

"OF WILDERNESS WATERWAYS AND THE WAYS OF WHITE WATER"

WINTER 1956



JOURNAL OF AMERICAN WHITE WATER AFFILIATION

WHITE WATER

American

In Bayou or Pine Barrens — Wherever You Go

TAKE A HART-SIOUX FOR YOUR ADVENTURE



Announcing end of season sale! Get your Hart-Sioux **folding** kayak now at a big saving for next year's cruising and white water thrills. **Write** for information and descriptive literature.

HART-SIOUX — choice of Lowell Thomas Cineranta Productions

Foldcraft Kayak Company — Phoenixville, Pa. Sole Distributors.

AMERICAN WHITE WATER

Sponsored by
The American White Water Affiliation


CONTENTS

Fall 1956

Volume 2


Number 3

ARTICLES

Take your choice in Missouri by Oz Hawksley	3
What's So Intriguing About Canoeing? by Allan Boz	8
Cataract Canyon by Kenneth Ross	9
Hull Design by Steve Bradley	15
Potomac River White Water Race by Robert Harrigan	20
Tragedy on the Colorado  Roland Palmedo	28

DEPARTMENTS

Letters from Readers	2
From your Editor	2
Magazine Articles	7
Competitions	15
New Products	23
Hook Reviews	24
Club Activities, Membership Application	31

EDITOR  Dave Stacey



Eastern Advertising ... Alfred Washington Circulation Clyde Jones

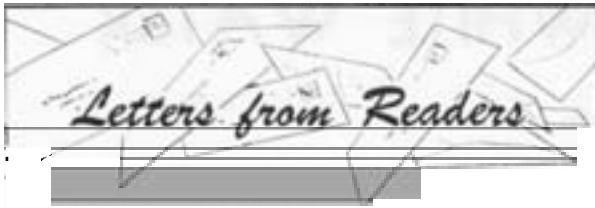
Western Advertising Bruce Grant Art Roy Kerswill

American WHITE WATER is mailed to all members of the American White Water Affiliation in February, May, August and November. Membership is open to all who are interested in river sport, for the sum of \$2.00 per year.

The magazine welcomes contributions of articles and photographs, but assumes no responsibility for them. Address all editorial and membership material to: Dave Stacey, 601 Baseline Rd., Boulder, Colo.

Printed in the United States of America

COVER—See "From Your Editor" on the  page. Photo  Roy Kerswill.



AWW appreciates your ~~many~~ kind letters. Because of space limitations, only parts of a few letters can be printed here. They are chosen to give an idea of what we receive.

Denmark

Dear Editor.

On my return from East Greenland I have received your summer number for 1956.

It is always with pleasure I receive this paper, and so far I have been fortunate enough to find numerous articles covering trips which I may like to make later on.

I have during the last 30 years made folding kayak trips on a number of rivers in Denmark, Sweden, Germany, England and Wales, France, and in 1953 also on Rogue River, Oregon, so you will understand that your paper is most interesting for me.

In your latest issue you ask for photographs and therefore, I herewith send you one which might interest you.

Knud Lauritzen

Letters like this ~~gladden~~ the hearts of ~~many~~ ~~AWW~~ ~~staff~~. Please ~~keep~~ them ~~AWW~~. Here is a picture of the Lauritzens.



FROM YOUR EDITOR

At first glance, our readers may ask what the cover photograph has to do with White Water. The answer is that people like this are the heart and soul of the Magazine and the Affiliation. It is hard work by enthusiastic volunteers that has put American White Water on the map. With their help, the Affiliation is a success, and has an ever growing membership.

Referring again to the cover, on the left we see Leo Lake (or at least part of him). Then comes Larry Monninger, Clyde Jones, Winona Kerswill and then Carol Jones. Behind the camera is Roy Kerswill. These people should be considered as representative of all those who have labored to put out your magazine. Many of the ~~team~~ have never met each other, but they have really worked together. To our unseen, but invaluable friends, many thanks for a job well done.

We appreciate the wonderful letters you readers have been sending in. However, our appetite for kind words is boundless, so please keep it up. In a more serious vein, the time has come for some constructive criticism on the magazine. We want to make it better. Among our readers there are bound to be experts in this field (several have already helped a great deal). How about some help from the rest of you?

The reproduction of Kodachrome slides is still a headache, and we (I) apologize for the lousy job on Kenny Roos's slides. If anyone has had experience along this line, will he please send me an outline of his process?

The membership committee has just sent in a sample of the new membership cards. They are very attractive and we think you will all be proud of them.

Christmas will soon be here, and to convey our best wishes, we enclose a card. Our Art Editor, Roy Kerswill, drew it up. We think it's pretty nice and hope it reminds you of our sport during the long winter months.

Dave Stacy
EDITOR

American WHITE WATER

Take Your Choice in Missouri

by OZ-HAWKSLEY

SOMEONE told us about an old canvas canoe that was for sale. We investigated and found it was only sixty dollars, including full sailing rig. We could get in some float fishing with it in the Ozarks and a little sailing on the lakes. If it only lasted one season, we could consider sixty bucks reasonable for a summer's recreation. So, we bit—and that was what started it all. We've been exploring the fast, clear water streams of the Ozarks at the rate of about 500 miles a year, twelve months a year, ever since.

That first June, we made a trip down to Bennett Springs State Park to do some trout fishing with friends. The canoe went along in case we decided to float a little on the nearby Niangua River. The night we arrived an all night cloudburst put an end to fishing. By mid-morning the spring branch and the river were turbulent, bank-full, and brown. In desperation, we drove to the nearest town to buy some steaks to "buffalo" on the coals in our cabin fireplace so that the holiday would not be completely dull. A docile looking creek along the way caught my eye. The sign at the bridge identified it as Goodin' Hollow Creek. Roy was leery of it but consented to paddle bow for me. We told our wives to pick us up where the stream crossed the highway north of Lebanon, and shoved off.

We had no sooner left them and rounded the bend than I became mighty thankful that I had a good Wisconsin man in the bow. For the next hours, we had an exhausting workout. Downed trees, barbed wire fences and "water-gaps," concrete "low-water" bridges that could barely be cleared by ducking low in the canoe, and boiling water going through man-made high water cut-offs, followed in rapid succession. To complicate matters, none of these dangers could be seen ahead, as the stream was never more than

20 to 30 feet wide and twisted unmercifully. We had covered about three-quarters of the twenty miles to the take-out point when we wisely stopped at a "low-water" bridge that we couldn't get under. We were too shot to lift the canoe over it, so hitched a ride to the car with a local man who was not frightened off by our wet and bedraggled looks.

We've never seen any water in Goodin' Hollow since, but that float opened our eyes to the possibilities in the Ozarks and led us to "discover" many streams which are not ordinarily floated.

Most of the Ozark streams are not wild; just unbelievably beautiful, and fast enough to be interesting. In fact, most floating in Missouri is still done in the time honored "john boat." The design of these stable river boats varies with every watershed. The classic type would probably be found in the White River area: about twenty feet long with a three and a half foot beam at center, tapered to perhaps two and a half at the ends, have hardwood skids on the bottom for sliding over shallow riffles and

Fly-rod abandoned for paddle



Oz Hawksley

can be managed by a single paddle at the stern. Boats are trucked to a "put-in" above the outfitter's place for the party floats as many days as desired below the outfitter's camp and boats are hauled back from the "take-out." Commercially floated streams carry the boats at a speed of about a mile an hour in normal water.

The Ozark streams of Missouri and Arkansas provide some of the best small-mouth bass fishing in the world. The faster, cooler waters abound with both smallmouth and Kentucky bass, while the still, warm back-eddies are often good for a largemouth. To round out the stringer or to provide eating on floats before the bass season opens, there are plenty of goggleeye, and the various sunfish referred to locally as "perch." These latter include the blue-gill, the scrappy "black perch" or green sunfish, and that beautiful little orange and blue fellow known as the longeared sunfish. All these fish can be readily caught with a fly-rod, on a lure consisting of a spinner, fly and pork rind. Many folks prefer to fish mainly for the bass by plugging or spinning, but they miss a lot of sport and a lot of fish.

All the clear water Ozark streams are built on essentially the same plan, that is, alternate pools and riffles, but the length of the pools, the character of the riffles and the general gradient of the stream vary considerably. Generally speaking, the

fastest and clearest streams are those which flow southward. These include the North Fork, Eleven Point, current and Black River drainages. The upper St. Francis is roughest of all but not as clear.

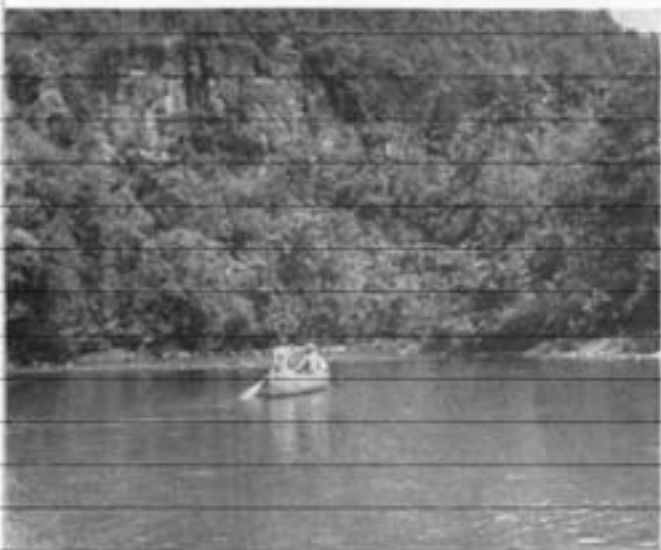
The North Fork and its tributary Bryant Creek can be run by canoes all the way from Highway to Norfolk Lake. Along the way are huge springs too numerous to name. Double Spring on the North Fork is the fourth largest in the state and from there on down, white-water and fast runs are abundant. A mill dam at Dawt is the only obstruction, but the mill and the rapids below the dam make it worth the lift over. The old mill at Sycamore, on Bryant Creek, is run by a spring. The stone ground corn meal and whole wheat flour which are still ground at the mill can be bought at the store.

The Eleven Point, like all the rivers fed by major springs, can be floated at any season, at least from the entrance of Greer Spring Branch down. Greer Spring is the wildest and most beautiful of all the big springs. Its average flow of 214,000,000 gallons a day easily doubles the size of the river. Although it is on private property which is posted against hunting and fishing, the spring is open to the public. A quarter mile walk downhill from Highway 19 brings one to the spring boil. Additional water is added from a good sized spring stream that issues from a cave several hundred yards upstream from the main spring.

For several years we hesitated to run Greer Spring Branch in a canoe although it drops 65 feet in a little less than a mile and a half, and is thus one of the best white-water runs in the state. Our reluctance stemmed from the fact that a party which had tried to run it in a rubber boat had suffered a fatality. When Nelson Wieters of Kansas City and I finally made up our minds to try it in March, 1955, we first looked the whole run over very carefully from shore and then went to see the caretaker to get permission. He had no objection if we would promise not to fish while going down! Next morning we carried in a fifteen foot Grumman, put in on the spring boil, and made the run to the river in eleven minutes flat.

A short drive east from the Eleven Point is the Current River. It is perhaps

Long pools joined by short riffles



Oz. Hawksley



Child's play on the Eleven Point.

Oz Hawksley

the most spring fed of all and one of the most canoed. In a good year, one can put in almost at the source, near Montauk State Park. A few miles downstream, just above the village of Akers, Welch's Spring adds its flow to the river. This is the fifth largest spring in the state and flows from a cave. If permission is obtained, a canoe can be carried into the ~~entrance~~ entrance under an old stone house and about a quarter mile or more of water passage, including a deep lake, can be traversed. Landings can be made to explore several large rooms which un-

fortunately have been badly vandalized.

Half a day's leisurely float below Akers, parties may stop at Cave Spring for lunch. This cave may be entered by canoe by merely paddling up a 50 foot spring branch. There is room, back about 100 feet in the cave, to turn the canoe around. Water-cress grows in profusion at these springs and it may be used to give crispness to a lunch-time sandwich or tucked into the ice chest to ~~spice~~ spice to the evening ~~dinner~~. After a hearty lunch, the party is ready to resume paddling and exploring this spring-fed river.

American WHITE WATER

The springs and caves continue to appear along the shore of the Current, but other diversions claim the floater's interest. Occasionally a long, straight riffle with the big waves is found. If it is free from obstructions, it is a place to pull up the canoes and let the swimmers do some floating. Before long, everyone in the party enters into the fun and there is a steady stream of folks wading back up along the shore to try it again, just like children going back for their next turn at a playground slide.

A major tributary to the Current, the very fast and clear Jack's Fork, gives the floater the illusion of wilderness more than most Ozark streams. Although commercially floated to some extent on its lower reaches, the sections above Alley Spring State Park are best suited to canoe travel. Pools are short and riffles close together. Venus-hair Fern and other ferns line its intimately close banks. Even rare lady's slippers cling to inaccessible places on overhanging bluffs. Place names along this stream have a special lure: Blue Spring, Jam-up Bluff, Lost Hollow, Lick Log Hollow, Ebb-and-Flow Spring and others. Below Alley, civilization is more evident, but the water is still fine. An easy canoe run from the spring to the town of Eminence, seven miles downstream, takes only an hour.

In sharp contrast to the more western Ozark streams, the upper St. Francis cannot be called a "float" stream. It presents a real challenge even to the experienced canoeist. Due to its boulder strewn course, it can only be really "run" during high water. The "float" streams usually meander through moderately wide valleys with high limestone bluffs and fertile bottomlands alternating with each other from side to side of the stream. The St. Francis and its tributary, Big Creek, run a more nearly straight course through narrow defiles of resistant granite called "shut-ins." A good gradient for a "float" stream would be 5-10 feet per mile. The upper St. Francis drops 20-25 feet per mile in places and the drop is often in one rapid. None of these are as short as the riffles of the "float" streams, and one is a mile long. If you try the five and one half mile stretch from Highway 70 to the slab bridge at Silvermine, take no gear,

wear life jackets and be prepared to do some roping.

Early last March, we "discovered" this section under rather hair-raising circumstances. There had been a two-inch rain and we had successfully run Rig Creek the day before. The St. Francis "shut-ins" should be even more fun. Paddlers for the two canoes were selected more by whose turn it was in our Outing Club group than by experience. Luckily, the boy was an experienced paddler and the two girls who took the bow positions were not rank novices.

A smooth, fast riffle was all we could see from the put-in and it promised to be a fast but easy float. Less than a half mile downstream we hit the first rapids. The girls were afraid to try it. After some reconnaissance, the boy and I took the aluminum canoe through. We came back and portaged the fiber-glassed canoe part way, and then took it through, but not before a swamping and ducking while launching it in a turbulent spot.

When the rapids showed no sign of ending, the girls got up their courage and ran the rapids with us; until we hit the mile long run, complete with steep ledges and falls. When we became exhausted from portaging over jumbled, house-sized boulders to get around the worst places, we took the risk of running bad places rather than make the carries. Soon after the girls were able to take the bow positions again, we encountered some local folks fishing at the mouth of a small creek. They indicated some surprise that we had come through the section above and said that if we were going to go on, there was a place just ahead that they would like to watch us go through. Only the news that the bridge was not far, encouraged us to go on. We cautiously said we'd look over the spot to which they referred and that if we did go through, we'd be glad to have them watch.

A quarter mile downstream we pulled into a safe eddy and there, looming before us, was a forty foot dam of granite blocks. Apparently, after the old silvermine above it had been abandoned, they had blown the left side of the dam and now the whole St. Francis River was pouring through a hole not more than fifteen feet wide before it dropped down a 35°

pitch into a whirl-pool. No canoe or foldboat could have survived the haystack at the bottom of that pitch and the abrupt turn beyond it. We ~~had~~ to disappoint our spectators; they had ~~had~~ great faith in us too. The bridge appeared shortly after this carry and we were mighty glad to see it. It had taken us seven and one half hours to go five and one half miles!

You don't *have* to risk your neck to float in the Ozarks. Most of the rivers just described could be travelled ~~by~~ practiced beginners. If your tastes run to even milder water, try one of the north flowing rivers, such ~~as~~ the Gasconade or the Meramec. The Gasconade is said to be one of the crookedest rivers in the world. Its 500 ~~meandering~~ miles bring it to the Missouri River only 150 miles from its source. Its vistas are no less inspiring, its springs and caves no less numerous, nor its clean gravel bars less inviting to the camper than those of the southward flowing streams. Remember, you can take your choice in Missouri.

Southwest Explorations

presents

14th Annual Explorers Camp
expeditions in the little known
~~Four~~ *Corners Country*

For young men of high school age who want to feel "ten feet tall" with a knowledge of honest achievement and increased personal adequacy.

Membership limited to 25 boys.
 2,000 miles of travel in four States. Includes 225-mile boat expedition running the rapids of the San Juan and Colorado rivers, climbing high mountains, exploring deep canyons, digging ancient ruins, meeting modern Indians and visiting National Parks and Monuments. Opportunities to prospect in both gold and uranium country.

For details write, phone or wire:

Southwest Explorations
 Kenneth I. Ross, Director
 Mancos, Colorado Phone 2341

MAGAZINE ARTICLES

Please drop a postcard in the mail to your editor when you see an article that may be of interest to other boatmen. Give the information shown below and any comments you may have.

Saga of ~~the~~ Desert Rat, by Anderson, Rivans, Bader, Earhart, and Nolan: Trail and Timberline, (Colorado Mountain Club Publication) August 1956 (Story of a recent run down the Grand Canyon)

White Water on the Carapou, by H. H. Leich: The Living Wilderness, Spring 1956 (Another excellent survey by one of AAW's authors)

The Way of a Canoe, by Sigurd F. Olson: The Living Wilderness, Spring 1956 (about the enjoyment and use of canoes)
 Autumn Canoe ~~Trip~~ Fur Fish Game, September 1956

Let's Go By Canoe, Fur Fish Game, August 1953.

Summer Canoe Trails, Fur Fish Game, June 1955

Be a River ~~Buster~~, by Don Jacobs: Cavalier, September, 1956 (a description of the art of swimming rapids)

Johnboat on The Jacks Fork, Illustrated by Guy Spilman: Monsanto Magazine, September 1955 (about float fishing in the Missouri Ozarks)

We Took a Float Trip, by Clyde Zimmerman: Cappers Farmer, June 1956 (the story of a two day float trip on The James River in the Ozarks)

240-Mile Canoe Marathon, by Joe Clark: Friends, September, 1956 (Michigan's Annual Canoe Championship)

The Lost Land of The Ozarks, by Dan Saults: Sports Afield, June, 1956 (Bass Fishing in The Current' River country)

What's So Intriguing About Canoeing?

by ALLAN BOZ

Reprinted by permission from the *Prairie Club Bulletin*, April 1953

If you're thinking of lazily dipping a blade on a sunny afternoon in a placid local pool, stop right now! Slates, that's a landlubber's dream our crew of vagabonds would scuttle on your first cruise. Actually, *real* canoeing is not that simple.

Instead, you will: hike miles and miles, on land and water; wallow hip-deep in gooey mud, and like it! starve, thirst, burn, freeze, and ache all over: paddle, cook, eat and pitch camp in a cloudburst or in the black of night; chop ice off yourself and your boat, and become ice-bound; go overboard often, even in mid-winter; gladly drive 700 miles for just ONE day of paddling (unbelievable? Ask Hardy Harold Kiehm): come home days later, perhaps never: portage your boat and duffel through trackless wilds, with rattlesnakes and millions of monster mosquitoes as stowaways: sleep all night in three inches of water and then have someone charge it off to your imagination; hit some mighty high "haystacks," flounder ignominiously, and then struggle like a drowning rat for another try, and still mother, until YOU are the master and become a true river rat.

Had enough? If not, then of course you will also: absorb the rejuvenating outdoors in your body and soul; relax completely as you drift peacefully under whispering trees; inhale the cooling breeze

and enjoy nature's vast symphony; bask in the pure, golden sunshine, free from city haze and pollution; observe nature, her swimmers, roamers and fliers as never before; earn the cherished friendship of the most loyal mates afloat; enlarge your concept of life every time you sail that flowing ribbon; meet every emergency masterfully, and revel in your feeling of conquest; tingle in anticipation of adventure that's always just around the bend; catch, fry and smack your lips over the most appetizing fish of your life: enjoy an evening songfest with a crackling campfire for accompaniment; sleep under a blanket of shimmering stars or a friendly, smiling moon; meditate and worship too, in the greatest church on earth, without a man-made thing to distract you, nor the crush of humanity to moor you.

And there's not a drop of bilge-water in any of that, mates. So, if you desire something that will take you completely out of this hectic city, its dirt and smell, mad traffic, blasting horns and shouting radios, then mates, you'll haul up that anchor and ship with us, and bless the happy day! You'll be as shipshape and sound as the swabbed deck you tread, and your log will be jammed to the gunwales with adventure until, like all good sea dogs, you finally sail into Davey Jones' Locker.



Winston Gleave

CATARACT CANYON

by KENNETH ROSS

THE Colorado is one of the mightiest rivers of the world. Born of a thousand icy rills atop the 14,000-foot peaks of north-central Colorado, it tumbles out of the cloud-wreathed Rockies to bury itself a mile deep into the shimmering plateaus of Utah and Arizona—and, after some 1700 rampaging miles, to lose itself in the mud of its own delta at the head of the Gulf of Lower California. It is a river of matchless power: the cloud-born architect of Grand Canyon's templed splendors, sculptor of an awesome earthscape, the denuder of barren wastelands and the builder of fertile valleys. It is the creator and master of a vast lonely empire which is the richest supplier of the atomic age and the last frontier of the American West. Although the Colorado River drainage embraces more than a third of the United States west of the Continental Divide, the whole 600-mile middle course of the masterstream lies embedded within a wilderness so profound that it can be crossed in only three places, and not a single town or village lies upon its banks. Here, the river winds a runneled way in magnificent isolation through an intaglio world of heat-splintered buttes, sage-decked tablelands and labyrinthian chasms, its waters gouging an ever-deepening channel toward the geological basement of the earth.

The average annual discharge of the river at Yuma, Arizona, is in excess of twenty million acre feet. During the lowest water stage of mid-winter, the flow has been as little as 3,000 cubic feet per second and, during the period of greatest runoff from melting snows in late May and early June, it has been known to rip past at the rate of nearly 400,000 cubic feet per second—a ravening red flood loaded with sediment stripped from the mantles of a quarter million square miles of mountains, mesas, and deserts. The silty flesh of the land which is discharged into the Colorado in a single year would cover more than 100,000 acres a foot deep

and in a century the mighty river can carry away the equivalent of a fair-sized mountain range.

Flowing through lands of violent contrasts, the Colorado is many rivers in one. It falls as a mountain torrent into the valleys of the western slope of the Rocky Mountains and flows placidly for a space, suckling might from the outpourings of other mountain rivers—the Williams, Blue Eagle, the Roaring Fork, the Flying Pan and the Gunnison. Entering the Utah wilderness it takes on sustenance from the Dolores River and speeds along the western flank of the La Sal Mountains. Leaving the Moab Valley, it slows again and crawls relentlessly across sage-covered uplands and on into the great orange plateaus which are the Colorado's supreme conquest. Now needing its greatest strength, the volume of the great river is nearly doubled by the capture of the silt-laden waters of the Green River, and the swollen flood plunges into the slotted earth, roaring madly through a shambles of jagged, broken rock to the sulphurous mouth of the Dirty Devil River.

It is at its junction with the Green that the Colorado becomes the mighty river of legend and historical fame. Here the combined volume of the two great rivers becomes intolerably squeezed within the narrow bed of a turreted canyon where the imprisoned water rages for more than 40 miles down a slanted course filled with furious rapids and dimmed by gloomy shadows. This is Cataract Canyon, first of the Colorado's named canyon sections. It was given its name in 1869 by Major John Wesley Powell, because the sharp declivity of the streambed and the constantly increasing velocity of its tumbling waters creates conditions which thought could not be fully expressed by the word "rapids." To Powell's men, who first conquered the Colorado and to other early river explorers, Cataract Canyon was one of the three most dreaded sections of the river, surpassing even Marble

and Grand Canyons in its rate of descent and the continuity of its rapids. With time, more and more adventurers, lured by the hope of furs and gold, attempted to travel the tumultuous river highway in almost every kind of floatable equipment. Too often these men were tragically without sufficient skill and knowledge of the river and the canyon of cataracts became known as the "Graveyard of the Colorado."

Despite its ominous nickname—perhaps partly because of it—Cataract Canyon is alluringly beautiful. It has none of the serene elegance of Glen Canyon and few of the architectural glories of Grand Canyon, but it enchants with an eerie magnificence of its own which is compounded of physical splendor, titanic energies and, especially, the mood it imposes upon its beholders. Close-pressing walls of pernian rock, carved by the elements into shapes beyond fantasy, tower a vertical half mile overhead and outline jagged rims against a winding ribbon of sky. With the daily procession of the sun, polychrome cliffs glow first on one side of the canyon and then the other as the cool shadows of morning slowly retreat to permit a moment of hot sunlight before creeping evening shade again plunges the river into gloom. Vanquished boulders roll in grumbling defeat along the river floor, the very ground quakes with the booming thunder of rapids, and everywhere, irresistible water in conflict with obdurate stone sets up a din that rebounds from cliff to cliff to thicken the air and make it vibrant with little shattered echoes. Vastness, color, light and shadow, living sound and elemental turmoil all blend to create a mood—to give Cataract Canyon an awesome personality which attracts with an hypnotic compulsion.

From the mouth of the Green River to the head of Narrow Canyon, Cataract Canyon is 41 miles long and descends a total of 430 feet—an average of 10½ feet to the mile. The greatest declivity is in the middle section where at one point the river drops approximately 75 feet in three-quarters of a mile. Throughout, there are many rapids which fall 10 to 20 feet and several are so abrupt as to give the impression of being slanted waterfalls. Most notable of these is Satan's *Gut* which drops 20 feet in no more than 30 yards—a churning fabric of interwoven currents draped over a nightmare slope of boulders. Big rapids occur on the average of one to the mile and some of these will approach a quarter mile in length. In contrast to the short descents where the power of the cataracts seems about equal throughout their length, the long rapids gather power with each yard of distance until the water becomes an almost rigid flow of force which is exhausted against the resistant water below in a long series of vicious, back lashing tailwaves. Outstanding among these are *The Maelstrom*, *Rapid 23*, *Gypsum Rapid*, *Rapid 59*, and granddaddy of them all, *Dark Canyon Rapid*. Altogether there are some 70 rapids in Cataract Canyon, only a few of which can be rated as minor at all stages of water. Nearly all are studded with blocky boulders scattered randomly across the whole streambed. They range from a foot or so in diameter to house-size blocks which rear above the surface to make a tortuous channel for the boatman and blind him to difficult waters below. The size range is graduated so that at any stage of water except the highest, the cataracts are filled with sags, suck-holes, standing waves and contentious currents alive with dangers often greater than that of simple collision.



Illustrations made from Kodachrome slides of Kenny Ross

Besides the great seasonal variations of late Spring and mid-winter, local storms anywhere in the upper drainage basin can cause marked rises of the river's surface. A few inches of rise on the outer river above may be reflected by an increase of several feet within Cataract Canyon, where the waters are often confined between steep talus slopes and sheer walls in a streambed no more than a hundred feet wide. Horizontal lines scoured on the cliffs mark the average rise due to individual storms while piles of driftwood testify to the flood levels of late Spring. *Although these indicate a normal fluctuation of about 15 feet, bits of driftwood lodged more than a hundred feet above the river bed prove that upon rare occasions, possibly when prolonged downpours of rain coincide with periods of unusually heavy runoff, the canyon has been tortured by hydraulic energies impossible to calculate.

The relative severity of the cataracts varies with the changing water levels in the canyon. A moderately difficult rapid at one stage of water may become a holy horror at a slightly lower or higher level of flow. Conversely, a really bad one may be made smoother when most of its rocks are well covered by high water. During the time of normal Spring rise most of the rapids may be clearer of obstacles, but here is greater danger from increased velocity, higher, power-stiffened waves, and almost continuous turbulence between rapids. At the times of greatest rise shown by the highest bits of driftwood—which surely occur no more than once or twice a century—conditions within the canyon would be too terrible to contemplate. To even dream of putting a boat through it at such a time would cause anyone familiar with conditions there to wake up screaming.

Cataract Canyon challenges the expert boatman to a battle of tumultuous water against human agility and skill. Attempts have been made to run it in nearly every kind of water craft, from primitive log rafts to sleek modern kayaks. History proves that decked-over boats designed especially for rough water have been safest and most successful, while the "Cat's" evil reputation has grown out of attempts to run it in open boats built for calmer waters and unable to withstand the

pounding of high, hard hitting waves which are characteristic of big river rapids. Even in 1869, Major Powell recognized that a special kind of boat was needed to conquer the wild waters of the Green and Colorado Rivers. He chose boats of more or less conventional design; but which were modified for his purpose by large decked compartments, or cabins, at the bow and stern. The boats for his second expedition were built with a third cabin amidship, leaving only small cockpits for the two oarsmen. A third at the stern faced downstream and steered with a sweep oar. Conventional keels gave them more draught than is good in swift shallow water and they were heavy and clumsy to maneuver. Nevertheless, the watertight compartments kept them afloat even when waves filled the cockpits to the gunwales.

In the 1890s Nathan Galloway, a Utah trapper and trader, began trapping the rivers in boats, and out of experience developed a new type of boat and a revolutionary technique of operation which through the following decades proved to be the safest and most efficient combination for running the rapids of the big rivers. The Galloway design, without significant modifications, survives today as the modern "cataract boat." Its main features are high sides, a broad bottom, fiat in cross-section, and a high rake or "rocker" from the center to both ends. With this construction it has a shallow draught, and the large amount of rake gives it a handy pivot point upon which to maneuver. Usually there is a large, watertight cargo compartment in each end which provides added buoyancy. The Galloway operating technique is so simple that it should have been conceived by

Kenny Ross



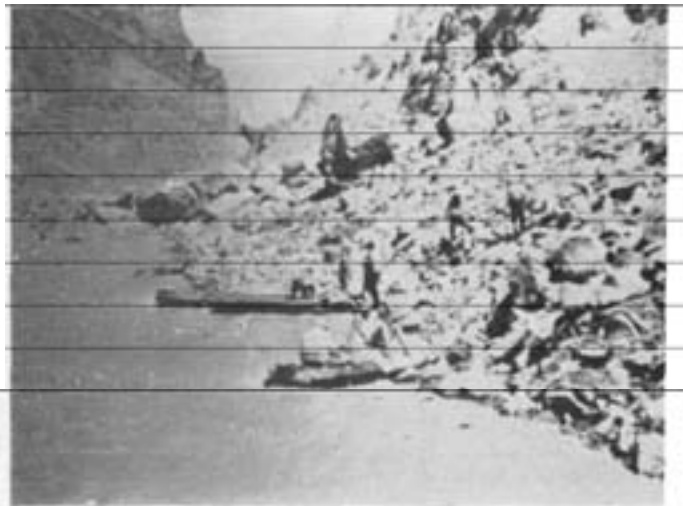
others faced with the problem of taking a boat through dangerous waters, but it appears to have been seldom or never used before Galloway's time. The essence of this technique is that the boatman enters a rapid or difficult stretch of water stern first, facing downstream to have a clear view of conditions ahead. By rowing in normal fashion against the current he can slow his boat at will or maneuver to either side to avoid obstacles. At the bottom he is automatically in the best position to pull away from the threatening tailwaves which are the "exhaust" of a rapid. When used with skill the Galloway technique is beautifully precise, and a boat thus handled in truly wild water is spectacular to watch.

After World War II inflatable rubber boats, which had been used as landing or assault craft, were made available to the rivermen and immediately became popular. These LCRs, with their large cargo capacity, the buoyancy of their several air chambers, and their great breadth of beam, are without doubt the safest, and in many ways, the most practical "work" boats of the rivers. They are built of very heavy black rubber and fabric material which has the strength and resiliency to withstand hard buffeting, and they have ample weight to hold them firmly to the water. This type of boat should not be confused with the lightweight Air Force life rafts which are built for emergency use on overseas flights but have neither the brute strength or the weight to be used safely in swift, rocky waters such as those in Cataract Canyon. Of the LCRs, the 15-foot size with a beam of nearly 7 feet is used most by rivermen. They are usually handled with oars by the Galloway method, but because of their broad beam and a bottom that is extremely flat from bow to stern, they are clumsier and slower to handle than is the Galloway type of boat. The writer, who regularly runs Cataract Canyon, uses the 12-foot LCKs which have a 5-foot beam, and he handles them with two paddlers seated side by side at the stern. Thus the stern becomes a pivot point which gives the little boats fast and precise maneuverability and a real sporting interest.

Kayaks have run Cataract Canyon, but always with portages and not without up-

sets. The writer knows of no ones that have made a successful passage, but he believes that at certain stages of water, sportboats, both kayaks and decked canoes, if handled by a highly skilled operator could run all but possibly one or two of the worst cataracts. And although he confesses no personal skill with sportboats, he is convinced that to really conquer the "Cat" in such craft would be the epitome of white water thrills. He is concerned that the present trend by sportboaters to tackle the "Hig Time" will inevitably lure many who are ill-prepared by experience into the canyon of cataracts and that the "Graveyard of the Colorado" will collect new graves. However, he feels that really good sportboatmen should be encouraged to try the cataracts and suggests that the less-skilled but sensible sportsmen still enjoy tremendous white water "kicks" by riding in larger boats managed by experienced boatmen.

Probably the best conditions for running the cataracts in sportboats would be had at the moderate water levels of early spring and late summer. The normal high water stage of late May and early June should probably be avoided by most parties although a good man with a Cataract Boat or an LCK can handle the conditions it creates. Regardless of the type of boat used, the advice, and if possible, the leadership of someone thoroughly familiar with Cataract Canyon should be sought by groups tackling the canyon for the first time. Kayak and canoe groups will enjoy maximum safety and comfort if they are accompanied by larger boats to carry cargo. So the least of the possible disasters to a party in the canyon





From Kodachrome

by Kenny Ross

would be to lose even a part of its food supplies. There is no place to replenish them and there is no way "out" to civilization except for some guides, or the very, very lucky.

No one knows how many people have made passage through Cataract Canyon in the 87 years since the Powell voyage, but they probably number less than two hundred. At least 12 or more have lost their lives there, but the record is blurred by time and the fact that many who tried it in the early days were itinerants in the West, whose plans and actions were not subject to scrutiny by friends and relatives who would note their passing. Neither is it known how many of the lost died in the rapids or survived the wrecking of their boats only to succumb to the forbidding wilderness which stretches for many miles on each side of the river. The record does show that both happened many times.

In Cataract Canyon the Colorado is truly a white water man's river. It is an adventurer's dream and a writer's despair. It has been an ordeal by water to all who inexperienced and either ignorant or unmindful of its dangers, have attempted its passage in boats unfitted to withstand the fury of the cataracts. Yet, no well organized party, adequately supplied and equipped with proper boats and experienced leadership, has ever had serious difficulty there. The white water sportsman who is expert with his chosen craft will find that the cataracts offer every problem and thrill he can hope to meet—and perhaps enough more to keep him safely humble. The less skilled but interested passenger riding with an expert boatman is offered a wonderful new experience and the unusual thrill of being both participant and spectator in a sporting clash between men and savage water.

■ * *

Serious Problem

Dear Sir,

Recently I complained that water ran up my sleeve whilst paddling, and I was advised to buy a pair of drip-rings.

The only ones I can get, however, seem to be far too small, as it took me over an hour to get them on to my wrists, and now I cannot get them off and have lost the use of both hands.

What shall I do now?

Yours faithfully,
NIG-NOG

Dear Nig-Nog,

We sympathize with you over your trouble with water running up your sleeves. We have consulted our technical staff and it would seem that, in spite of their name, drip-rings are not items of personal wear. The following suggestions have been put forward for your guidance.

- (a) Try holding the paddle between your teeth.
- (b) Join the Scout Movement and swear.
- (c) (Inspired by a contemporary canoeing book) Stuff the space between the sleeve and the arm with goose-grease.

Editor

(Reprinted with pleasure from the Summer 1956 issue of White Water [British])

News Note

The ART RAKER TV show "YOU ASKED FOR IT," filmed a simulated white water race with the Washington Foldboat Club. It has been shown on the West coast, and is worth watching for. Congratulations to the club for helping to further the sport.

Georgie White reports that work has started on the Glen Canyon dam. There is a report that Glen Canyon will not be open to river runners next year. This will not only stop runs on beautiful Glen, but also on the classic San Juan. We await more news on the subject.

Here is a place for our Conservation Committee to go to work.

Safety Test of British Canoe Union

This is an elementary test, but well worth the effort. Note that a kayak is a canoe in Europe.

The test can be carried out within a small area on a river flowing smoothly at a speed of not less than 3 mph.

1. The candidate will swim 25 yards in light clothing (e.g. shirt, shorts and gym shoes). He will swim under a canoe and come up on the other side.

2. The candidate will present his canoe for inspection when it is ready for use. Folding canoes must be built at the time of the test.

3. The candidate will pack his canoe as if in preparation for a journey of two or more days.

4. The candidate will get into his canoe from the bank, and will put out into midstream.

6. The candidate will paddle his canoe upstream a distance of 50 yards. He will then turn and paddle back to his starting point.

7. He will carry out two Ferry Glides, one facing downstream and one facing upstream.

8. He will capsize his loaded canoe in midstream, come to the bank with the canoe, and empty out the water.

9. He will re-embark, standing in water not less than knee deep. He will then return to the bank, disembark and take the canoe out of the water.

Note: In items Nos. 2, 4, 8, 9, the candidate may have assistance if he so desires.

(Forwarded by Bruce Grant)

Olympic Canoe Team

"The flat water racing team for the Olympic Games has now been selected by the American Canoe Association. Those who would like to help send them to Australia should send their contributions to the United States Olympic Committee, Biltmore Hotel, New York 17, N. Y. Be sure to mark your check "for canoeing."

Tell your boating friends about American WHITE WATER, or better still, send us their addresses. We'll mail them a sample copy.

HULL DESIGN

by STEVE BRADLEY

PART I OF A SERIES

MY first real interest in hull design had its origins in, not on, a river. The hull in which I had a strong personal and financial interest was riding barely awash. It was a conventional folding kayak, in an unconventional position, full of water. Like a state of Maine "stone-boat," its gunwales were barely under, and we were heading for a big rock. Feeling that our destinies must take separate paths, I parted from my ship, and watched it wrap itself, like a saturated dish-rag, around the rock. It was totally destroyed, in a few seconds.

Emerging from the river I was sobered by the realization that I no longer had a boat, that our association had been pleasant, brief, and expensive, and that I would have to either order a new one, quit boating, or come up with a less destructible solution to the problem. I chose the latter because the moment was propitious. A new era was already at hand in hull fabrication. Reinforced fiberglass was revolutionizing the ship-building industry.

It was propitious too, because I had not been wholly pleased with the performance of my folding hull, and had already concluded that the exigencies of engineering a folding type hull had cut heavily into the field of ideal hull design, creating, for me at least, the feeling that an ideal hull and an ideal folding hull might be distances apart, that possibly too much compromise had taken place in order to satisfy the pure mechanics of hull foldability.

It took six months to design my first hull, because to do this I had to take a basic course in naval architecture. Whittling a boat out of a block of wood was one thing. Laying out a three dimensional curvilinear form on a flat two dimensional piece of paper was quite another. I was fascinated, and perplexed. It was a new language. Naval architects speak it fluently; no one else does. Yet even they seem to agree generally that hull design is as much an art, as much a

matter of sense of proportion, of eye analysis, as it is an exact science. Mathematical curves have not yet taken over the field, and probably will not.

Since I had no concern about either foldability or the limitations of rigid materials I could approach the problem with one thought: performance. The new fiberglass material had already proven itself to be essentially indestructible, and could be molded into any compound shape. The entire focus was concentrated upon pure form.

To my astonishment pure form, in hull design, did not seem to exist. I quickly learned that practically every hull made, be it ocean liner, or single scull, was compounded of many compromises, that few hulls have ever been successfully made for one single purpose to the complete exclusion of other considerations. Thus, my investigation, just beginning, led me into first an analysis of hull form terms, and then into what each element of form contributes to over-all performance. It was here that I quickly learned how much the designer must exercise judgment and experience in an essentially non-scientific field.

Admitting that even after seven years of interest and experimentation in the specialized field of river kayak hull design that I really know very little about the creation of the ideal hull form, I feel it important to stress certain procedural aspects which have been profitable to me, and to mention the many points upon which a hull must be examined before it can be ready for fabrication.

While not an exact science, much is known about the elements that contribute to hull performance. To discover and understand these elements we have to learn the terms, and what each means. Immediately you face an almost impenetrable forest of new terms: deadrise, sheer, tumble-home, windage, directional stability, lateral stability, center of buoyancy, free board, wall sides, flare, flam, and a host of others. As in every

glossary, some are vital, and some are simply there to make the language seem impressive and esoteric.

The first, and most important step, is to find out just what it is you expect of your hull. I am assuming of course that we are concentrating upon a river kayak hull. Is the prime intent to make a stable, easy handling, recreational hull? Or are we interested in a high speed racing hull? The range of possible hull forms from the extremes of each, from the most stable, and ponderous recreation hull, to the lightning fast, tricky racing hull, are infinite. They are infinite, because the designer has to bring into some sort of harmonious relationship a number of elements of form, not all of which are necessarily compatible. Hence, the need for compromise.

Having established his purpose, the designer must now select these elements of form and relate each to the other in such a way as to create in his final product the shape which will most nearly answer the purpose. If it were simply a matter of using a measuring cup, or a slide rule, or an IBM machine the problem would be simple, and naval architects would become an extinct species.

To the neophyte like myself, this meant attempting to assimilate the vital principles, and apply them in what I hoped would be their most favorable proportion to a field pretty much neglected by naval architects, river boating. It is one thing to create a hull of certain performance characteristics for a lake or ocean where wind and wave are the dynamic elements to consider; it is quite another to apply principles to a situation like a river where water is in every conceivable state of motion and upheaval. I learned quickly—after designing and fabricating the first hull—that the expectation of spectacular success on the first try was naive optimism. The first hull simply indicated the correctness of the direction in which I was heading. Perfecting it would take many new designs, which accounts for the fascination of this field.

In the succeeding series I shall attempt to discuss how I approached the problem, and what the main elements in hull form

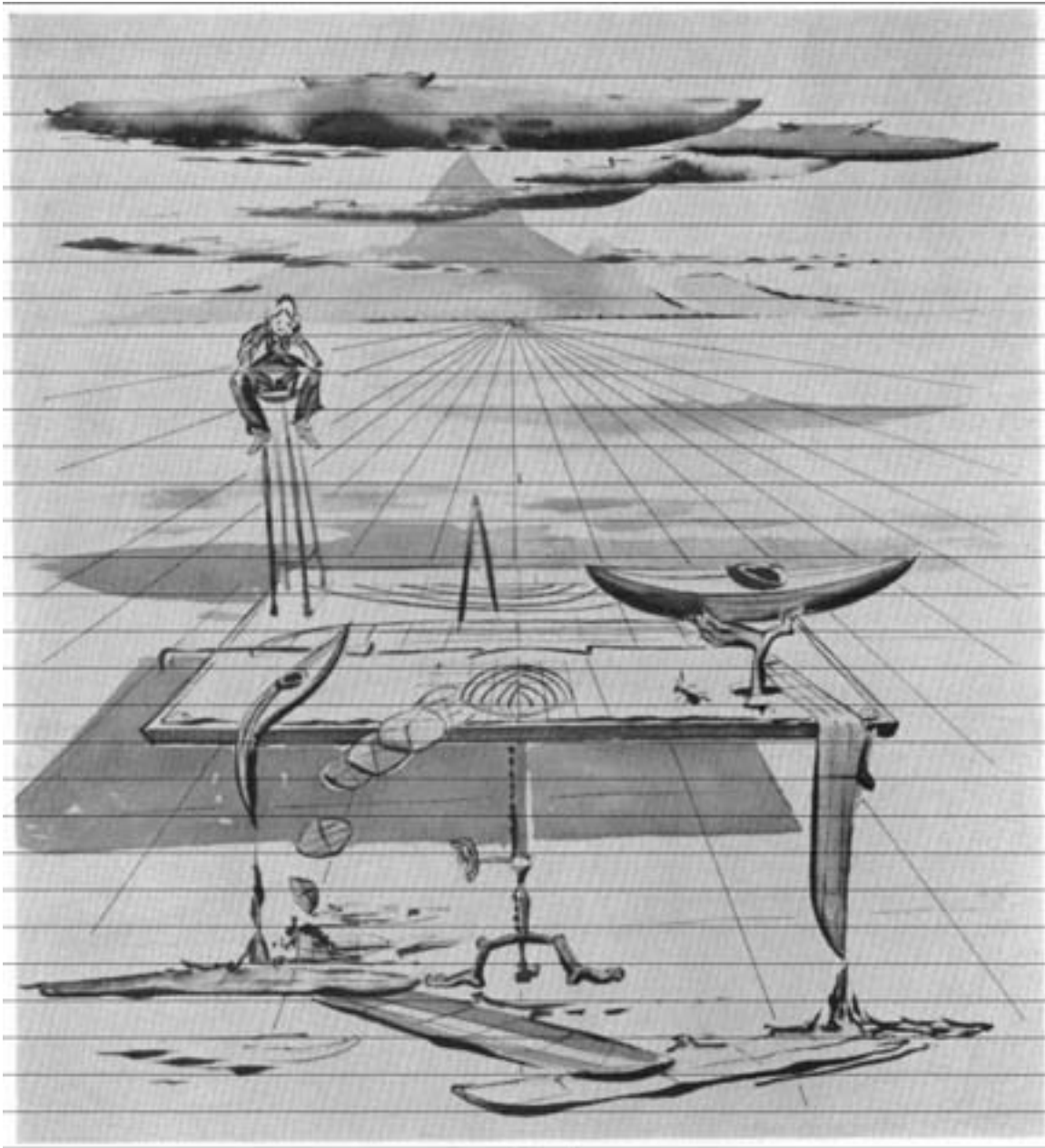
were that had to be considered and harmonized. I do not consider myself an authority, even on river boat design; but I hope that what I have discovered so far can be of profit to the readers.

The first hull, then, was essentially a testing ground for certain theories I had about river kayak hulls, and as such it may be of interest to the reader to examine the practical application of theories to a specific problem. Hull One was to be a two seater. It was designed before the single became the most popular model. Experience with two-seater folding kayaks led me to believe that much could be done to improve maneuverability. For example, the two-seater foldboat was long and knife-like. While it cut through waves without difficulty, and held to a straight course without wavering, it could not be turned quickly nor easily.

Thus my first consideration was to develop in my design a form that would respond quickly to direction changes. I was not primarily concerned with speed: but I did want a hull that would be stable, buoyant, and responsive. With these elements in mind I approached the first big compromise. Without too much loss in directional stability, the capacity of moving in a straight direction, I yet insisted that the hull be maneuverable. Generally speaking, these two elements in boat design are at opposite poles, as are many other elements. A knife-like hull, long and narrow, with bow and stern in the water will cut like a knife, and resist efforts to alter course. A pie plate will turn instantly, without effort; but cannot be counted on to maintain any course. Thus, the problem was to select elements of both and attempt to harmonize them together in exactly the right proportion.

For maneuverability I selected what is often called "rocker" in a hull profile: that is, where the keel profile is such that the bow and stern actually are slightly out of the water. Where the conventional foldboat was about 17 or more feet long. I chose to shorten the length to 15½ feet. A long sharp bow way out in front, resting in the water at the water line, obviously would resist a paddler's efforts to turn the boat suddenly. Cutting down on length, and pulling the bow slightly out

Designers Dilemma
or
The Persistence of Deadrise



Steve Bradley

of the water would tend to increase the paddler's leverage by decreasing the resistance against it. The boat should turn more easily. Establishing the precise degree of rocker, and decreasing the over-all length, necessarily was a matter of judgment. There were no exact rules to follow.

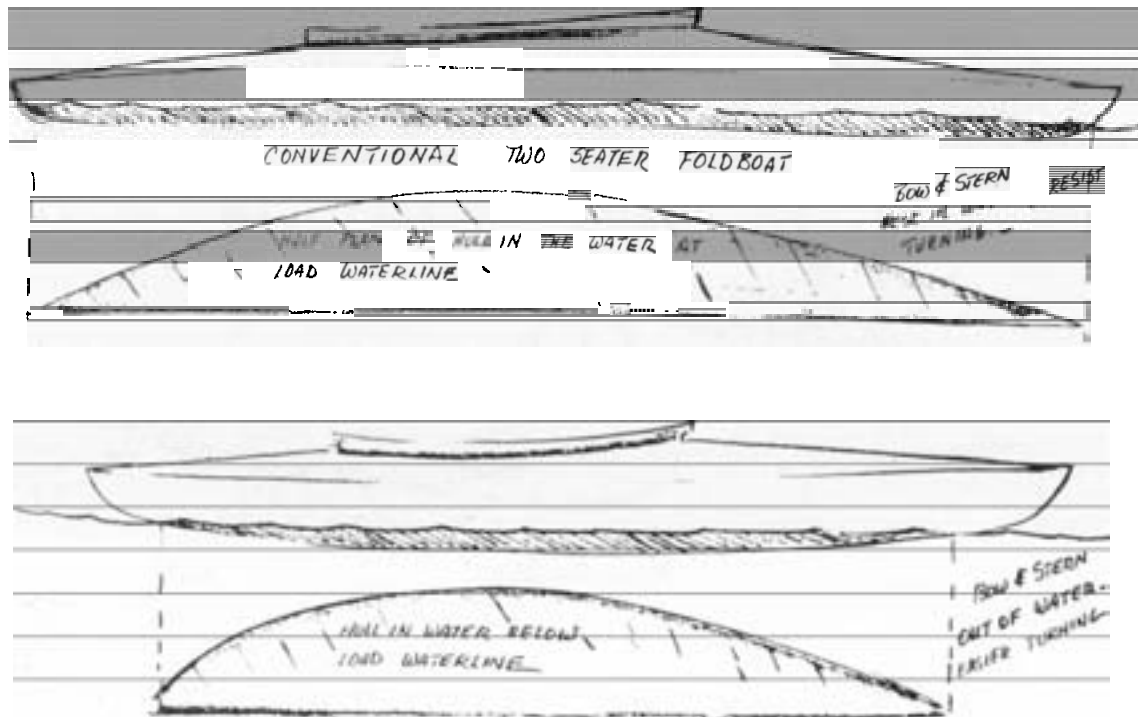
Shortening the length I knew would make the boat more stubby. The long clean lines of a 17 footer make it a faster boat, it slips quietly through the water instead of parting the water suddenly. A stubby boat of the same beam would tend to be slower. How much, I could not ascertain precisely. Speed was not a principal consideration and could be sacrificed somewhat.

Also, I knew the rocker would make the boat rise somewhat in the waves rather than cut straight through them. Rut a hull that rises too much in the waves will have a tendency to "pound," that is, to

rise high on the wave and then slam hard down into the trough. I had *to* beware of combining too much rocker with too much flatness on the bottom of the boat. This brought me to the complicated and subtle problem of attempting to decide what kind of cross sections my hull would have, taken at one foot stations from bow to stern. The performance of a hull in water is nearly as much dependent upon the cross sectional shape of the hull as it is on its profile. The two must be considered together. In laying out a hull on paper you continuously work from one to the other; a change on one automatically implies an alteration of the other, as well as an alteration of the various waterlines found in the plan view.

In the next installment we will examine the subject of cross-sections and their effect on hull form and hull performance.

Effect of Rocker on Submerged Area



Steve Bradley

Change In Results Of National Slalom Championship

A question has been raised about the entrance of foreign citizens in the 1956 National Championships, reported in the Summer issue. The matter has been reviewed by the officials of the American Canoe Association, and it was decided that only U. S. citizens may compete. To be fair to all concerned, the original winners are being allowed to keep their prizes. The corrected results now read:

CANOE CLASS C2	
1. Larry Zuk, Paula Zuk	399.2
2. D. Rupp, J. R. Caukins	450.2
3. R. McNair, Edith McNair	652.8
KAYAK CLASS F1	
1. Larry Zuk	316.9
2. Willie Schaeffler	403.8
3. Volney Perry	410.25
4. Dick Stratton	420.8
5. Eric Frazee	428.4
6. Joe Lacy	480.8
7. Dave Stacey	487.
8. Laurence Campton	506.
9. Benny Campton	593.7
10. Tom Tellefson	669.7
11. R. H. Dawson	933.75

Congratulations to Larry Zuk as the new National Kayak Champion. Repeated congratulations to Larry and Paula as the Double Canoe Champions.

English Literature Available

Donald Rupp of Buck Ridge has kindly offered to facilitate your getting the following items of particular interest:

YOU AND YOUR CANOE, by O. J. Cock. This little book on foldboating was reviewed in our Summer issue of this year. Cost \$1.75.

THE ESKIMO ROLL, a pamphlet published by the British Canoe Union, will help you master this maneuver. Cost 50c.

WHITE WATER, This English counterpart of our own magazine specializes in folclboat slalom, and is a must for slalom enthusiasts. Your subscription will bring you the four quarterly issues for \$1.00.

These prices include mailing and just cover Don's costs. Send your checks to Donald Rupp, 3766 Woodland Ave., Drexel Hill, Pa. Send them soon so he may order for all at once.

American **WHITE WATER**

COMPETITION DURING 1956

Here were some scheduled races. For more information, write to Larry Zuk, -1585 South Washington, Englewood, Colo. He is Chairman of the Slalom Committee of the American Canoe Association.

Arkansas Race

Sponsored by the FibArk Boat Club. Slalom (National Championship), June 15th and 16th, Downriver Race, June 17th. (write to Howard Blakey, Salida, Colo.)

Salmon River Race

Sponsored by the Appalachian Mountain Club and the Buck Ridge Ski Club. April 29. (write Roland Palmedo, 1185 Park Ave., New York, N. Y.)

Potomac River Race

Scheduled May 6 (write Andy Thomas, 6103 Dunrobbin Dr., Washington, D. C.)

Blue River Race

Sponsored by the Colorado White Water Ass'n. Scheduled June 30 and July 1. (write Larry Zuk, 4585 S. Washington, Englewood, Colo.)

Clear Creek Race

Sponsored by the Colorado White Water Ass'n. Scheduled July 8. (write Milly Schaeffler, 3456 S. Ash, Denver, Colo.)

No doubt there are many races that are not mentioned. Will the sponsoring club please drop a note to the editor about them? Let's have a list of next year's races.



POTOMAC RIVER White Water Race

by ROBERT HARRIGAN

WHILE it is doubtful that the Potomac River near Washington, D. C. has many stretches of rapids comparable to those found on the Arkansas and Colorado Rivers, it is a challenging enough stream to have inspired a number of local canoeists and foldboaters to put their heads together to plan an exciting downstream race.

The informally organized 7-member Potomac River White-Water Racing Committee planned, organized and regulated the event. Beginning in November of 1955, meetings were held at least once and often twice a month. The general course of the race was mapped out, necessary markers were designed and made, safety monitors, starters, judges and timekeepers were recruited and briefed, and publicity was planned. Qualifications for entrants and general rules of safety were established. During this stage we gratefully received the assistance of members of the Montgomery Sycamore Island Club.

A seven and one half mile stretch of the river was selected for the race course. It had its start in a narrow gorge about 200 feet wide a short distance downstream from Great Falls on the Potomac. This point is only about ten miles from the heart of Washington, but fortunately the shoreline all along the race course is relatively undeveloped, the Maryland side being a part of the National Capital Parks system. The Virginia side of the lower Potomac is in most cases lined with steep cliffs rising abruptly from the water's edge, thus discouraging any immediate construction. Consequently, when traveling down the river, one has the impression of going through a wilderness area. In addition, the craggy shores provided good vantage sites for spectators.

On the day of the race, 30 boats were registered. Out of this number, 19 actually entered the race, 14 of which were Canadian type canoes and 4 were foldboats. While admittedly this is a small number, it must be remembered that the event was entirely new and untried here.



Contestants preparing for the start, near Great Falls. Bob Harrigan

Even so, one contestant travelled 250 miles from Norfolk, Virginia, and another from northern Pennsylvania. According to the Committee's rules, the racers fell into two classes: 1) two men with double blades in canoes, foldboats or kayaks, and 2) two men with single blades in canoes, foldboats or kayaks. One man with either single or double blades was placed in the latter class. The Committee had planned these classes with expected entrants and their boats in mind. However, it developed that no tandem double bladers entered and only the second class was in effect. The racers competed for first, second and third place on the basis of the fastest time.

May 6 was a beautiful, clear, sunny, spring day and hundreds of spectators lined the course. The race started promptly at 12:30 p. m. with the contestants leaving in numerical order at 30 second intervals. Only a short time was allowed to intervene between the starting of each race in order to give the competitors and the spectators the feeling of excitement and personal contest. During

the course of the race it was not uncommon for a boat to be passed by as many as three or four boats which succeeded it, and a few of the boats were actually passed in the roughest stretches of white water, this proving to be a rather thrilling spectacle to all concerned (with the possible exception of the individual whose boat was being passed). Although a couple of boats turned over or swamped, no one's life appeared to be at all endangered. This was due in part to the rigidly enforced safety rules. Each participant had to be accepted by the racing committee and only strong swimmers and experienced paddlers were permitted to start. At the foot of each dangerous passage, motor boats were deployed, manned by crews equipped with lines and life preservers and experienced in life-saving techniques.

From the starting point the canoes bobbed and bounced through a short stretch of water with deep swells and high waves known as "Wet Bottom Chute," and then swept down the length of the gorge through water moving at about 6 miles per hour. After a mile or so the gorge widens, the river becomes shallower and some large rocky islands split the course making two rapids, one at each side of the river. Many of the canoeists were surprised here when rounding a bend they suddenly had to struggle out of the hard pull of the current pouring into the Virginia shore rapids in order to stay on course on the Maryland side. This section is known as "Difficult Run." After this the river quiets somewhat for about another mile. Then the canoes were forced into 2 successive spans of rapids. It was in this section that one canoe struck a rock head-on causing the occupants to be bolted forward with the resultant loss of one paddle. Fortunately, a spare was tied to the canoe and this boat, though leaking slightly, was able to continue the race. Having passed these obstacles the canoeists paddled through a brief stretch of slack water until they reached the boulder strewn passage of "Stubblefield Falls." Here, there are continuous haystacks for 100 yards and few were the canoes which did not add costly water. At the base of these rapids the water boils beneath the

surface creating a maze of whirlpools. More than one boat could be seen going downstream broadside with its embarrassed paddlers frantically stroking to right themselves. Although Stubblefield Falls was the last rapid, the remaining 2 mile stretch to the finish line troubled the contestants with continuous ripples and hundreds of little rock islands which barely showed above the surface.

The first canoe to cross the finish line at Sycamore Island completed the course in one hour and eight minutes. This was the fastest time for any boat, and is testimony to the strength and skill of Kill and Frank Havens who powered this craft. Both of the brothers have been in Olympic canoe races, and Frank won a gold medal in the last one held in England. The second place was 1 hour and 15 minutes won by Grady Richey and George Boyd, both relatively new to the sport of canoeing. Oddly enough one solo canoeist, Robert Broad, with double blades in a 15 ft. aluminum canoe made third place time, 1 hour and 16 minutes. The best time for the foldboats was 1 hour and 27 minutes achieved by Lt. Herbert Wil-

Ramone Eaton in Stubblefield Falls



Bob Harrigan

liams, USN. All four foldboats were propelled by solo paddlers and were two place boats.

Due to the relatively few entries, a disproportionate number of canoes, and contestants in all states of physical condition and preparation, it is difficult to evaluate the race with respect to the time made by the different types of boats. Complicating this is the fact that this course is composed of sections of rapids interposed with fairly long sections of flat water so that neither the Canadian type canoe nor the foldboat is ideally suited. We feel that until the race gets greater recognition and a stronger following, the rules should be as broad as possible, permitting as many different structures and designs of boats as possible in as few classes as is practical. Additionally, women are permitted to enter but there is no special class for them. Though this allows for the greatest number of entries, it must be admitted that there may be some hurt feelings when prizes are awarded.

Although there are three local boat clubs in Washington which are primarily interested in canoeing. (Washington Canoe Club, Potomac Boat Club and Montgomery Sycamore Island Club) their racing activities have generally been confined to the conventional contest on placid water. This type of race is very popular in many parts of the country. However, it does have the drawback of requiring rather extensive training and devotion to "staying in shape." The practice sessions in themselves are hardly pleasurable, but are rather a necessary means to an end. This does not mean that events such as the slalom and down-stream race encourage the inexperienced and poorly conditioned to enter. However, the period of training for these events may be likened to the game of golf in which one is improving in skill while playing the game and at the same time, thoroughly enjoying oneself. Carrying the analogy further, a canoeist who travels down a stream avoiding as many obstacles as possible, is like the golfer who approaches par in his score. To enjoy this type of sport no personal opponent is needed. The only requirement is a

course which is sufficiently difficult to challenge the ability of the participant.

Another factor which has made the conventional race less attractive is the recent revision in ACA regulations. While a canoe could formerly enter a number of different events, the many new restrictions on the design of particular boats for particular events has brought about a situation where a contestant may travel 200 miles to find that he can enter only one event lasting perhaps 20 minutes (unless, of course, he has a truckload of boats of different design). This is not mentioned to detract from the flat-water race, but to show that there are definite advantages to the slalom and down-stream race.

A mild climate and 10 rivers in the area offering a variety of conditions have permitted us to develop a very good cruising program. Since the number of people participating in this activity has increased, it was felt that something new and exciting could be offered in the form of a down-stream race. The wide acceptance and approval of this idea was a pleasant surprise and the Washington newspapers gave it excellent publicity, both before and after the race.

Our hopes are that the cruising program and the down-river race will complement each other. and that both activities will continue to expand. The Potomac River White Water Race is to be held each year on the first Sunday in May. All experienced canoeists and foldboaters are invited to apply to enter. Correspondence should be addressed to the Chairman of the Potomac White-Water Racing Committee, Andrew J. Thomas, 6203 Dunrobbin Drive, Fairway Hills, Maryland.



John Jay Does White Water Film

John Jay, the well known skier and lecturer, made some movies during this year's Arkansas Races. These shots are now part of his show for this season, "Great White World."

He sure to see it—and look for some of the AWW staff in boating scenes.

American WHITE WATER

What No Flannel Board?

For several years Buck Ridge has struggled in teaching more and more newcomers how to read and run white water. We used a blackboard for our classes until the Red Cross and Ernie Schmidt of the Roy Scouts told us about flannel boards, the latest gimmick in visual education. So we tacked a piece of flannel on some plywood, and we snipped an assortment of waves, rocks, current arrows, and canoes out of cardboard. These will stay wherever placed on the flannel if backed with flannel, sandpaper, or a backing sold for this express purpose. (Huck Ridge used "Flok-tite," Florez, Inc., 815 Hates St., Detroit, Mich.) Shore lines may be painted on permanently or shown by movable ribbons of flannel.

We think our students are learning more now. Of course slides and movies are needed too; but we are sold on a flannel board in addition.

New Products

We will attempt to keep our readers informed of new products that may be of interest. Please send in information about new items which are of significance.

There is a new Fiberglass kayak, called the Minnow. It is 12'8" long, has 33" beam and weighs 35 lbs. There is also a racing model which is a little narrower and lighter. There is styrofoam floatation and a mahogany deck, with openings for two paddlers. It is sold by E. Gitt, 328 Ashwood Rd. Springfield, Del. Co., Pa., for \$129 at the factory. He also does custom boat construction and is working with several White Water groups.

Klepper (1472 Broadway, New York 36, N. Y.) has a few imported slalom paddles in stock. Drop them a note if you are interested in equipment for top competition.

Lots of us have kicked around the idea of a rudder for canoes and kayaks. Some of the foldboat makers sell them for use with sails. Now there is one on the market for canoes. It is worked by rudder pedals, but when pressure is released, will swivel freely. On hitting rocks, it swings up. It is sold by W. L. Jones, 222 Glen Rd., Webster Groves, Mo.

American WHITE WATER



The flannel board in operation. Demonstrated by your secretary, Bob McNair

Corrections

We really messed up the ~~AWWA~~ addresses. Oz Hawksley lives in Missouri—not Pennsylvania. And our Eastern Ad Manager is Al Washington. We're very sorry.

HATCH

RIVER EXPEDITIONS

411 East 2nd North, Vernal, Utah

LICENSED GUIDES

Approved by the National Park Service for operation in Dinosaur National Monument.

Join us on one of our "Group Specials," or private trips — from one to six days.

We also offer excellent low rate trips through Grand Canyon, Cataract, Middle Fork, and others.

Write soon for details!

"SEE DINOSAUR WITH US"

BOOK REVIEWS

The Canoeing Manual, by Noel McNaught. Nicholas Kaye, Limited, 194-200 Bishopgate, London EC 2, England, 1956. 10/6

Most books on canoeing fall into two types; the adventurer's biography and the guidebook. The first tells of the dangers, glossing over the pleasures, encountered in running near-vertical streams in desolate wildernesses, while the second deals with equipment, passports, landing places and regional delicacies of the tourist's rivers. The ability, or is it interest, of imparting enthusiasm and confidence to the beginner is too often lacking. The best book I know on the pleasures of river touring has little to do with canoes and not much with sightseeing, yet more people envy Huck Finn than dream of running the Housatonic. Mr. McNaught's book is a little gem for the novice and the next best to read. He cautions properly about the real dangers such as the piles of masonry often left around bridge piers, and the submerged stakes that discourage fishing (and canoeists) without suggesting that anything but ordinary observation and caution is required. He tells of his own travels and indicates the degree of difficulty required for all the major rivers of England and many of the Continent. He particularly recommends certain rivers as "fun for beginners" and is accurate. How often have we wished for an expert opinion on that subject to convince our friends! Concerning boat equipment he is quite lucid, and devotes a chapter on the particular types and makes of canoes available in England, but he is very incomplete. There is nothing on the types of sleeping bags; on which clothes will stand canoe treatment and which will not; on how to stow the gear you decide to take and, most important, what you should leave behind.

It is about canoeing itself that McNaught falls down. Admittedly there is much art in that—the technique cannot be taught, it can only be learned—but there are many things which the canoeist can be told, and which he will remember. I write of precepts—"Ride your boat as

you would a horse, grip it with your knees and your heels and keep your hands off," or "Better pick rocks than bushes if you must choose." I write of touring technique—"A meadow beside a deep eddy is nearly always the best place to camp," or in Europe, which rivers supply driftwood for fuel and which require you to carry a primus. The lack of this type of information prevents this book from being a manual in the true sense of the word, but it is still a very good book for instilling the desire and the confidence which the novice must have if he is to be taught at all. It will put techniques of other canoeists, but most of all, from going and doing it himself.

Reviewed by
John Forester
1419 Queen's Road
Berkeley 8, California

Canoeing. By Joseph L. Hasenfus. Doubleday & Company, New York, 1956. 445 pages 350 figures, \$1.25

CANOEING, a textbook prepared by the American National Red Cross, is perhaps the most important contribution within recent years to our rapidly growing sport. It is very thorough and covers methodically such topics as history, canoes, paddle strokes, and rescue methods. Many alternative methods are outlined and explanations are made clear by numerous pictures and diagrams. This thoroughness makes it valuable for beginners and for all who teach beginners. To a growing sport beginners are very important. This thoroughness makes it invaluable to skilled paddlers; they want to be sure to have all the tricks at their command.

In addition to being more thorough than any book so far, this one goes one step further. It opens the door to the more advanced phases of canoeing, to touring, to racing, and even to white water. The chapter on fast water is to be noted particularly for an excellent exposition on the art of poling. It is true that the complete story on fast water can not be told in such limited space. The writer

is wise to accept this limitation. It is better that there be several books for so extensive a subject as canoeing. We have seen foldboat books each of which attempts to cover all phases and so does justice to none. This book does an excellent job on canoe handling and will be used by all for years to come. Whoever now writes the much needed white water manual need not waste space on what has already been so well described. It will be expected that all canoe paddlers are familiar with this Red Cross book.

We congratulate Mr. Hasenfus, the writer, on an important job well done and we owe him our warmest thanks.

CANOEING is available from your bookstore, from your Red Cross chapter, or from the American National Red Cross at Washington 13, D. C.

Reviewed by
Robert E. McNair

* * *

The Handbook of Wilderness Travel.
By George and Iris Wells. Harper and Brothers, New York, 1956, 306 pages, \$4.00.

Here is a book which is written for everyone who wants to get away from the noise and hectic activity of "civilization." It covers everything you need to know about travel in all types of wilderness—how to go, where to go, when to go.

The book is divided into three sections. The first describes America's wilderness areas and ways of traveling in them; the second is a comprehensive listing of wilderness areas in the United States; the third is a directory of outdoor clubs.

Part one includes chapters describing many types of back-country trips, including back-pack trips, pack trips, river trips by canoe or rubber raft, jeep tours in the desert, and excursions in the Florida swamps. There are discussions of the advantages and disadvantages of each: where you can go and what to expect, from areas where one can wander for days without seeing a sign of civilization to trails where one may have access to a hotel and restaurant every night. One helpful item is a list of 25 companies which specialize in dried foods and lightweight backpacking equipment.

It tells what organized trips are available, such as Sierra Club High Trips and Forest Association Trips, and places where guides and outfits may be obtained.

There is a special account of four of the major long distance trails: the Appalachian Trail, which reaches from Maine to Georgia; the Pacific Crest Trailway, which traverses the West from Canada to Mexico; the California Riding and Hiking Trail, which outlines a huge loop from Los Angeles through the Sierras and back down along the Pacific Coast; and the Long Trail in the Green Mountains of Vermont.

The most valuable part of the book is its second section, entitled "Guide to Wilderness Trails." This is an extensive (75 page) listing of the wilderness areas of the United States. There is a general introduction to each state, and for each wilderness area in that state a description is given which includes the main scenic and recreational attractions, a little about flora, fauna, and climate, hunting and fishing potentialities, best season for traveling, and information about pack stock, guides, canoe rentals, etc., and organized trips offered by private clubs and commercial operators. Many specific trails are described, and sources of maps and guide books are listed. Numerous rivers suitable for canoeing or rubber raft float trips, particularly in Maine and Minnesota, are included.

This book covers a wide field, and is necessarily brief on any one subject. Many of the recommendations for beginners are stated arbitrarily without much discussion and are certainly open to question. References to other publications with more detailed information occur frequently throughout the book, however, and compensate for this lack of depth. It seems mostly attuned to the more casual camper; the most rugged type of activity discussed is back-packing. The "Guide" is a fine introduction for beginners, and it would be particularly useful to any outdoor enthusiast who wants preliminary information about specific areas.

Reviewed by Carol Rudnick

* * *

Survival Training Guide. Navaer 00-80T-56. November, 1956. Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. \$1.75.

There is much of interest to outdoorsmen of all kinds in this new 340-page manual. Most of the 23 chapters contain material of interest to cruisers who might sometime find themselves away from civilization without their equipment and provisions. (We will let you imagine how the cruiser got in that fix!)

The subject is discussed from the point of view of Hazards, both tangible (fauna and flora) and intangible (fear, cravings, inactivity) and the many facets of *Providing* for Yourself. Under this heading are chapters on:

- Shelters and Beds
- Drinking Water
- Firemaking and Cooking
- Securing Animal Food

- Preservation of Animal Food
- Plant Foods
- Primitive Land Travel and Ground Navigation
- Construction and Use of Rafts
- Packing

Improvised Clothing and Equipment
There are specific chapters dealing with regional problems in the arctic, desert and tropics.

This manual is written in extremely readable language, has hundreds of clear drawings and a very good bibliography of literature and FILMS at the end of each subject chapter.

Reviewed by Jeff Wilhoite

Tell your boating friends about American WHITE WATER, or better still, send us their addresses. We'll mail them a sample copy.

FREE '56 CATALOG

More than 32 pages of the finest specialized camping and back-packing equipment available. Write today!

Just food and fuel is needed for this 2 1/4 lb. cook set.



Tent #328. 5 1/2 lbs., 5' x 7'. One of our many models.



Camp and Trail Outfitters

WATER LEVEL OR MOUNTAIN HIGH

Working the fast waters or back packing . . . lightweight and compact equipment is indispensable. We carry the finest imported and domestic equipment. Your satisfaction is our pleasure. For FREE CATALOG write today to:

Dept. FW -

Camp & Trail Outfitters
112 CHAMBERS STREET • NEW YORK 7, N. Y.



New England Scene

Doug Brown

**SHARE-THE-EXPENSE-PLAN
RIVER TRIPS
TIME IS RUNNING OUT
ON MANY RIVERS**

Write now for information on Grand Canyon & Cataract of Colorado River. Hell's Canyon of Snake River. River of No Return. Middlefork of the Salmon River.

GEORGIE WHITE

(*Woman of the River*)

435 W. Loconia Blvd., Los Angeles 61, Calif.
Ply. 5-3125 5-1259

HAMMER



**FOLDBOATS
PADDLES and ACCESSORIES**

write for catalog
to sole

U. S. Representative

**ROLF GODON
BANTON CORPORATION**

24 California St.
San Francisco 11, Calif.

Tragedy on the Colorado

by ROLAND PALMEDO

The Colorado River above Glenwood Springs on Sunday, May 27, was swollen by the run-off of the melting snowfields which still festooned the north and east sides of the mountains at the 10,000-foot level. Where the river channel was confined by the sides of the gorge, masses of muddy water smashed ferociously at the boulder-lined shores. At two places especially rocky spurs constricted the flood into a confused tumbling cataract. In the upper passage a submerged rock sent a plume of water eight feet into the air.

Half a dozen of us had planned to run a few miles of the Roaring Fork, which comes down from Aspen and joins the Colorado at Glenwood Springs, on this fine Sunday. But when we heard that three young men from Aspen were going to try to run Glenwood Canyon, we decided to take this in first.

I had studied both of the turbulent passages a few days before. The upper rapid was about 150 feet long; standing on the bank above its end, with eyes level with the smooth stretch above, I judged the water below to be a good 15 feet lower than it was where I stood. A drop of 20 feet in 150 speaks for itself. The lower cataract was almost as bad. Both seemed more ferocious than Disaster Falls, in Lodore. It was obvious that no fold-boat or other small boat could possibly negotiate either. Having no experience with the big pontoon rafts used in Western rivers, I could not pass on a large craft's chances of survival, but Dick Durrance, who was with us, said, "We've got to stop them if we can." The water felt to be between 40 and 45 degrees in temperature.

"Multiply the danger by four when the water is cold," says Doug Brown in the discussion of the 45 safety points in his book "White Water Canoeing."

The three men who were to man a raft were Bob Mann, Ken Moore, and Hans Zurfluh. None had ever had any experience in handling one of these huge pontoons, or in running white water. They had borrowed the raft, which was one

used the year before on a trip from Glenwood to Lake Mead by others. It had no wooden frame for oarlocks, and the small ones were woefully inadequate to control the bulky craft.

The boat was put in just below the Shoshone Dam in rapid but smooth-flowing water. Even here the crew appeared to be having difficulty keeping it fore-and-aft in the stream. The primary problem was to maintain it in this attitude through the rapid, and the best chance of doing this appeared to be by crossing the brink near the center and holding this line, or to the left of it. This involved a battering from the powerful waves rebounding diagonally from both shores, but at least it offered the best hope of coming into the awesome hole two-thirds of the way down in proper position.

Actually, the raft never came out from the right bank but hugged it close. A moment later the boat was flung against the rocks on the right, where it hung for a few seconds, taking a rough battering from the heavy waves. The stern came off first, and the stream took it quickly around, so that when the whole craft started moving again, it was on a dangerous diagonal. The huge curling wave on the far side of the yawning hole did the rest without effort. The huge float was flipped over as easily and quickly as if it had been a 15-foot canoe, and its riders were tossed out into the boil as if from a balking elephant. All three disappeared from sight, and it seemed that all would be lost in the icy flood.

Moore and Zurfluh luckily came up near the bank in the quieter water below and made it to shore. Hut Mann was not seen. Meanwhile, Dave Lawrence, a well-known skier, with great presence of mind, had sped downstream to the first quiet water. Stripping off his shoes and clothes, and tying a line from a State Trooper's car around his waist, he was almost ready to climb down the bank to the water's edge when Mann's head bobbed up some 50 feet upstream, but it was not seen

again. Some lines of the overturned raft fouled on a rock just below, and there it hung up, like a sombre sea-monster stranded in a mountain torrent.

This episode, like the other fatal white-water accidents that have happened recently again emphasize the precautions that are vital to safety in this potentially dangerous sport. Skiing is also a potentially dangerous sport, for those who ignore common-sense rules of safety, and many skiers have been worried about the public reaction to the high accident rate, and have done something about it. In spite of the fact that skiers outnumber white-water runners perhaps 500 to 1, the fatal accidents in the latter sport in recent years have probably exceeded those in skiing. This is indication enough that the foolhardy white-water runner is flirting with death.

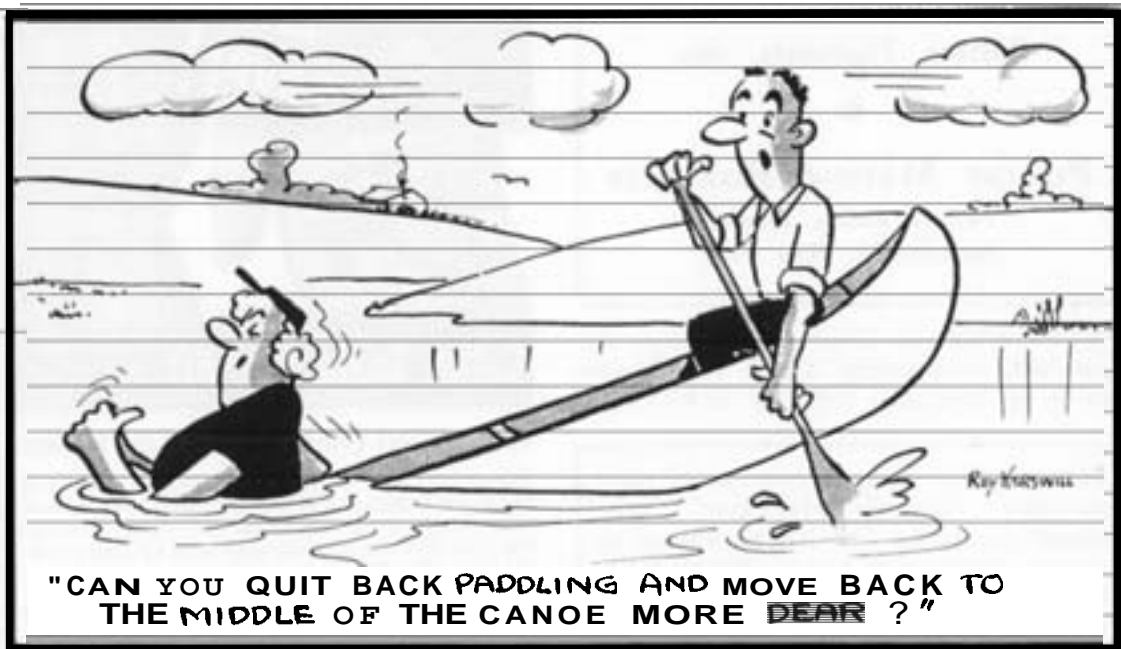
This is not the place to compile the rules of safety, but a few of them might bear mentioning. Too little emphasis has been put, except by well-organized white-water groups, on the foolishness of inexperienced persons running difficult waters. Novice skiers running out of control on a trail far beyond their skill,

are to be pitied for their bad judgment, rather than admired for their bravado. The same holds for river runners.

Whenever possible, a rescue boat should be posted in the first quiet water below a dangerous passage, preferably lurking in midstream in the eddy of a rock. Throwing lines should be readily available, and unlimbered in such places. Difficult stretches should be studied carefully from the bank, and if more experienced advice is at hand, it should be requested and heeded. When the water is cold, long wool underwear should be worn. Life preservers, flotation chambers, ability to swim—any one may be the critical factor.

We who love the white-water sport and would like to see others come to enjoy it, must see to it that the common-sense precautions of safety become known and are observed so that accidents like the Glenwood incident are few or non-existent. Otherwise, not only may more unnecessary tragedies result, but also the public authorities may decide that, in the absence of self-regulation, regulation by law, including the closing of certain streams, may be called for, which would be unfortunate all around.

In any sport, if you ask for it enough, you are going to get it. We ask you to set an example for others in matters of safety. As in the cartoon below, let's keep our troubles something we can laugh at. Ed.





*Floating in Air
Canadian National Railways*

Tell your boating friends about American WHITE WATER, or better still, send us their addresses. We'll mail them a sample copy.

**Fibreglass Fabrics
Tapes Mat Roving
Polyester & Epoxy Resins
Putties, Pigments, etc.**



Pozgay Marine Products

147-22 Archer Avenue
Jamaica 35, New York

PATRONIZE the firms who promote the sport with advertising. TELL THEM you saw it in American WHITE WATER.

FOK SALE: Factory new never used German **Zuendapp-Delphin** side-board motor 2.3 HP for Foldboats or Canoes below cost price. \$96.50 delivered. Contact The Banton Corp., 24 California St., San Francisco.

Advertising

Advertising helps support your magazine. It is also a good investment for the people who do it. No other medium reaches such a group of active, enthusiastic boatmen. Let us all show our appreciation and patronize the firms who advertise in our magazine.

More advertising means that we can afford more pages and more illustrations. If you know of potential advertisers, please drop a note to either of the following:

Eastern Advertising Manager,

Alfred Washington,

450 Maple Ave., Westbury, N. Y.

Western Advertising Manager Bruce

Grant, 6255 Chabot Rd., Oakland 18, Calif.

For everyone's information, our rates are:

1 page . \$75.00 inside covers \$85.00
 1/2 page .. \$40.00 rear cover \$85.00
 1 column inch ..\$5.00

For two consecutive issues the discount is 10%, for three is it 15% and for four it is 20%. Copy for the next issue must be received by January first.



The Smallest Effective Kit on the Market!

Weights only 1 1/4 oz. Contains 3 suction cups, knife-blade, antiseptic, lymph constrictor & easy Instructions. Everything needed for suction treatment - the only first aid method approved by medical authorities. Works on insect bites, too!

If available at your drug or sporting goods store, send \$2.00 cash, check, M. O. (no C. O. D.'s) to Cutter Laboratories, Berkeley, Calif. Dept VL-2.



Club Activities



The AWWA is an association of people and clubs who are interested in boating. To this end, they work to make the sport better and safer for more and more people. Many of the clubs run classes for beginners, and most of the informal cruising groups are glad to help. This summer, the Colorado group had visitors from everywhere between Israel and California. There were a good number of Europeans. Next year let us try for some Australians, or some from Asia.

Our members are friendly and eager to share their experience. To find people in your home area, drop a note to the nearest of the people listed below.

AWWA ADDRESSES

Bauer, Wolf ~~C. 5213~~ 11th N.E., Seattle 5, Washington
 Buchman, Hill—County Line and Gulph Creek Rds., Radnor, Pa.
 Charnley, Donn—947 Harvard No., Seattle, Washington
 DuBois Eliot—Sandy Pond Road, Lincoln, Massachusetts
 Grant, Bruce, 6255 Chabot Rd., Oakland 18, California
 Grinnell, Lawrence I.—710 Triphammer Road Ithaca, New York
 Hawksley, Oscar—Central Missouri State College, Warrensburg, Mo.
 Jones, Clyde—2565 Poplar, Denver 7, Colorado

Kerswill, Roy—1760 Magnolia, Denver, Colorado
 Kiehm, Harold—2019 Addison Street, Chicago 18, Illinois
~~McNair, Robert 32~~ Dartmouth Circle, Swarthmore, Pennsylvania
 Rupp, Donald R.—3766 Woodland Avenue, Drexel Hill, Pennsylvania
 Stacey, David—601 Baseline Road, Boulder, Colorado
 Washington, Al—450 Maple Ave., Westbury, N. Y.
 Wilhoyte, H. J.—148 Rambling Way, Springfield, Del Co., Pa.

IF you are interested in learning more about the sport, or are interested in helping it grow—fill in the card below and send it with \$2.00 to American White Water, 601 Baseline Rd., Boulder, Colo.

COUNT ME IN

as a member of the American White Water Affiliation. I understand that as a member I will receive four issues of American WHITE WATER magazine. Here is my \$2.00. My address is.



Type of boat preferred: _____
 Boating club membership if any: _____
 Suggested article subject: _____

(OVER)

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 PURPOSES

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 (ideas to incense the **fun** of our sport and ideas for improving our services to you).

MEMBERSHIP

Tell your friends who might enjoy canoeing or canyoneering about the ~~AWWA~~. Their **\$2.00** will help foster enjoyment of wilderness ~~water~~ and bring each into the boating fraternity through the pages of American WHITE WATER magazine.

Robert McNair, Secretary
32 Dartmouth Circle
Swarthmore, Pa.

THE PERFECT GIFT FOR OUTDOORSMEN

A gift membership in the AWWA is an excellent remembrance for any sportsman. Surprise a friend with four issues of American WHITE WATER. His or her first issue will contain a card announcing your gift . . . do it today.

As a member of the American White Water Affiliation you automatically have a guiding hand in this magazine. Your suggestions and comments are important. Write in your ideas now . . . we want them all.

(OVER)

ANNOUNCING:

Canoeable Waterways of New York State ^{and} vicinity

By **LAWRENCE I. GRINNELL**

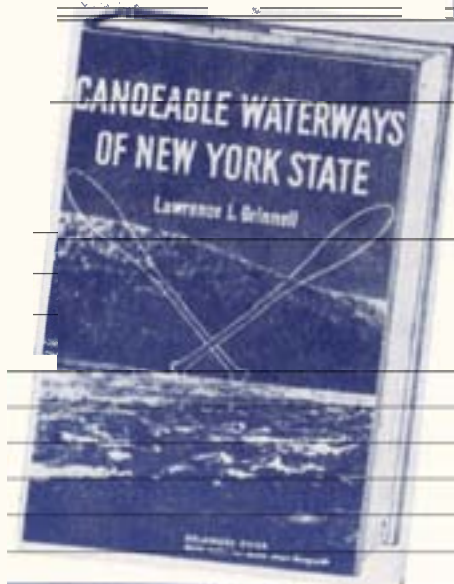
A comprehensive guide for white-water canoeists, veteran and novice, based on the author's firsthand experience in cruising 4,700 miles of New York waterways. Brimming with useful information on planning and organizing canoe cruises; describes physiography of rivers, lakes and canals available—mileage, widths, difficulty rating, other features of interest.

A book of extraordinary beauty; includes 50 photos of exciting moments and 2-color fold-in map. 420 pp., water-repellent cloth, \$5.00.

at your bookseller or from

PAGEANT PRESS, INC.

130 W. 42 St., New York 36, N. Y.



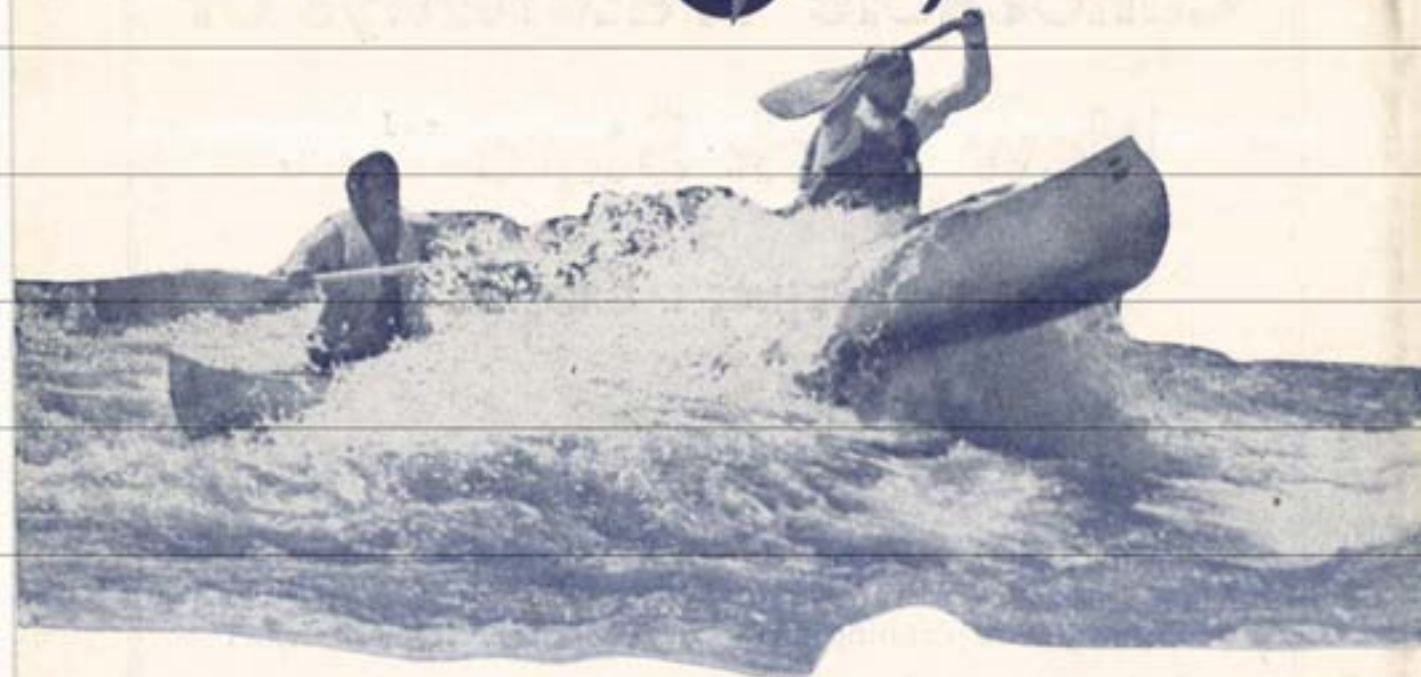
— first and finest) in aluminum water



NYMPH OF THE WHITE WATER WILDERNESS



Grumman



TWELVE MODELS TO SELECT FROM

Grumman Aluminum Canoes are the natural choice of experienced white water men. They increase the fun... eliminate the upkeep... and reduce the repairs common to all other types of craft.

Tough aluminum hulls embody heavy rib reinforcement to withstand the roughest punishment of man or nature. Light weight plus flat bottom design means minimum draft... quicker maneuverability. You skirt over underwater obstacles... dance across shallow spots with ease. Styrofoam flotation compartments assure self-righting and non-sinking performance.

Easy portaging and convenient car-top transport is another convenience found in all twelve Grumman Canoe models... all optionally equipped for paddling, rowing, sailing, or outboard motors.

Go Grumman this year... for the finest enjoyment of wilderness waterways.

Send for Canoe Catalog Boat Catalog Name of Nearest Dealer



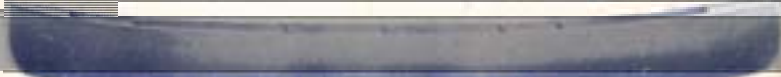
Grumman 15 Footer: Lightweight — 53 lbs. Standard — 68 lbs.



Grumman 17 Footer: Lightweight — 59 lbs. Standard — 73 lbs.



Grumman 18 Footer: Lightweight — 71 lbs. Standard — 83 lbs.



Grumman 20 Footer: Standard only — 113 lbs.



Grumman 17 Foot Square Ender — 84 lbs.



ALUMINUM BOATS AND CANOES

METAL BOAT COMPANY
4586 South St., Marathon, N. Y.

GRUMMAN AIRCRAFT ENGINEERING CORP.
Marathon, New York