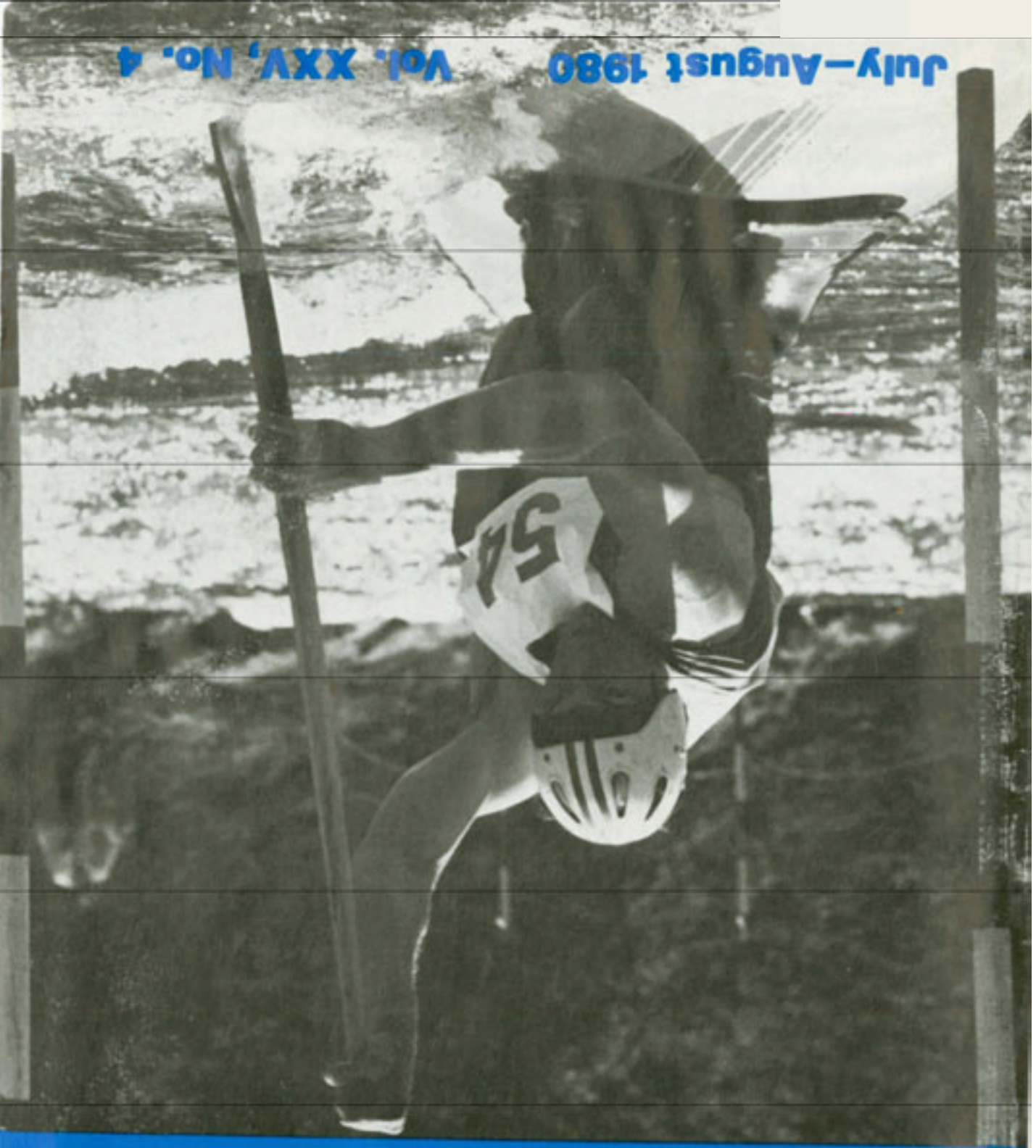


July-August 1980 Vol. XXV, No. 4



WHITewater

American

The Journal of the American Whitewater Association



ABOVE: The cliffs of California's Stanislaus — A river worth saving. (Joe Bauer photo)

COVER: C-1 Slalom expert Paul Black cross draws self and boat under and through a gate. (Eric Evans photo)



WHITEWATER

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The American Whitewater Affiliation

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How to Write to AMERICAN WHITEWATER:

- Send articles, photos, cartoons, poems and drawings to AWA Editor.
- Send all membership forms and payments to Membership Chairman.
- Send advertising matter and payments to Advertising Chairman.
- Send questions of AWA Policy to Board President.
- Obtain membership forms and all other information from AWA Secretary.
- Obtain AWA products from Membership Chairman.
- Obtain AWA Safety Codes from Dave Smallwood, Box 1261, Jefferson City, MO 65102

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 The Staff and Directors listed above are unpaid Whitewater enthusiasts who volunteer their time and efforts to bring affiliate/member subscribers this journal. Your contribution of articles, letters, race results and schedules, photos and drawings are essential for their continued efforts and the timely publication of the American Whitewater Journal.
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Letters from Readers:

Recently, AWA received a very thoughtful letter which raised several questions about boaters and the boating community as a whole. Therefore, in lieu of our regular "Editor's Soapbox"; we reprint Pam Salins' and include our own reply.

AWA invites your comments on this letter or any item in the Journal or the boating world. Why not write AWA Editor today at 7 Holland Lane, Cranbury, N.J. 08512. If any or all of your letter is not for publication, please specify.

ANOTHER SIDE

Let's hear about another part of the boating population – the people you won't find paddling on a Class III or IV, but instead on a stream meandering through the woods. Or on a lake camping trip with the wife and kids. Or on a saltwater cruise.

Whitewater isn't everything. People are not all made the same, and some of us don't want to rush downstream past life – we want to float through a forest and hear the birds; we want to stop and admire a wildflower or a rock formation. Some people can do it in a kayak (although not many that I've met); others of us can't or don't want to.

Some of my most vivid memories are from comparatively tame trips. Like the time a man threatened to shoot my husband and me when we tried to land our canoe at a public beach late at night. Or when we paddled out onto one of the Bowron lakes in B.C. to fish and ended up watching a gorgeous sunset instead. Or when I paddled solo on a Seattle lake after work and it was so peaceful I didn't want to leave.

I enjoy whitewater too. But paddling has opened my eyes to the other natural beauties around us, many of which elude us when we're intent only on becoming the best damn paddler in the world.

Have you followed me this far? Maybe you're ready for another radical thought: the world does not revolve around boating or sports. I know that this is not a popular topic among boaters, but there's a whole

other world out there, where people work, play, mow their lawns, go for walks, do volunteer work at the local hospital and go to the opera. And their lives are just as full as yours or mine.

Boaters often think that there is something wrong with people who don't care for challenging whitewater or some other exciting sport. (Although some of the most fanatic boaters I know are the ones with trouble in other areas of their lives.) I've seen marriages break up when a boating husband or wife finds that a partner does not share their devotion to the sport.

Kayakers especially tend to be white, middle-class and young; look at your own circle of boating friends. Because you share a common outlook on life, geared toward thrills and self-gratification, you shut out those who don't speak your special language of holes, rolls and enders. Conversations are built around your exploits and feats. Probably the last thing that you debated with your friends was whether the Boat Cruncher River is really a Class IV, not whether your obsession with whitewater is a way to escape reality.

Am I urging people to give up kayaking or not to strive for excellence? Hardly. What I would rather see is a more cosmopolitan, less rigid attitude on the part of those who love whitewater – an understanding that the boating life is just a part of the total picture and not the focal point.

– Pam Salins
Seattle, Wash.

REPLY

Yes Pam, we not only follow you, but find ourselves largely in agreement. *Ideas* this vital deserve a response both full and public:

Unfortunately, there is an inherent, regrettable gap between what people want to read in AWA and what they are willing to write for it. We can only beg and plead for articles about less difficult streams and boating's other interesting facets – we cannot manufacture them. (How about a contribution, Pam?)

Definitely, one of whitewater's greatest traps is making the river solely a stage for personal achievement – a tragically blindered approach which reduces all boating to this souse hole or that pry. This view blots out the awesome beauty of the water, its banks, and the whole spiritual recreation paddling offers each individual.

This ruthless spiritual streamlining is seen mistakenly by a few as necessary, even advantageous. But we refuse to believe it is inherent in, or prevalent among kayakers, competitors, or heavy-water boaters than Class I canoe cruisers. Purity of emotion *is no* more discernable by boat design than by skin color.

Doubtless, for many, boating is an escape from what society deems reality. But with this rises the question of whether encountering one of God's rivers is less real than selling deodorant, operating a drill press, or keeping a manicured lawn. Perhaps the thrill and personal esteem found on the water *re-create* us to better handle those aspects of life that don't afford them. Let us hope so.

More than escape, boating offers most of us a tribe – a core of folk united by shared interest and experience. Such bonds are essential in a community-less world. When two boatcarrying cars honk on the highway, it brings an identity and kinship unfelt in life's other groupings. Thus "holes", "enders", "hair" become exclusive tribal passwords that offer rapid

acceptance, make friends, and dispense with cautious social probings.

The nice thing about this boating community is that the exclusiveness is based primarily on enthusiasm and interest; only very secondarily on ability or anything else. The Class II cruiser who is out every weekend, helps actively with his club's races, instruction weekends, and newsletter obtains a measure of local respect not afforded the lone expert who boasts three or four hair runs. Acceptance is usually yours for the effort.

We should all realize that within this community some mow lawns and go to operas, some let weeds grow and drool in porn shops. The range of individualistic taste – as well as outlooks on life – is vast. Yet the main bond comes from our boating experiences. It is the Journal's aim to tighten this bond as well as entertain.

Finally, we reiterate Pam's plea to expand and put in perspective our boating lives. Paddling's rewards are endless: the peace of flowing through beauty, the thrill of sheer physical extension, the knowledge of self and a fast-dwindling wilderness, and so much more. This full spectrum of experiences *is not* limited to just cruisers or just heavy hot-doggers. But it is most certainly denied those who reduce boating to a sterile, technical exercise. Those whose vision is that narrow have our pity. Those who espouse this view have our shame. –Ed.

WHY NOT CONTRIBUTE TO AWA?

The Journal craves your articles, pictures, letters or boating tidbits. Address them to:

Bart Jackson
7 Holland Lane
Cranbury, N.J. 08512

The

FLUVIAL

AWA AFFILIATE NOTES

Affiliates, send your newsletters to our Editor to help AWA stay current with your club's activities and concerns.

THE ULTIMATE CANOE CHALLENGE – YEAR #1

, At the end of this past May, Steve Landick and Verlan Kruger set off on the first leg of what they labeled the "Ultimate Canoe Challenge" – a 28,000 mile trek of paddling and portage lasting about three years. Certainly this is the most ambitious paddling odyssey ever attempted to any recent knowledge. The first year's section alone begins at the source of the Missouri, loops around the eastern two thirds of the United States, and returns north to the Headwaters of the Mississippi. Below, is an outline of the paddling planned through April, 1981. AWA will keep its readers posted on the expedition's progress in upcoming issues. But the best way to follow this amazing trip is to subscribe to the Ultimate Canoe Challenge Newsletter. \$10 for the year, \$25 for the length of the expedition. To subscribe write editor Mike Reynolds, 617 S. 94th Street, Milwaukee, Wisconsin 53214.

THE ROUTE – through April '81

In early May we will begin our journey at Red Rock Lake, the source of the Missouri River. Starting high in the Rocky Mountains, the river will carry us swiftly to St. Louis, following much of the Lewis and Clark trail. Spring will turn to summer as we head up the Illinois River and arrive on Lake Michigan at Chicago. Our travel

around Michigan will be interrupted briefly to enter the famous 'World Championship Au Sable River Canoe Race': One evening in late July many of North America's best marathon canoeists will gather in Grayling, Michigan for the start. Racing 180 miles non-stop through the night and the following day, we will finish on Lake Huron after fifteen grueling hours.

After a day's rest, we will head for Niagara Falls by way of Detroit and Lake Erie, Lake Ontario, the Erie Canal, Lake Champlain and French speaking Quebec are some of the highlights as we aim toward the rising sun, saltwater, and the cooler months of autumn. Several tough portages will carry us over the height of land and into Maine. Time permitting, a side trip to the highest point in the state, Mt. Katahdin, will precede our travel down the Allagash Wilderness Waterway, the St. John River and into the Bay of Fundy. The world's highest tides (up to 53 feet) will have to be negotiated with caution!

From the Bay of Fundy to New York City we will cross many segments of open ocean exposed to the full fury of the North Atlantic in late fall. Paddling by the Statue of Liberty to the beginning of the Inter-coastal Waterway should be a moment to remember. With eager anticipation of the warm southern climate we will head for Miami and Key West. If winter weather treat us well, we could have Christmas in the Everglades.

Arriving at the **mouth** of the Mississippi will be a goal we will have long looked forward to because we both enjoy upstream paddling and the challenge it pre-

NEWS

sents. The full length of the mighty river during the peak of flood season (late winter/early spring) should prove interesting indeed! Our plan is to arrive at Lake Itasca,

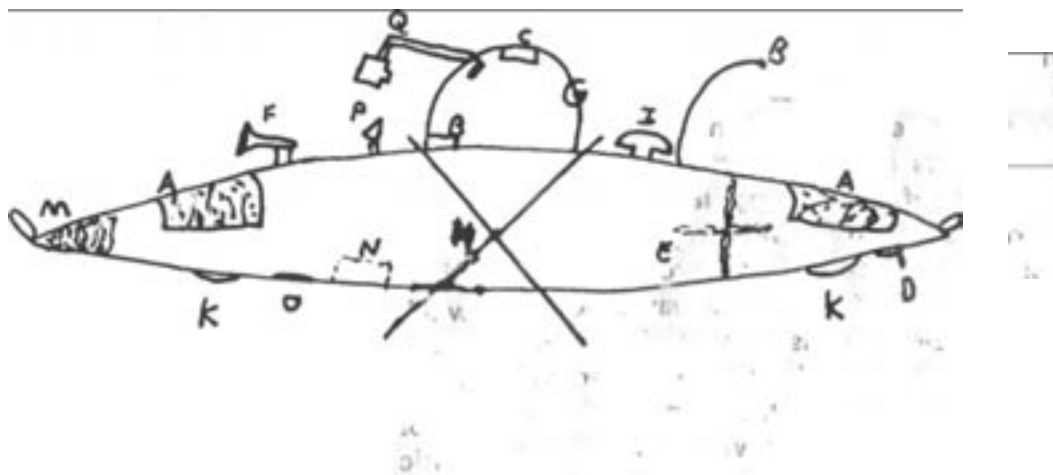
the headwaters, by late April which is the earliest possible date of ice break-UP.

*—thanks to Sierra Club's
"Paddlers News Bulletin"*

KAYAK OF THE FUTURE UNVEILED

Once the progress of boat design blunders on — though not necessarily forward. A team of experts slaving away in a dark cavern in the Midwest have recently developed the Kayak of the Future. Ever alert,

the Chicago Whitewater Association's **Gradient** discovered and published the plans in their August Issue. We reprint them here to give you an idea of just where our sport is going.



The Future Kayak will have solar panels (A) to power the radio-CB (B), dome light (C), propeller (b), gyroscope (E) and air horn (F). The bubble (G) will eliminate any weather problems. The gyro (E) will prevent the kayak from tipping over. The hand-operated paddle wheels (H) will preserve the nature of the boat as a paddle craft. The self-sealing air vent (I) will allow air exchange. The retractable wheels (K) are for easy portages. The front grab

loop (M) is spring-loaded so that it can be shot out for rescues. Options will include a refrigerator (N) and depth finder (O).

Because the paddler is sealed in the bubble, air bags aren't needed. An additional safety feature is the rear-view mirror (P). Another option is the remote-controlled camera boom (Q) for taking your own picture as you paddle.

— Thanks to CWA's Gradient

SUPPORTING THE RAFT TRIP

If the river is easily within your ability and you don't plan to do much playing, you can carry up to five days gear in a kayak. It's been done on the Salmon in Idaho with the remark, "We don't eat well, but we eat." But if the trip is challenging or you really want to cut loose and go for the perfect ender, the support raft is a virtual necessity. Individually, the cost of a large, fairly durable rowing raft is beyond all but an Abscam politician. So the Oregon Kayak and Canoe Club decided to chip in and purchase one for its members. Various legal and logistic problems made the plan fall through, so now they are trying out another program. OKCC will subsidize 60% of the cost of one or more sup-

port rafts for any club sponsored river camping trip. The rental responsibilities will be handled by the trip organizer or someone he specifically delegates.

AWA suggests that for clubs located in parts of the country, like Oregon, where there are long whitewater rivers, broad enough for a raft, that this plan is an excellent option to buying. It will make the rafted trips more affordable for club members. But one hint: before rushing headlong into purchasing or subsidizing a raft, the club should make sure there are ample members who can and will row it and bring it back alive.

— Thanks to Oregon Kayak and Canoe Club

Upcoming Expeditions

If you or your club are seeking members for an expedition, send specifics to AWA. Please include registrar's address, mandatory skill

level, location, and approximate trip dates. If possible, list the number of available places and estimated cost.

WANTED: CHILE-BOUND TRIP AND/OR TRIPMATES

Paddler John Harragin is interested in journeying down to Chile and boating some of that country's big water, i.e. Bio Bio and similar water. He is planning his vacation for around January or February, 1981, but is flexible. If you are planning an expedition, commercial or private; or if you are interested in working one up, please contact: John Harragin, 53 Spring St. Goshen, N.Y. 10724.

Allyns Law: Anything is easier to get into than out of.

Paddlers' Exception: This does not apply to wetsuits on Sunday Morning in early March.

— thanks to Southern California Canoe Association

EIGHT MONTHS ON THE NILE

The Nile — the world's longest. It stretches from Lake Victoria in the heart of equatorial Africa, over 4,000 miles to its mouth on the Mediterranean Sea. On July 1, 1981 the Nile River Expedition will begin paddling this river from source to sea, a journey of about eight months.

This is the expedition that you've dreamt and fantasized about. Though no longer a river of total wilderness, the Nile displays more variety of people and nature than any of us can comprehend. It is the home of hippopotamuses and crocodiles. It feeds and creates the endless Sudd — a giant swamp of shifting vegetation that defied all attempts at navigation until 1880. But more, the Nile is the home of an incredible variety of cultures which will be the focus of this expedition.

Thomas McHenry and a group of Yale Forestry School graduate students will be leading the trip. The idea for it was sparked by a concern for "the deforestation of tropical forests, the imposition of western culture on peoples in the name of development, and the environmental consequences of this action."

The team will be paddling Klepper Foldboats; similar to those used by John Goddard and his crew when they made the trip in 1950. Each member will carry and be expected to use a full set of photographic equipment.

The Nile River Expedition is looking for additional members, specifically a physician, botanist, wildlife ecologist, an anthropologist, or anyone with whitewater qualifications. Write Thomas McHenry, 164 East 72nd Street, New York, N.Y. 10021.

Suggested reading: *Kayaks down the Nile*, John Goddard, Brigham Young University Press, 1979. *The White Nile* and *The Blue Nile*, Alan Moorehead, World Books, 1962.

— Thanks to Expedition Research, Inc.

Conservation Notes

NATIONAL RIVERS INVENTORY GOES ON — CARTER AIDS MUCH

In 1978 Rep. Phillip Burton (D-Ca) vowed to assemble the largest set of additions to the Wild and Scenic Rivers Act yet. Burton, Chairman of the House Interior committee's sub committee on National Parks and Insular Affairs, did push through eight new rivers for designation and 17 for study, giving Wild & Scenic a total of 2600 miles of protected rivers.

But this, he claims, is "just the beginning". Burton has vowed to push an addi-

tional river package through the last part of the current 96th Congress. In addition, the Carter administration has backed Burton to the hilt, naming fourteen individual river segments for special emphasis. (The Carter list includes parts of the Payette, Salmon, Priest, upper Mississippi, Gunnison, Stanislaus, and Cache La Poudre).

The selection of the various river segments, as well as the impetus, came from the National Rivers Inventory which boating, fishing, which the entire spectrum of outdoor clubs and conservation groups have been working on for the past year. The aim of this survey was to list all the rivers worthy and in need of protection. This is the conservationists pool of rivers which will form the base of all future preservation legislation. Thus it is vital to make the inventory as thorough as possible.

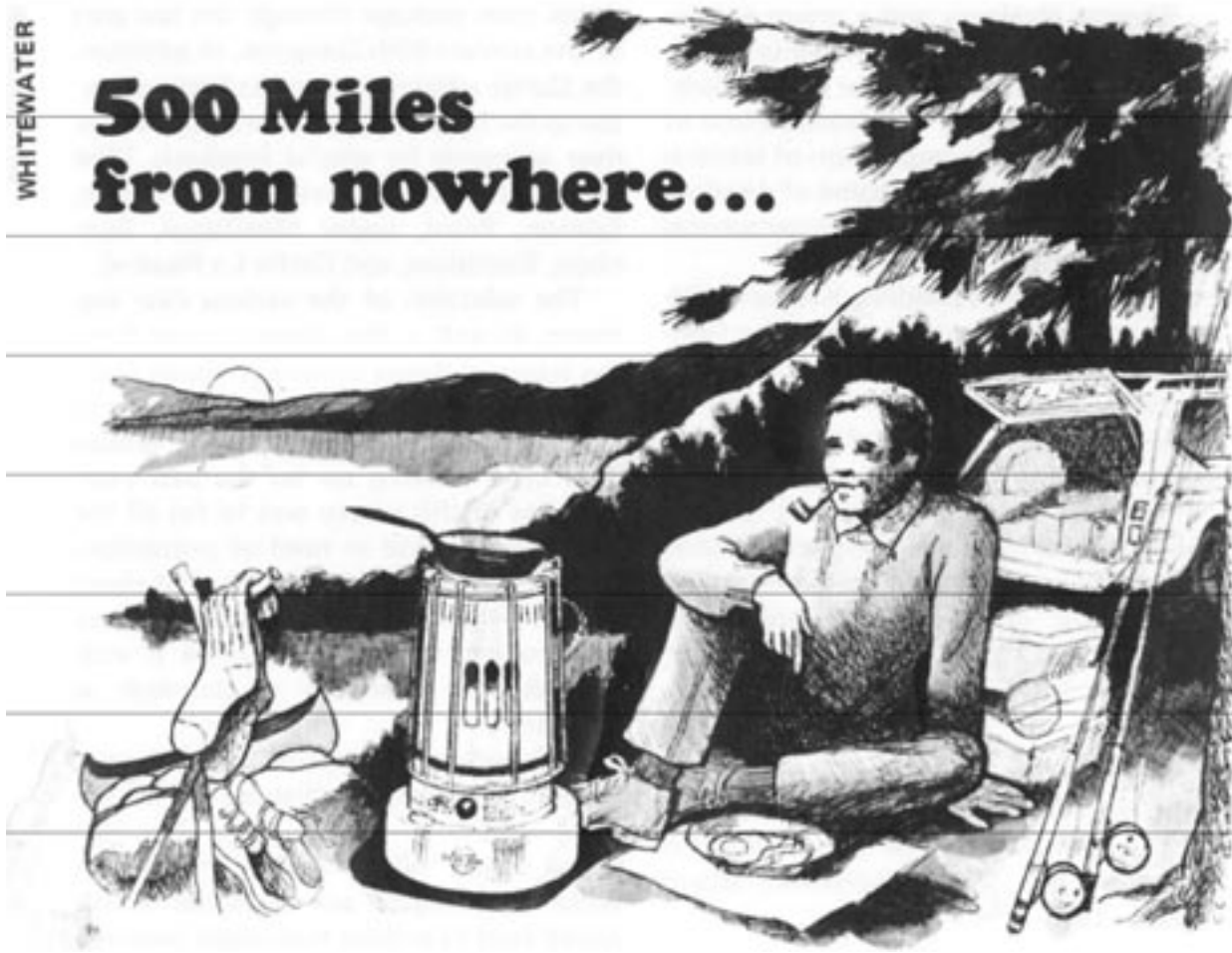
A Presidential directive issued August 2, 1979, has further enhanced the importance of this inventory. In it President Carter stated "all agencies are directed to avoid or mitigate any activities which would lead to actions that might preclude these rivers (on the inventory) from potential future addition to Wild and Scenic designation."

This directive, called by some our first fumbling steps at a national river policy, throws an incredible roadblock to the Corps or other dam builders. Once a river is accepted on the inventory, Presidential authority forbids tampering with it, unless you can satisfactorily save an equal amount somewhere nearby. This is a magnificent victory and an added impetus to complete the National Inventory.

The East is complete, virtually. But west of the Mississippi there are still many areas that do not have any rivers included on the inventory. If your club has the energy to help prepare a list of potentially preserved streams, you can make a big difference. Call Dave Conrad, American Rivers Conservation Council for advice on

(continued on page 36)

500 Miles from nowhere...



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AWA BOOK REVIEWS

SOME POSSIBLE ADDITIONS TO YOUR BOATING BOOKSHELF

AWA is constantly on the lookout for new books and films on boating, the environment, and generally related topics. We welcome outside reviews from interested readers. If you would like a book or film reviewed, just send a copy to the AWA Editor. (If not elsewhere listed, please include book price and a few author biography notes.)

WHITEWATER RACING

by John Burton &
Eric Evans

166 pages, paperback, \$6.95

Available from Nantahala Outdoor Center, Box 68, Bryson City, N.C. 28713 and various retail outlets.

Few authors can claim the broad knowledge of subject or prestige within its ranks displayed by Eric Evans and John Burton in *Whitewater Racing*. John in C-1 and C-2, Eric in a kayak have each been top competitors since the mid-sixties, both in wildwater and slalom, each stacking up an impressive pile of National Championships to his credit. In their book this translates into a total, unbiased coverage of racing. C-2 technique is not short shrifted by the kayak, and wildwater plays no second fiddle to slalom. Regardless of what boat you paddle in what event, you will here find well-written, thorough advice from an expert.

The book is very logically organized in a step-by-step fashion and well laid out in clearly titled sections. So despite the unfortunate lack of glossary or index, you can easily find your way. It's seductive

reading, with one part flowing naturally into the next. And this writing and layout, plus a great number of generally high-quality black and white photographs swiftly pull your eyes from page to page.

The authors make no claim to have written the encyclopediac manual of racing. Still, I defy any whitewater racer not to find something new and valuable here. Every aspect of competition from mental preparation, to diet, to training programs is covered with a solid, basic core of information, laced with several more detailed, technical hints. Examination of training methods and paddling technique aptly receive the strongest emphasis. In fact, the book does give some of the best stroke analysis found anywhere.

My main disappointment was the sadly incomplete stab at equipment. Granted it is an unweildly and easily dated subject, and there are some good principles of choice, particularly in the paddles segment. But it is too brief, slightly haphazard, and has the feeling of a tack-on chapter. Perhaps a list of necessary and optional accessories and where current, updated information can be found would have helped.

Generally, however, I think the authors chose the right depth of coverage. By not being overly exhaustive technically, the book has space to examine several novel and equally important facets of competition. A prime example is the Burton-Evans collection of racing personalities — a group of fun, but surgically accurate caricatures that every paddler displays at least a little of. For me, one of the best parts of the book was the dedication. Whitewater racing is a truly amateur sport that has grown very rapidly due to the efforts of those who love it. It was gratify-

ing to the sport's history and individual supporters applauded publicly.

But *Whitewater Racing* is more than another deadly how-to tome. The history, state of the sport, anecdotes of racing stars, the current trends, are all there, blended throughout the more instructional text. When a certain stroke technique is given, the rationale for it usually includes some interesting story about some top racer's using it.

So if you are seeking the dark, hidden panacea that will rocket you to the competitive level of the authors, you won't find it here – or peobably anywhere. But the common sense information in this book can set you well on the way to improving your racing skills. And in addition, you'll find some fun, fascinating reading in a book that does not talk down to you. John Burton and Eric Evans are enthusiastically sharing with the reader what they love best. And the theme rings through the book with an almost evangelical verve: Come on and race – you can do it, and you'll love it.

– Reviewed by Bart Jackson

BOAT BUILDER'S MANUAL

by Charles Walbridge

114 pages, paperback, Fourth Edition
Available from Wildwater Designs, Ltd.,
230 Penllyn Pike, Penllyn, Pa. 19422.

Charlie Walbridge's Manual traditionally has offered the most complete boat building information available anywhere, and his fourth edition maintains the same excellent quality and thoroughness. In this day of \$1000 commercial canoes, the attraction of constructing your own waxes great. But building a boat remains a difficult, incredibly complex task, with inestimable potential for blunders. To steer the first-timer through the process and away from the pitfalls is a mammoth undertak-

ing; but this volume does it exhaustively, well, and as simply as possible.

One of the book's best features is that it is not just one man's instruction. The writing belongs to the author, but an army of paid and volunteer contributors have supplied the most current methods, tips, and ideas based on their own experience. In addition, the author is not afraid to turn a whole section over to some expert, e.g. Vacuum Bagging Technique by Steve Rock, Safety Considerations by Gary Myers, Laminate Design by Chip Quietzsch, and Jim Colianne's Resin Chemistry notes.

For the reader, this conglomerative effort means several options for doing a given job. When it comes to getting resin-sopped seaming tape placed properly inside the boat, three separate methods are offered, each with descriptions of the advantages and problems. (Only two are offered in the third edition.)

How-to-build tomes are traditionally deadly. Multi-step, complex explanations are just not fun reading. But while you couldn't curl up with it, this manual is at least clear and very readable. Charlie has an infectious, down-home style which allows you to follow along easily, nodding your head in understanding.

There are times when this down-home chatting can stray the reader away from the point, particularly when he needs a quick answer. But the tangents are usually helpful and often vital. Boat building is, after all, a job with endless detail. And here, at least, it is easier to wade through the instruction than the construction.

The organization shows care and logic, with the whole book laid out on a step-by-step, start-to-finish plan. A 47 item table of contents for the 114 pages, plus endless subheads and numberings represent an effective-as-possible attempt to make information quickly findable. The plan isn't flawless: only after you have the vacuum

(continued on page 35)

Kayaking's Mount Everest

by JACK ALLEN

WHITEWATER

Part II—Devil Canyon

Continuing from last issue (Vol. XXV No. 3), Alaskan kayaker Jack Allen records the story of the four attempting Devil Creek Rapid in the Susitna's Devil Canyon. Along the way, he interjects tales of Blackadar, Barney Griffith, and the state of Alaska's plan to turn this natural wonder into a lake.

In Part 111, coming up next issue, Rob Lesser describes his own experience and terrors in running the Susitna with Walt Blackadar, Al Lowande, and Ron Fry in 1977, at 30,000 cfs, the highest attempt ever.

Since 1970, two names have become associated with kayaking Devil Canyon: Walt Blackadar and Barney Griffith. Today, Griffith stands with the three other wetsuited figures across the river, pointing out the run's pitfalls. He is the only one of them who has paddled Devil Creek Rapid before. Barney is pointing out the route that Blackadar pioneered in 1976.

Walt Blackadar, who died in a kayak in spring, 1978, first came to the Susitna at age 50, in 1972. He and his two companions Roger Hazelwood and Kay Swanson stopped and scouted Devil Creek Rapid from the spot where Barney and the others now stand. Later Blackadar wrote "it might be paddleable but none of us

was interested." He diagrammed the rapid but carried around it. It was not yet in his blood.

Four years later it was. ABC-TV was looking for a river to do a kayaking sequence on for the "American Sportsman" series. They asked movie producer, Roger Brown, who asked Dr. Blackadar to pick a river. "Devil Canyon:" he said, "it's the Mt. Everest of Kayaking — the most fearsome rapids I've seen that can be paddled." He had diagrammed the rapids in 1972. In the margin he wrote "huge water of unbelievable strength . . . Should you miss the ferry you'll be in for the ride of your life — and you won't live unless you roll up."

By 1976 only six kayakers had considered — and rejected — the idea of running Devil Creek Rapid: Hession and Christie, Blackadar and his group and John Spencer who floated the rest of the river solo in 1974 but carried around Devil Creek Rapid.

Many variables make up a river's total difficulty, but sheer, massive volume is one undeniable ingredient. When 12,000 cfs are forced into a constricted channel terrifying things happen. Huge cresting haystacks curl back and continually explode at the top like ocean surf. Eddies become boiling whirlpools that hoist you

Mike **Moreline** (foreground) shoots out of a trapping eddy while Barney Griffith hunts for a break in the current wall. (Jack Allen photo)





"Huge cresting haystacks curl back and continually explode at the top like ocean surf."

two feet atop a slippery dome of moving water. The rocks that manage to endure in this channel are sizeable and create foaming holes correspondingly large. Devil Creek's power and pitfalls are evident even from Walt's diagrams. On the outside bend he shows a series of 12-foot drops followed by holes. The keeper holes are labeled "holding", others simply "huge" and one "Humongous".

The Susitna is big water of the ultimate variety. Once, during the 21 years for which records have been kept, it climbed to 90,000 cfs on June 7, 1964. But 1976, the year of the ABC Expedition, was a low water year, with an average flow of just under 20,000 for July and August. When the TV crew arrived on August 3, 1976, it was 21,000 on the nose — a level which in no way mitigated the daring or skill of the paddlers attempting to run the Susitna.

'76 — The Devil Creek "First"

On August third, the four paddlers of the ABC - TV Expedition had floated down from the Denali Highway, 100 or more miles upstream. The team consisted of Dr. Walt Blackadar and three other kayakers from the lower 48: Cully Erdman, John Dondero, and Billy "Wouzle" Ward.

Barney Griffith, 18 years old, was not with them. He had met Walt Blackadar on a warm-up run made on Sixmile Creek near Anchorage. Barney had paddled the Sixmile, considered an expert run, over a hundred times and knew it as well as any boater alive. But on the one day he wanted to impress the good doctor, the river threw him a curve. He had swum and Blackadar refused his request to join them on the Susitna.

The camera crew was flown in by helicopter and deposited just upstream of Devil Creek Rapid. Walt met them and

handed producer Roger Brown a note he had received from one of the helicopter pilots the day before. It was from Barney and read:

"Walt, I am up at High Lake with the rest of the people. I have my kayak and am going to run the river. I need to know if I can run it with you guys. If not I will run it today . . . Please send answer. Barney Griffith."

"Blackmail." choked Roger, "if he makes it, we will loose our 'first' for ABC." So Barney Griffith became the fifth kayaker.

Later, Brown wrote, "Barney remained a mystery, noncommittal, shy, silent. Interestingly, none of the others seemed resentful of his actions." Two of the five survived the entire run without swimming, one was Cully Erdman then from Aspen, Colorado; Barney was the other.

'79 – Attempt in Higher Water

For this current Devil Creek Rapid attempt, I had accompanied paddlers Barney Griffith and Bob Wallace on a float plane flight up the canyon. We flew low and

Barney pointed out such notable landmarks as Hotel Rock, Screaming Left-Hand Turn, and the ledge where Roger Hazelwood spent a night in 1972, before being rescued by helicopter the next day.

About eight miles above Devil's Creek, the pilot found a place he considered smooth enough to land on. I had some doubts, inspired by two foot waves, but held my peace. The pilot's judgement proved sound, however, and minutes later we were tied along shore.

The other two kayakers, brobght in earlier, Mike Moreline and Garry Galbraith were making last minute adjustments to various bracing devices and extra sprayskirt attachments. A popped skirt in this water can bring deadly consequences.

We unloaded the gear and got ready to take off. The plan, which I had nothing to do with, was that I would be in the plane while the pilot untied the rope, pushed it into the current, then tried to scramble aboard and get it started. I envisioned him tripping on a strut and me making the first

"The Nozzle – a massive 'V' formed by two diagonal curlers crashing at angles into each other." (Photos below and above right by Jack Allen)



attempted run of Devil Canyon, in a float plane, sans paddle. Yet despite my fears, I was flown safely back to High Lake and hiked to the river bank where I have now joined the other spectators.

Suddenly a cry goes up from one of the more alert. A boat is approaching, looking very small among the towering waves. It is Barney. He seems too far left to hit the first wave just right. Movie cameras whirr. Barney caroms into a small wave and is flipped. (Later, he tells us that he was aiming for a larger wave downstream, and the little one caught him off guard.) He snaps up in a roll, but his bow is pointing upstream and the big wave is on him. He slides in backwards and much too far left.

The wave engulfs him from view. Seconds pass. Across the river, I notice Wallace and Galbraith still watching from the opposite bank. They watch Barney flipping over and over in the hole to the left of the wave. Finally, he is shot out of the hole upside down and tossed into an eddy. He rolls up, but does not find a breath-catching haven. Instead he teeters on an unpredictable boiler-twixt sheer rock walls of the canyon and the more violent waters of the main current. The circulating current in the eddy draws him down and out toward the hole he has just graduated from. Circling with the flow, he tries twice to paddle out of the eddy, but the main current is a foot above him and keeps pushing him back in.

Suddenly, another boat shoots into the eddy – bottoms up. It rolls and we see Mike Moreline. It is all they can do to keep from being jammed up against the wall or sucked back into the malevolent hole. Each strokes furiously, hardly acknowledging the other's presence.

Mike is at the bottom of the eddy when a boil unexpectedly lifts him the necessary foot or so, to the level of the main current. He seizes the opportunity and slips out. Cameras whirr again.

The second big wave lies dead ahead, flexing its muscles to the massive depth charges exploding rhythmically beneath the surface. In 1976, this wave knocked one boat almost completely out of the wa-

ter in a cartwheel and in 1978 tore Mike Hughes out of his boat. Today it is 4000 cfs greater than '76 and 8000 more than '78.

Mike swerves left, dodging the full impact of wave number two. But he skirts uncomfortably close to the canyon wall which juts out and pushes the river into deep furrows. He looks relaxed – too relaxed. His boat pauses for a second, hanging twixt the rock and an exploding wave. Then in full control, Mike slips down into the trough separating them. We see him again as he rides up a third large cresting wave. He crashes the crest . . . then on a long, low brace coasts toward a fourth. Crash . . . he slams it broadside . . . it thunders atop him . . . he somehow hangs on, pulled through by a strong downstream current.

Barney comes out of the eddy close on Mike's heels. He pierces the second wave head on. It drives his bow down and flips him end over end. A quick roll and he's up.

Below, just on vision's edge, is The Nozzle – a massive "V" formed by two diagonal curlers crashing at angles into each other. From river level, it resembles a giant sausage grinder. Just downstream of the Nozzle point, the river broadens with eddies on both sides. In '76 only Barney and Cully Erdman survived it, sans swimming.

We can now scarcely glimpse Mike and Barney. Suddenly we see the stern of Barney's boat pop up in the air as he ends again. Later we learn that they both survive without a swim. The other two boaters, thought better of the operation, crossed upstream, and portaged their boats up to High Lake – feat vastly more difficult, but less dangerous than running the rapid.

Long before Walt Blackadar got Devil Creek Rapid in his blood, other men were laying plans to tame the Susitna. These were not men in boats with a yen for adventure, but men in hard hats with a yen to pour concrete.

The State of Alaska and its junior Senator, Mike Gravel, have designed a hydroelectric project which would transform

UNOFFICIAL RECORD OF KAYAK ATTEMPTS ON DEVIL CANYON

August, 1970	– Jack Hession (w) Dave Christie
August, 1970	– Jack Hession (w) Dave Christie (w)
1972	– Walt Blackadar (p) Roger Hazelwood (p) Kay Swanson (p)
1974	– John Spencer (p)
August 3, 1976 (21,000 cfs)	– Walt Blackadar (s) Billy Ward (s) John Dondero (s) Cully Erdman Barney Griffith
August 4, 1976 (22,000 cfs)	– Walt Blackadar Cully Erdman (s)
1977 (30,000 cfs)	– Rob Lesser Walt Blackadar (s) Al Lowande (s) Ron Fry
August 16, 1978 (16,000 cfs)	– Barney Griffith Vee Finoff Darwon Stoneman Myke Hughes (s)
July 29, 1979 (26,100 cfs)	– Barney Griffith Mike Moreline Bob Wallace (w) Gary Galbraith (w)
August 11, 1979 (21,700 cfs)	– Barney Griffith Gary Galbraith Gary Steinberg

(w) – walked out (p) – portaged Devil Creek Rapid (s) – swam Devil Creek Rapid

wild Devil Canyon into a placid lake. The project would involve three dams and annually produce seven billion kilowatt hours of electricity, which is hard to argue with in a country whose plug of cheap power has just been pulled. Alaska currently uses about a third that much electricity, but it would undoubtedly find ways to increase consumption if it had to. The handful of kayakers who are likely to experience the special brand of adrenalin shot that Devil Canyon Rapid offers, are offset, in the impact analysis of the pro-

ject, by the greater numbers who could own a lake front lot.

In 1975, Walt Blackadar wrote to the Corps of Engineers urging building only the two upstream dams and leaving Devil Canyon until the need can be demonstrated. "To lose the Devil Canyon section of whitewater could be a tragic loss to America and its future generations, because there is no other place like it in North America, or for that matter the world, as far as I know." Alaska has lots of lake-front. There is only one Devil Canyon.

How do you squeeze a 231 pound man into a 31 pound kayak?

Not without difficulty.

Unless, of course, the kayak has a cockpit tailored to fit a guy whose sport coats are a 46 long.

Most don't. Which may be one reason big guys take up football instead of kayaking.

So Old Town has introduced an all-around kayak called the



President. At just over 14 feet and 31 pounds, the hull will go around a river in a hurry. And with

eight extra inches of opening, the cockpit will go around the legs and hips of a linebacker.

Those extra inches say something about every kayak Old Town makes. Because it's our daft notion that cruising around in a kayak is such plain darn fun nobody in the whole land should miss it. And that maybe we can turn kayaking into as much of a national pastime as paddling an Old Town canoe—if we try.

So we try. We build kayaks that fit the needs—and the bodies—of Americans. Never ceasing to wonder at manufacturers who do just the opposite. Who ask Americans to fit the needs and bodies of *the kayaks*.

If our designers, Klaus Lettmann and Toni Prijon (the Ty Cobb and Cy

Young of their sport), work under anyone principle, it's that kayak designs must have more than one side.

The side you see on TV. In which the world class athlete plummets straight down a wall of water. To win medals with his Lettmann Hydro 80 or Prijon Dolphin.

And the side you don't see on TV. In which the guy next door rides a playful stream like a feather rides a breeze. And would rather have his Lettmann Mark IV or Prijon 420 than own the Queen Mary.

Tell your Old Town dealer which side is for you, and he'll suggest the kayak. Write for his name and a catalog, which has facts about our I-beam support system, expedition layups, and quality accessories.

Anybody who can paddle an Old Town canoe ought to try an Old Town kayak.

**Old Town.
The Old Masters.**

Old Town Canoe Co., Dept. W
Old Town, ME 04468.
(207)827-5513



OPEN CANOE NATIONALS

RESULTS AND HIGHLIGHTS OF THE JULY 19th SLALOM AND JULY 20th DOWNRIVER CHAMPIONSHIP RACES

by *BARB McKEE*

The 1980 National Open Canoe Slalom Championships on Esopus Creek in Phoenicia, NY demonstrated how masterful course design can overcome nature's nasty little tricks. After a year of carefully planning the competition, and a successful "pre-Nationals race" on the site in the fall of 1979, the Atlantic Division of the ACA and the Appalachian Mountain Club thought they had everything under control. Then, this spring, a severe flood roared through the town totally altering the proposed site.

The tentative course design was rendered unworkable and a year's labor seemed washed away. But some serious river architecture efforts deepened the washed out rapid, returning some of its former character. In addition, ingeniously devious gate sets transformed this broad, Class II+ rock garden into a surprisingly difficult course requiring maximum skill to master. As proof, only two clean runs were recorded for the day; both by doubles teams.

Unfortunately, however, not as much could be done for the rest of the river, so the downriver racers had to contend with some badly scoured bends and shoreline sweepers. These, plus the ever challenging Railroad Rap at which more than a few boats swamped, made for an interesting race. The hot, steamy weather, while not affecting the slalom racers to a great degree was a severe liability during the grueling 11 mile downriver event. The competitors' one chance out of the sun was the midway mandatory portage — a

joyous run through the woods of about 100 yards, carting boat and blade, designed to offer variety and exhaustion.

Starting at the Portal in the town of Allaben, racers, for the most part, received few splashes and hence little welcome relief from the heat. At the end of the downriver race, several unfortunate controversies arose concerning results. Tempers flared and several people proved this sport is taken more seriously than a simple weekend game. But all-night efforts on the part of race and protest committees; along with later appeals brought delayed, yet firm and final decisions.

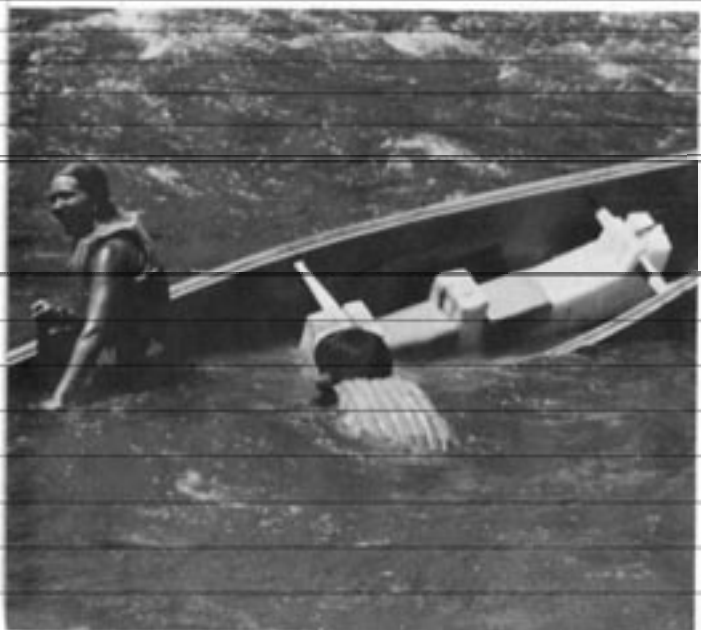
The organization of the race itself was handled with a high degree of class and efficiency: from the slick, informative race publication to the beautiful trophies. Great attention was paid to detail and all aspects of the race organizing were overseen by expert personnel.

One always risks omissions by mentioning names, still some applause should be given to Jim Raleigh and his phone and computerized electronic timing system. All season long Jim travels from one important race to another — hopping from New York to California in three days — working to train others in the use of his accurate, foolproof system. Timing was accurate, communications excellent, scores were posted almost instantly. These technical aspects along with human precision gave paddlers race organizing in its most advanced state.



Above, four-times National Singles Champion, John Sweet, deftly handles the infamous "flush gate". Hung perpendicular to the current, in a hole, the gate required precision and speed to avoid the downstream (green) pole. (Ben Cass photo)

Below, Melissa Andrews and partner after their slalom run find a way to best the unrelenting heat which persisted throughout the weekend. (Ben Cass photo)



SLALOM – July 19,1980

OC-2 Men

1. Ben Cass, Joe Stahl*	274.3
2. George Strickland, Ricky Hill	289.9
3. Charles Harris, John Harris	304.8

OC-2 Jr/Sr

1. Kevin LeClair, Keech LeClair	408.0
2. George McLane, Denis McLane	445.1
3. Holly Courtney, Bob Courtney	642.2

OC-2 Mixed

1. Barbara McKee, John Sweet*	289.9
2. John Zubizarreta, Margie Carlisle	335.9
3. Bunny Johns, Ed Weatherby	341.7

OC-2 Women

1. Bunny Johns, Carrie Ashton	302.6
2. Marilyn Courtney, Jan Cormier	434.4
3. Eve Eaton, Margie Carlisle	490.4

OC-2 Masters

1. Fred Hesselgrave, Andrew Reynolds	395.9
2. Keech LeClair, Ann LeClair	416.0
3. Marilyn Courtney, Bob Courtney	428.4

OC-I Men Short

1. John R. Sweet	286.3
2. James Underwood	293.0
3. Richard Hill	293.0

OC-I Women Short

1. Melissa Andrews	540.4
2. Julie Stewart	811.4
3. Cathy Zdunek	860.6

OC-I Master Short

1. John Berry, Sr.	507.6
2. Jim Hill	511.6
3. Len Cormier	554.9

OC-I Junior Short

1. George McLane	428.2
2. Scott Strausbaugh	451.4
3. Kevin LeClair	563.5

OC-1 Men Medium

1. Alan Blanchard	416.2
2. John Berry Jr.	428.7
3. Tim Kelly	468.1

* denotes clean runs

DOWNRIVER – July 20, 1980

OC-2 Mixed

1. Cindy Lynch, Schuyler Thomson 1:15:19
2. Marianne Bean, Nat Luch 1:15:35
3. Karen Blazejewski, Steve Blazejewski 1:17:34

OC-2 Masters

1. John Ayer, John Rowe 1:17:24
2. Leon Wiggan, Monte Smith 1:20:13
3. Bill Thomas, Don Brown 1:24:03

OC-2 Men Short

1. George Walsh, Ed Mendes 1:18:25
2. John MacDonald, George Fatula 1:18:57
3. Stephen Clarke, Marke Clarke 1:19:43

OC-2 Women

1. Carrie Ashton, Bird Stasz 1:19:36
2. Kathy Lambert, Debbie Shelton 1:20:34
3. Lillie Gilbert, Nancy Shelhorse 1:20:42

OC-2 Jr/Sr

1. Jim Hill, Ricky Hill 1:15:45
2. David Igel, Jurgen Igel 1:17:18
3. Dan Stasz, Frank Stasz 1:18:35

OC-1 Men

1. Ralph Vincent 1:16:12
2. Peter Heed 1:19:30
3. Robert Duncan 1:19:47

OC-1 Master

1. Dave Wellington 1:22:23
2. Fred David 1:25:35
3. Earl Stetson 1:29:09

OC-2 Men Medium

1. Rod and Rusty McLain 1:11:49
2. Baxter – Bechdel 1:12:06
3. Tingley – Osborn 1:12:43

Oc-2 Men Medium results under protest . . .
affecting placing.



Above, Melissa Andrews, Women's Singles Champion negotiates a reverse gate in swift, shallow water. (Ben Cass photo)

Below, the venerable John Berry Sr., winner of **OC-1** Masters Medium class, who has contributed so much to the sport both as a racer and innovative boat builder, is an inspiration to young and old alike. (Ben Cass photo)



PROGRESS WITH PROBLEMS

by Barb McKee

SOME REFLECTIONS ON THE STATE OF OPEN BOAT RACING

Around 1960 the first fully enclosed, fiberglass canoe was introduced at slalom competition in the United States. Whitewater canoe slalom was never to be the same. These new, sleek designs were so clearly superior to the heavier, less maneuverable, and much wetter traditional open canoes of the day that all serious competitors soon acquired a "decked" boat. It wasn't long before the traditional deckless, family-type canoe, which had been the mainstay of slalom racing, became obsolete.

Even after the takeover of the fiberglass decked canoe, a growing number of die-hard traditionalists persisted in racing their "Indian" type boats. Separate classes were established at slaloms (which had become primarily decked boat races). Finally, in 1970, a National Championships exclusively for open canoes was held on the Dead River in Maine. In 1975 the Whitewater Open Canoe Committee (WWOC) of the ACA was officially established to govern this growing aspect of canoesport in the United States. Now, the introduction to the current ACA rules for open boat specifications states, ". . . a whitewater open canoe is a traditional, open Canadian or Indian canoe, which is a boat with ends pointed and higher than the middle, symmetrical side to side, and propelled by single-bladed paddles."

As slalom races for open canoes increased in numbers, difficulty, and importance, their competition stiffened steadily. And it wasn't long before specialized slalom racing designs appeared. Downriver

designs had been advancing all along since canoe marathoning was already highly competitive and fully developed, as a flat-water off-shoot. Around 1975, the first slalom OC-1's made their successful appearance at the Nationals. Not long after, several doubles boat designs hit the scene. Not surprisingly, the new hull designs were borrowed from the most popular, and already proven decked boat hulls of the time: Hahn and Hartung among others.

In 1979 the inevitable happened with the unveiling of the now-popular X-Cider: competitive open boat slalom left forever beyond the aluminum age. Based on the close-cockpit Gemini V hull, the X-Cider was meant to be paddled with the competitors sitting much closer to the middle of the boat. The boat's extreme rocker made it very quick to turn and it proved to be "dry" as well. Hence the urge to win had spawned the growth of creative design in Open Canoe Slalom.

If the appearance of new slalom designs borrowed from decked boat hulls helped change the look of the open canoe, likewise the attendance by more "decked boat paddlers" at open canoe races changed the standard of competition. Decked boat racers, are by necessity, used to racing on more difficult courses. At first there was some undercurrent of resentment at the number of decked boat racers who showed up and took medals. It was charged these same racers contribute? no support to open canoe racing year around, but only showed up at the Nationals.

It is interesting, however, to note that

the most active open canoe racers were not the ones voicing this resentment. For they realized that raising the quality of competition could only stimulate and strengthen the sport in the long run. They also realized that if more open boat races were available, these same decked boaters would have more opportunity and would attend. More racers means more interest and, hopefully, more new races.

But most significantly, the invasion of hot decked boaters pointed up the real differences in the skills demanded for open boat vs decked slalom racing success. With this, the need became clear to design slalom courses which test these skills inherent and exclusive to open canoe paddling was recognized. 1977 National Decked Boat C-1 Champion Kent Ford was unsuccessful in his bid at the 1978 Open Boat Nationals in part because his decked boat skills were so ingrained. He was seen on more than one occasion trying to dunk the stern of his Open Slipper – a move that resulted in a near-swam-

ping! While basic maneuvering skills and paddle strokes are the same, keeping an open canoe dry is a necessary skill whose lack has caused more than one decked boater some grief.

In Whitewater 78, the 25th anniversary issue of the racing program, Mark Fawcett writes of decked boat racing, "Slalom has grown from a spring weekend sport where the best cruisers also won the races. . . to international competition dominated by youthful competitors who train year round." Now, as never before, open canoe slalomists have come to the same realization, They are joining the decked boat and marathon competitors in programs of running, weightlifting, and gate training year round – beyond the regular race and cruise weekends. With this, the skill level inevitably climbs. Each year someone, encouraged by her performance at a certain race, will go home and train just a little harder than those who beat her – she will be next year's champion.



National Mixed Doubles Champs Barb **McKee** and John Sweet lean upstream turning on a wave-hole to keep water away from the downstream gunwale.

Report No. 2 on

HYPOTHERMIA

A COMPLETE PREVENTION PLAN

by MARY GINSBURG

Mary Ginsburg is a biology graduate student who canoes with the Appalachian Mountain Club, New York Chapter. She has recently attended two international conferences on hypothermia and cold water survival, and is summarizing the results for AWA. In her second of three hypothermia articles. Mary sets out a total hypothermia prevention plan – from the breakfast table the day before to when you're standing drenched and shivering on shore after a swim. In the next issue, Mary will cover hypothermia treatment.

Being chilled, wet, and often miserable are inherent in whitewater boating. As long as you prefer this sport to tiddy-winks, these aspects are unavoidable. But accidental hypothermia is *completely avoidable* regardless of boating season or temperature. A total prevention plan can maintain body temperature in the coldest weather even after an icy swim. The key is to make all preventative planning thorough – involving many facets of action before you hit the river, boating on it, swimming on it, and standing drenched on shore.

This hypothermia prevention plan isn't a short, quick checklist because total prevention isn't a few-step process. Any of the items you do will help, and the more the better. Hypothermia is a constant threat in all waters and is each paddler's personal fight. Winning it can reduce the cold's misery, save your life, or make you paddle better and wince less in early March.

DRESS

The general rule is to insulate all the body surfaces against cold loss, but particularly in the head, neck, lateral chest, and groin. The type of clothing must protect not only against wind chill, but against cold water flowing through the clothes, against the skin and rapidly robbing body heat. Boating is one of the few sports demanding both water and wind chill defense.

WETSUIT. Although a compromise between safety and comfort, nothing as much as a wetsuit restricts the flow of cold water against the skin. It provides the insulation of the neoprene itself along with a thin layer of quickly warmed water twixt body and suit – thus warm when wet. Several styles and thicknesses are available: the 118-inch suit is adequate for the hardy or for all but the really tough, cold, long trips. The 3/16-inch full suit is the most popular and offers adequate protection for virtually all trips. The 114-inch is generally too heavy and restrictive for boaters.

WOOL & PADDLING SUIT. Wet or dry, wool insulates magnificently in the cold air. But during heavy splashes or a swim it offers little defense against rushing water's conductive and convective heat ripoff. A waterproof paddling suit over wool pants and sweater is needed to minimize the water flow. Generally this will suffice for mildly cold water, but is inferior to a full wetsuit and not adequate for real cold.

"Research has found that a close-fitting, vest-type PFD can increase cold water survival time by 50% to 75% over that of a horse collar."

PFD's. The right life jacket can supply an amazing amount of insulation. The vest-model, type III PFD insulates heavily a good percentage of the body core. The floating cushion or horse collar offers virtually nothing. A close fit is very important to prevent riding up which inhibits swimming and lets in more water. Research has found that a close-fitting, vest-type PFD can increase cold water survival time by 50% to 75% over that of a horse collar jacket. Because of this insulation, PFDs should be worn in cold weather, even when the water is calm. If you dump it can take you a lifetime to don it.

FULL vs PARTIAL COVERAGE. When you dump, blood rushes from the extremities to the body core. If your core is not insulated, the whole body temperature will drop disastrously. But if your arms and legs aren't covered as well, both fine and large muscle movements will become so impaired that you'll never be able to flail to shore. This is why a paddling jacket should have pants to match, and a wet-suit should be full to be most effective. If you want the comfort of a "shorty" cut gussets in the full suit and add neoprene or nylon cloth.

In addition, wetsuit booties for the feet and pogies or wool gloves for the hands retain an amazing amount of heat. Also the head is not only the prime area of heat loss, but holds the higher heat control center. Thus a wool hat, *which will stay on during a swim*, worn under the helmet probably retains more warmth per ounce than anything you can wear. The diver's neoprene helmets usually seem unsuitable for boating, but some have modified them satisfactorily.

OTHER DRESS OPTIONS. The military and fishing industry have developed

various one-piece coverall float suits providing both flotation and insulation. Some convert into shorty suits, some are close-fitting, dry foam. There is also a traditional wet suit made of Featherlite material which is lighter for the given degree of insulation. See box at end of article for manufacturers addresses.)

GENERAL PREPARATION

The best preparation is to maximize your paddling ability and thus minimize the odds of dumping. But it takes more than top equipment and ability to defend against hypothermia.

GOOD PHYSICAL CONDITIONING

aids in enduring both the shock of sudden immersion and the prolonged exposure to cold air and water. The more fit you are, the longer your body can generate heat, via shivering or exercise, before exhaustion. (Exercise and shivering in air will increase heat production; in water, however, they accelerate heat loss by increasing blood flow to extremities where heat is rapidly convected away.) Interestingly, physical training in water improves cold tolerance better than does running.

NUTRITION. The body requires you stoke the furnace with more fuel to maintain cold temperature in cold weather. So increase your food intake, one day prior and during the trip, but equally impor-

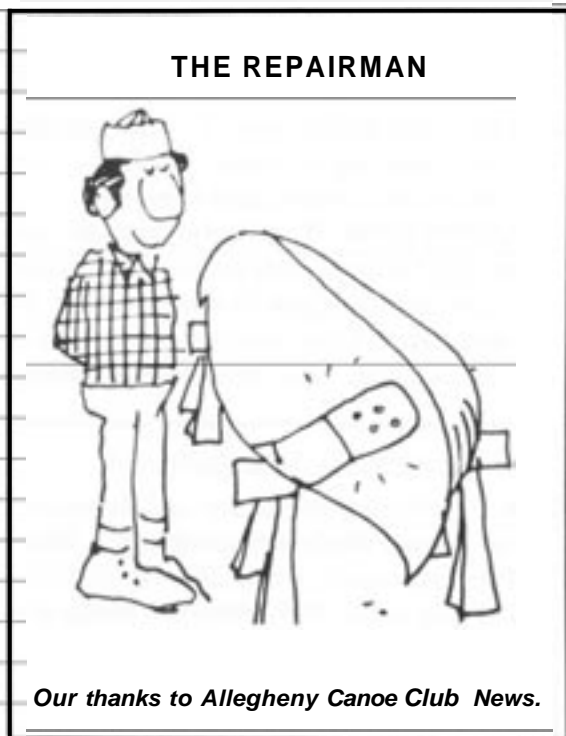
DRESS ALTERNATIVES

- A well-fitting foam dry suit is made by: Narwal Marine Products, P.O. Box 171, Tobermary, Ont., Can. NOH2RO.
- Various suits of Featherlite material are made by: Bayleysuit, Inc. 900 S. Fortuna Blvd., Fortuna, Ca. 95540.

"Interestingly, physical training in water improves cold tolerance better than does running."

tant, keep a dietary balance among proteins, carbohydrates, and fats. The three metabolize differently and compliment each other in terms of heat production: carbohydrates yield heat and energy rapidly, but are burned up rapidly; proteins yield about the same number of calories per gram, but burn more slowly, over a longer span; fats produce about twice as much heat per gram as the other two.

DEHYDRATION. Granted, you're not drenched with summer sweat, but winter fluid loss is equal and more insidious and increases the odds of cold injury. A good guideline is to drink more fluid than you think you need: at least two quarts of hot, sweet fluid throughout an active day. No caffeine, no alcohol. The former reduces the ability to withstand cold stress. The latter causes vasodilation: an opening of blood vessels which drains warming blood from the body core.



ON THE RIVER

IN THE SWIM. Of course the best way to avoid immersion hypothermia is to avoid immersion. So much for theory. When you dump, attitude is vital: think survival, develop a plan, pick goals, and don't panic. If possible, enter the water slowly — keeping that low brace may not stop the dump, but it will slow your entry into the water. Cold shock automatically accelerates blood pressure, pulse rate and initiates a gasp reflex. Work, concentrate and consciously try to calm this rapid breathing rate. A good PFD and good physical conditioning will aid here, preventing the shock of hyperventilation (Sudden Death Syndrome) and in swallowing water. Self-rescue must begin immediately as muscle movement will start slowing within seconds. So get out before the cold saps your strength, but don't attempt exercise; as stated this only drains heat in water.

GROUP PREPARATIONS. When a boater dumps, he almost invariably spends a lot of time hanging onto the boat and trying to swim it ashore. The faster other boaters can get to the swimmer, relieve him of the burden of his boat, and tow him to shore, the better the odds of avoiding hypothermia. This is vital. In addition, somewhere in the group should be extra dry clothing (even if everyone is wearing a wetsuit) a warm wool hat, warm fluids, and heat producing equipment (waterproof matches and dry tinder). Finally, all paddlers should adhere to general safe canoeing principles as outlined in the AWA Safety Code.

ON SHORE. Danger is not over when the shore is reached. Get out of wind and water as much as possible. Don a wind-breaker and other dry layers ~~over the~~ wet-

(continued on page 35)

AWA FORUM

Equipment Safety- Who's Responsible?

WHITewater

Recently, long-time kayaker Arnold Reif, while surfing a Class III wave, experienced a deck collapse of his newly-bought, Old Town Prijon Special kayak. Reif claimed the collapse was primarily Old Town's fault, for not supplying foam support pillars (which they now do in their newer models). Old Town disagreed, arguing that any paddler experienced enough to handle Class III should know enough to install deck supports himself.

In the course of their arguments several larger issues were raised: who is responsible for boating safety – how much of the burden belongs to the individual paddler – to the equipment manufacturer – to federal government controls?

AWA believes no one has better right or ability to decide these questions than the boating community itself. Therefore we offer this forum presenting the views of Arnold Reif, complainant; Pete Sonderegger, General Manager of Old Town; and Charlie Walbridge, Safety Chairman of ACA. AWA seeks and will gladly publish your opinion of this incident and the larger issues at stake.

THE COMPLAINT

K-1 Deck Collapse – ARNOLD REIF

One of the joys of living in Boston is being close to the tidal race at Cohasset. Arrive about three hours before high tide, and you are assured two hours of a Class III drop that forms at a bridge bottle neck, as water rushes from the harbor into a tidal estuary. On a weekend, one finds half a dozen boats playing there in a fine standing wave.

I was surfing this wave in September, 1979, when the deck of my kayak collapsed, trapping my feet. I managed to retract my legs, got out, used my paddle to push out the collapsed part of the deck, and resumed surfing. The deck collapsed again, this time trapping my feet more tightly, and I had a harder time pulling

them loose. My boat was a new Prijon Special kayak, a medium volume slalom model made by Old Town Canoe Company specifically for whitewater.

I had intended to reinforce the deck of my new kayak before taking it out, but had not expected a deck collapse while surfing in a standing wave. I therefore wrote Old Town to inform them of the deck collapse under what I considered mild stress, and suggested that they reinforce their boats in future with a vertical deck-to-floor brace.

They replied, thanking me for "bringing them up to date on the status" of my kayak. For 1980, they had "totally redesigned the construction techniques",

“. . . most [paddlers] do not belong to a canoe club or subscribe to a canoe magazine . . . It is for this silent majority that regulation may well serve a life saving function."

and taken care of the item that I had suggested. The implication that the deck collapse was not their concern annoyed me a bit.

I replied to Old Town, and sent a copy of my letter to the Maine Consumer Protection Agency. I said, I thought Old Town had a definite responsibility to warn the purchasers of its 1979 whitewater kayaks about this danger. Further, I suggested that Old Town offer a free kit to remedy the defect. This kit should consist of two (bow and stern) pieces of polyethylene foam, two inches thick, fiberglass cloth ribbon, epoxy resin, and instructions for installation between floor and deck. A cost to Old Town of about \$25. Old Town replied that they would be pleased to sell me such a kit (minus epoxy) for \$27. Nothing was said about contacting others who had bought one of their four models of whitewater kayaks during 1979.

Later, I learned my letter to the Maine Consumer Protection Agency had snowballed. This agency had sent it to the Consumer Product Safety Commission in Washington. They in turn mailed it to a Captain Lohmann, chief of the Boating Technical Division, U.S. Coast Guard, as is routinely done with boating safety matters. Captain Lohmann contacted the American Canoe Association, who in their turn apparently contacted AWA.

On February 14, 1980, Capt. Lohmann wrote me that he had decided that the 1979 Old Town kayak did *not* contain a defect for which recall was appropriate. His reasons were: (a) kayakers must be aware that lightly constructed boats are not unbreakable. (b) A deck collapse does not necessarily result in a fatal accident. (c) Paddlers commonly install deck braces

for Class III and more severe rapids. (d) Requiring a recall would mandate all similar kayaks to be provided with deck braces.

Subsequently, however, I received a copy of a letter dated three days later, which ACA council member Don Jarrell wrote to Capt. Lohmann. He stated I was *not* requesting regulation, but only seeking to have a construction flaw corrected by the manufacturer. He was quite surprised by Old Town's response, and urged Capt. Lohmann to reconsider his decision.

Armed with support from Jarrell, I wrote to Capt. Kellogg, Chief of the Coast Guard's Boating Safety Division in Boston, and asked him to investigate the deck collapse. I had known Capt. Kellogg since January when he graciously read and corrected my "Protection Against Drowning: Safety and Equipment", a chapter written for a sports medicine book to be published this fall. Capt. Kellogg responded by sending Lieutenant Seney from his office to look at my boat.

Lt. Seney explained to me, that if the Coast Guard ordered Old Town to warn the 250 purchasers of 1979 whitewater kayaks of a deck collapse possibility; this would in effect constitute a recall. Further, such action would of necessity require all future kayaks offered for sale commercially in this country to have deck bracing installed. Finally, the mandate given the Coast Guard by Congress does not permit regulatory action unless "substantial danger to life" can be proven. There would have to be evidence that collapse of kayak decks had resulted in several deaths, at least. In due course, Capt. Kellogg denied my petition. His letter made the same points as Capt. Lohmann's, but added "the Coast Guard is not aware of any

documented case in which a deck collapse has trapped and drowned anyone". He suggested that the best way to ensure that a large segment of the boating public becomes educated in kayaking would be to write a series of articles for some of the major sports and boating magazines, outlining the thrills and inherent dangers of the sport.

What lessons can one learn from my mishap? Perhaps all owners of decked boats who kayak in rapids should install a deck brace, as described above. This should extend from the very front of the cockpit to about nine inches beyond the footrest. By terminating the brace at this point, one can still use a single flotation bag in the bow, rather than split bags. If all boats sold commercially had deck braces to safeguard the legs, this would help to protect both beginners and those not knowledgeable about safety requirements, in case their boat is pinned against a rock.

The larger issue: Regulation vs. self-regulation vs. no regulation.

I was not aware that larger issues were at stake until I got an agitated phone call in early April from Charles Walbridge, Safety Chairman of the American Canoe Association. "You are trying to wreck the sport of canoeing in America", he said. He had just spent five years, he explained, working on behalf of ACA with Capt. Lohmann's office on the question of whether there should be flotation requirements for all canoes sold commercially in the U.S. He had concluded that such regulations would add \$50 to \$100 to the price of a canoe, and that it would be a "disaster" for the government (as represented by the Coast Guard) to become involved in regulation. The Coast Guard's hands were tied by laws that controlled its action, and it did not have the flexibility to establish sensible regulations. Often, the choice seemed to be, "all or nothing". In that case, he much preferred "nothing". Whitewater boating was not an "idiot sport" — one that could safely be en-

gaged in by idiots.

My response to all this was that driving a car was also not an "idiot sport", yet lots of Americans do it and suffer for it. The automobile industry has failed to regulate itself as far as safety devices are concerned: padded dashboards, flexible steering columns, and gas tanks that don't explode following a rear-end collision seem to have been forced on an unwilling industry only because of consumer group complaints or court suits. Walbridge owns a company that deals in whitewater equipment. The last editor of *Canoe* magazine was Pete Sonderegger, currently General Manager of Old Town. It seems that the people with whom the Coast Guard had been working on canoe flotation represented *industry* rather than the consumer! Can we trust them to look out for the consumer's benefit rather than their own?

One cannot read *American Whitewater* without being greatly impressed by its stress on safety. However, many of its readers are experts, who by definition need little advice and less regulation. Admittedly, laws designed for those who don't know better are often a nuisance for those who do. Can one, then, trust experts to support regulation?

However, I do not believe that altruism should be sold short. Lots of people will support those less fortunate than themselves, at considerable cost. It seems to make little difference whether or not deck braces are mandatory for commercially sold whitewater kayaks, if the Coast Guard's conclusions are correct. But the canoe flotation requirements seem a far more important matter, even if most manufacturers do install minimum flotation. Many more people use canoes than kayaks, and most do not belong to a canoe club or subscribe to a canoe magazine. Nor are the majority of canoers fully skilled in the sport or educated in its hazards. It is for this silent majority that regulations may well serve a life-saving function. Is the cost of helping these people too high for us who are more knowledgeable?

FORUM REPLY:

by **PETE SONDEREGGER**
General Manager, Old Town Canoe Company

Arnold Reif answers his own letter when he writes, "I had intended to reinforce the deck of my new kayak (Prijon Special Slalom) before taking it out on (Class III) whitewater . . ."

When the perfectly predictable happened and the deck collapsed under the stress of Class III water, Mr. Reif switches the blame from himself to the manufacturer and adds for extra measure that the federal government has an obligation to step in and protect him and others from themselves.

Taking a kayak into Class III water without proper support makes as much sense as running a convertible without roll bars up the side of a mountain. The best of intentions are meaningless if proper kayaking rules are ignored. Foam pillars or some type of deck support is absolutely mandatory before any kayaking in whitewater is attempted, as are helmets and PFDs. This is why we at Old Town Canoe Company now include foam pillars as standard equipment in all our whitewater kayaks. It is a measure of safety we want all of our kayakers to have.

Mr. Reif claims that by making these pillars standard equipment we are admitting that all our previous kayaks were unsafe. This is nonsense. Our deck construction has not changed since we first began making Lettman and Prijon designed kayaks. What Mr. Reif seems to be implying is that any change or improvement in a product makes all previous models unsafe. If this were true, all improvement, research and development would come to a standstill.

The additional cost of Old Town's new

whitewater kayaks was for this support system and was the same amount as it is as an accessory. When Mr. Reif contacted us, we felt and still do, that he expected us to supply him with free foam pillars. We refused. Then it appeared he started his campaign with the various federal and state agencies to order us (and maybe every other kayak manufacturer) to either recall or at the very least warn previous buyers that there might be a deck collapsing danger.

He found one sympathetic ear with one Don Jarrell, who speaking for himself and not the ACA, replied to the U.S. Coast Guard that the Old Town kayak probably has a construction flaw. This is incredible for Mr. Jarrell never saw the kayak in question, though the Coast Guard did and they found nothing wrong with it. Yet, incredibly, Mr. Jarrell judged us at fault from afar.

For the record, we have had no similar complaints from anyone else regarding a collapsing deck. The Old Town Canoe Company has been making canoes, kayaks, and boats for more years than anyone else in the industry and has prided itself on making the very best product in the market place. I won't use the word safe, for safety depends as much or more on the paddler than the manufacturer, but we generally put more into our boats than others and occasionally are chided within the trade for over-building our boats.

In our canoes, we use more flotation than any other manufacturer in order to offer the most sea worthy craft afloat. Yes, on occasion a defective canoe or kayak has slipped past our quality con-

trol people. Whenever this has happened, we have replaced the boat without charge and without question.

The Government Hand

The bigger question Mr. Reif raises is one of federal control or regulations in the design, manufacturing, and marketing of canoes and kayaks. Nothing concerns this industry and its users more than the possibility of some Washington bureaucrat getting into the act of making a totally "safe" canoe and kayak. To date, the industry, through a very free enterprise system, has done an excellent job of offering the very best product available without assistance from our friends in Washington.

Assuredly, canoeing and kayaking of-

fers risks to the participants, particularly in whitewater. This is why the sport is exciting. Yet these risks are minimized when the boater undertakes certain precautions before entering the boat: proper instruction, the use of PFD, helmet, deck supports, and other personal safety equipment. We cannot and will not tolerate the Federal government's heavy handed attempts to protect us from ourselves. Have we not the ability and common sense to do certain things on our own without government directions?

If Mr. Reif still feels the Old Town kayak is unsafe, we will buy it back from him. If he does, I hope he will stop the dangerous sport of kayaking before he hurts himself. Perhaps there is a safer, more regulated sport that would satisfy his needs.

FORUM REPLY:

**by CHARLIE WALBRIDGE,
Chairman, ACA Safety Committee**

Mr. Arnold Reif's campaign against Old Town and his letter to AWA pose a serious challenge to our sport. He is one of that group in our society who seek to eliminate all risks by enacting safety legislation. Such laws in no way improve individual skills or awareness, and have little effect on river safety. But they have great potential for severely restricting or even eliminating our sport. Knowledgeable paddlers have long agreed that only the individual can be responsible for his on-river safety. So let us be aware of the full burden of involving Uncle Sam in problems we ought to be solving on our own.

I first heard of this matter through the Coast Guard, whom Mr. Reif had contacted early on. Through years of working with their people, I have found them intelligent, open-minded, but not expert

canoeists. They look at canoes as seamen — being more familiar with larger craft where equipment plays a greater role. Years of inestimable effort by ACA, AWA, and USCA representatives has introduced them to our sport and gained respect for our expertise. Their phone call, asking my opinion on Mr. Reif's complaint is but one example of improved cooperation on boating safety matters.

My answer was simple: the deficiency in the Old Town kayak was bothersome, but not life threatening. Regulation requiring the use of internal walls would not eliminate entrapment danger. I felt that Mr. Reif had the responsibility, as all of us do, to make sure that his equipment was suited to the water he planned to paddle and to modify it accordingly. The Coast Guard's answer incorporated many of

[Down with] "legislative Frankensteins . . .

If a person is ignorant, no amount of rule-making will help him."

these ideas; it was well thought out, and I fully agree with it.

Early in my tenure as ACA Safety Chairman, I explored this idea of requiring ethafoam walls. I soon learned the dangers of such rigid, blanket requirements:

The cost of compliance to such government drawn-up regulations could easily add \$50 or more to the price of each boat.

Yet the average buyer never encounters Class III whitewater. Most paddling deaths nationwide occur on flatwater.

No wall is a guarantee against entrapment when pinned. Yet such a rule denies other approaches to internal reinforcement ie: break-apart cockpits.

Regulation length walls, for the large person, often offer more hazard than help.

Based on this, I decided to shift the focus of my job from regulation to education.

Armed with these thoughts, I phoned Mr. Reif to explain the ACA position. He was not amused when I suggested he just sit down and fix his boat like everyone else. If the Coast Guard took his side, I told him, it would in effect mandate support walls for all future kayaks – whether intended for whitewater or not. This he responded, would be a desirable end.

I then explained the problems posed by such de facto regulation: pages of bureaucratic prose to define a "support beam", establish "performance criteria", produce lists of "approved support beam materials", provide for "factory visits", and even demand "retrofitting" of existing boats. Further, demanding that Old Town, for free, provide previous kayaks with an accessory which is now standard equipment, would discourage all manufacturers from ever improving their products.

Mr. Reif assured me things "were not so bad" – similar to my own misconceptions about our legal system before becoming involved in several court cases. He admitted he knew of no other Old Town owners with similar problems, but he vowed to press on. "I love a good fight," he said.

Well, there's not much I can do to stop an American citizen from exercising his constitutional right to be unreasonable. But to the rest of us: a warning. Ask for Government help, and you have to take the whole package: this includes the catch-22 logic, the endless forms, and well-meaning but inexperienced administrators.

It's time all of us resolved to be responsible for our own actions, and demand that those around us do the same. It's time for us to demand that the government treat us as adults, rather than running to them like small children with all our little problems. And, Mr. Reif, it's time for you to fix your boat. I'll even send you the Ethafoam if you'll just stop wasting my tax dollars on your crusade.

Mr. Reif's persistence in fighting for his ideas and the fact that he is taken seriously renews my faith in American democracy. But this cannot rationalize enlisting government's help on so trivial a matter. Regulation is a powerful, but crude procedure for settling differences – best reserved for serious problems which warrant the risk posed by the inevitable side effects.

Let's look at some examples:

▲ The proposed youth-camp safety bill with the canoeing section, written by "whitewater experts" at the Center for Disease Control in Atlanta, requires identical training for whitewater boating and salt water sailing. It calls for Red Cross

River Safety Certification – a non-existent program. It limits youth camps to Class III water, defining a youth camp as "any gathering of ten or more youngsters under 18". This would restrict the Nantahala Outdoor Center and many U.S. team training sessions to Class III. (Fortunately our outraged screams have modified this somewhat.)

▲ One state interpreted their boating safety laws to mean kayaks and canoes were required to carry anchors, flares, and other useless paraphernalia. Changing that idiocy took a battle endless and unnecessary.

▲ One hard pressed commercial outfitter stowes all the required yet totally useless gear in a "S—t Kit" which no raft operator has ever opened except to satisfy government inspectors.

▲ One agency produced, with taxpayers money, a river rescue film. They consulted neither ACA, AWA, or expert dive rescue teams, and the film contains serious errors.

▲ The death of a few tubers foolish enough to try Class V+ water led local authorities to close *every river in the area* for "safety reasons" and arrest kayakers for boating streams on which they'd been assisting rescue squads the day before.

If it sounds like those responsible for boating safety know little about canoes and kayaks, you're right. Law administrators, with a few notable exceptions, view paddlers as a small group of freaks, somewhere between motorboat racers and hang glider pilots. Changing this misconception is a time consuming, frustrating job. And convincing government of our ability to regulate ourselves while possible has become a more than full time task for organizations like ACA and AWA. Therefore, I have no desire to spawn new legislative Frankensteins whose effects will deeply restrict my boating time and freedom. Besides, experience has taught us all that the

only way to improve boater safety is to make paddlers aware of the dangers. If a person is ignorant, no amount of rule-making will help him.



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BOOK REVIEWS

BOAT BUILDER'S MANUAL (continued from page 12)

process, step by step, are you then given the name of a necessary instruction publication — the address is listed elsewhere. But generally, each piece fits and follows sensibly.

What I liked best about this manual is its viewpoint. Charlie Walbridge talks to a boater who has decided to build a boat; unlike so many how-to books, which just list instructions for the semi-pro handyman. Before plunging you into resin and cloth, he explains just what you're getting into, what you'll need in terms of time, effort, and cash, and even a very thorough explanation of boat design and use, to help you choose the right craft. Instead of a dictatorial, the author takes a problem-solving approach. i.e. he offers the reader the choice of a light or heavy boat, using various layups, listing the advantages and disadvantages of each. Also, along with describing what to do, he is meticulous about telling over eager clutzes, like myself, *what not* to do.

In addition to being well-written, exhaustive and all of that, the volume has charm. Walbridge's own illustrations though always clear are unique in the world of art. Anyone who has ever built a boat before will find a wry irony at seeing all his struggles and blunders in print. What's more, he will find a great relief with the number of solutions that will make his next effort easier and better. Thus to any boater even vaguely considering building his own, I heartily recommend this book. It will tell you not only if it's the right course for you, but it will pay for itself in resin savings alone. Finally, there is one other reason — quality. In the author's own words, "the best boat you can get for whitewater is the one you build yourself!"

— Reviewed by Bart Jackson

HYPOTHERMIA

(continued from page 26)

suit. Drink warm fluids and eat some quick-energy food. If the paddler was fully wetsuited, in the water under 15 minutes, and if he is shivering but still alert, that is probably all that is needed. Have him do 50 jumping jacks and 100 racing strokes upon returning to his boat. During the remainder of the trip, he should be watched for signs of lowered coordination or further chilling.

If this is seen, or if he shows muscle spasms, clouded consciousness, he should be given first aid for hypothermia (see next issue of AWA). If hypothermia is determined, the trip leader must make decisions about continuing the trip based on weather, river conditions, and group strength.



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(continued from page 9)

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CHATTOOGA VIOLATION

To all paddlers,

HELP US PROTEST . . . In 1974 the Chattooga was named as a National Wild & Scenic River. This act protects the river from any development – there will be no roads within one quarter mile of the river, no condominiums; nothing to detract from the natural wild beauty of the river and the surrounding area.

The National Forest Service (specifically Sumter National Forest) has been appointed to manage the river corridor. The Forest Service has done much to improve roads, trails, and parking facilities which makes the river more accessible to a larger number of people.

It is ludicrous, however, that the first and unprecedented development on the Chattooga is by the Forest Service. The Forest Service has built a new trail from the Hwy. 76 parking lot one quarter mile upstream to Bull Sluice rapids. This trail

terminates on the South Carolina side of the river at a dangerous point very near the rapid.

The Forest Service has proposed a plan to construct a rock wall terminus to the trail.

"Friends of the Chattooga" feels that this construction is an intrusion on the wild nature of the river and violates the spirit of the National Wild & Scenic Rivers Act. Our organization is at work to try and stop this and any future development on the banks of the river. We feel that the Chattooga is a beautiful and pristine river and should be preserved for future generations.

Please help us by writing a letter stating that you are opposed to the Forest Service plan to build a rock wall terminus at Bull Sluice rapids. This terminus would include a flight of steps, a retaining wall, and a hard surface standing area. Please send a letter so the Forest Service will know that others want to keep the Chattooga truly wild. Letters should be addressed to: Mr. Donald, Eng, Forest Supervisor, P.O. Box 2227, Columbia, S.C. 29202. With all our thanks and appreciation,


Norman (Buzz) Williams
President

AWA thanks the Friends of the Chattooga for working to save this river and its bank-side beauty. Any reader wishing to help fight the good fight or just keep current on the situation, can write: Friends of the Chattooga, Box 151, Long Creek, S.C. 29658.

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Lehigh Valley Canoe Club
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L.E.R.C. Voygeurs
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North Hollywood, CA 91605
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c/o Ron Shanholtz
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Hagerstown, MD 21740
Maumee Whitewater Club
c/o Richard M. Johnston
9962 Diebolo Road
Fort Wayne, IN 46825
Meramec River Canoe Club
Earl C. Biffle
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Fenton, MO 63026
Merrimack Valley Paddlers
Paul Malenfant
24 Fox Meadow Rd.
Nashua, NH 03060
Monocacy Canoe Club
Box 1083
Frederick, MD 21701
Natl. Org. for River Sports
314 No. 20th St.
Colorado Springs, CO 80904
Natural Designs
c/o Dan Ruuska
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Seattle, WA 98103
Nelson Canoe Club
c/o P.O. Box 793
Nelson, New Zealand
Niagara Gorge Kayak Club
Douglas Bushnell
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Erwin, TN **37650**

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Scotia, NY **12302**

Northern Vermont Canoe
Cruisers
Melinda Dodds
RD **1**
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Ontario Voyageurs Kayak Club
J.G. Shrage
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Toronto, Ontario
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Outdoors Unlimited
Millberry Union Recreation Dept.
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500 Parnassus
San Francisco, CA **94143**

Ozark Wilderness **Waterways**
Club
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Kansas City, MO **64112**

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118 So. Buckhout St.
State College, PA **16801**

Pennsylvania Paddle Packers
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Box **346**
Secane, PA **19018**

Penobscot Paddle &
Chowder Society
Wm. F. Stearns
Box **121**
Stillwater, ME **04489**

Philadelphia Canoe Club
4900 Ridge Avenue
Philadelphia, PA **19128**

Polivalues, Inc.
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Clearwater, FL **33515**

Raleigh Ski & Outing Club
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Fuquay-Varina, NC **27526**

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Kayakers
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Rome, GA **30161**

Rutgers University Outdoor Club
P.O. Box **231**,
c/o Robert Markley
New Brunswick, NJ **08903**

Scranton Kayak Club
c/o Glen Gantz
118 Crown Ave.
Scranton, PA **18505**

Sierra Club, John Muir Chapter
Larry Zibell
6561 Hillridge Dr.
Greendale, WI **53129**

Slippery Rock State College
Cooperative Activities
Committee, S.G.A.
Slippery Rock, PA **16057**

Sport Rites Club Inc.
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Ossining, NY **10562**

Sports Resource Info. Center
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Ottawa, Canada **K1L 839**

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Elk, IN **46514**

Tennessee Scenic Rivers
Association
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Nashville, TN **37219**

Tennessee Valley Authority
Forestry Library
Norris, TN **37828**

Texas Whitewater Assoc.
Tom B. Cowden
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Austin, TX **78763**

Troop 230 Canoe Club
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Greensboro, NC **27408**

Univ. of Washington
Canoe Club
Intramural Activities
Bldg. GD-10
University of Washington
Seattle, WA **98195**

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Kayak Club
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No. Hollywood, CA **91605**

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Mahwah, NJ **07430**

Wascana Institute
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c/o Dental Div.
Regina, Sask., Canada
S4P **3A3**

Washington Kayak Club
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Seattle, WA **98124**

Watauga Whitewater Club
Richard Furman, M.D.
State Farm Rd.
Boone, N.C. **28607**

Whitehouse Rafting Expeditions
Expeditions
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Condon, OR **97823**

Whitewater Nova Scotia
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Middleton, N.S., Canada
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Wiggers Canoe and Kayak Sales
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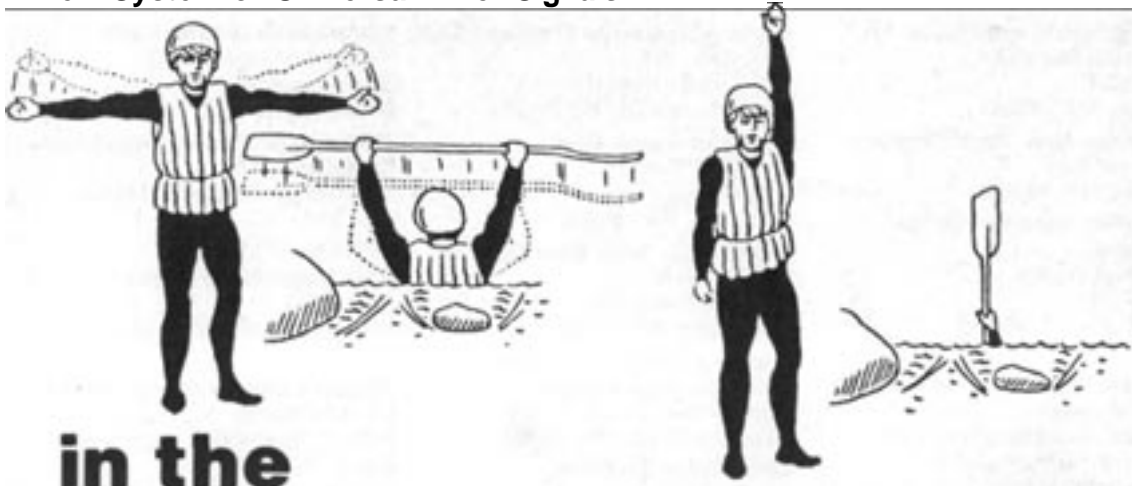
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Rochester, NY **14626**

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