cover: Dave Morrissey in a perilous chute on the Feather River, 1965
Photo by Peter D. Whitney. Leica M2, 105 mm Nikon. Ilford Pan F, f 16, 1/250th
Dear Peter:

I see no "choice" at all between racers and cruisers as posed by Bob Simmonds and yourself in the last AWA issue.

Is there a movement toward the slalom-oriented European point of view? I hadn't noticed.

Personally, about racing I care nothing. But I never have resented the space allotted to this activity in the AWA Journal. I do believe present and future potential for membership in the organization rests with the cruisers because of their greater numbers. Let's don't scare this element with too much emphasis on danger.

Of one thing I am convinced: Should there be a split in AWA, neither side would win, and the racers have more to lose. The market is limited for both. An organization that does not publish will perish, especially when the membership is so widely dispersed. Reorganization always is difficult, confusing and expensive, even where labor is cheap.

I say we can live together if we want to, and that is the only issue before us.

The modern slalom canoe (and I question that it should be called a canoe at all) definitely is not a touring model. There is a Real Challenge to running rapids and white water in an open, undecked canoe that some of these "banana-boaters" never will know. There is also water that cannot be run in an open boat, but there is room on our streams for all of us.

Incidentally, a Grumman does not sink. It may float at or near the surface when full of water, but sink it does not.

If you want to talk about thrills, I've had 'em in hairy rapids and maneuvering through obstructions with a standard open Grumman. At the same time, I do not miss an easy trip, because what I seek is not suicide in an acceptable manner, but enjoyment of all the river and the great out-of-doors have to offer in my locale. Challenges of the Ozark streams 12 months out of 12 are enough for me. I pit my skills and strength against the water and weather, not my fellow canoeists or time.

Let the slalomers slalom, let the racers race, and let me cruise with an occasional real white-water trip when conditions are right.

There should be room for all of us in one organization and its publication if a happy balance can be maintained.

It is improbable but not impossible that some day I might meet one or more of the giants of the racing fraternity. Such a meeting would please me very much, even though the principals might have very different immediate interests.

I see no dichotomy. What is the problem? Where is the argument?

Nancy C. Jack
805 Sandusky Ave.
Kansas City, Kansas 66101

Dear Editor Whitley:

Presently I am researching for an article entitled, "They Fight for White Water." The piece is being written for folk who know practically nothing about the pastime, and it will stress the conservation angle, especially the tendency to destroy our natural resources.

I am especially anxious to have several illustrations of how the American White Water affiliates' members hope to interpret legislation or attempt to influence legislation having to do with conservation and especially with the preservation of natural rivers.

Can you help?

Fraternally,
Orlo Strunk, Jr.
30 Arnold Avenue
Buckhannon, W. Virginia 26201

American WHITE WATER
"Impassable at most water levels," warned Walter Burmeister in his book *Appalachian Water*. This was all that Wick Walker needed. He cajoled Sandy Campbell, president of the Ledyard Canoe Club, and Jay Evans, the club's adviser, into a Saturday afternoon excursion to Vermont's Grand Canyon: Quechee Gorge.

As with many canoe clubs there was, and is, among the members, an accumulated body of knowledge concerning rivers in the neighborhood that are favorite places to run. Quechee Gorge, however, was a thing apart. Everybody knew about it, but no one in the club had ever run it. No one knew for sure that it could be run. In years gone by legend had it that one of the Deans at Dartmouth had tried unsuccessfully to paddle an open canoe through the gorge and had nearly drowned. According to the club history a foldboat had met its end in the gorge in the late fifties; but no one knew precisely what was down there and the precipitous walls precluded the possibility of a complete reconnaissance by foot along its coldly inhospitable banks.

The passing motorist comes upon the chasm suddenly before he is really ready for it. The graceful, arched span which allows him to cross the gap stands out black against the sky and
Sandy Campbell just below Burmeister’s Drop. 165 feet above the tumultuous waters, dwarfing the few tall pointed evergreens in the gulf itself.

We arrived at the head of the gorge at 12:30 Saturday afternoon. The incredible power of water cascading over the dam shook the ground beneath our feet as we stepped out of the car. A beautiful rainbow arched gracefully across the gorge in the tossed foam. We descended on foot to the water level. It looked as if we could hike along the west bank for a way—so we did. Pretty soon, however, the severe walls converged until we found our way blocked by a sheer precipice. But we had successfully scouted several hundred yards and could see a large eddy just beyond us that could give us refuge—if we made it safely that far through.

We were dressed in full wet suits, with lifejackets and helmets. Each of us carried rope for emergency use and Sandy carried a resuscitube. Wick paddled his C-1 slalom canoe; Sandy and I had kayaks.

Moving through the rapids one at a time we alternately stopped and checked, scouted and paddled our way to a spot almost directly under the high bridge. Here a 65-foot gradient is complicated by a formidable trough formed by the narrowing of the gorge itself. Within this rocky chasm the water tumbles roughly over a 30-foot slope treating several huge haystacks, a couple of nasty diagonal curlers and a wicked boil on the east side.

Wick’s eyes lit up as he saw all this, and he studied its possibilities for several minutes. We could look straight up and see ant-like figures peering over the bridge railing watching us; we must have appeared like ants to them. It was at this spot that a distraught woman, only two weeks earlier, had plunged from the bridge to her death.

Sandy and I both felt that a boater accustomed to heavy water could probably make it through "Burmeister’s Drop" without mishap seven times out of ten at this water level. But there was no quiet pool below in case of a capsize nor would any rescue efforts from shore be helpful if a boater became stuck in one of the curlers. For one thing it was not possible—short of using rock-climbing techniques—to get over to the east side of the gorge at this point and it was near the east side where the danger lay.

After a brief consultation we reluctantly agreed to carry our boats around this section and put in below. From there on out the gorge gradually relaxed its grip on the water and provided us with a delightful as well as scenic Class-III run. We emerged from the gorge at 4:30 p.m. tired, pleased with what we had accomplished, but vaguely unsatisfied. The question at Quechee was still unresolved. Perhaps we’ll try Burmeister’s Drop some day in the summer when the water is warmer—with a larger party and at a much lower water level.
Homework — that is what I am happy to call the following article. Three [British] canoeists are to go to West Greenland in the summer of 1966, to do all manner of things with kayaks and the seal hunting community where we shall live. It is necessary to read and study to prepare ourselves for this wonderful venture. There is a great deal of work to be done, and this is part of it.

One thing that I did know about the Greenlanders was that they hunted seal. What they did it with was kayaks and harpoons. The rest was mystery. In an attempt to penetrate this mystery, such as how much does the harpoon weigh, how big is it, etc., how is the head planted in the seal, the following points emerged. No doubt I'll revise them extensively after the expedition, but they seem fair enough at present.

The Hunter

He is a stocky, very strong man. He may be as young as eighteen, and few live to be more than forty-five, being lost in single-handed hunting to fighting seals. He wears a tan or off-white canvas anorak, which is different from the sealskin tuvilik used for rolling practice. In the village the hunter is distinguished by his sealskin trousers and soft-soled boots, which look very like wetsuit neoprene trousers and boots.

He can paddle forty to fifty miles in a day and hunt as he goes. More usual now, a motorboat is taken to the likely hunting grounds, with the kayaks balanced across the thwarts. If he kills, he must tow the carcass back with him. He may kill twice, and have two to pull. The carcasses are held by thongs and quick-release toggles alongside the hull just behind the cockpit. Because the village economy until quite recently depended very greatly on the skill of the hunter, he is the most highly respected of men.

During the long hours of waiting motionless on the fairly smooth sea, (the waves are damped by ice floes), he may be subject to "kayak fear." He may become rigid with terror, through sitting still too long, and during his waiting for the seal to appear he may think too much of the death penalty for a capsize without a roll. A hunter held in the grip of such fear must be approached with care and spoken to gently, so that he may be "rafted up" and allowed to unwind without fear of capsize. Some hunters become subject to repeated attacks of this, and cannot hunt any longer. The problem of kayak fear is the subject of a thesis in preparation in America.

The Kayak

This is the usual Greenland type, length 16 feet 8 inches, beam about 20 to 22 inches. To obtain similar balance and buoyancy characteristics, the European should have a kayak slightly longer and slightly wider, because his center of gravity is higher, and his weight is greater. It is foolishness to expect to obtain the same degree of proficiency with a narrow kayak as the Greenlander has through a life spent in using it for his work.

The hull is hard-chined, built with timber imported from Denmark. The covering is now usually canvas, painted white. A few are still built with sealskin. A good sealskin will bring in about $25, and several skins are needed for the kayak. Economy demands canvas. At the rear of the hull is fixed a skeg, so that the directional stability may be improved, for long journeys. Bow and stern are protected with a bone rubbing strip.

The deck is the most interesting part of the hunter's boat. All the hunting gear is detachable, leaving the deck clear for practice and non-hunting paddles. The gear is attached with cun-
The hunting kayak's deck is well furnished.

The Harpoon

This deserves a paragraph to itself. Starting at the head, there is a swivel-lining and very sharp triangular blade. This is held in a wooden or bone block which is pushed onto the bone end of the shaft of the harpoon and held by a thong to a peg. This bone end is about a foot long, and itself is attached by thongs to the wooden shaft of the harpoon. The main wooden shaft of the harpoon is thickest just behind the bone fore-end. Along the tapering and slightly down-curved shaft there are four bone pegs. Two in particular are very important. These locate the throwing stick, which is a 18-inch paddle-shaped piece of carved wood. The fore peg sticks out at right angles to the under side of the shaft. The rear peg is tapered and slopes backwards.

The harpoon stands a pan which contains the coiled thong which is tied to the harpoon head, which is separate from the harpoon until just before aim is taken. The other end of the thong runs alongside the cockpit opening to the inflated opening to the inflated sealskin behind the paddler, where it is attached with quick-release thongs and toggies.

The Throw

The hunter picks up the head and fits it to the fore end of the harpoon. He then takes hold of the throw stick and turns the harpoon the right way around by swinging the butt end up over his head and back with his extended arm. He lies back against the inflated bladder. With an enormous pull of his belly muscles he snaps upright with extended arm and twisted
body and shoulders, unwinds his body, and uses a powerful elbow flick, to launch the harpoon. The throw stick is jerked off its pegs, and is thrust up against the rearmost peg giving the harpoon the final thrust. The increased radius of action which the throw stick gives is very useful, but requires enormous physical strength to use.

The hurtling head unwinds the thong in the pan. Between throwing the harpoon, and the head striking the seal, the hunter must twist around and slip off the inflated seal skin, before the thongs tighten.

The head strikes the seal, and sinks the triangular blade into the body. The seal immediately dives, taking the line with it. It may go under the kayak, or to the side, or in any direction. In any case the seal must surface very soon for air. If it goes deep and dies there, it will stay down. As it dives, the head is pulled off the harpoon shaft, which is left floating on the surface. The line whizzes down through the water, then jerks the inflated skin away, which sets the head in the seal and stops it going deeper. Very soon the seal surfaces, and the hunter uses the killing lance or the knife to finish it.

If the hunter should not release the float, and then roll up—his paddle being held under a foredeck thong—that is his life. A fighting seal may savage the kayak and tear the skin, allowing the water in: a slow sinking and death through exposure follows. It is a hazardous way of making a living. Sometimes guns are used to effect the kill. A shot not over the bows may result in capsize, through kick from the gun. During all these powerful and potentially off-centre moves which the hunter is making, his balance must be instinctive and absolutely right. This can only come from years of living in a kayak, the penalty for a bail-out being death.

Comments by JOHN D. HEATH

Peter Whitney has asked me, as a student of Eskimo kayaks, to comment on Alan Byde’s interesting article. Congratulations are due Alan for an excellent article, and I extend my best wishes for a successful expedition to Greenland.

Kayak Fear

As Alan explained kayak fear is a condition in which a kayaker becomes terrified that he will capsize and drown. A typical example of kayak fear—sometimes called kayak dizziness—might occur as follows. A lone kayaker sits motionless in his kayak, waiting for a seal to surface. The sea is
calm, and there is a reflecting sun. Slowly, as if in a trance, the man begins capsizing. He usually snaps out of it when his arm begins sinking into the cold water, or when other kayakers approach. It is an unnerving experience, and a single incident can shatter the confidence of an expert kayaker.

Early in this century, Dr. A. Bertelsen, a Danish medical researcher, studied kayak fear, and his work on the subject has been of great interest to physicians and anthropologists. More recently, Dr. Zachary Gussow, a psychiatric researcher at Seton Hall College of Medicine and Dentistry, New Jersey, has conducted an investigation.

In 1961, Dr. Gussow wrote me that he had not found any record of this condition among Eskimos outside of Greenland. He wondered if my study of kayaks had uncovered any such condition among other Eskimo groups. It had not, but I decided to look further. In 1962, Dr. Kaj Birket-Smith, dean of Arctic ethnologists, wrote me that he had never heard of this condition outside of Greenland. Nor has any other Eskimologist I have asked. Curiously, such groups as the Caribou Eskimo of Canada—who used less stable kayaks than the Greenlanders—never experienced kayak fear. Even the Aleuts of Alaska—who spent so much time in their baidarkas that they walked with a deformed waddle—were free of this disorder.

I believe that kayak dizziness and kayak fear are separate conditions, the former leading to the latter. Going back to the typical example given above, remember that it tends to occur to lone kayakers, sitting motionless in calm seas, when there is a reflecting sun. Under these conditions, the water surface would reflect the sky, and the horizon would be lost in the glare. A solitary seal hunter, concentrating on his quiet search of the surface, could easily lose all references to up and down, with the resulting sensation of floating in space, hence loss of balance.

When other kayakers approach, the condition vanishes. Why? Simply because they have provided the dizzy kayaker with a reference point by which he can tell up from down—themselves. The same effect would oc-

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cur if the kayaker, slowly capsizing toward the side on which his paddle was braced, suddenly realized that the wet, cold feeling creeping up his arm was water! Any man who experienced this phenomenon without understanding the causes and effects could easily lose his confidence and become a victim of kayak fear.

Kayak Equipment

In the nineteenth century, three pieces of equipment were added to the West Greenland kayak. These were the shooting screen, the gun bag, and the skeg. All are removable. The shooting screen has a dovetail mounting block which fits over the gunwales and grips them when it is pushed aft, toward the wider part of the foredeck, the way toe clamps on roller skates grip the sole of one's shoe. The screen has an area of about 3 square feet, so that it will conceal the hunter from the seal. This amount of cloth, mounted near the bow, catches the wind and causes the kayak to turn. The removable skeg helps correct this tendency.

The skeg also serves another purpose. Nowadays, the seal is shot with a rifle or shotgun, and then must be harpooned before it sinks. So the hunter paddles up quickly, making his final paddle stroke with his right hand and then, holding the paddle in his left hand, reaches for the harpoon with the right. His final paddle stroke turns the kayak to port just the proper amount to allow the harpoon line to unreel from the line tray without snagging the bow, and the skeg keeps it on this course. (This latter reason for the skeg was also noted by Duncan Winning of the Scottish Hostellers Canoe Club, in the February, 1966 issue of Canoeing magazine, which arrived while my comments were being prepared.)

The Throwing Stick

The throwing stick acts as an extension of the arm, to impart greater velocity to the harpoon. The Greenland type is about 18 inches long, 3 inches wide at the base, tapering to an inch wide at the tip. It is edged in bone to prevent splitting.

The one illustrated was obtained for me in Iqdlorssuit, West Greenland, in 1959, by Kenneth Taylor (see A Summer in Greenland, AWW, Spring, 1962). It has a skin thong terminating in a knob of bone. This knob can be slipped under one of the deck straps to allow the throwing stick—and the harpoon to which it is "buttoned"—to hang alongside the kayak to stay wet. If used dry, the holes in the throwing stick do not fit the pegs of the harpoon properly and affect the throw. In use, the throwing stick is flicked, much the way a fisherman makes a cast with a rod. The forward peg (where the hand grips the stick) disengages first, and the rear peg remains engaged during the cast. As soon as the throw is complete, the hunter grips the throwing stick between his teeth, in order to leave both hands free for the following operations of throwing the float overboard, paddling, and lancing.

In 1957 my son Dave and I made several types of throwing sticks and used them for "plunking" at pieces of floating woods. It is a pleasant sport, and one which can be enjoyed on any lake or pond. It helps one appreciate the tremendous skill that Eskimo hunters needed in order to survive. No doubt Alan Byde will return with a great admiration for the skills of the Greenland kayakers.
Dartmouth on

By Jay E

Because they hadn't gone 1600 miles to stop short of their goal, nine Dartmouth College canoeists had to seek the cover of darkness in order to slip their boats once more into the waters of the Danube River for the dramatic conclusion of an unparalleled summer-long canoe trip.

The first rays of the sun on the morning of September 7, 1964 blazed from the surface of the Danube Estuary, and flashed in reflection from nine paddles that dipped and rose from the swells of the Black Sea. It didn't matter then that small boats were forbidden to wander so far out; nine weary but elated veterans of the Connecticut River in far off New Hampshire had paddled a long way.

The natives of Vermont often say that the Connecticut River has a strange power in its current which pulls the thought of a man away, down its length to the sea—and beyond. It had happened again on a lazy, blue, cloudless afternoon late in the summer of 1963 when Dan Dimancescu, from Hartford, leaned back and opened his mind to thoughts of other rivers, and the seas that they run into... of Europe, Austria, the Balkans, the Black Sea... who not someday paddle down that venerable route of history—the Danube!

**Nation-wide Roster**

Soon the idea took hold with nine months of solid planning which raised more than $16,000 in cash and equipment. Dan found 8 students who likewise felt the lure of adventure and, what's more, had the initiative and energy to make it all come true. Bill Backer from Bound Brook, New Jersey, Dave Donnelley from Lake Forest, Illinois, Dick Durrance from Aspen, Colorado, Bill Fitzhugh from Chappaqua, New York, Bruce Irvine from Salt Lake City, Terry Fowler from New York City, Mike Lewis from Washington, D. C., and Chris Knight from Cleveland, Ohio all rallied to the call.

Passports, visas, shots, and transatlantic passage—the usual concern of...
most European tourists had been only incidental to this undertaking. Given the chance to penetrate the Iron Curtain in their favorite style, by canoe, they hoped to develop meaningful contacts with the people of Eastern Europe and particularly to visit boating clubs and student groups along the Danube.

From the National Geographic magazine they received a full complement of the finest photographic equipment available in exchange for "their story" which appeared in the July 1965 issue. Polaroid, Old Town canoes, and Abercrombie Fitch joined the National Geographic Society as public underwriters of the expedition; in all 54 separate sources contributed.

**From a Trickle to Sea**

And so the trip in its execution was as natural and beautiful as the idea of it had been from the beginning. The men saw the Danube swell from the trickle at Donauquelle near Donaueschingen, Germany, into an 80-mile-wide delta on the border between Rumania and the Soviet Union.

Newly made friends at the Ulm, Germany Kanuklub helped celebrate the departure of the four Old Town canoes by building a bonfire, and only a few miles downstream they passed a shepherd on the banks of the river who exclaimed, "You'll need lots of time and God to get as far as the Black Sea."

Arriving in Passau on the Austrian border they were greeted by the mayor on the city dock and invited to a dinner of gypsy steak and cognac at the City Hall. Four days in Vienna capped their experiences in the West before they faced the crucial transition to the world behind the Iron Curtain. Then, in the words of Bill Backer, "No one spoke. Our paddles trailed uneasily as the Danube drew out four canoes toward an invisible border stretched taut across the river. The silken water offered no sign. But we sensed it when our bows pierced the Iron Curtain: an odd brief chill in July's noon heat.

"A foolish feeling, I told myself. But
glimpses of barbed wire, guards, and gaunt watch towers hadn't helped. And now a Czechoslovakian patrol craft bore down on us, black swivel gun menacing on her foredeck. Sailors armed with rifles, knives, and pistols ... gestured us toward a city shadowed by great castle ruins." Nevertheless, the four canoes were allowed to proceed.

Fraternity of Boaters

This was Bratislava and the Tatran Boat Club came out in force to greet the Americans. After enjoying the hospitality and the club's facilities the expedition moved on accompanied by five Czech students, three of them girls, who canoed alongside for several days.

A Ledyard Canoe Club Pin, presented to a Hungarian border official, overcame visa regulation. Much of the populace had learned about the trip from various Voice of America broadcasts and from their own national television. But still, Mike Lewis commented, "That doesn't mean we didn't shock hell out of a few sleepy villages, nine guys trooping ashore at dawn in bright orange rain parkas!"

Occasionally trouble did occur. Armed guards grabbed Dick Durrance as Dick was taking pictures of a construction site in Belgrade. But as Dick said, "How was I supposed to know it was Tito's new national defense headquarters?"

Non-Political Fascination

Interestingly enough the constant stream of visitors to their campsites were much more interested in their camping gear and cameras than in their political ideas. Never having handled such fine materials, they wanted to touch everything especially the nylon which they had not seen before.

There were stretches of real quietude along this mighty river. As Backer wrote in his diary, "Heavy wind in the morning, coming across the flat plain, curls the water with choppy seas. But soon the air falls dead. And there is loneliness. A woman walks down to the water with a sack of clothes for washing and a basin. In the distance, the solitary figure moves, unhurried. Nothing else in the whole vista of the river."

They paddled into the heart of Budapest on a sunny Sunday afternoon, threading through a tangle of motor boats, kayaks, enormous paddle-wheelers, past shoreside boulevards and the great Neo-Catholic Parliament Building; past laughing children and spouting fountains. They dined at Budapest's Meteor Boat Club with Ferenc Kiss, a former European single-scull champion. The members of the Akademski Kajak Klub of Belgrade greeted them in much the same way. From Belgrade the canoeists took a 170-mile train ride to the famous Drina River for a change of pace. The Drina has been compared to our Colorado River and provided them with a couple of days of thrilling white-water sport.

Fabled Iron Gate

Back on the main Danube again they cautiously made their way through the historic 200-yard-wide "Iron Gate" where the mighty river drops over 100 feet in about 70 miles. Part of this section, for safety's sake, was taken in the neighboring Sip Canal.

Now into Rumania they found the Danube to be lazy, vast and lake-like, swept by the mighty northeast wind. The sky and the shore were alive with waterfowl of all kinds, for the Danube Delta is well known as one of Europe's greatest bird sanctuaries.

Eight countries, 1685 miles, 73 days on the "Dustless Road" as the gypsies called the Danube, the nine canoeists from Dartmouth estimated that well over a million strokes of the paddle had at long last brought them to the Black Sea. Thus they became the first Americans ever to canoe the entire navigable length of the Danube River.
Survival: The Will to Live

By Surgeon Commander A. F. Davidson, R.N.

(Reprinted from the British magazine "Canoeing")

The two main factors in survival are determination to live and elimination of fear by knowledge.

To remain alive the body requires oxygen, water and food and protection against cold. Few people are able to hold their breath for more than three minutes and if one is unable to breathe for longer period unconsciousness and death follow rapidly. It is possible however in a temperate climate to survive for up to ten days without water and for twenty to thirty days without food. The reaction of the body to cold is less well known.

Man is a tropical animal. His critical nude air temperature is 80.6° F. Below this temperature it is necessary to increase body heat production or to wear clothes.

The physiological means of keeping warm are by reducing the blood flow to the skin and increasing heat production by increased muscle tone and shivering. If the body continues to lose heat faster than it can produce it the deep body temperature falls. Normal deep body temperature is 37° C or 98.4° F. 35.5° C is the minimum deep body temperature for useful activity. 31° C is the minimum deep body temperature for useful activity. 31° C produces unconsciousness while death occurs when deep body temperature drops to 25° C.

Effect of Immersion in Water

When immersed in water the body's loss of heat becomes much more rapid and survival times without suitable clothing in cold water become very short indeed. The following table gives the approximate survival times of human subjects immersed in water at various temperatures.

<table>
<thead>
<tr>
<th>Water Temperature °F</th>
<th>Exhaustion or Unconsciousness</th>
<th>Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.5</td>
<td>Less than 15 min</td>
<td>Less than 15-45 min</td>
</tr>
<tr>
<td>32.5-40</td>
<td>15-30 min</td>
<td>30-90 min</td>
</tr>
<tr>
<td>40-50</td>
<td>30-60 min</td>
<td>1-3 hours</td>
</tr>
<tr>
<td>50-60</td>
<td>1-2 hours</td>
<td>1-6 hours</td>
</tr>
<tr>
<td>60-70</td>
<td>2-7 hours</td>
<td>2-40 hours</td>
</tr>
<tr>
<td>70-80</td>
<td>3-12 hours</td>
<td>3 hours — indefinite</td>
</tr>
</tbody>
</table>

The greatest change in survival time occurs as the water temperature drops below 60° F and even the summer sea temperatures around Britain do not greatly exceed this figure.

Naturally the amount of subcutaneous fat and the clothing worn will affect the survival time. Channel swimmers invariably have a thick insulating layer of body fat, and must be sufficiently fit to generate as much heat by muscular action as they lose to the water, in order to maintain thermal balance.

In cold water, swimming increases the flow of water past the body and pumps it in and out of clothing so in spite of increased heat production the body cools more rapidly. When there is no prospect of getting out of the water quickly the survival time will be longer if the subject does not swim but can rely on his life jacket to hold him up.

To survive for a long period it is essential to get out of cold water.

Effect of Alcohol

Alcohol usually increases blood flow to the skin but its action is not suffi-
ciently powerful to overcome the constriction of the blood vessels due to cold. If the survivor drinks alcohol it will reduce his discomfort but at the same time it reduces his capacity for intelligent action. Although not harmful in situations in which the survivor is unable to do anything to improve his condition, it may reduce his ability to help himself and so increase the effects of exposure with serious or fatal results.

Prevention of Exposure

Protective Clothing: In summer most canoeists wear little more than swimming trunks, shirt and a life-jacket, and if the weather is bad, an anorak [parka]. While this is adequate as long as the canoeist remains in his canoe, it is not sufficient to protect him if he lands in cold water. When wearing light clothing of this type the only action that will help the survivor is to get out of the water. In a river this is usually fairly easy, but when at sea one must be able to right the canoe and get back on board. The deep water rescue drills require in most cases two canoes to empty the third one after a capsize, therefore for sea canoeing a minimum of three canoes are required.

If one is canoeing in surf or other conditions in which capsize is likely it is advisable to wear special clothing. The foam neoprene or "wet" suit is the most commonly used garment. It gives good protection both while in the canoe and in the water, but it also has disadvantages. In warm weather it is hot and sticky and the shoulders almost invariably restrict the shoulder movements and tire the paddler. I have found the best compromise to be the trousers of a "wet" suit and a thin rubber dry suit top. This can be worn over a short or sweater according to the temperature and the seal at the waist is obtained by using the elastic of the spray cover to hold the top and the trousers together.

I feel that the complete dry suit is less satisfactory than the combination as the trousers are rather thin and therefore liable to snag easily. Naturally any tear will allow water to get in and destroy the insulation provided by the garment.

As cold not only reduces the ability, but also the desire to undertake any positive action to increase one's chances of survival, it is particularly important that the person in charge of the expedition or group remain warm. This was well illustrated by the recent experience of Alan Byde at Blackrock Sands in North Wales.

The most difficult situation to deal with is probably sea touring because the canoeist expects to paddle long distances and although the sea may be cold, he would become uncomfortably hot if he wore much clothing while paddling. He is also likely to be tired and in the event of a capsize may be unable to roll up again. Having got out of his canoe, his equally tired companions would have to empty his canoe (a touring boat loaded with camping gear) and assist him to get in.

Outside or Inside?

The time taken for a rescue in this situation will be much longer than during a practice in good conditions with fit fresh bodies. I feel that the best solution, at least with hard-skinned kayaks, is to fit a bulkhead immediately behind the cockpit. This must be water-
proof but can have a sealed hatch in it through which to load camping gear, etc. The advantage of such a bulkhead is that following a capsize, a single canoeist can lift the bows of the canoe and empty out all the water while the stern floats. This makes rescue far easier and the canoeist in the water does not have time to get really cold before he is able to get back into his canoe.

The life jacket should be worn outside the anorak if possible and while canoeing in a river or canal this is easy to do because there is no difficulty in landing if one wants to put the anorak on or take it off. At sea however things are different. The canoeist can't expect to wear his anorak all the time, but on a long trip the weather can change. It seems unreasonable to expect him to remove his life jacket, put on his anorak and put the life jacket on again, but this is the only answer at present. It means that while the anorak is half on he has no personal buoyancy and this is the most unstable phase of the operation. For sea canoeing therefore I would recommend an anorak which is large enough to put on over a fully inflated 40-lb. life jacket, and with a hole to enable the oral inflation tube to be brought to the outside of the anorak. The life jacket would be worn uninflated but with the 20 lb. of inherent buoyancy. This means that the jacket could be inflated if necessary. The anorak must be made of yellow or orange material as it covers the life jacket. If the anorak is made of dark material, it is much more difficult for the rescuer to find the survivor.

Safety Drills

In sea canoeing the party should consist of not less than three canoeists and they should all be proficient in deep water rescue drill. The Eskimo rescue technique and the ability to roll are particularly valuable if one capsizes in cold water as these reduce the immersed time to a minimum and keep the lower half of the body dry.

Stay with the canoe if you do capsize and, if you have to leave the cockpit, don't try to right the canoe yourself as you will lose the trapped air inside it.
If you ever have to throw a rope to someone in trouble make sure that it has a loop, preferably large enough to slip over his shoulders easily, on the end of it. It is impossible to hang on to a rope with cold hands and it is very difficult to pass it round the waist and tie a knot, especially if only one hand is free.

In low temperatures survival in the open is hazardous. Even at low wind speeds the chill factor is greatly increased (see the graph).

Dry clothing and a towel should be carried in a waterproof bag to keep them dry and should be put on after reaching shelter. The clothing should be windproof, warm and comfortable but not too bulky. It should also be rainproof, hard-wearing and light. If clothing is wet its effectiveness is greatly reduced but it is still better than none. It should be dried as soon as possible.

**Symptoms of Exposure**

Few accurate descriptions are available of the symptoms of exposure in canoeists, but Dr. Pugh in his paper in the British Medical Journal in January this year provided an excellent review of the effects of Accidental Hypothermia in Walkers, Climbers and Campers. From this one can deduce the likely course of events in the case of canoeists. Exhaustion is a major factor and re-
duces the resistance to cold. Abnormal behavior, slowing of reactions, weakness caused by muscle cooling, lack of coordination, and collapse followed by unconsciousness and finally death is the probable sequence of events. Cramp, loss of sensation, paralysis and convulsions may also occur in some cases.

It is unfortunate that the effects of cold make it more difficult to remove oneself from the cold environment. The mental effects will be similar to those observed in states of extreme fatigue. The subjects show a lack of concern for their own safety and may be unwilling to try to help themselves.

It is not necessary to capsize to suffer from exposure. Inadequate clothing, and wind combined with rain or spray provides all that is required, although the onset will be slower than when the body is immersed. It must be appreciated by the leader of the group that one or more of the canoeists with him is becoming excessively cold, and shelter should be found at this stage. Do not wait until someone is in trouble. If in doubt the safest course of action is to land and pitch camp. (This is difficult if you are in mid-Channel).

**Treatment**

Even unconscious or nearly unconscious patients will usually revive spontaneously when further cooling has been prevented. It is safer to camp and allow the patient to warm up slowly in a sleeping bag, than to carry him a long distance. It is dangerous to carry the patient in a head-up position.

After rescue complete immersion in a hot bath is the best treatment for conscious patients. In camp this is not possible but rapid re-warming can be obtained by immersing both the patient's hands in hot water. The water should be as hot as you can put your hand into without pain. This method may be safer for the unconscious patient than the hot bath method.

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**Our Fight for Life**

(British version)

Reprinted from Canoeing (London)

The river situation is worse. Our vice-president, Maurice Rothwell, is still fighting valiantly for us all over the Ribble, and the letters that have passed between him and the other folk concerned would already fill a fair-sized book. But at present (May) the position is, no canoeing on Ribble without special permission, and an entire ban on the Lune and Hodder. The Levon, on which there has been a monthly canoeing test for teens of years, must now be vacated by canoes by 13:30 hours on test days, the only time when canoeing was allowed. Last week, with Noel and Eric, I went to launch on the lovely Tamar, ideal practicing river with its fast water. At Horsebridge we found the notice banning canoes. A mile downstream, after negotiating a forest track and a 150-ft. near-vertical bank, we launched like outlaws and had a magnificent run. . . .

If we may no longer travel freely on Ribble and Lune, there will be unfair crowding of canoes on other rivers with kinder riparian owners, and in a short time there will be no swift rivers left for canoes. On many rivers already the canoeist must start before dawn in order not to be seen. I have myself started at 3:30 a.m. . . .

— Kathleen Tootill

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**On the Next Four Pages**

A spectacular chute on Northern California's Trinity River, run for the first time by Sierra Club rafts and kayaks this year. Ray Cochrane pilots the raft en Pages 18-19; his son Mike makes the first of two successful runs in a kayak, Pages 20-21. Photos by Peter Whitney (who did not try the chute).
First Eastern Slalom Clinic

By David G. Binger

Way down east, in the State of Maine, there's a story about a lost tourist who stopped at a general store to find out where he was. "How do I get to East Rutherford?" he asked an old gaffer who was rocking on the porch. The old man looked at him for a minute, and said, "You can't get theyah from heah!"

That's more or less what happened to us when we set forth for South Arm, Maine, to attend Jay Evans' Eastern Slalom Clinic. Actually, one can get to South Arm, or "Ahm," but it doesn't matter whether one goes up through Portland or around, by way of Albuquerque. It's still a long way off, and it's lost in the land of the moose, the loon and the black fly.

South Arm, when we finally found it, consisted of a dock. This dock sticks out into one end of Richardson Lake, at the other end of which, about six miles away, is the mouth of the Rapid River, our destination. Richardson Lake, in case you have an Atlas handy, is in the Rangeley chain of lakes in northwestern Maine, almost at the New Hampshire border. At any rate, on the aforementioned dock, the vital heart of South Arm, we saw piled up the most colossal amount of gear, food, kayaks, canoes, tents and bug dope that has been assembled in any part of the state since 1842 or thereabouts. The reason for this was that the following people had fought their way to the place to participate in the clinic: Jay and Eric Evans, and Sandy Campbell, Wick Walker, John Burton and Jo Knight of the Ledyard Canoe Club (Dartmouth); Bart Hauthaway, Barbara Wright and Tom Wilson of the K.C.C.B.; Charlie Bridge, John Bridge and Terry Franz of the C.C.A.; Tom and Nancy (Abrams) Southworth, Dave Kurtz and John Sweet of the P.S.O.C., and Mike and Georgie Stanley, Jan Binger and yours truly of the K.C.C.N.Y. We had come prepared to live independently for a week, many of us traveling like the Duchess of Windsor, although the baggage tended more to be cardboard cartons than Louis Vuitton suitcases.

Island Wouldn't Do

A motor launch came along after a while and we loaded it up until the rats began to leave and only the docking lines kept the poor vessel from sinking. The boat took an advance party out to a very, very small, or teenie-weenie island in the middle of the lake where, it was thought, we would camp during our stay. The only trouble with this island, aside from the fact that it had practically no dimensions save those under water, was that it was about two miles from the mouth of the Rapid River, which in turn, was several miles from the actual rapid which Jay intended to use for our training ground. This meant a daily round-trip flat-water paddle of more miles than any of us cared to contemplate just to get to and from work. By a brilliant stroke of diplomacy, however, we were able to turn near disaster into triumph by getting the Union Water Power Company to allow us to camp on their land at the start of the Rapid River.

The dam which controls the flow of water into the Rapid was right at our campsite, and from Mr. Bragg, the amiable and hospitable dam-keeper, I learned a few important facts about our situation. The controlled flow varies wildly, depending on demand from pulp companies down on the Androscoggin River into which the water of the Rapid eventually flows, and depending on the levels of Lakes Mooselookmeguntic (no kidding!) and Richardson, which must be kept in equilibrium. By the end of our stay I learned how to translate the figures which Mr. Bragg quoted to me (in cubic feet per second) into paddling conditions, viz.: at 500 c.f.s. the river is tame and gentle, about like the Railroad Rapids on the Esopus River in June; at 900 c.f.s. the river starts to roar a bit, and to change its character dramatically; at 1700 c.f.s. it becomes a big, white turmoil, more like a steep ski-
That night it rained hard, and the next morning our friendly dam keeper said to me, with a twinkle in his eye, "We're going to sock it to you today!" 1700 c.f.s. was what he meant. We walked the two or three miles down river to the place where our gates presumably still hung, and found that our nice little rapid was hardly recognizable. Barb Wright said it looked like Spittal, and somebody else said it looked like Hell, but it looked like very big water to all of us. Jay sent the C-1s and the Dartmouth boys downstream on an exploratory run and to recover some poles which had been swept away by the flood. The rest of us ran the first rapid a few times to get used to the high water. When the first group came back, carrying their boats several miles up a logging road to rejoin us, they were howling with glee like baboons in a yam patch. "Holy Smokes!" said one of them; "It's a roller-coaster!" I asked him if there had been any spills. He looked at me the way a G.I. who had just helped to relieve Paris might have looked at his granny when she asked, "Did you meet any nice girls on the Champs, dear?" Let me add, parenthetically, that the ability to roll-up in a kayak or canoe is an absolute must in a river like the Rapid, especially in high water, where falling out of the boat can mean a dangerous swim of hundreds of yards. Having an almost infallible roll in one's bag of tricks means that one can play, Frug, Watusi or what-have-you in hairy water without having to worry about leaving the boat after a spill. Almost everybody at the clinic could roll very well indeed. In fact, some of the boys had perfected something new, an end-over-end Immelmann, in which the bow is thrust (upstream) into a hole with such force that it submerges, and gets carried downstream, the stern rising into the air and coming down upside down where the bow once was, at which point the paddler either joins the Immortal Hall of Fame or rolls up.

The second group ran the same stretch and I can tell you that it was an unforgettable ride. There were hardly any rocks visible in the river, which had become a confined sea of surfable waves, with drops so steep that all one could see of the person in front, even though he might only be thirty feet ahead, was his helmet, and that only intermittently, as he climbed the tremendous swells. The lurch down from the crests into the troughs was fabulous, but you were all alone down in there with all those bubbles. I wouldn't say that it was very difficult paddling, because there were no rocks...
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to dodge. It took some faith, hope and a solid brace, however, and was very exciting. Zap!

**Back to 700 c.f.s.**

As fast as it came, the high water went. The next day we were down to a manageable 700 c.f.s. again. The squads practiced all of the possible combinations offered by the thirteen gates that had been hung. The "Rapid River Landscaping and Black Fly Taxicab Association"—a group of hearty, laughing woodsmen who happened to be there when we needed them—built a trail through the alders and pines so that we could carry our boats up the race course from the bottom, and we ran the gates over and over. The course was well conceived, nicely consecutive even though created by four different groups, and left us looking forward to the next and last day's Grand Finale.

This was a unique race indeed, because the contestants themselves had argued about, hung and practiced the gates. There were no secrets, except that Jay planned to move some gates and change the direction of others in the second half of the four-run race. Racers were scored on their best three-out-of-four runs. The level of competence was extremely high. From fore-runner Jay Evans to the last-place man or woman, the most casual observer would had had to realize that he was watching some very classy paddling indeed. Times were close, and among the men, penalties were few. For the girls, the course was a bit tough, but challenging, and they made a good race of it. Eric Evans came away with the laurel wreath, the pennant and the Davis cup, for at the tender age of sixteen, he beat his peers both in individual runs (fastest run of the day), and aggregate score. As far as the next world championship is concerned, it looks as if Eric might well "get theyah from heah."
RACING REPORT
By Jay Evans
AWA Racing Editor

Tired of driving 200 miles to get in only three or at the most four runs on a week end? Dismayed at the administrative red tape and falderal of running a large-scale slalom? Sick of having to wait in line to race? Try a Jiffy Slalom and bring some fun into racing.

Essentially an intra-club activity, a Jiffy Slalom can be run with a minimum of three enthusiasts or as many as ten to fifteen. Find a stretch of fast-moving water in a fairly small or narrow river, reasonably close to home. The course must not be over 120-150 yards long and should be visible either from a nearby road or bridge. Suspend four to six gates from the bridge—which can also be used as a command post for gate checking.

Next, string two or three ropes across the river to suspend the remaining gates. This is best done with three people. One person in a boat ferries the rope across the stream and hands it to someone on the opposite bank who attaches it to a tree, while a third person remains on the near side, pays out the rope as it is ferried over and ties it around a tree near him. If the water is too wild for ferrying, the rope may be hurled across tied to a rock.

Bamboo Poles

The gates themselves are easy and inexpensive to make. Cut to the appropriate length, bamboo poles from your nearest furniture store work fine as cross-pieces. The poles themselves can be designed from broken hockey sticks (visit your nearest sports arena) or from wood scraps from your neighborhood saw mill. A bent nail at the top of the pole avoids the expense of screw eyes. Two shower curtain rings (a dozen cost only 29 cents) tied to either end of the cross-piece act as perfect attachments to slide the gate into place.

With a relatively small number of competitors (fifteen or less) there is no need for racing numbers. Each competitor has a name—use it. A number for each gate? Why bother. One quick trip along a twelve-gate course and you have it memorized anyway. Decide among yourselves which way the route should be run, bearing in mind a few legal variations for the resourceful and imaginative competitor.

One Judge

Gate checkers? If you wish to be extravagant you'll need two—but one will do. A starter with a clip board and stop watch stands down-course by gate three or four, gives the competitor the countdown, follows along the course noting penalties, then stands about two gates from the end. After the competitor passes through the final gate the timer-scorer totals the penalties and seconds, then walks back to the start.

In the spring of 1963, Chris Knight, Ben Holden and I ran what is probably the niftiest of all Jiffy Slaloms ever held on the Mascoma River in New Hampshire. A very unusual situation occurred the day before the race when all but three competitors scratched and there were no spectators around to watch who could be marshalled to help. Cancel the race? It never occurred to us. Two telephones had been installed, one at the start and one at the finish of a 200-yard S turn, fourteen-gate course. Ben was the first competitor—in his boat ready to start. Chris stationed himself at the starter's phone and I was at the finish line with clip board and stop watch, listening on the second telephone. Chris gave Ben the countdown and then relayed over the phone Ben's penalties (there weren't too many) for the first six gates. As Ben came around the S turn into view I recorded penalties for the last eight gates, clocked him and totaled his score.

In the meantime, back at the start, Chris had climbed into his boat. I gave the clip board, stop watch and phone to Ben, and carried my boat to the starting line, gave Chris a countdown, and Ben scored him.
Race Results

PENN. STATE INDOOR SLALOM
Jan. 29, 1966
State College, Pa.

K-1
Score
1. B. Youngkin .............................................. 177
2. D. Klaus .................................................. 180
3. S. Bortree .................................................. 195

C-1
1. J. Sweet .................................................. 101
2. R. Rigg ................................................... 125
3. D. Kurtz ................................................... 126

C-2
1. Sweet-Rigg .............................................. 118
2. Borttree-Umberger ...................................... 177
3. Kurtz-Myers ............................................. 184

C-2M
1. Yeisley-Yeisley ........................................... 183
2. Rigg-Andrews ............................................. 210
3. Shuster-Waldspurger .................................... 227

DARTMOUTH INDOOR SLALOM
March 12, 1966

K-1 Expert
Jo Knight ................................................... 64.0
Sandy Campbell .......................................... 72.5
Jay Evans ................................................. 76.0
Barbara Wright ......................................... 78.0
Bart Hauthaway ......................................... 80.0
Tom Wilson ............................................... 80.0

K-1 Intermediate
Willard Richards ......................................... 87.5
Sam Galpin ................................................ 88.0
Hans Carroll ............................................ 102.5

C-1 Expert
Wick Walker .............................................. 73.5
John Burton .............................................. 84.5
Masters’ Cup Trophy
Bart Hauthaway ......................................... 1st Place
Barb Wright-Jay Evans’ 2nd Place Tie

CREDIT RIVER RACE
April 3, 1966
Slalom

C-1
Roger Parsons ........................................... 213
Larry Scott ............................................... 263 1/2
Ross Durfey .............................................. 292

C-1 Jr.
Gordon Wild ............................................. 305
Michael Twitchin ....................................... 682 1/2
Robert Grose ............................................ 670

K-1
A1 Zob ......................................................... 157
Keith Daniel ............................................... 162
Heinz Poenn ............................................. 162
Parsons - Parsons ...................................... 219
Zob - Zob .................................................. 225
Balek - Balek ............................................. 406 1/2

C-2
Daniel - Scott ............................................. 268 1/2
Brigley - Jack ............................................ 286
Poenn - Leinweber .................................... 315

C-D Jr.
Durfey - Bell ............................................. 743
D. Sivers - Kilby ......................................... 801%
Myland - Blight .......................................... 832

Team
Leinweber - Poenn - Zob ................................ 277 1/2
Baur - Daniel - Rapin .................................. 340
Moecking - Parsons - Wild ............................ 546

WHITE WATER SLALOM
Salmon River, Connecticut
April 2, 1966

K-1
1. Bart Hauthaway ............................................. 205.8
2. Barbara Wright ......................................... 216.0
3. Rich Brainerd ............................................. 279.0

C-1
1. Charles Kaufman ......................................... 289.2
2. John Rule ............................................... 316.2
3. Dick Schaffer ............................................ 323.9

C-2
1. Estey - Estey ............................................. 243.9
2. Field - Moulton ......................................... 289.8
3. C. Richardson - Richardson .......................... 304.3

C-2M
1. Wright-Tuckerman ...................................... 288.0
2. Moulton - Moulton .................................... 359.3
3. Field - Field ............................................. 311.0

WESTFIELD RIVER RACE
Massachusetts
April 3, 1966

C-2
1. Hauthaway ............................................... 1:10
2. Graf ....................................................... 1:12
3. Berry ..................................................... 1:13

American WHITE WATER
Kettle Creek Slalom
April 8-9, 1966
Kettle Creek, Pa.
K-1
1. Franz .................................................. 290
2. Younkin .............................................. 297
3. Klaus .................................................. 364

C-1
1. Kurtz .................................................. 203
2. Sweet ................................................. 216
3. Southworth ........................................ 249

K-1
1. Kurtz-Southworth ................................. 209
2. Gross-Wyld ........................................ 327
3. Southworth ........................................ 330

2nd ANNUAL KERN RIVER RACES
Kernville, California
April 23-24, 1966
SLALOM
K-1 T. P. Tot.
1. Ted Young ........................................... 368 30 398
2. Chuck Costa .......................................... 452 40 492
3. Mike Cochrane ...................................... 477 30 507

K-1 W
1. Gail Minnick ........................................ 561 180 741

C-1
1. Tom Johnson ........................................ 654
2. Alan Donaldson ..................................... 1088

C-2
1. C. Costa/T. Johnson ............................. 606
2. C. Mueller/B. Parks ............................... 926
3. G. Sturdy/D. Keens ............................... 981

C-2
1. G. Minnick/C. Costa ............................. 671
2. L. Johnson/T. Johnson ........................... 989
3. B. Dubois/E. Dubois ............................. 1432

DOWNRIVER
K-1
1. Tom Johnson ........................................ 14.04
2. Doug Hughes ....................................... 15.24
3. Chuck Costa ........................................ 15.49

C-2
1. Chuck Costa/T. Johnson ........................ 15.22
2. Dan Harburt/Dave Sturdy ....................... 15.58
3. Clark Mueller/Ben Parks ....................... 16.24

WHITE RIVER CANOE RACE
Ledyard Canoe Club
May 1, 1966
Pl. Contestant, Club Time
1 McKibben & Hixson, Ledyard 1:20
2 Blodgett & Hahn, Challenge 1:21
3 Foss & Baldwin, Ledyard 1:21.5
4 MacCornack & Miles, Ledyard 1:22
5 Derzon & Blodgett, Challenge 1:32

Hudson River White-Water Derby
North Creek, N. Y.
May 7-8, 1966
Wildwater Race
K-1
1. McKibben ............................................ 59.31
2. Guyapay .............................................. 59.39
3. Hauthaway .......................................... 59.53

C-2
1. Church-Bliss ...................................... 1:00.20
2. Berry-Harrigan ................................... 1:02.36
3. Stetson-Stetson ................................. 1:05.03

C-2M
1. Fawcett-Gruss, Buck Ridge ........................ 1:06.03
2. Field-Field, AMC ................................ 1:09.32

(No other entries)

Charter Flight in 1967
Dave Kurtz announces that a canoeists' charter flight will be arranged during the summer of 1967 revolving around the World Slalom and Wild Water Championships in Czechoslovakia.

The flight will be round-trip from New York to either Zurich, Switzerland, or Frankfurt, Germany. Cost will be no more than $359 (jet) or $275 (prop).

Special arrangements are being made for cheap air freight of boats.

If you are in the least interested drop a card to the flight chairman, David A. Kurtz, 623 W. College Ave., State College, Penna. 16801.
1966 National Slalom champion Roger Paris in his near-perfect run on the Feather River.
Mike Stanley (above), Mascoma Slalom; Larry Scott (below) Elora Gorge Slalom.
Rouge River (An account of a run that sounds like one of the hairiest on the continent, from Ontario affiliate.)

After a small group from our club had accepted last year's "Labour Day Invitation" issued by the Viking Ski and Kayak Club of Montreal to join them in running the "Rouge" and about this event. The cruising committee decided to make it an alternative, official trip on the '65 Labor Day Week End.

Meeting time was 11 a.m. on Saturday morning. A lot of people had arrived during Friday night and around 10 a.m. the first group went up on the cliffs to inspect the toughest part of the run—the Canyon Section.

Due to heavy rainfalls during the past weeks, the water was higher than expected. When he looked down into the Canyon, 150 feet below us, George Long decided on the spot that "that wasn't his cup of tea." Judging by their faces the others standing around him also seemed to have that funny feeling in the stomach area; they, however, didn't say anything.

Six "Experts" Try It

Since a portage was not possible, a group of six "experts" finally decided to give it a try. All of us came down the first rapid leading into the canyon right-side up and we assembled in the back water before starting out for the canyon. Mike Easton, who with his movie camera went first, was promptly swallowed by the big roller. Myself, trying to help him, went as number two and met the same fate. Together we finally made it ashore after a mile's swim and a few mouthfuls of water. There were two more swimmers among the ones following us. Only the stars of the day (Eckhart Rapin and Malcolm Hill) survived.

The remaining part of the river was also full of class three to four water consisting of various holes, rollers, and high waves that caused a few more spills. It was a continuous fight down the six miles of river. At the finish we all agreed that that was enough for the day. After coming back to the campsite, the evening passed quickly so we relived the spills and thrills of the day. Sunday began with a mist that soon cleared to another sunny and warm (80-degree) day. We started from Huberdeau in a much larger group having been joined by a few additional arrivals, including some beginners.

Most Beautiful River

The river winds through a valley surrounded by the most beautiful scenery found on any trip ever organized by the club (author's and most participants' opinions). There was something for everybody: exciting rapids (easily portaged); quiet flowing stretches; interesting wildlife, as well as the beautiful scenery and excellent lunch spots. The weather was hot and sunny all day. Around 5 o'clock in the afternoon we arrived at the campsite, ready for supper.

While getting their cars back from the starting point, a few of our members got in 'one of Huberdeau's pubs, attracted by the free beans and bread given out with the drinks and supposedly served by young and charming French-Canadian girls.

Monday saw another group of 6 run the canyon section as scheduled for the day. This time (we had a little less water) everybody made it through the canyon except Malcolm, who decided to go for a swim twice. His remarks while being pulled out of the water farther down the river were: "My goodness! Oh mercy!"

The remainder of the trip was run fairly quickly. Around 1500 hours the first people started leaving for home. Everybody agreed that it had been a wonderful and exciting trip well worth the long drive. We all felt that this trip should be scheduled for next year again.

Usually the water level at Labor Day weekend is much lower and the rough stretch can be run by every advanced beginner.

Herbert May
Ontario Voyageurs' News

American WHITE WATER
AI LOU (above) and Tom Stott, (below); Loyalsock Slalom
A Stiff Program of Slalom Training

By David A. Kurtz

It has been the honor and good fortune of the US C-1 team last year to have had as one of its trainers the well-known Czech paddler, Milan Horyna. In 1963 he and his partner, Milan Kny, took tenth place at the World Slalom Championships and third in the Wild Water Championships. In two difficult races that spring they also took two first places.

Here is their actual training schedule of May, 1963, during the time the above races were held. It is noted that they spent 86 hours of in-water training and 23 additional hours in boat and paddle preparation.

This training program is run in two-week cycles. Both downriver and slalom techniques are practiced, for one complements the other. The first week is said to be more "quantitative" and the second week less "quantitative."

For the practice of slalom groups the first run is paddled slowly with concentration on technique. The second and subsequent runs are practiced quickly and with strength. For the slalom sequences each one is done many times, but a stop-watch is used perhaps only once a week.

This type of regimen is carried on during the spring and early summer. Twice a year the team has a week's training camp near the practice site for efficiency and easy access.

The following was their schedule day by day:

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Downriver Sprints: 10 X (&quot;times&quot;) 30 sec. quickly, 30 sec. slowly</td>
</tr>
<tr>
<td>2nd</td>
<td>Downriver: 5 km. alternating each few minutes quickly, slowly with 200 m. (meters) very quick finish</td>
</tr>
<tr>
<td>3rd</td>
<td>Sprints: 2 X 15 strokes quickly, 10 slowly</td>
</tr>
<tr>
<td></td>
<td>2 X 20 strokes quickly, 10 slowly</td>
</tr>
<tr>
<td></td>
<td>2 X 25 strokes quickly, 10 slowly</td>
</tr>
<tr>
<td></td>
<td>2 X 20 strokes quickly, 10 slowly</td>
</tr>
<tr>
<td></td>
<td>2 X 15 strokes quickly, 10 slowly</td>
</tr>
<tr>
<td>4th</td>
<td>Downriver: Same as day 2.</td>
</tr>
<tr>
<td>5th</td>
<td>Sprints: 15 X 30 sec. quickly, 30 sec. slowly 1 km. slowly 15 X 30 sec. quickly, 30 sec. slowly</td>
</tr>
<tr>
<td>6th</td>
<td>Rest day.</td>
</tr>
<tr>
<td>7th</td>
<td>Race: 40 kilometers long.</td>
</tr>
<tr>
<td>8th</td>
<td>Exercises: Run 3 km., general exercise, play soccer</td>
</tr>
<tr>
<td>9th</td>
<td>Sprints: 10 X same sequences as day 5.</td>
</tr>
<tr>
<td>10th</td>
<td>Slalom: (30 minutes training). Train group 1 Run through a whole line of 20 gates 3 X.</td>
</tr>
<tr>
<td>11th</td>
<td>Slalom: Train in group 2. Finish with 20 gate sequence 3 X. 30-60 min. in white water training</td>
</tr>
<tr>
<td>12th</td>
<td>Slalom: Train in variety slalom groups.</td>
</tr>
<tr>
<td>13th-14th</td>
<td>Main Race.</td>
</tr>
<tr>
<td>15th</td>
<td>Begin second cycle. Do the same as day 1 but more. Thus 20 X 30 sec. quickly, 30 sec. slowly 2 km. slow with a 500 m. quick finish</td>
</tr>
<tr>
<td>16th</td>
<td>Slalom: Groups 4, 5 with timing. Practice weaknesses of last race.</td>
</tr>
<tr>
<td>17th</td>
<td>Sprints: Same as day 3, but 4 X 18. Sprints: 10 X 30 sec. quickly, 30 sec. slowly</td>
</tr>
<tr>
<td></td>
<td>5 X 60 sec. quickly, 60 sec. slowly</td>
</tr>
<tr>
<td></td>
<td>10 X 30 sec. quickly, 30 sec. slowly</td>
</tr>
<tr>
<td>19th</td>
<td>Slalom: Train the whole 20-gate line 5 X 1 hour in sluice</td>
</tr>
<tr>
<td>20th-21st</td>
<td>Race (small)</td>
</tr>
<tr>
<td>22nd</td>
<td>Sprints: 20 X 30 sec. quickly, 30 sec. slowly 1 km. slow-quick interval of very short time (15 sec.) 200 m. quick finish</td>
</tr>
<tr>
<td>23rd</td>
<td>Slalom: Group 2 and group 3</td>
</tr>
<tr>
<td>24th</td>
<td>Sprints: Same as day 3, but 3 X</td>
</tr>
<tr>
<td>25th</td>
<td>Slalom: Sluice practice</td>
</tr>
<tr>
<td>26th</td>
<td>Sprints: 15 X 30 sec. quickly, 30 sec. slowly 1 km. slowly only with 200 m. quick finish</td>
</tr>
</tbody>
</table>

27th-28th. Major Race.
No Noise at All
(The joy of piloting a high-performance rapids boat)
By Andres Peekna

"The Sound of Metal" and "The ((Merry) Sound of Metal" were entertaining articles that appeared in this journal of ours not so long ago. Randy Carter extolled the beauties of the wood-and-canvas canoe while Nancy Jack dwelt on the virtues of the aluminum version.

I, too, first experienced the joy of running white water in a conventional, 17-foot open canoe. Today I am convinced that such boats are obsolete for white-water travel, and belong in museums or back on quiet water.

I have seen several of the sturdiest open canoes get stuck in the river with the open face upstream. As the current wraps them around the rocks, the "sound of metal" is not a pleasant one. It is similar to that of crumpling kitchen foil. As I looked at the canoes (or what remained of them) after they were fished out, I tried not to think of what a paddler would look like had he been caught between one of these canoes and a rock.

White-Water Thoroughbreds

Why not eliminate such senseless dangers? Why not run white water for the fun and aesthetic pleasure it offers rather than its challenge? Such is the case with the proud owners of true white-water thoroughbreds—boats that are designed expressly for white-water use.

I own a C-1 and a kayak. Both were made of fiberglass and polyester by as fine a craftsman as any that worked on a wood-and-canvas canoe. Both have all the requisites of a good white-water cruising boat: high rocker, blunt ends, well-rounded lines for stability in turbulent water, proper seating, and of course complete decking. In addition, I have installed maximal flotation in the form of air bags that fill the interior except for the cockpits. The boats really appreciate this flotation. In return for my promise that they will not get wrecked, they promise never to crush me on a rock.

I cannot say which of these two boats I like better. Each has its faults and virtues. I am glad none of us has to be faithful to any one boat!

C-1 for Vision, Agility

When I wish for a better look ahead and somewhat better agility in long rapids that require intricate maneuvering, I choose that C-1. If my main concern is one of staying upright, I choose the kayak for its low center of gravity and paddle braces on both sides. Thus with the C-1 I hit fewer rocks, and with the kayak I have fewer dunkings.

The maneuverability of the high-performance white-water boat enables me to play the rapids instead of merely reacting to them. I am no longer chained to the easiest route, and since these boats can be turned almost instantly, the choice of route and of attitude (forwards or backwards) can often be made at the very last second. Decking lets me go where the fun and action is: right through the biggest waves instead of around them. It also enables me to play around in small souse-holes; it's great fun to pull into them sideways, stay in while paddle-braced, and pull out. The river, instead of being a powerful adversary to be challenged, is now more of a playground.

Running difficult white water in a conventional canoe is definitely more challenging, and I have great respect for the paddling ability of anyone who can do it safely. But at the same time I feel sorry for him, for he is missing so much of the fun.

And Furthermore . . .

As an avid, dyed-in-the-wool kayakist who avoids like the plague any and all contact with the slower and sluggish canoe I read with considerable amusement your tongue-in-cheek article in
the A.W.W. winter issue entitled, "The (Merry) Sound of Metal."

It is not often that a true kayakist will defend canoeing in any form (any more than a sports-car owner would be caught driving a truck) but I must come to the defense of my good friend Randy Carter who almost came out on the short end of your article.

You state that aluminum makes for a longer canoeing season. Phooey! Just imagine being in a metal canoe with the temperature above 90 in the blazing heat of August—or do you enjoy being fried? What could be more miserable than handling cold metal in December? Oh, no, Nancy dear, you have it the wrong way around. It is the marvelously versatile wood-and-canvas canoe that lengthens the season. It doesn't blind you with the reflection of the summer's sun nor does it drain away your body heat with the first touch of winter, or coat your hands with dirty aluminum oxide.

The raucous, grating sound of a metal canoe on a rock is at best a barbarous noise better suited to the irritating jungle of city street traffic—precisely what so many canoeists are trying to get away from.

Why knock T.L.C.? No great work of art worthy of the name was ever created without Tender Loving Care. And the unique wood-and-canvas masterpiece stands superb as a creation of beauty, grace and form.

The Ledyard Canoe Club of Dartmouth, which has had 46 years of experience with canoes of all kinds, has found that the metal canoe, in reality, cracks up just as easily and once the metal is stretched out of shape and slit it is harder to repair and simply is never the same again. Mute testimony to this cold, hard fact is the "Arapahoe." At the present moment she lies buried under dead leaves behind our canoe shed, a sorrowful, grotesque spectacle indeed. She was the sole metal canoe and one of 20 from our fleet available for rent last summer. One day a novice wrapped her around a rock in the Connecticut River and proceeded to wrinkle her even more trying to pry her off. "Too difficult to fix," the boys said, "let's junk the old tin can."

And so $200 went down the drain.

The wooden ones saw heavy service, too, and some broke ribs, cracked gunwales and slit canvas—but all were easily and quickly repaired without fancy machinery or skill.

And lastly, there is a certain mystique about a wood-and-canvas canoe. It develops character and personality—as have the four Old Towns that travelled down the entire navigable length of the Danube in the summer of 1964. Make that trip in a metal jobbie? Unthinkable! There is no personality in a tin can.

—Jay Evans

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Ozark Anti-Litter Crusade

By Nancy Jack

Ozark Wilderness Waterways club is in danger of becoming a literary society on the basis of all the letters members have written in attempts to save numerous streams from destruction by dams.

But there is more than one way to "lose" a river.

Water pollution and unsightly and unsanitary, stinking litter in a stream and on its banks can turn a little jewel into a most unattractive locale.

Harold C. Hedges, OWWC president its first seven years, had an inspiration for the club's Fourth of July trip on Missouri's Current river in 1960. He took along a bale of gunnysacks, and announced we'd clean the river as we went along.

Litter Grows With Traffic

Everyone pitched in, and we thought we had done very well to collect some 2,000 foreign objects from 25 miles of the river. Since that year, the "can contest" or "clean-up trip" has been confined to the annual 3-day Labor Day week end on the Current, the nation's first National Scenic Riverway.

Traffic on the Current has at least doubled every year since 1960, and one needn't expect litter to diminish.

Total count for the 1966 Labor day
effort was 167 gunnysackfuls of mostly beer cans and bottles, 34 tires, 18 items that were brought up from Cave Spring by divers from very cold water, and 16 "miscellaneous" items such as bed springs, tractor parts, and other locally contributed articles.

Cans, bottles, cardboard boxes, and all kinds of packaging come in only by boat. Curiously, no one seems to mind packing in these containers full, but it appears to be too much bother to carry them out empty. How do you figure that?

**Two Tons Plus**

Altogether, the count came to an estimated 16,600 objects this year, and tonnage was at least two and a half. We floated empty the first day, but the other two, the junk had to be accommodated on and around everyone's camping gear. Most, but not all, of the 44 canoes on the trip were engaged actively in the clean-up effort which is a major project for our young people. Adults are not barred from helping.

Kids who work themselves to a frazzle more for the honor of winning the trophy than for the cash prizes can't possibly become future litter bugs themselves.

And if the Conservation Federation of Missouri did not provide us with a truck at daily access points, we couldn't possibly bring all that junk out for proper disposal. It should be apparent that we contribute precious little to the litter ourselves. Neatness is a neat trick when you have as many as 125 men, women and children on a single trip.

No comparison of the 1965 and 1966 takes is possible. In 1965, the Current flash-flooded for the first time in 15 years, washing 80 of us off an inundated gravel bar camp at 2:30 a.m. after only one day's work. We beat a hasty but orderly retreat with no loss of life, and only a very little lost gear.

At first, fishermen and other boaters and campers looked askance when a kid suddenly would dive or jump overboard and come up with an empty beer can, or when one or more canoefuls of children and/or adults would land and comb a gravel bar for trash. Facial expressions plainly said, "are these nuts... or something?"

You haven't seen anything if you haven't seen beer or booze-bleary eyes pop when someone in a canoe catches an empty as it is rolling down a bank or as it hits the water and the canoeist murmurs "that's a no-no."

Gradually, however, attitudes have come around to our side. Former veiled derision has turned to something like admiration.

The idea has caught on in widely separated parts of the country, on other rivers, on hiking and horse trails, parks, and even urban neighborhoods. There is no copyright on the general idea.

In 1960, there wasn't any such thing as a rental canoe on the upper Current River: john boats and heavier metal craft, yes. Today, there are more than 300 rental canoes on the first 35 miles of the river.

It should not sound so fantastic to a river tourer, but because of the way boats string out along any river, there can be hundreds there you won't even see. What you WILL see is where they've been.

**Anti-Litter Sticker**

The gentle, spring-fed Current is an "easy" river, classed as I and occasionally II in difficulty, but it does have its moments. Its popularity also can be explained by its beauty and many access points.

Boat rental operators and resort owners have been most cooperative in affixing our anti-litter stickers to their equipment. Legend is, "Help Keep Our Rivers Clean! Burn Trash. Tote Home Cans, Foil, Bottles. Ozark Wilderness Waterways Club." The sticker also has been adopted, with modifications, by other groups.

It also should be pointed out that most garbage is better burned than buried—especially in that interval after the fire's owner has finished cooking and before everyone congregates for warmth and conversation.

A canoe is a freighter compared to a kayak and other small boats, but it is still true that anything you can carry in full you should be able to carry out empty very easily.
Dear Sir,

GET WITH IT, CRUISERS!

I am somewhat tired of the bleating of the cruising fraternity. As they point out at great length they are the majority of the B.C.U. [British Canoe Union]; but the B.C.U. consists only of its members and is in no sense the hired servant thereof. If cruisers find that the action they wish is not taken they have only themselves to blame for it. Frankly, Cruisers, get with it. You state that the B.C.U. is heavily biased in favour of competition, but please note that competitive canoeists have not the slightest desire to impede cruisers and, so far as I can see, do not do so.

Yours Faithfully,

A. Stoneley,
Cambridge University C.C.

(The above is reprinted from the letter columns of the British magazine "Canoeing," Sept. 1966. edited by Brian Skilling)

We said in the last issue that the competitor-vs.-cruiser quarrel was international in scope. The above letter reflects a long-standing rumble in the ranks of our British colleagues.

And it seems to us that it should be a warning to U. S. white-water paddlers, so much more fortunate than their British fellows in having a wide choice of opportunity for both competition and cruising.

A warning against unnecessary, divisive controversies on matters that don't have to be in contradiction.

* *

We find it interesting to reflect how much of a one-way street is this "rivalry." All the rancor seems to come from one side. Nobody ever hears of any competitor campaigning for the de-emphasis of cruising, much less the abolition of pleasant waterways, eradication of riverbank trees or the screening of scenery that detracts from single-minded training. Would you expect to get letters from racers, complaining at the expensive waste involved in cruising—waste of water, manpower, boat-building skills?

We say firmly, out of our experience in several white-water clubs: the best cruisers are the competitors. They are the ones who lead the timid down the tough, unexplored rapids, who wait at the bottom to rescue the less skilled. And more likely than not they will bring back the best films, with beavers, birds, bears and trees duly included.

In the Sierra Club, 1965 National Champion Walt Harvest and his 1966 National Champion wife Kay are probably the hardest-working leaders for our spring training sessions that we've ever had. And many of us remember how that great competitor Paul Bruhin worked to give Eastern kayakers their start toward today's skills.

* *

That there are negative things about competition, nobody in his right mind would deny. Of these the worst to our mind is the over-competitiveness that leads to poor sportsmanship. A great deal of this, we understand, is carried over from skiing; some too may derive from the increased and dreary professionalism of modern American sports life.

But the fact is that character defects aren't created by slalom races; no more are they cured by them. Side-by-side with the incidents of pampered behavior, one sees and applauds gritty courage, modesty and good-humor. Competition is a seeding process that brings out the worst as well as the best: seen in the open, one hopes, these faults are more easily dealt with in life, as well as on the river. But good sportsmanship wouldn't have much value if it weren't difficult to achieve.

One thing we should all agree on: ours is the sport of running rapids, and riding the surf. Only secondarily is it the paddling of calm backwaters. Otherwise we would not call ourselves a
"white-water" group. Or should we change our name?*

This will be the last issue under our editorship. It has been a great privilege and a pleasure over the past six years to have been the editor of American White Water and the Editorial Chairman of the American Whitewater Affiliation. To have communicated with the growing body of participants in our wonderful sport, and to have watched the tremendous strides in our skills, has been a most exciting and rewarding experience.

To give some idea of the changes these six years have wrought—in 1960-61, the Eskimo roll was known to but a few, mostly in the Rockies and the Far West; many Easterners thought it a stunt without value in either competition or cruising. The screw roll, in turn, was known by still fewer kayakers—most of them still relied on the long paddle methods. The Duffek technique was just something to talk about. Many kayaks in service were still the wide-beamed touring models. Many paddlers were not using their spray skirts; some did not even own one. The canoeists were all paddling wide-beamed open craft, some with keels, and many used the sitting position by preference. The Neversink Gorge was then considered an all-but-unrunnable horror (today the KCCNY schedules training runs there). At that time, our affiliates numbered slightly over 30 and our membership about 700.

Adieu, then, and au revoir, to all voyageurs of the double and single blade, wherever you are on salt water or fresh. Water under your keels!

—P. D. W.

Dave Morrissey, Feather River, 1965
River Guide: The Bois Brule

By Oz Hawksley

(Oz Hawksley, our AWA Trips Planning Chairman, is also the author of the excellent "Guide to Missouri Ozark Waters," published by the State of Missouri).

This small river, which flows to Lake Superior in Wisconsin's northwest corner, is a canoeist's river in every way. Its forest surroundings belie the name "burned woods" given by early Frenchmen. Clear because its watershed is protected by its location in the Brule River State Forest, it runs first through spruce and tamarack bog country in which wild orchids and numerous species of warblers can be seen without leaving one's canoe. After a section of giant red pines, it meanders through alder thickets, then quickens its pace again among birches, maples and conifers as it approaches the lake.

It is easy enough for the beginner who wants to try water of gradually increasing difficulty, yet sporting enough in some sections to provide experienced boaters with much enjoyment. Open canoes are quite safe. There are numerous put-ins and take-outs and, believe it or not, signs which read "NO OUTBOARD MOTORS ALLOWED." This law is enforced by the townships through which the river flows.

The Brule has been famous for its trout fishing for a long time and is often referred to locally as the "trout stream of the Presidents." Many local guides now use the ubiquitous Grumman but one may still see Lucius canoes which are meticulously cared for by their owners since the craft died with the craftsman who originated them. These unusual boats are about twenty feet in length and constructed of butt-jointed cedar planks about 1 1/4 inches wide. They are covered only with green paint, not canvas!

Although Wisconsin provides a guidebook which includes the Brule, many will find it inadequate and in some ways inaccurate. Therefore the description below, in the same format being used in "Guide to Ozark Float Streams," is offered in the hope it will be useful to those who visit the Brule.

**Difficulty:** (early summer water) Hw. S to Hwy. B, I and II; to Hwy. 2, II; to Co-op Park, I; to Hwy. FF II to easy III; to Hwy. 13, I to easy II, to Lake Superior, I and II.

**Gradients:** general—12.2 ft./mi.; Hwy. S to Hwy. B 4.1; to Hwy. 2—17.3; to Co-op Park 4.7; to Hwy. FF—33 (but easy); to Hwy. 13—20; to Lake Superior—15.

**U.S.G.S. Quadrangles:** Ellison Lake, Brule.

**County Hwy. map:** Douglas.

| 0.0 | Put in at Stones Bridge on Hwy. S. Small campground and parking lot. |
| 1.8 | Picnic area on right near McDougal Springs. This and other private picnic areas open to public but must be left clean. |
| 2.8 | Private picnic area on left. |
| 3.7 | Footbridge at Cedar Island Estate President Coolidge spent a summer here. Water becomes faster. Picnic site on left of pool. |
| 4.2 | Lower Twin Rapids. Easy. |
| 4.3 | Enter Big Lake. Picnic sites on either side. |
| 5.5 | Wildcat Rapids. The name apparently does not refer to the difficulty. |
| 5.7 | Lucius Lake. Smaller than Big Lake and followed by small rapids. |
| 6.4 | Summer homes and boat docks of members of the Winneboujou Club begin to appear. Look for the big wooden canoes typical of the Brule. The homes and their grounds fit beautifully into the surroundings so that they really do not detract from the beauty of the river. Virgin red pines in this area. |
| 8.4 | Hwy. B bridge. Roller type put-in slide on northwest side of bridge. Water picks up speed and there are a few little runs before Hall's Rapids. |
8.9 Hall's Rapids. Fast ride with sharp turns. One turn is blind under a footbridge. Shallow just before a pool is reached at the bottom. Alternate slow sections and very nice runs until Little Joe Rapids is reached.

10.2 River suddenly narrows at top of Little Joe Rapids. Easy run down right side but this and Hall's Rapids could be classed as III in spring water.

10.5 Ranger Station up on right bank.

10.8 Brule River Campground No. 2 at "Rainbow Bend." Good takeout and place to base-camp.

11.5 Brule River Campground No. 1. Smaller and closer to the highway.

12.0 U. S. Hwy. 2 bridge. Roadside park on right but less handy as put-in than Campground No. 2. River below this point meanders slowly through alder thickets and pastures with occasional log obstructions for approximately 8.5 miles until the bridge at Co-op Park is reached.

20.5 Bridge and put-in at end of Co-op Park road. This is approached from Hwy. H on the east. Unimproved campsites here and a place for trailer camping which seems to be "Co-op Park." Next 3 mi. almost continuously class II rapids except for one ledge.

23.0 Rapids which usually rate III. This is a drop over a ledge of the Copper Range sandstone and may be identified by the presence of cabins on both banks as the river swings to the left. Scouting is worthwhile here. A twisting course must be run. The shallow water over the ledges funnels into a channel against the left bank at the lower end of the run, but this obvious channel has a nasty rock in its lower end which must be taken into consideration.

23.3 Johnson Bridge (Hwy. FF). Good put-in spot just below bridge on left. Parking space for a few cars.

23.8 First of two falls. This is an easy drop through a definite slot but the slot may be difficult to pick out without getting out to scout from the right bank.

23.9 Second falls. This one is larger but easily run if scouted from right bank near cabin. An exciting run over sloping sandstone follows immediately. Open canoes may ship a little water here. The run-out is shallow and the left channel at the bottom (around a small island) seems best.

24.0 River now becomes relatively quiet with a few class II runs until Hwy. 13 is reached.

28.3 Hwy. 13 bridge. There is a parking lot here but the bank is rather steep. Canoes may be run through the culvert in the bridge at most water stages. There is one more sloping sandstone ledge between here and the next bridge but it provides a good, runnable shoot on the left.

31.0 Iron bridge at farmhouse. Can be approached only from west. Road on east side does not go through. Section from here to lamprey weir nearly continuous riffles.

32.6 Fair access via old road from west.

35.2 Electric weir for lamprey control! Short portage must be made. Use beaten path on right bank. Flat water.

35.6 Lake Superior. Access on both sides of river but road on west side ends just west of the mouth of the river and cars cannot get down to water level on that side. Either side is usable for camping or picnicking on the beach. There is plenty of driftwood.

KAYAKING FILMS AVAILABLE

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