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Viewpoint

Pennsylvania Boaters and Surveys



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Director
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Pennsylvania Fish & Boat Commission

Each year the Pennsylvania State Data Center (PSDC) conducts a survey of Pennsylvania citizens. The purpose of this survey is to measure the opinions on several topics about a variety of state planning efforts. Using randomly selected phone numbers from Pennsylvania's 1,474 telephone exchanges, the PSDC conducted 868 interviews of citizens age 18 and older from November 14 through December 12, 1992.

The Commission participated in the 1992 survey to assess the public awareness and knowledge of the agency and its work. We were also interested in estimating the number of people who fished or boated during the year as well as obtaining an estimate of the total number of boats in the state.

Interestingly enough, only 68 percent of those surveyed knew that there was an agency with specific responsibility for fishing and boating. Of the 868 adults interviewed, only 3.6 percent could identify this agency as the Fish, or Fish and Boat, Commission. A few others named the Game Commission or a variant. The startling fact is that almost 80 percent of those surveyed, including those who fish and boat, could not identify the agency that provides and regulates fishing and boating.

During 1992, an estimated 2.4 million adults boated in Pennsylvania. This estimate validates a 1987 study by Chilton Research Associates that estimated that 2.47 million people boated that year. Thus, the number of people participating in boating appears to have stabilized at 25 percent of the total population. Boating continues to be one of the top recreational activities in terms of total participation in the state.

It is said that the only thing better than owning your own pickup truck is to have a good buddy who owns one. The same appears to be true with boats. Only 29 percent of respondents who boated during 1992 reported that they boated in their own boats. Sixty percent boated with a friend or relative and 17 percent rented a boat. The study estimates a total of 271,000 motorboats, which is very close to the actual 281,000 registered motorboats. Surprisingly, the number of unpowered boats is estimated at 390,000. This estimate closely approximates the earlier estimates made in the Chilton survey, but greatly exceeds previous Commission estimates. If these figures are accurate, and we are beginning to accept them, then the total number of boats in Pennsylvania exceeds 660,000.

As we might expect, most boating occurs on public lakes. Fifty-four percent of all boating activity occurs there. Another 37 percent takes place on large rivers and only nine percent is done on private lakes or small streams. Past surveys have shown that more than 30 million boater days and \$3 billion are expended each year in the pursuit of boating enjoyment by Pennsylvania citizens. Obviously, boating has a significant impact on the resource and on the economy of the state.

This survey suggests that we rethink some of our programs. We are one of the oldest state agencies, yet people still do not recognize us or our work. We have to do a better job informing the public of the role that the Fish and Boat Commission takes in the provision of fishing and boating opportunities in Pennsylvania. We must strive to provide additional opportunities for boaters and anglers. Almost 80 percent of the people who boated last year, including 300,000 people who rented boats, did so in someone else's boat. Many of these people were first-time boaters. We must direct additional educational efforts to this group of boaters, and we must learn how we can ensure that their boating experience is safe and enjoyable. Our future planning efforts must consider that many of our boaters are not part of a traditional programming effort. Finally, we must assess which demands for boating opportunities will be made and how we will satisfy these demands.

The Commission is currently developing a long-range plan for fishing and boating. The information obtained from this survey will be invaluable as Commission managers chart a course to the 21st century.



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Whitewater Tricks for Cruising Canoes *by Cliff Jacobson*
There's a method to the madness of getting safely down the rapids of an unfamiliar river. Check out these 10 rules for safe passage..... **4**

Whitewater Run *by Heidi Milbrand*
Running a river is great fun, and beginners have to start somewhere. Use these ideas on getting started and then decide where to go from the list of seven best waterways..... **7**

The Rebirth of an Old Canoe *by Marge Wonderlich*
Follow these step-by-step specifics on renewing an old canoe..... **10**

Who's Teaching Kids Outdoor Pursuits? *by Cheryl Hornung*
Studies show that fewer and fewer youngsters are learning to boat, and that if young people aren't introduced to boating by the age of 18, they probably won't pursue the sport. What can we do to pass on this legacy?..... **14**

Buying Better Boats *by Louis Bignami*
An insider tells you the essentials you need to know to buy a boat at a fair price..... **16**

After Work on the Yough *by Mike Sajna*
The bottom Youghiogheny River, some 40 miles from Connellsville to McKeesport, is the perfect spot for an after-work canoe trip..... **18**

How to Improve Your Water Skiing *by Ann Kreisler*
Getting back to the basics of safety and technique can help you hone your skills..... **23**

Warm and Dry *by Cliff Jacobson*
Paddling early in the spring can be alluring, but five months of shoveling snow and watching TV can dull your paddling skills and numb your judgment. Here's a plan to help you back into the swing of things..... **26**

Fire Prevention *by Cheryl Hornung*
Fire aboard a boat can be a terrifying experience. Take steps now to prevent it this season..... **30**

The covers
This issue's front-cover barefoot water skier was photographed by Tom King. Learning to barefoot water ski requires building on basic water skiing skills to learn new techniques. That's the kind of information you can find in this issue—basics as well as more advanced how-to-do-it ideas. On page 26, you can forge ahead with new paddling skills built on basics. The article beginning on page 8 offers basic information on paddling, and the article on page 23 provides a brush-up on basic water skiing know-how. If you own a powerboat, don't miss the vital details on page 30. No matter which kind of boating you prefer, check out the thought-provoking article on page 14. Do you want to buy a used boat and get the most value for your investment? Better scan page 16. This spring, if you live in southwest Pennsylvania and you'd like to get away from it all just for a while after work one evening, turn to page 18. The back cover photograph was taken by Bill Burger, Dagger Canoe Company.

WHITEWATER TRICKS for CRUISING CANOES

by Cliff Jacobson

Round the bend you see the dancing horsetails of the rapid. As is the stern's prerogative, you command the bow to "brace" so you can stand for a better look. The way ahead looks clear so you settle to your knees and power toward the slick water vee, which defines the route. Suddenly, a huge rock pillow looms out of nowhere; the bow misses his cue, draws too late and the tottering craft dives into the yawning hole below. Capsize! Seconds later, paddlers and gear are immersed in the chilling grip of moving water. This irresponsible scenario is played again and again on rivers everywhere. Canoeists approach a drop, survey it briefly from above, then dash jubilantly downstream. More often than not, luck prevails and everyone simply has a splashing good time. But not always.

As this classic case illustrates, unplanned upsets can be fatal: It was September 14, 1955, on the Dubawnt River in the Northwest Territories of Canada, and already there was a crispness in the air. Each day, frost grew heavier on the morning ground. Arctic summer, so intense in early August, was gone now and autumn with its sub-freezing temperatures and fierce polar gales had begun. Arthur Moffat, experienced trip leader, was worried; he knew the snows of winter were not far away.

Moffat unfolded his map and stared unbelievably at the thin ribbon of blue that was the Dubawnt river. Some 250 miles lay between his campsite and destination—the isolated settlement of Baker Lake. After some discussion there came a monumental decision: To save time, the party would run any rapid that "looked safe from the top."

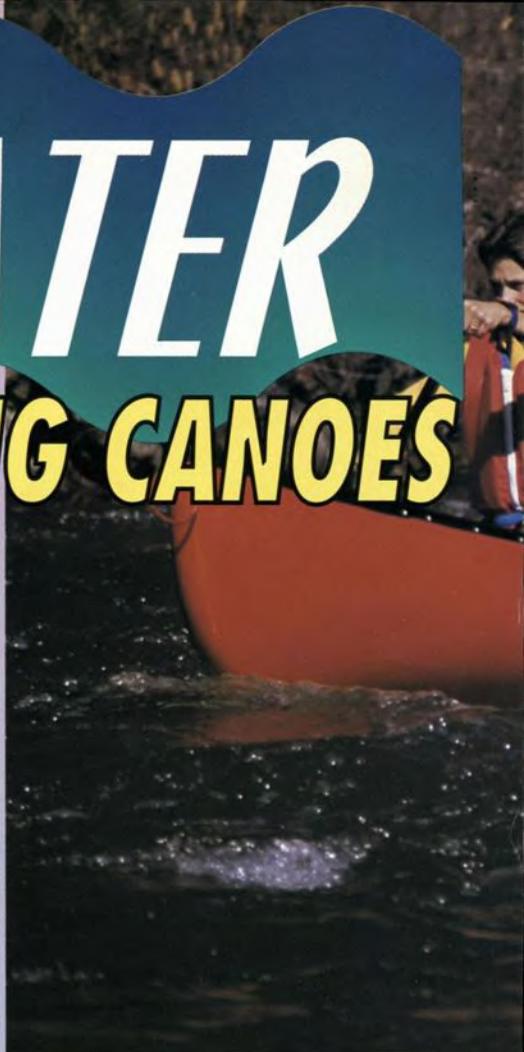
Later that day they came upon a substantial rapid. Moffat stood up in the canoe to check it out. "Looks okay," he said. "Let's run it!" Almost immediately it happened. Capsize! Another canoe followed suit behind. Four men now struggled for survival in the icy waters of the Dubawnt.

Everyone was rescued quickly, so there should have been no problems. But there was not enough wood to build a warming fire and the crew knew little about hypothermia. We can only speculate why Moffat died on that September day and his friends did not. Perhaps he was concerned for the safety of the others and so neglected his own treatment until it was too late. Or maybe he was in poorer health than his friends.

Arthur Moffat was buried at Baker Lake, Northwest Territories, in the land he loved best. A simple wooden cross in a lonely cemetery marks his grave.

**The most unforgivable
paddler's error is
recklessness—failure to
scout a rapid from top to
bottom before running it.**

Art Moffat made a number of serious errors, all of which are easily avoided by perceptive men and women with cautionary sense. Most unforgivable was recklessness—failure to scout a rapid from top to bottom before running it. Second was a lack of planning. Indeed, Moffat's diary, which was later published in *Sports Illustrated*, gave no indication that he had a travel schedule at all. There was no battle plan in the event of an "upsetting experience," and no respect for the dangers of ice-cold water. No one in Moffat's crew understood the nature of hypothermia or knew how to treat it. Whitewater thrill-seekers take to the river



as soon as the ice melts in early spring. Clad in wet (or dry) suits and helmets, and secured to their boats with thigh straps and toe blocks, they play confidently in drops that flatwater canoeists portage around. Fast forward turns into eddies and "bow upstream" procedures are used to cross severe currents. Rarely do they backferry around curves or into eddies.

Even if you don't paddle serious rapids, you'll benefit by knowing the ways of whitewater sport paddlers. But keep an open mind as you learn, because what works best in a short, rockered canoe often creates problems in a standard 17-foot cruiser. There's a method to the madness of getting safely down the rapids of an unfamiliar river. Here, in no particular order, are 10 rules for safe passage:

1 When you see the dancing horsetails of a rapid, put ashore immediately, on the inside bend (more on this later) of the river and scout the entire drop. Shorelines are often brushy and difficult to travel, so this advice is not always easy to follow. Often, you may have to horse your way through shoulder-high willows, jump from rock to rock or cross a patch of knee-high mud, all



Summary of Whitewater Tricks

1. When you see the dancing horsetails of a rapid, put ashore immediately on the inside bend and scout the entire drop.

2. Equip your canoe with 25-foot ropes so that you can "line" around dangerous obstacles.

3. Learn to identify falls by the "obstacle height comparison method."

4. Learn to separate the sound of a gentle rapid from the roar of a dangerous one.

5. If the water is cold or the river is wide, run the rapid as close to the shoreline as possible.

6. Don't attempt the rapid unless you're certain you can run it safely "nine out of 10 times"!

7. Dissect rapids into "manageable pieces" by scouting them from eddy to eddy.

8. Maintain visual communication between canoes.

9. Have a realistic travel schedule and stick to it.

10. Respect the skills of your partner.—CJ.

the while sweating and swatting hordes of mosquitoes.

Nonetheless, you must avoid the temptation to abandon the project and "go for it," even on a river you have paddled many times. Indeed, familiar routes may be the most dangerous of all, as the following case illustrates.

It was my fourth descent of Saskatchewan's Fond du Lac River. The always canoeable" Class III rapid was etched clearly in my mind. Begin far right, clear the narrow chute below, then pivot quickly upstream and ferry across to river left. Just before crashing the bank, turn down-current and catch the yard-wide slot near shore. High water makes the run easier, but it is possible if there is any downstream flow.

Still smarting from the hurt of wrapping my canoe earlier that summer on a river I'd done five times before, I decided to walk the right bank and check for obstacles in the ferry path. There was none. However, to see the negotiable slot, I'd have to cross the river and then walk 200 yards on precarious boulders. Why mess around to ascertain what I already knew? Hadn't I faithfully walked the right shore and satisfied

the need for caution? After all, I'd run this rapid three times before. Further checking would surely be a waste of time.

Or would it? In a far corner of my mind, my conscience begged for caution. Should I heed the call and take the time to scout? Longingly, I stared at the blind spot that marked what past experience had revealed was a clear channel. Again, I remembered my upsetting experience earlier that year. I would not run this rapid until I checked the chute!

Dutifully, I crossed the prancing rapid and tied up to the gnarled bole of a wind-beaten spruce, then mechanically boulder-hopped to the final drop, confident I was in for no surprise. There, marked by a two-inch trickle of water, was the vee of the "always canoeable" chute. Horrified at what might have been, I mentally played out the scenario: Coming out of the fast forward ferry, we'd spin downstream into nothingness and capsize in the heavy water that pounded the boulder line below. There simply was not enough water for a clean run!

If I could teach just one skill to those who paddle straight-keeled cruising canoes on

fast-moving rivers, it would be the backferry. In this technique, paddlers maintain a downstream attitude and angle their canoes about 30 degrees to the current—tail pointing in the direction they want to go. As they paddle backward in unison, the canoe moves sideways across the river without slipping downstream. You'll find the rules for playing this unique vector game in every basic canoeing text.

Hotdog whitewater paddlers do not backferry. Instead, they spin their lightweight slalom canoes upstream and dash across-river to the nearest eddy. Try this in a lively rapid with a heavily loaded tripping canoe and you're in for a big surprise! Better to point the bow of your big canoe downstream and slowly backferry around obstacles.

Granted, backferrying lacks the dynamic appeal of pivotal, bow-upstream maneuvers, but it is the safest way to get off the river when you're piloting a long canoe that turns reluctantly. It follows that you should always ferry to the inside bends. Rivers run faster on the outside curves and all the waves pile up there. And if you have to portage, the inside route defines the short-



Photo: Cliff Jacobson

est distance between points.

The forward ferry is the opposite of the backferry. Same procedure, only the bow is turned upstream. If there is no safe passage around the rapid on the inside bend, line your canoe well above the drop and ferry to the far shore for another look. The forward ferry is much more powerful than its backpaddling cousin, but you'll need space and time to execute it if you're paddling a stock tripping canoe.

In 1982, friends and I experienced a polar gale along the remote Hood River in Canada's Northwest Territories. For three days we were confined to our tents by 55 mile per hour winds and unrelenting rain. When the weather cleared, we were greeted by a silt-choked river in flood stage, the hydraulics of which commanded respect. There were uprooted dwarf willows and debris everywhere in the river, and it all piled up on the outside curves. The powerful current, which we estimated at more than 10 miles an hour, produced human-sized waves at the outside of every bend. In many places, the river was more than a quarter-mile wide!

Getting downstream that day was a matter of staying tight on the inside bends, away from the debris and engulfing whitewater. First, we'd ferry furiously to reach a right bank, only to ferry back across the channel when the river curved left. I don't know what we would have done without our well-practiced ferries.

2 Equip each end of your canoe with 25 feet of brightly colored 3/8-inch diameter, polypropylene rope (it floats) so you can line the boat around obstacles in the river. Safety demands that you keep lines coiled and secured under a loop of shock cord on the deck when they're not in use.

3 Learn to identify ledges (falls) from above by the "obstacle height comparison method." That is, visually compare the height of shoreline trees, boulders, canyon walls, etc., which dot the shoreline with those that are downstream. I am always amazed when I hear stories about canoeists who paddled over a dam because they

"didn't know it was there." A significant drop is almost always visible from above.

4 Learn to separate the sound of a gentle rapid from the roar of a dangerous one. As you develop an "ear" for whitewater, you'll discover that a substantial upstream wind can magnify dangers, and a downstream wind can minimize them.

5 If the water is very cold or the river is wide, try to run the whitewater as close as possible to a shoreline. Capsize in 50-degree water in the midst of a 100-yard-wide rapid and you'll understand the need for caution.

6 Many backcountry trippers apply the "nine out of 10" rule before they commit to a rapid. Can you run this drop nine out of 10 times without capsizing? If not, better portage.

Scenario: Your partner wants to run the rapid. You don't. Here are some tricks you can use to support your position. "Well, John, it's your boat. I won't take responsibility for what happens to it."

Conversely, "Sorry, John, it's my boat. I can't afford to buy a new one for the family trip this fall."

Or best of all: "I trust you, John, but I don't trust myself. I'm not up to this and I don't want to let you down."

7 Whitewater novices are often overwhelmed at the size and complexity of a long, thundering rapid. At first look, there seems no alternative but to portage. But once you learn to dissect the rapid into "manageable pieces" by scouting each obstacle from eddy to eddy, options abound.

Scenario 1: Inspection reveals that you can run the clear vee to the big eddy just above the first drop. Because you can't see what's around the bend, you'll put ashore there and scout to the next safe stopping place. If the rapids are too rough, you'll line or portage. This "bits and pieces" approach puts a heart-throbbing rapid into negotiable perspective.

Scenario 2: There's a clear channel on river left that terminates at an unrunnable ledge, 200 yards below. You can avoid the

drop by turning right just above a subsurface rock that is difficult to see from the river.

What to do? Station a person on the river bank, or make a trail sign at the location of the critical turn.

- Maintain visual communication between canoes. Everyone should know the three most common American Whitewater Affiliation "paddle" signals:

- **Help/Emergency.** Wave your paddle overhead in a circular motion and give three blasts on your whistle.

- **Stop.** Raise your paddle overhead to form a horizontal bar and pump it up and down.

- **All clear.** Hold your paddle high (vertical), blade face turned upriver so everyone can see it. If there's a preferred route through the whitewater, angle the paddle 45 degrees toward it. Never point toward an obstacle you wish to avoid!

9 Maintain a realistic travel schedule that is commensurate with your skills and traveling philosophy. Ten miles a day is a reasonable figure to shoot for on a river you haven't done before. Don't forget to consider water levels when you plan. A fast run in early spring may be a long, disgusting drag in the shallows of late July.

10 Respect the skills of your partner. Some canoeists are lucky enough to paddle with the same partner all the time. Others have to adjust to the ways and incompetencies of a new person on every trip they take.

Whitewater training sessions? Are you kidding? Learning comes out of necessity in the course of the trip. By trip's end the new person is "trained." Too bad we may never see him or her again! All of which brings us to the bottom line: Whitewater tactics are for practiced whitewater teams. If in doubt about your partner's ability, portage, portage, portage!

All in all, when you see the dancing plumes of a lively rapid, scout it first from the inside bend of the river. Dissect complex rapids into short, manageable drops and use your practiced avoidance skills (ferries and eddy turns) to run from eddy to eddy. Develop an ear and eye for the sound and sight of dangerous water and apply the "nine out of 10" rule to every rapid you run. Paddle difficult rapids near the shoreline if the river is wide or the water cold. Failing this, line or portage. Finally, adhere to a realistic travel schedule and develop a signaling system everyone can understand.



WHITEWATER RUN

by Heidi Milbrand

If your idea of boating is one tube for you, one tube for the refreshments and a very placid stream, then look elsewhere—whitewater boating is not for everyone. Before considering doing whitewater, consider yourself, your skill level, your sense of safety and what moving water you plan to tackle. Anyone who travels on whitewater has to be safety-conscious. This means using extra flotation in every boat, wearing a life jacket and helmet, and always carrying a throw bag.

Although any fast-paced water can be nasty with chest-slapping waves, intimidating hydraulics, intimidating hydraulics and rocks that seem to leap in front of the boat, almost every rapid empties into a calm pool. For the paddler, this flat water is a place to take care of the necessities—catching your breath, slowing your heartbeat and scouting to see what lies ahead. It's also a safe place to rescue anyone who may have exited the boat, either on purpose or by accident. And paddlers traveling together can use these pools to regroup and make sure that everyone is all right.



Why run a river?

River-running can combine many of our favorite outdoor pastimes into one activity: fishing, camping, hiking, photography, bird watching, etc. People enjoy whitewater boating because it is exhilarating, fun and builds your confidence beyond belief. Indeed, one common thread among all who safely run rivers and whitewater is a profound respect for the power of moving water. The main job of persons who run rivers is the same as for all other boaters—keeping your body in the boat and keeping the water out. In open boats on fast-moving water, that job becomes very important.

Before getting under way

Successful paddling requires a delicate balance of coordination and dexterity. No written words can properly prepare an individual for the sport. It requires the acquisition of skills that can be obtained only through practice. There is no substitute for good skills and knowledge in canoeing, kayaking or whitewater boating. Training is available from local canoe and paddling clubs, the American Red Cross and the American Canoe Association.

Besides the acquired skills, properly outfitting your boat is a necessity. Always wear your personal flotation device and helmet, and make sure your boat has extra flotation. Carry a throw bag or two, a first aid kit, a bailer, a dry bag (sealed properly) with dry clothes and food in it, and always be knowledgeable of the water you will be running.

Some questions to ask yourself before you begin include: Are you skilled enough to deal with potential water hazards? Aquatic

wildlife? Rescue situations?

Knowing your limitations must be coupled with a knowledge of all potential hazards, which include remoteness of the area, the class of water to be paddled, wind conditions and the water and air temperatures. Inexperience paired with improper knowledge and planning can be disastrous. Be aware of everything!

What to know

As a beginner, you want to start out with rivers that do not involve too much risk. As your skills progress, along with your confidence, you can move on to bigger and better waters. But how do you find these

easy rivers to start out? The American Whitewater Affiliation has "graded" all the rivers in the area using a scale of difficulty ranging from Class I to Class VI.

Class I. Moving water with a few riffles and small waves. Few or no obstructions. Best for beginners.

Class II. Easy rapids with waves up to three feet and wide, clear channels that are obvious without scouting. Some maneuvering is required.

Class III. Rapids with high, irregular waves often are capable of swamping an open canoe. Narrow passages that often require complex maneuvering.

Class IV. Long, difficult rapids with constricted passages that often require precise maneuvering in very turbulent waters. Scouting from shore is often necessary and conditions make rescue difficult.

Class V. Extremely difficult, long and very violent rapids with highly congested routes. Rescue conditions are difficult and there is significant hazard to life in the event of a mishap.

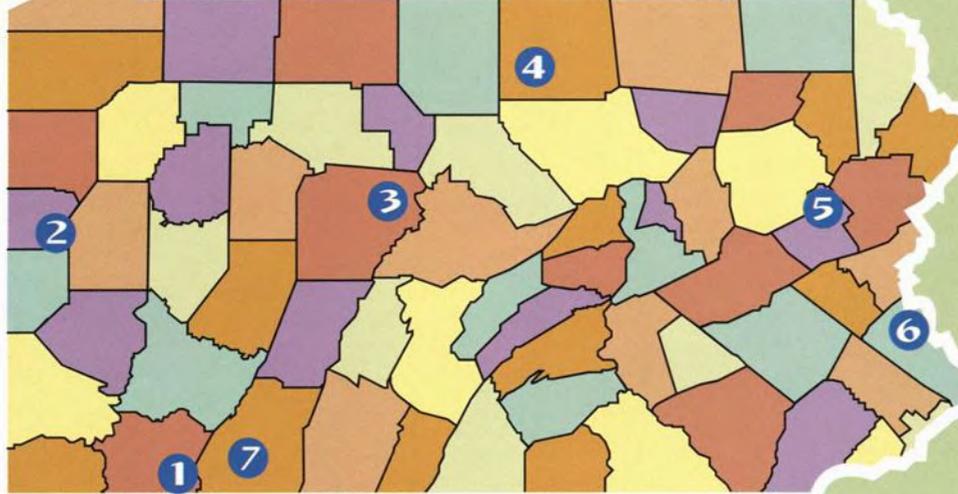
Class VI. Difficulties of Class V carried to the extreme of navigability. Nearly impossible and very dangerous. Only for teams of experts.

Keep in mind that this scale is only a guideline because all river sections are different combinations of shape, duration and location of hazards. Any run's difficulty varies with the water depth and flow rate on a given day. Find out what the river conditions are on the day that you want to make your run.

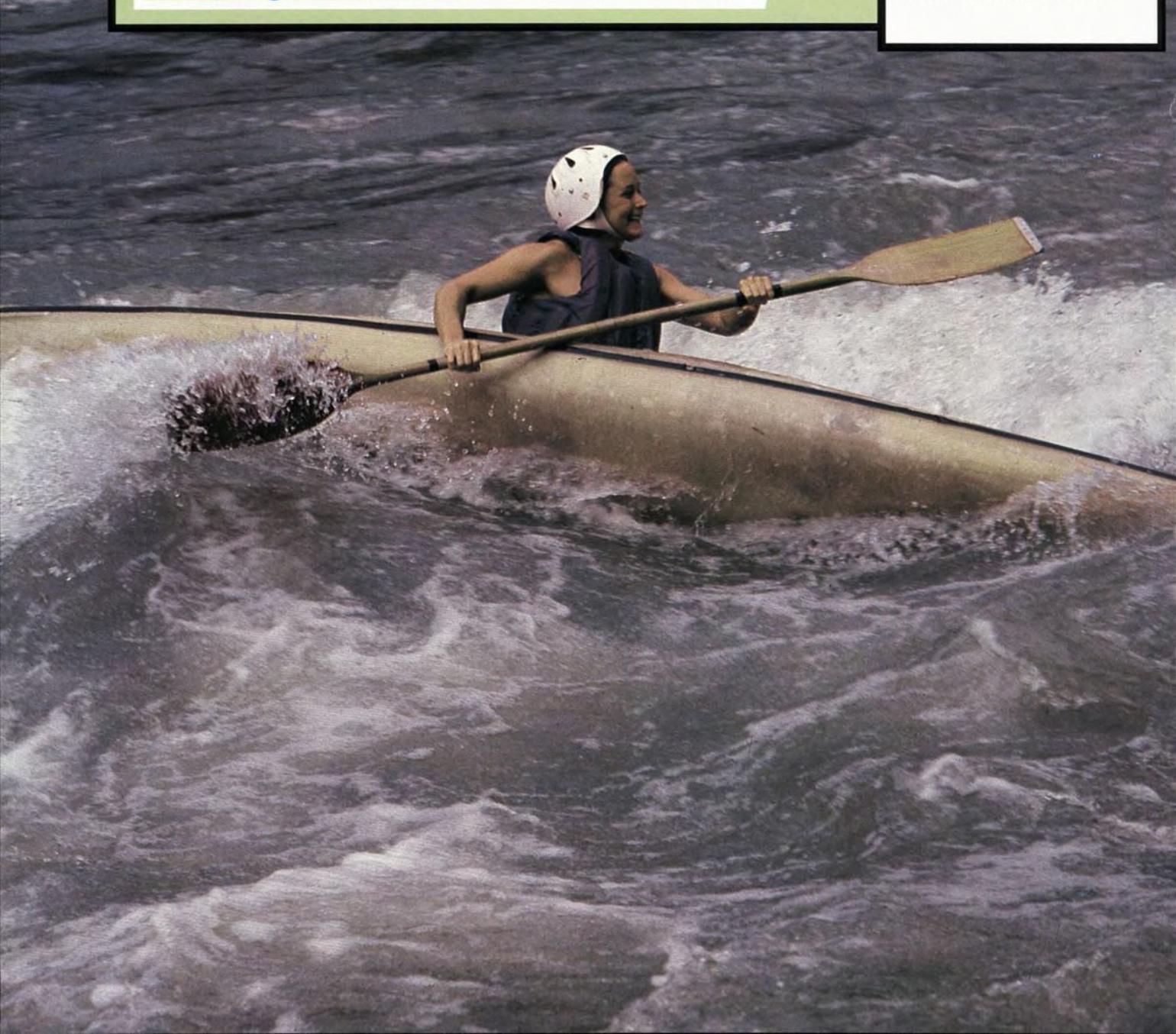
Where to go

Now that you know the degree of difficulty you are looking for, consult a guidebook that describes rivers near you. These books are often updated, so ask a local retailer (of outdoor gear and clothing) or a local canoe club where you can get the latest information. As a beginner, focus on Class I. River maps, which show rapids and their ratings, suggested routes down the river, put-in and take-out points, dams and more, are useful sources of information.

Pennsylvania's Best Whitewater Trips



1. Youghiogheny River, Ohiopyle State Park.
2. Slippery Rock Creek, McConnells Mill State Park.
3. Moshannon Creek.
4. Pine Creek.
5. Lehigh River, Lehigh Gorge State Park.
6. Tohickon Creek, Ralph Stover State Park.
7. Casselman River.



Let's take a look at what the Keystone State has to offer.

• **Casselman River.** The Casselman starts high atop the plateau of western Maryland and follows an arc across Somerset County to end in the Youghiogheny. This run is 20 miles long and can be done in two trips. From Garret to Markleton (Class I, II) is 14 miles, and this section flows through a wooded gorge that offers a visible railroad and some fire-damaged forest land. There are a few easy rapids. Below Rockwood, the river's pace picks up and goes through some challenging rapids. The bridge is off limits in Markleton, so travel downstream a little farther and take out along the road upstream of town or exit at the town of Casselman with permission.

From Markleton to Fort Hill (Class II, III) is six miles long. This section is great to practice your whitewater moves. The rapids are often long and when the water is up, it can be technical. Because of Markleton's access difficulties, consider starting upstream at Casselman or Rockwood. Take out in Fort Hill. To get to Garret, take the Turnpike to exit 10, then Route 219 south where it intersects with Route 653. No rental facilities are available.

• **Youghiogheny River, Ohiopyle State Park.** The very name *Ohiopyle* means "white frothy water." This large and powerful river provides some of the best whitewater boating in the East in the 1,700-foot gorge. PFDs must be worn and the park's rules and regulations must be obeyed. The famous lower river begins after Ohiopyle Falls within the park and contains Class III and IV rapids. Four authorized concessionaires provide guided river runs on the lower section. The lower section runs from Ohiopyle to Bruner Run and is eight miles. The put-in is at the access maintained by the park below the falls. The take-out is at Bruner Run, on the left and is clearly marked with a sign on the right. If you run the river with an outfitter, transportation is provided from the river back to the put-in. If you run the river with your own group, transportation is provided from the river to a parking lot 1 1/2 miles away from the river and it will cost you a shuttle ride. **CAUTION:** This section can be dangerous for the beginner or novice canoeist if you are not familiar with it. Familiarize yourself by taking a guided trip or going down with experienced and knowledgeable canoeists or kayakers. Launch permits or registration is required for all boaters. Reservations are highly recommended. Call the park office at 412-329-8591 for more information.

To get to Ohiopyle State Park, take the Turnpike to exit 9 and follow Route 31 to 711. At Normalville, take Route 381, which passes through Ohiopyle.

• **Pine Creek.** This creek has carved out Pennsylvania's "Grand Canyon" and is probably one of the most popular canoe streams in the state. The scenery along this stream is rugged and beautiful. A very common run is from Ansonia to Blackwell, Class I, II and III water, approximately 19 miles long. You can put in at the Big Meadows Access just off Route 6 at Ansonia (eight miles west of Wellsboro). Make sure you stop and check Owassie Rapids to determine the correct route. Keep left to avoid trouble. The creek follows a bend around Mount Tom and enters the canyon through a high mountain gate. Take out at the Blackwell Access located along Route 414, just south of the Pine Creek bridge in Blackwell. Guided trips and rentals are available. Call Leonard Harrison State Park, 717-724-3061, for more information.

• **Moshannon Creek.** Commonly known as the "Red Mo," this stream will delight a wide range of paddlers with smooth water, nice scenery and intermediate whitewater. It is conveniently located in the center of the state and accessible to all. It is a wilderness

stream with an acid-iron pollution problem from abandoned coal mines that has turned the stream bed a yellowish-red.

One of the more popular runs is from Peale to Karthaus, covering 15 miles and Class II and III water. Put in at the Peale bridge on a small dirt road between Grassflat and Moshannon. To get to this bridge, take I-80 to exit 21, then Route 53 north. Go about five miles and then make a right, and follow the road to the bridge.

The first few miles is relatively easy. After that, it is continuous Class II action (Class III depending on the water level), with little or no still water. When you do reach the mouth of the Red Mo, you will see that it goes "uphill" to crash into the West Branch of the Susquehanna. The take-out is on the West Branch at the Route 879 bridge at Karthaus. No rental facilities are available.

• **Slippery Rock Creek, McConnells Mill State Park.** The creek cuts a gorge 400 feet deep through an otherwise rolling countryside, creating Class III-IV rapids. The section generally run is from Kennedy Mill to Harris bridge, over seven miles long. The upper stretch is generally easy. When you reach McConnells Mill, portage on the left. The mill dam is here. Below the dam, the creek launches into a slalom through boulders, blind turns and narrow chutes. Because the creek is constricted in some spots, the rapids take on big-river-like disorder. Because of this, only advanced paddlers should attempt this run. Take out at Harris bridge. To get to McConnells Mill State Park, take either I-80 to Route 79 south to Route 422 west or the Turnpike exit 3 to Route 79 north to Route 422 west. No rental facilities are available.

• **Lehigh River, Lehigh Gorge State Park.** This spot is a whitewater paradise that offers some fine whitewater in the Northeast. For this reason, the river becomes crowded during the peak season—April to August, and it is located off I-80 and the Turnpike, which makes it easily accessible for everyone. The Francis E. Walter Dam, located upstream, can change the water drastically with its releases. The dam is a U.S. Army Corps of Engineers project, and special weekends are designated for releases. Beginning at the dam, the river enters the gorge, which extends over 30 miles to Jim Thorpe. Boaters in the park must respect the state park rules and regulations. All boaters must wear a personal flotation device and extra flotation is recommended for all hard boats. Boating is not permitted between the dam and White Haven.

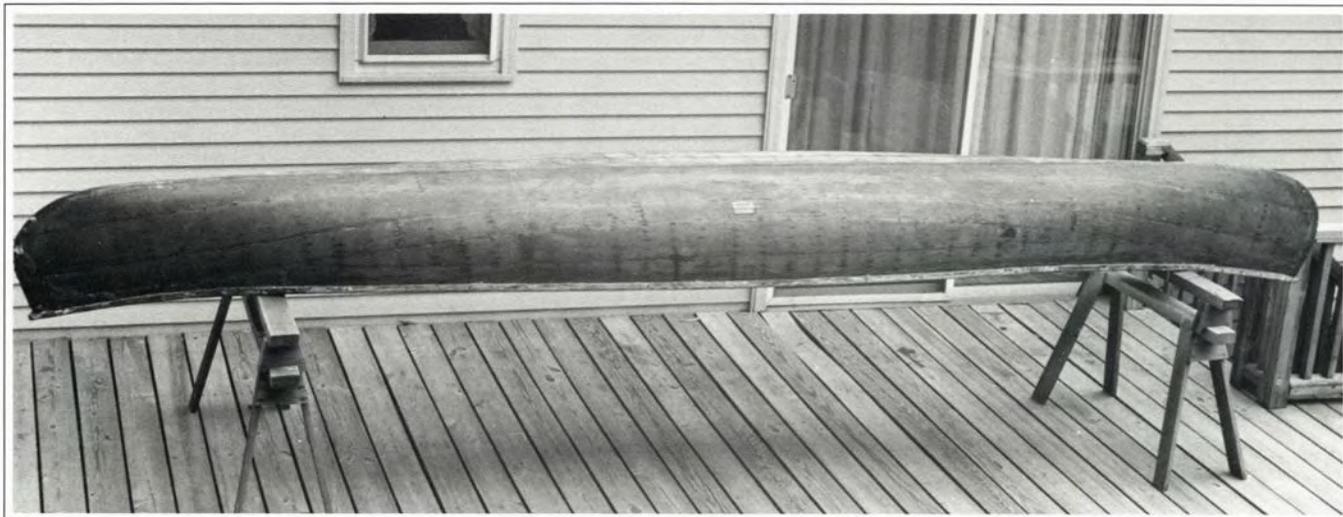
From White Haven to Jim Thorpe, the river covers 24 miles and Class II and III water. River access is on the west bank off Route 940 in White Haven. The river requires your attention with sometimes long, boulder-filled rapids. Below Rockport, the river begins to pick up speed as it gets steeper. It also begins to get complex, running through holes and paddling over rocks. Below the Route 903 bridge, the town of Jim Thorpe appears and the take-out is on the right at the borough parking area located behind the train station. Guided trips are available. Call either Hickory Run State Park, 717-443-9991, or Lehigh Gorge State Park, 717-427-8161, for information regarding guided trips.

• **Tohickon Creek, Ralph Stover State Park.** Special upstream releases from Nockamixon State Park occur one weekend in early spring and late autumn. Tohickon Creek offers a technically challenging course for closed deck canoes and kayaks. Put in at State Park Road in Ralph Stover. This marks the beginning of a deep, narrow gorge, surrounded by high cliffs. The whitewater picks up speed and difficulty as it races to the Delaware. Take out at Route 32. To get to Ralph Stover State Park, take the Turnpike to exit 27. Follow Route 611 to the park. No rental facilities available.



THE REBIRTH OF AN OLD CANOE

BY MARGE WONDERLICH



Before you let a second-hand man cart your old canoe away, consider the possibility of refinishing it. Many outdoor trading posts have popped up throughout the Commonwealth, and an inspection of their watercraft reposing in the weather may reveal a prize. Backyards, barns, garages and old sheds may also contain an unusable canoe the owner would love to get rid of.

Canoes, especially those with wooden ribs and covered with canvas, have been susceptible to rot over the years. Because they are no longer functional in their present state, they are often discarded and can be bought for as little as \$50 to \$100. These canoes are almost pieces of art in their beauty. They are sleek and sport natural wood interiors that would cost a mint to reproduce today.

This summer, my husband, David, and I decided that one of our family projects would be to refinish our well-used and loved but worn-out canoe. It was made by the White Company in Old Town, Maine, sometime in the 1940s. Even though its exterior had gone the way of so many canoes, the interior wooden ribs were still in good

condition and had such a rich patina we wanted to preserve the craft and make it functional again. So we stripped, sanded, fiberglassed, primed, stained and painted our canoe. When we finished the job, we all agreed the results were beautiful—it was worth it!

We decided to use fiberglass rather than re-canvas our canoe because we felt fiberglass would be much tougher—it would be

able to withstand hearty use on our rocky streams and rivers. We also wanted to refinish it only once and be able to patch it easily if necessary. The following procedure, with tips we picked up along the way, can help you from start to finish with your own project.

1 Carefully remove the keel and gunwales. Depending on the age of your canoe, they may be brittle and could break





easily. It helps if you keep all the screws in a container for later use.

2 Strip off all the old canvas. Sometimes this requires the delicate use of a chisel, especially to remove stubborn canvas bits—they will create a mound in the fiberglass.

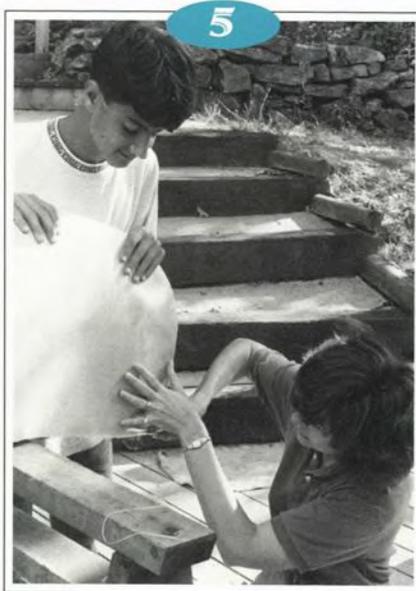
3 Sand all the rough spots. We started with #60 sandpaper and then went to #150. In addition to smoothing off the last traces of canvas, this provides a better bond for the fiberglass and a smoother finished product.

4 Make sure all the tacks and screws still in the canoe are bedded securely.

5 Measure the length of your canoe along the widest section to make sure you buy enough fiberglass to cover the entire length without having to piece it. We were able to buy fiberglass in a 36-inch-wide roll, so we used two long strips. It is better to do as little piecing as possible because the edges unravel very easily when you start to brush on the resin and epoxy mixture. A stringy mess can develop, which makes the desired result of a smooth surface harder to obtain.

6 During the fitting process, cut the fiberglass along the straight grain as much as possible, even if it means you will be overlapping a little. As I cut the fiberglass, I discovered it was similar to straight-grain fabrics—easier to cut along the grain when I pulled one strand out and followed that space with the scissors.

7 For the ends, we purposely wrapped each length of fiberglass around both ends of the canoe. David wanted the bow and stern to have the added strength of the extra layer.



8 Where your panels meet, make sure they overlap a minimum of three inches.

9 We decided to use epoxy instead of the more economical polyester for two reasons. Epoxy is recommended for redwood and cedar, and it would result in a tougher finish. However, you may want to consider using polyester because it works on all other types of wood, and it is more economical as well as more flexible when completed. The epoxy finish may be on the brittle side, but either will do the job.

10 Spread your fiberglass on the canoe, trimming as needed. If it stays in place you can apply the first coat of epoxy on top. If it slides off, roll up the fiberglass, brush some epoxy on the canoe first, and then lay out the fiberglass.



MANY OUTDOOR TRADING POSTS HAVE POPPED UP THROUGHOUT THE COMMONWEALTH, AND AN INSPECTION OF THEIR WATERCRAFT MAY REVEAL A PRIZE.

11 Epoxy comes in two parts—resin and hardener. For our 16-foot canoe, we bought a gallon and an extra quart and were glad we had the extra—it all went on the canoe. Mix the two parts a small quantity at a time according to directions. Do not mix the entire quantity all at once. We found that mixing a quart at a time (measuring two cups of resin to two cups of hardener) was just the right amount to spread on thoroughly before it hardened too much to handle.

The instructions on the container are valuable regarding your time limitation for working with the epoxy. You have only about 30 minutes, depending on the temperature of the day, to brush on the mixture and roll out the bubbles. It helps to choose a day, or place, that is on the cool side, around 65 degrees. The warmer it is, the less time you have to work with the epoxy before it hardens to become unmanageable.

12 Coloring agent is available in several colors to add to the epoxy so your fiberglass layer will closely match the paint color. This is an added, optional step, but if you decide to color the epoxy, later on when you unfortunately scrape the bottom of your canoe on the inevitable rock, the mark will not show up as much



because it will not be white, but will be similar to the exterior color.

When you mix the coloring agent into the epoxy, mix it into the resin (about 1/4-tube per quart) before you add the hardener so you don't take away from valuable applying time after you have mixed the two main parts together. The finish will be translucent, and depending on the look you want, you may decide not to put on a final coat of paint.

13 Use gloves to protect your hands and make cleaning up easier. We found disposable models for \$.49 that were a lot tougher than we expected, and very handy.

14 Brush on the mixture quickly but thoroughly. It is critical to cover the fabric completely, saturated to the point that you see no more white showing.

15 At the same time someone is brushing the epoxy into the fiberglass, it helps to have another person rolling the bubbles out. We were very glad our two sons were able to help us—all eight hands were definitely put to use brushing on the epoxy, smoothing out the fiberglass (with gloved fingers), and rolling out the bubbles.

This is one of the most important times, and the most frustrating, but patience helps. Just keep after it, smoothing and rolling until all the bubbles are eliminated and the fiberglass is thoroughly saturated.

16 Do not attempt to do the whole canoe at once. The epoxy dries too quickly. Plan on doing about a two-foot

square section at a time, brushing on the epoxy and spreading it out as smoothly as possible. Move on only when you have completed the section. Once the mixture hardens, you are done, whether you want to be or not.

17 When you run out of epoxy, mix more as needed, trying to add about the same amount of coloring agent each time.

18 Do not apply the epoxy to your canoe at night if you are working outside, because the evening dew will interfere with the gloss.

19 If you are applying the epoxy over a two-day period, you can save the brush for reuse by wrapping it in foil and placing it in your freezer.

20 After the epoxy and fiberglass has dried, sand down the rough spots. As you sand and then wipe off the dust, inspect for pinholes where you didn't quite saturate the fabric, and note these locations.

21 After the basic coat of epoxy, brush on another complete coat to seal and toughen the skin of the canoe. This is your opportunity to cover those tiny holes you missed with the first coat.

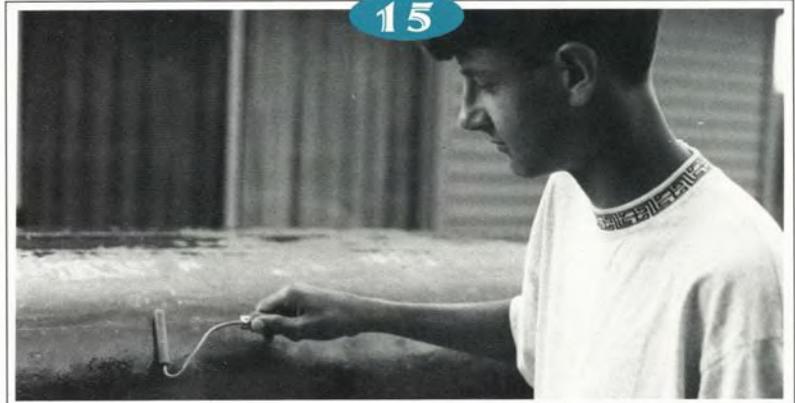
22 Lightly sand this final coat of epoxy to prepare it for the primer. We used #150 sandpaper for this step.

23 A coat of primer applied before the outer coat of paint will help smooth over any imperfections that may have been caused by wrinkled fiberglass or bubbles not eliminated before the epoxy hardened. The primer goes on easily and also helps fill those persistent pinholes. Primer is another optional step we were glad we took the time to do.

24 We found that one coat of final paint (a beautiful forest green) was sufficient to cover our canoe. One pint was sufficient.

25 While the canoe is drying during the various stages, you can work on the keel and gunwales. We decided to strip them, stain, and give them a coat of exterior varnish for a natural wood finish. They provide a nice contrast to our green canoe.

26 Attach the keel and gunwales to your canoe with the screws you saved when you removed



them. You need to drill small starter holes from the inside for the keel, and from the outside for the gunwales. Before putting in the keel screws, apply clear silicone sealant (tub or aquarium) to each hole. When you tighten the keel to the canoe with the screws, the sealer prevents the keel from causing a leak. Wipe any excess from the bottom of the canoe before it dries. Brass screws add a lovely touch, and they don't rust. If you started with brass, polish them first or buy replacements.

It is very exciting to see a worn-out, unusable canoe transformed into a beautiful, functional craft. As a result of your work, you have a fine canoe for fishing, exploring, or just plain floating down a favorite stretch of water. Try rebuilding an old canoe. It is definitely worth it!

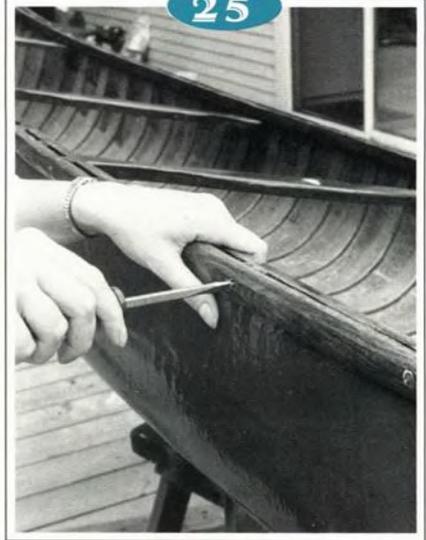
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MATERIALS AND COSTS

Stain.....	\$3.59/half pint.	Coloring agent.....	\$4.15/tube.
Exterior varnish.....	\$4.59/half pint.	Fiberglass.....	\$6.40/yard.
Exterior paint.....	\$12.99/quart.	Primer.....	\$12.99/quart.
#60 & #150 sandpaper.....	averages \$.50/sheet.		
Epoxy hardener and resin...	\$97.75/gallon + \$29.77/quart.		

EQUIPMENT

Saw horses or something comparable to elevate the canoe to a workable position.

Replacement parts: for Old Town canoes call 207-827-5513; Jerry Stelmok of Island Falls Canoe at 207-564-7612 has the White canoe molds and restores them; or try Rollin Thurlow of the Northwoods Canoe Company at 207-564-3667 (he has a catalog of restoration parts for most canoes).—MW.

Paint brushes

(2 1/2-inch for canoe, one-inch for keel and gunwales)

Drill & 1/16-inch bit

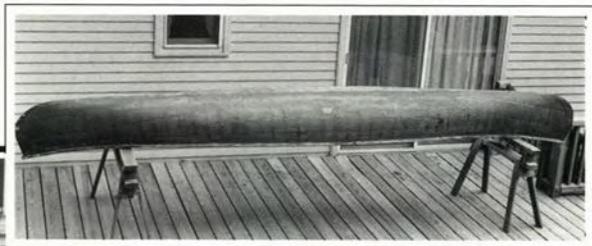
Screwdriver

Chisel

Gloves

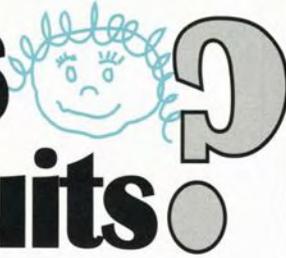
Stir sticks

Roller



WHO'S

Teaching KIDS Outdoor Pursuits



by Cheryl Hornung

Pennsylvanians value the outdoor recreation activities that our state offers, whether it's the exhilaration of making that tournament water ski jump, paddling down a stream's quiet channels, catching a trophy fish or just watching the beautiful outdoors. However, fewer numbers of our youth are attracted to what was once seen as these "traditional outdoor activities." This trend is disturbing not only in Pennsylvania but across the country. We need to keep our young people in touch with our natural environment.

What is happening to our youth today? Schools and social agencies tell us that today's youth face significant problems, including drug and alcohol abuse, teen pregnancy, violent and anti-social behavior, abuse, excessive stress and low self-esteem. All of these factors contribute to why our youth are not having the opportunity to enjoy outdoor leisure activities.

Take a close look at your life. Change has affected all of us—not just our youth. Our world has become computerized. We expect fast results and fast service. We have many new options to "play" within our leisure time, including VCRs, home computers, cable TV, video games and many other forms of entertainment. How many teenagers do you know who do not play Nintendo or video games? As our options for using leisure time multiply, traditional outdoor activities get a smaller share.

Two-career families comprise approximately 70 percent of households with couples. This trend will continue to increase over the next decade and will reduce family recreation time. Families may not be able to spend a weekend camping, fishing and boating as they once did.

Our population is also aging. Baby-boomers are entering their 40s. They are switching from activities such as fishing, camping and boating to other forms of recreation. Their children are not taking up these outdoor pursuits as their parents did when they were children. These children spend a great deal of time with videos, computers and other electronic options.

One-fourth of all children under 18 are living with only one parent. Half the number of all children will live in a single-parent family before age 18. Most of these families are headed by women. Single women rarely fish, boat or camp. Their children are seldom introduced to these activities. Studies have shown that if children are not introduced to these activities by the time



Half the number of all American children will live in a single-parent family before age 18. Most of these families are headed by women. Single women rarely fish, boat and camp. Their children are seldom introduced to outdoor activities.





they are 18, they will probably never pursue these outdoor activities.

What can we do?

Getting involved helps. There are many organizations across the state introducing youngsters to outdoor pursuits. A group of concerned parents, teachers and counselors at the Lower Dauphin School District in Hummelstown, Dauphin County, took a major step to do something about this problem by forming a group called "High on Kids." This group, concerned with the use of alcohol and drugs in the school system, is busy promoting safe activities for youth. They raised enough funds and community support to sponsor a one-week camp to introduce middle school students to activities such as boating, fishing, archery, rifle shooting, sporting clays, drug awareness and karate. Dan Statt, a concerned parent and local Boy Scout leader, is in charge of the next camp. He says that last year's camp was so successful and that it filled up so quickly that next year the group hopes to expand the effort to two separate week-long camps.

Sportsmen's clubs across the state donate time in the summer to coordinate week-long "conservation camps." They, like the "High on Kids" group, depend on local contributions and donated time to run their programs. Volunteer chaperones "camp" with the teens for a week. They teach or assist with programs such as boating safety, fishing skills, stream improvement, hunting safety, tree and wild plant identification and astronomy.

The Pennsylvania State Police sponsors teen "Camp Cadet" programs across the state, targeting middle and high school

students, introducing them to the concepts of leadership, physical fitness and camaraderie through outdoor settings. Activities of boating, swimming, physical fitness, self-defense, firearms safety and drug awareness are often included.

Statewide Big Brother/Big Sister (BB/BS) agencies have been working with local sportsmen's clubs and boating groups to sponsor outdoor programs. A York County personal watercraft dealer, Don's Kawasaki and Yamaha, sponsored "Personal Watercraft Days" with the York and Tri-County (Harrisburg) Big Brother/Big Sister programs. The company donated its time and boats to give the city youth a chance to experience this exhilarating new sport. Many of these kids had the opportunity to experience something they had only dreamed about. They also had the opportunity to learn boating safety and fishing tips from the Pennsylvania Fish and Boat Commission.

All of these programs give teens a chance to experience outdoor recreation activities. In addition to making the outdoors "user friendly" to the teens, these activities also emphasize cooperation, interdependence and social skills. Partnerships formed with local agencies and volunteers allow these beneficial programs to be offered.

You, too, can get involved. If you are an outdoor enthusiast, contact your local sportsman clubs, State Police headquarters, Big Brother/Big Sister office or any other such group and see if it sponsors summer camps or outdoor activities. If so, volunteer your time. You'll enjoy opening the eyes of the teenagers to what the outdoors has to offer, and they'll learn an outdoor skill that might otherwise be forgotten.



Introducing your child to boating

There are few activities more exciting to a child than a boat ride. There are schools, summer camps, scout groups and parks that provide hands-on in-water courses to introduce your child to the excitement of boating while learning the proper safety measures. The Commission has a Boating and Water Safety Awareness Course that targets Pennsylvania's middle and high school students. It is an eight-hour program taught in a classroom and in the water. Topics covered in the classroom include life jackets, safety equipment, basic boat operation, rules of the road and hazards on the water. The remaining time is spent in the water practicing these small-boat safety tips. Students learn how to swim wearing a life jacket, paddle a swamped canoe to shore, climb in or on top of a swamped boat to await rescue, practice hypothermia prevention techniques, and safely rescue a classmate in a water emergency. Students must successfully pass both the written and skills tests to receive a boating safety certification card.

This course is endorsed by the Pennsylvania Aquatic Council and the Pennsylvania Department of Education. Its contents are approved by the National Association of State Boating Law Administrators. If your child boats in a state that has a mandatory boating education requirement, passing this course and carrying its boating safety certificate meet those requirements.

This boating course allows children to experience boating at a new level. They not only learn the boating rules and regulations, but they have fun practicing their newly acquired skills. They can spend time in quiet wonder, or like most children, in noisy excitement. Either way, they have learned to appreciate and respect the challenges and joys of this outdoor recreational activity.

For more information on where this course is offered, or if you know a group interested in instructing this program, contact the Pennsylvania Fish and Boat Commission, Bureau of Boating, P.O. Box 67000, Harrisburg, PA 17106-7000, or phone (717) 657-4540. 

Buying Better Boats

by Louis Bignami



During the years it has become clear that boaters spend more than they need for boats and aquatic gear. Buying the wrong boat type, “turkey” models in a class, or used junkers, wastes far too much money. I learned this the hard way, and more than I wanted to know about dry rot, when I bought a “bargain” wooden sailboat from a high school classmate and discovered the dubious joys of dry rot, mildewed sails and sprung planks. If smart sailors learn from their mistakes, it’s quite certain that the smartest sailors learn from those of others. So here’s a start.

These days I review boats for many magazines. Hulls in the last test batch ranged from 16-foot open fishing skiffs to 30-foot power cruisers, and included both fishing boats and exotic designs such as a 23-foot offshore racing boat that hit 70 knots with four aboard through three-to four-foot chop. My own boats run from inflatables, foldables and canoes to skiffs.

To start, realize that premium boats cost more than similar length, lower quality hulls. However, the difference may shrink if you check the options not included on other craft. Premium boats use an extremely sturdy hull with the best possible combination of materials. Then the manufacturers set a price.

Some boat manufacturers aim at a price and then build the biggest hull with minimal quality. Craft in the latter class might suit flat water, or those who only boat a few times a year. But if you boat in big water, or operate a ski boat at 60 knots two or three times a week, quality costs less per hour because resale values stay high and repair costs remain low.

Boats must, of course, match the intended use. Open offshore fishing skiffs suit those who fish open or rough water and stand and cast all day. Those who want to laze in comfort enjoy the benefits of cuddy cabins. So hull choice is yours.

One thing must be certain, boaters always lust for more boat than they can afford. How much you can spend for the boat, trailer, motor and options package? Don’t compare apples and

photo-Dan Martin

oranges. Some manufacturers "fill every hole" in the dash. Others package hulls, trailers, motors and electronics. Others sell bare hulls and let boaters add what they like.

To start, don't overlook skiffs, inflatables, canoes or kayaks for light use in sheltered waters. Such small boats may be all you need. However, if you want to fish big, open water or spend more time afloat in more comfort, look for more boat.

Many experts think new boaters do best with new packages from local marinas or boat sales operations. Their rationale is that locals know the conditions, help is nearby, and because of your package, you have more leverage if it comes to warranty problems than if you buy everything separately.

Others claim lower prices through catalog, mail order or distant dealers who specialize in bulk sales justify potential problems when something breaks. They claim "money is the bottom line and it's the manufacturer's warranty that counts."

However, the best bargains are often off-season sales by users who have discovered that their boating budget exceeded their interest. Such seems particularly true in hard times. Here, the hire of a surveyor or other expert deserves attention. The next step is a realistic look at your budget.

First, what can you get on your old boat in sale or trade? Note: You need a sharp pencil here. Sometimes inflated trade-in values are offset by prices on the new boat or options. Really look at your old boat and trailer. Could new finish, motor, upholstery or electronics satisfy your urge for change? Note: A little cosmetic work on boat and trailer can raise its resale price.

Second, examine your financing package. Do you pay cash? That eliminates financing costs, but you lose your interest on money taken from accounts and the leverage with withheld payments if problems come up. Financing is available from banks, credit unions, thrifts, dealers and others. Wise shoppers might finance first. Then make a deal on the boat. Separate out any trade-ins. Then ask about terms for cash. Some sellers can handle their own financing. This is worth checking.

You need to "sharp pencil" your own deal. It's your money at stake! Don't overlook tax advantages, either. Some larger live-aboard vessels may qualify for tax savings under second-home statutes.

Once you get the money organized, try to attend boat shows that let you see dozens of different types of craft in one spot. This

gives you the perspective you need to price used craft. Collect booklets and talk to dealers and other boaters.

Talk to boaters who want to buy or trade up to a more expensive model in the same line. They must be satisfied.

If possible, shop all summer. Then buy at season-end sales when owners and dealers seem anxious for sales to solve off-season cash flow problems.

To ensure boat quality, I start with the boat up on the trailer. A slick trailer with sturdy bunkers that fit the boat exactly and may include a travel cover is a plus. Owners who take the time to detail their craft seem careful in other areas, too.

Hidden surfaces seem a good test of overall quality. Run your hand carefully into areas on the hull you can't spot. Rough surfaces or screws where well-found boats use bolt-through fittings and inexpensive chrome in place of stainless grab rails and such suggest similar problems in areas you can't see.

Aluminum hulls seem easy to check. Look for careful, even rivets and secure seats or casting platforms. Avoid hulls with projecting bolt heads, sharp metal edges or odd creaks and groans. Pay close attention to the transom fit and check rivets and keel.

Fiberglass hulls are normally molded. Kiln-dry solid wood stringers and/or fiberglass box beams with or without molded-in flotation foam work well. Most makers mold in internal wood stringers and add bulkheads to stiffen the hull before the mold is popped. Plywood covered with fiberglass seems to dry rot eventually. Such is especially the case with "homemade" craft. Realize that hand-laid glass uses sheets of different types of roving and mat. This is preferred to "chopper gun" hulls that merely spray on glass. Some foam in the entire hull for extra flotation and to set internal tanks and such solidly in place. This can, unfortunately, also hide defects.

You can get a rough idea of hull quality if you glance down the side of the hull. A buddy who builds some of the best offshore racing boats in the world says, "if you see distorted reflections, you don't get a good gel coat. That's the reason only quality boats come in dark colors. White and light colors can hide defects."

Check hull graphics, too. Those stuck on abrade or tear off. Graphics under gel coats do not.

Cockpit seats and upholstery tell a lot about the care a used boat enjoyed or suffered. Even welting, nice decorative

touches and durable fabric and plastics look better and last longer than the least expensive vinyl. Cockpit console finish and carpet type tell you more. Look at a half-dozen boats from different owners. You can easily see quality construction and, in some cases, quality care.

If possible, peak underneath the console—I use a dentist's mirror on a stick to check in odd spots. A tidy wiring harness testifies to that extra care that signals quality. Old candy wrappers tell another story. Don't get snowed by electric radio antennas, wipers, horns and the like. Look for basics.

Basic instruments are worth the money. Besides the usual RPM and MPH gauges, oil PSI, engine temperature, fuel, AMP and the like are useful. So is an engine hour gauge to ensure proper tune ups on inboards and I/Os. Tilt and trim gauges, depthfinders, VHF radios and other electronics repay their investment in ease and safety.

However, electronic add-ons, such as depth gauges, Loran or radar, do not help much on resale. New buyers often have their own preferences. So, when I sell my boat, I remove these items or substitute less expensive alternatives so my well-tested and carefully maintained electronic gear goes onto the new boat.

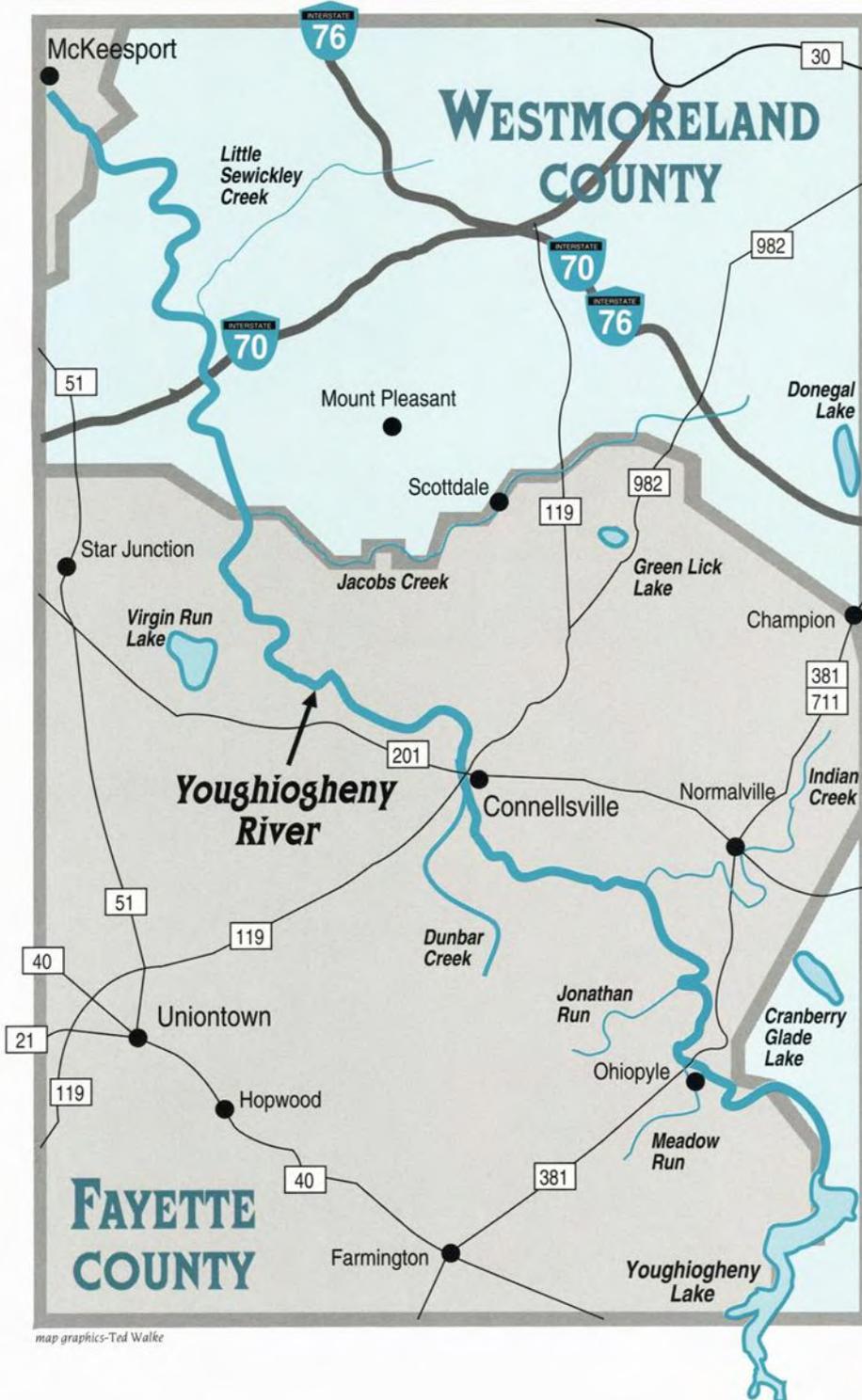
If you check used boats at a dealership, survey the sales area quickly. Listen to the dealer. Pros know everything about the boats and gear they sell, but don't show off. Then go around back to the parts and service department that makes such a big difference in owner satisfaction. Look for full parts bins, and listen for an hour on a weekend as customers come in. If too many must wait too long for parts and service, look elsewhere.

Buying new boats makes demands on boaters. Buying used boats can sink the expertise of most. If possible, look boats over, check the typical resale price, ask the owner why they sell and then, if you are still interested, get an option or contract of sale subject to inspection by an expert who might charge \$50 to \$100 to inspect the boat or hull. Then have another expert check the engine or engines. Work a deal so that if the pros pass boat and motor, you pay. If the craft fails, the owner picks up the tab.

Buy a better boat for a fair price, keep it up and it should last for years before you sell or trade it in for top dollar. That, not flash and a bigger hole in the water, ensures real value. 

After Work **YOUGH** on the

by Mike Sajna



Once when he was on vacation in his native Scotland, Andrew Carnegie was drawn to comment on the deplorable environmental and living conditions he found along the way in Great Britain's industrial heartland.

"We see the Black Country now," he wrote in *Our Coaching Trip*, "rows of little dingy houses beyond, with tall smokey chimneys vomiting smoke, mills and blast furnaces, the very bottomless pit itself. . .To think of the green lanes, the larks, the Arcadia we have just left. How can people be got to live such terrible lives as they seem condemned to here? Why do they not all run away to the green fields just beyond? . . .But do not let us forget that it is just Pittsburgh over again; nay, not even quite so bad, for that city bears the palm for dirt against the world."

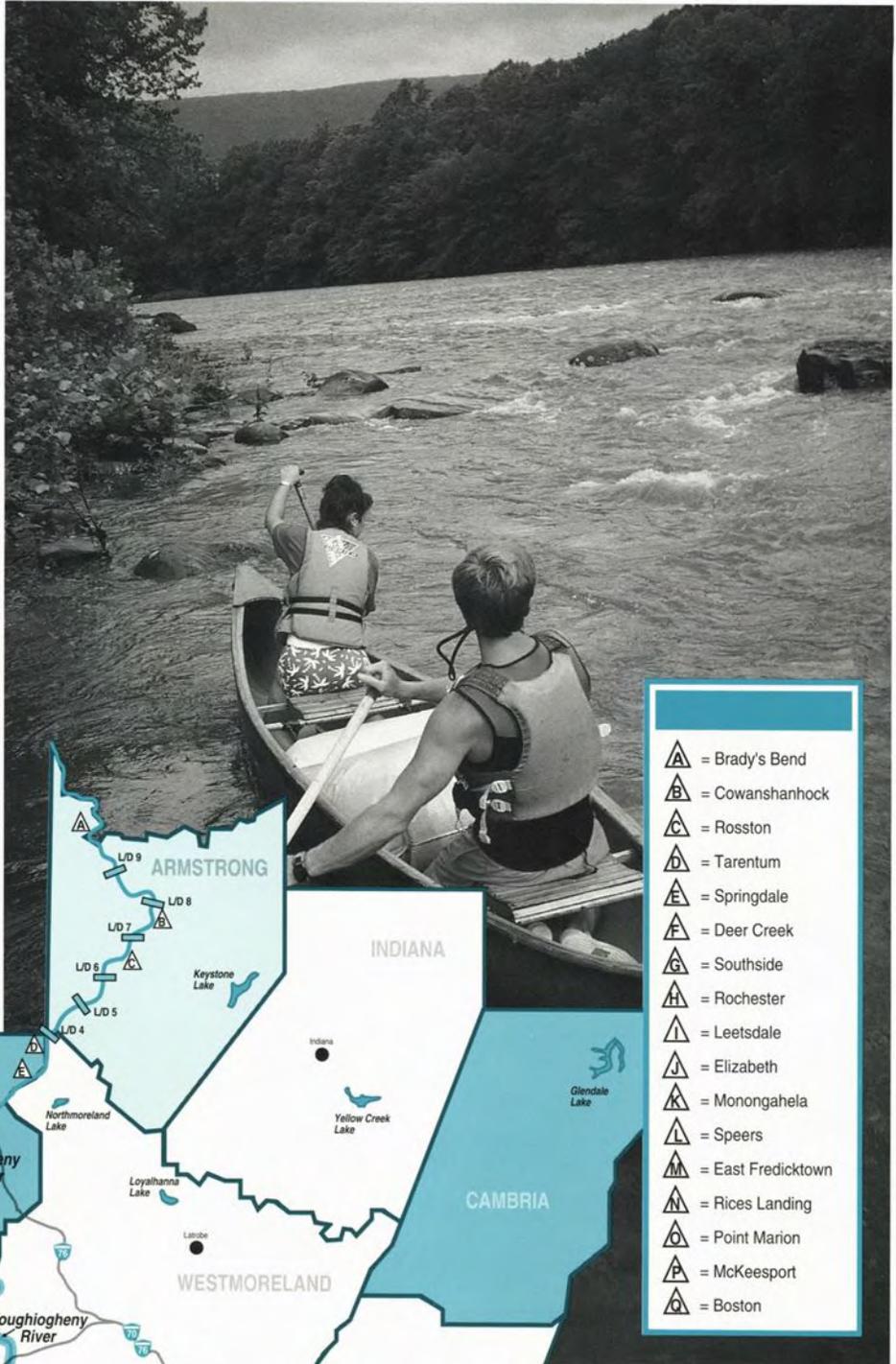
In those laissez-faire days of the Industrial Revolution when any behavior, from the extermination of the buffalo to the clearcutting of every forest in the East, was acceptable if it turned a profit, it never seemed to dawn on the steel magnate that he was largely responsible for the condition of Pittsburgh. So good a job did Carnegie

Pittsburgh is the second-largest urban center in Pennsylvania, and after-work paddling choices are limited. For people living south and east of the city, the lower Yough is the best opportunity.

and his fellow robber barons do, however, that for a century after he made his observations the people of western Pennsylvania were still paying the price for his wealth and narrow vision with rivers dominated by ugly, polluting mills and streams turned orange by acid mine drainage.

Over the last couple of decades, because of a combination of stricter environmental laws and the closing of ancient steel mills, Pittsburgh has sprung back to the point where *The 1993 Information Please Environmental Almanac* lists it as the 14th greenest city in the nation, ahead of such trendy towns as Miami, Atlanta, Denver, Phoenix, Dallas and Seattle. And in Pennsylvania, Pittsburgh was the greenest of them all, well ahead of smaller Harrisburg, Scranton and Allentown, ranked 24th, 30th and 41st respectively, and larger Philadelphia, ranked 27th.

But even with plenty of clean air and water, good transportation practices, low toxic chemical emissions, conservative energy use and price, the criteria on which the *Almanac* based its rankings, Pittsburgh second largest urban center in Pennsylvania.



That means opportunities for after-work paddlers to relax for a couple of hours on a quiet stretch of water surrounded by mountains and trees are limited. Of course, there are exceptions to that rule, and the best, certainly for people living south and east of the city, is the "bottom Yough."



These short excursions can provide a renewed sense of peace after a tough day on the job.



Beginning at Connellsville in Fayette County, the bottom of the Youghiogheny River flows north about 40 miles through Westmoreland and Allegheny counties to empty into the Monongahela River at McKeesport. Throughout the stretch, it is a gentle river without anything even vaguely approaching the rapids that annually draw thousands of whitewater rafters to Ohiopyle State Park farther upstream.

The main difficulties are swift runs and floating debris during high-water periods, and shallow riffles that occasionally require paddlers to get out and drag their canoes in late summer. Otherwise, it is all easy sailing, available year-round because of the U.S. Army Corps of Engineers flood control dam at Confluence near the Maryland line, and ideal for novices and families.

Numerous access points reachable off main highways or good roads easily located and followed on PennDOT road maps also mean it is possible to tailor-make a trip to whatever time is available, from an evening to an entire day or even weekend.

As may be expected, the upper end of the bottom Yough, from Connellsville downstream to Whitsett, is the most remote and scenic. As the river approaches McKeesport, the greenery gives way to towns and touches of commerce. But even as the river draws closer to civilization, it still holds significant sections of water along which other canoeists are rarely encountered and the only sights are green banks, maybe a road or railbed, and the occasional town or scattering of homes. The Connellsville stretch is the farthest section of the bottom Yough from Pittsburgh, so it might best be saved for a day-long trip for most city dwellers or suburbanites.

Put-in for the upper stretch is at the park near the junction of U.S. Route 119 and North Seventh Street in Connellsville near the replica of Colonel William Crawford's cabin. After leaving Connellsville, the Youghiogheny is quickly surrounded by towering wooded banks the equal of some of the river's

most beautiful upstream sections. Watch for birds and wildlife along the banks and schools of lightning-fast white bass in the water. About midway to Dawson, 5.7 miles away and reachable off Route 819, stands the ruins of the Schenley Distillery, a faint echo of the region's industrial past. At Dawson, take-out is about 200 yards upstream of the Dawson bridge at the firemen's carnival site.

The Dawson to Whitsett stretch of river runs 9.7 miles, according to the Pittsburgh Council American Youth Hostels' *Canoeing Guide to Western Pennsylvania and Northern West Virginia*, and, like the Connellsville to Dawson stretch, it is mostly wooded and pleasant. Good fishing for smallmouth bass, trout and a variety of other species can be found around the collection of boulders and deep holes at Layton a little over two miles above Whitsett. The area can be reached by following Township Road 495 off Route 51 south of Interstate 70 between Wickhaven and Perryopolis.

A dirt road that starts between the main road and railroad tracks at Layton, across the river from Perryopolis, runs down to the river. It can be used as a take-out point, trimming a trip by about two miles. A safer parking place, though, is the canoe livery, which charges a small parking fee.

At Smithton, about four miles downstream of Whitsett and reachable off the Smithton, Route 981, Exit of Interstate 70, the river becomes accessible to more and more people. Still, the towns of West Newton, 6.5 miles below Smithton; Sutersville, three miles beyond West Newton; and Boston, 11.5 miles downstream of Sutersville are the main disruptions in the scenery. Most homes, industrial sights and roads along the stretch are screened by trees and brush.

Access to the Youghiogheny at Smithton may be had at numerous points along the road running upstream to the village of Jacobs Creek. West Newton can be found by taking the West Newton, Route 31, Exit of Interstate 70. Access to the river is also available at the West Newton Sportsmen's Club public launching area on the downstream end of town.

The roughly 14 miles of river remaining between Sutersville and the Yough's end at McKeesport is the most accessible for an after-work float. The four-mile stretch from Boston to McKeesport is heavily populated and loaded with ugly industrial sites, so paddlers would do well to skip it and take out at the Fish and Boat Commission's Boston Park Access at Boston, cutting the trip to 11.5 miles. That length can be trimmed in half to meet the time available by taking out at the village of Buena Vista.

A shuttle for the trip can be set up by following Route 48 toward McKeesport and the borough of Boston. On the south side of Route 48, immediately after the Boston Bridge over the Yough, turn right, and then right again to reach the Fish and Boat Commission's Boston Park Access on the downstream side of the bridge.

To reach Buena Vista and Sutersville, return to the Boston Bridge and turn left onto Renzie Road, which runs past the Super Dollar Market. Renzie Road leaves the river, but leads to Buena Vista, where, under various names, it parallels the Yough upstream to Sutersville. Paddlers can put in at Buena Vista for a roughly six-mile trip, or if time permits, you can continue up to Sutersville to cover the entire 11.5 miles to Boston and a renewed sense of peace after a tough day on the job.



Notice to Subscribers

Act 1982-88 provides that certain records of the Pennsylvania Fish and Boat Commission are not public records for purposes of the Right-to-Know Law. This means that the Commission can place appropriate conditions on the release of such records. The Commission has decided to make the subscriber list for *Boat Pennsylvania* available to statewide nonprofit, nonpartisan fishing, boating and sportsmen's organizations for non-profit, noncommercial organizational purposes under limited circumstances.

If you do not want your name and address included on the subscriber mailing list to be made available to the described organizations, you must notify the Commission in writing before January 1, 1993. Send a postcard or letter stating, "Please exclude my name and address from *Boat Pennsylvania's* subscriber mailing list." Send these notifications to Eleanor Mutch, Boat PA Circulation, P.O. Box 67000, Harrisburg, PA 17106-7000.

Boat Registration Facts and Figures

The number of registered boats in Pennsylvania continues to grow steadily. During 1992, the total number of registered boats reached 311,893 (not including dealer registrations). This growth was a modest 3.7 percent increase from 1991. However, in the last 10 years, the number of registered boats in Pennsylvania has increased 53 percent.

Allegheny County continues to be the state's leader with the largest concentration of registered boats. At the end of the 1992 boating season, 29,560 boats were registered in this county.

With an increase of 694 (five percent) registered boats during the 1992 season, Bucks County had the largest single increase of any of Pennsylvania's 67 counties. Bucks County ranks second among counties in the state for the total number of registered boats (14,601). Luzerne, York, Montgomery and Erie counties follow respectively. The overall average increase per county for the 1992 season is 148 boats.

The southwest regional counties (Allegheny, Beaver, Washington and Westmoreland) include 17 percent of the total number of registered boats in Pennsylvania.

Allegheny County alone accounts for 10 percent of all of Pennsylvania's registered boats.

The newest boating trend on the water today is the personal watercraft. During the 1992 season, the number of registered personal watercraft increased 25 percent over 1991. The number of registered personal watercraft now totals 7,658. At the end of the 1992 season, Kawasaki led all personal watercraft manufacturers with a total of 4,173 registered units. Yamaha was second with 2,115 and Bombardier (SeaDoo) was third with 1,135. Over the past four years, the total number of registered personal watercraft has increased from 3,225 to 7,658 (137.5 percent).

During the 1992 season, the Boat Registration Division issued more than 21,000 "new" boat registration numbers and more than 7,500 duplicate registration certificates.

The division registered more than 25,000 unpowered boats in 1992. The unpowered boat category increased by 5,000 over 1991. The unpowered boat category is forecast to show modest increases over the next few registration seasons, because more and more boaters are using Commission-owned lakes and access areas.—*Andrew Mutch, Chief, Boat Registration Division, Bureau of Boating.*

Fatal Boating Accidents Increase

For the first time in five years, the number of fatalities in recreational boating accidents has increased, according to the U.S. Coast Guard. Fatalities reached 924 in 1991, up from 865 in 1990. The higher number of deaths translates to a slightly higher fatality rate for boating—the measure the Coast Guard uses to put fatality statistics in perspective with the growing boating population.

Last year, the boat population grew by half a million to an estimated total of 20 million. This increase set the number of fatalities for 1991 at 4.6 per 100,000 boats. Although this figure is up from 1990, when fatalities numbered 4.4 per 100,000, it is an improvement from 1989—and shows a significant progress since 1971 when the death toll was 20.2 deaths per 100,000 boats. Overall, on-water safety has improved over

the past two decades, particularly in the context of a boating population that has nearly tripled in size.

The Coast Guard attributes last year's increase in deaths to the warmer than usual winter, which extended the boating season in many parts of the country. Milder weather means more boating activity in late fall or early spring when hypothermia is a much greater risk to boaters who fall overboard or capsize. Capsizes and falls overboard accounted for more than 60 percent of all boating fatalities in 1991.

According to Admiral William Ecker, head of the Coast Guard's boating safety program, "Many deaths could be prevented in smaller, open boats if people would get into the habit of wearing personal flotation devices. Life jackets are comparable to seat belts in automobiles—they won't help in

an accident unless you are wearing them."

According to Ecker, boating while intoxicated (BWI) continues to be a serious problem. "We believe excessive alcohol consumption plays a part in at least half of all fatal boating accidents," he said, noting a study done for the Coast Guard indicating that intoxicated boaters (with a blood alcohol level of .10 percent or above) are nearly 11 times more likely to die in a boating accident than those who are sober.

The National Marine Manufacturers Association (NMMA) and its members are striving to show alcohol's adverse role in boating safety. Working with Miller Brewing Company, the NMMA encourages boaters to use a "designated driver" approach. A training video to enhance BWI enforcement efforts of marine patrol units nationwide is also under development.

Currents

Viewpoint comments

I read "Viewpoint" in the Summer 1992 *Boat Pennsylvania*, and I agree that the regulations in House Bill 1107 are a necessary improvement to safe boating, but I feel it stopped short of the most necessary improvement—licensing. Until boat operators are licensed, and completion of a safe boating course is required, the waterways will not be safe. I boat on Shenango Reservoir, and every weekend I see unsafe acts by people in boats or on jet skis that could lead to serious accidents.

Safety-minded people take safety courses on their own. The reckless and uncaring won't take a safety course unless they are forced to do so. I encourage the Fish and Boat Commission to petition the state legislature to pass a bill requiring all operators of motorized watercraft to take an approved safety course and then to be licensed.

Fear of losing one's license would do a lot to make boating more fun and safer for all. Our officers do a good job, and a license law would give them the additional help and support they need. The only arguments against licensing are coming from people who feel that they could not pass the test or that they operate their boats in such a manner that they would lose their license. Are these the people we want to protect?

Other states are starting to require licensing, let's have Pennsylvania be a leader in the area of safe boating and not a leader in accidents and deaths on our waterways.

—Chuck Paul, Pittsburgh, PA.

The subject of mandatory education or licensing has been discussed for many years. Several states have had a youth boater education requirement for many years, others have had a rudimentary licensing program. However, these programs are mostly for generating revenue. It wasn't until Maryland passed its mandatory education legislation

that this approach to safety began to take on life. Since then several other states, most of which are in the Northeast, have passed similar legislation.

Last June, Representative Kasunic introduced legislation (H.B. 280) that would establish a system of mandatory education in Pennsylvania. This legislation is similar to the Maryland law and would require boat operators born after July 1, 1976, to complete a boating safety education course. Technically, this is not a boat operation license because it requires the completion of a course and the certificate is not revokable. This bill is currently being discussed by the House Game and Fisheries Committee.

The Commission has endorsed the idea of mandatory education as a means to help make the waterways safer and more enjoyable as the number of boaters continues to grow. Mandatory education is becoming popular across the country as boaters come to realize the need for formal education in what has become an increasingly complicated leisure activity. Boat operator licensing is not popular because sportsmen feel that licensing is an unnecessary intrusion by government on their chosen recreational pursuit.

Right or wrong, both sides of the issue have strong feelings about licensing and mandatory education. Much work still needs to be accomplished before a decision can be made concerning whether mandatory education or boat operator licensing is right for Pennsylvania. We will continue to work with legislators as they consider mandatory education. Your comments are an important part of this process.

—John F. Simmons, Director, Bureau of Boating.

PWRA Begins Membership Campaign

The Personal Watercraft Riders Association (PWRA) has begun a membership campaign to promote the nationwide development of local chapters. The association's focus is on developing individual chapters to be instrumental in helping grassroots lobbying efforts for the personal watercraft industry.

The association's new executive director, Jane Begalla, will spearhead the development of the local chapters. As PWRA assistant director for the past two years, she has been involved in personal watercraft regulations and legislation, and has helped resolve many use and access issues. Glyn Johnston, the former executive director, will work with communications and on-water event management.

PWRA's main goal is to promote personal watercraft as a recognized and respected part of the boating community. The association will expand the industry's support of personal watercraft users and its efforts to educate the public on safe and responsible use of personal watercraft. Members of PWRA are exposed to many areas of interest, including touring and group rides, environmental protection, rider responsibility and how to keep access areas open.

"I've responded to countless requests for help on a local level through the PWRA Hotline. This indicates that riders are ready to become involved in their own communities, and that's exactly what our industry needs for longevity. The PWRA offers the chance to gather for group rides, fun events, beach clean-ups, environmental seminars, and most importantly, the ability to form a group that can act together to promote our sport," Begalla said.

For more information, or if you're interested in starting or joining a PWRA chapter in your area, call the PWRA Hotline at 1-800-833-2650. The address is 925 North Pennsylvania Avenue, Winter Park, FL 32789.

How to Improve Your Water Skiing



by Ann Kreisler



Water skiing can be an invigorating experience and exciting sport, great fun as well as excellent exercise, but it can also be dangerous if you ignore the sport's safety procedures. The skier, boat operator and observer must work as a team. Each member needs to know individual skills.

Every water skier has had bad days. Jim, a friend of mine, had an extraordinarily bad day last September, which just happened to coincide with his first time water skiing.

Jim had a girlfriend last September, and she had a 15-foot run-about. One beautiful early autumn day, Jim and his girlfriend and another couple decided to water ski on the Susquehanna River near Harrisburg. The Susquehanna in this area is known for its shallow water in autumn, and on this particular day, it was about four feet deep.

Unaware of any potential hazards, Jim and his friends were totally unprepared for this trip. Violating all the safety regulations, none of the passengers had Coast Guard-approved PFDs on board, nor did the boat have a working fire extinguisher. Additionally, the boat operator was unaware of any underwater hazards or shallow areas in the area where they were skiing.

Setting himself up for potential disaster, Jim tackled the sport of water skiing for the first time. Without any initial professional instruction, Jim slipped into the waist-deep water, bravely held the towline, and yelled, "Hit it!"

Without luck, the boat pulled Jim face-first along the water. A little shaken, yet full of proud determination, Jim made another attempt to stand up, again without avail. After several attempts, Jim succeeded in standing up! Yes! He was skiing, and breaking all the rules of gravity.

As Jim skied along, out of control and in a proud daydream, he lost his balance and clumsily fell backward. Stubbornly he held onto the rope in a futile attempt to regain his balance. The driver,

unaware of his fall, skated the boat along, dragging Jim underwater. He surfaced long enough to gasp a lungful of air and immediately was pulled again beneath the surface. The driver chatted away, unconcerned and still unaware of Jim's fall. She dragged him over a section of hidden, underwater rocks with his skis above the surface. In a scream of pain, Jim finally let go.

Hurt and disillusioned, Jim quit skiing for the day and enjoyed the comfortable boat ride, content to watch his friends ski. He relaxed in the autumn sun, warm and peaceful. Suddenly the operator drove out of the deep channel where they had been skiing and across a shallow section of the river. The outboard's lower unit hit a rock, causing the motor to become engulfed in flames. The motor shot upward and into the boat. The flames, energized with oxygen, danced across the motor and the broken propeller, and inched toward the leaking fuel tank. Confusion and panic erupted on board. The fire extinguisher didn't work. The flames crept closer to the fuel tank. Jim panicked. He jumped overboard and began dousing the flaming engine with water. Slowly the fire was extinguished and calm was restored.

After attempting to restart the burnt and broken motor, both couples began to push the boat to the nearest ramp, about 100 yards north of their disabled position. They reached the landing exhausted and weary from their exciting and frightening day. And Jim? He hasn't been water skiing since.

Over 17 million Americans water ski every year, with 1.7 million new people attracted annually to the sport. Thankfully, the sport has a relatively low casualty rate. According to a 1980 Coast Guard report, only one out of 32,120 skiers suffered a substantial injury, and one out of 384,615 skiers was killed. What was the major cause of these injuries? According to a five-year Coast Guard study of water skiing accidents, most injuries were caused by a total disregard of safety procedures.

Let's review some basic ideas of safety and water skiing technique.

Safety first

Water skiing can be an exhilarating and exciting sport, great fun as well as excellent exercise, but it can also be dangerous if you ignore the sport's safety procedures. There are some simple safety measures designed to protect the skier from injury and harm in case of a fall.

The first safety procedure that must be observed is choosing an adequate place to ski. Granted, the size of the water skiing area varies with the configuration of the waterway. There are still some general guidelines which should be followed. Every boat using a waterway for skiing should operate in a 200-foot-wide and 2,000-foot to 3,000-foot-long channel. (This length increases if you're barefoot skiing.)

Second, a safe boat is vital for the safety and enjoyment of the sport. The boat should have a minimum of about 50 horsepower on a runabout (for an outboard-powered boat of 14 to 16 feet.) Inboard and stern-driven boats usually have more than the minimum horsepower requirement. Additionally, the boat should be equipped with a wide-angle rear-view mirror, a necessity for the skier's safety. However, a mirror is never a substitute for the legal requirement of a competent observer.

The following list is not necessarily essential requirements for your boat, but nevertheless, accessories that add to the skier's ease and enjoyment to the sport.

- **Towing pylon.** It prevents the line from becoming entangled in the propeller and outboard lower unit by securing the line above the motor.

- **Boarding ladder or low freeboard.** It provides the driver with the maximum view over both sides of the boat, while easing boat entry for the skier.

- **Speedometer.** It aids in establishing the skier's most comfortable speed.

Boat operator

The boat driver is especially important when pulling novice skiers. The driver must be a competent and capable driver and must be joined in the boat by a competent observer. He must be on the lookout, especially when pulling novice skiers, for other boats, hidden underwater objects, docks and other obstructions. When pulling beginning skiers, the operator should drive about 15 to 22 mph, depending on the skier's weight, and between 36 to 40 mph for more experienced or barefoot skiers.

When approaching a skier after a fall, always make sure that the skier is on the driver's side and in full view of the driver. Turn off the engine as the skier boards the boat. The fallen skier should signal the driver and other boats in the area by clasp both hands above the head or by raising a ski into the air.

Selecting skis

Choosing skis can be confusing, because there are quite a variety of skis currently available. However, all skis should be made sturdily and be free of sharp edges. This includes ski tips, fins, foot bindings, kneeboards and other attaching mechanisms. For children, skis should be between 40 and 50 inches in length. Adult skis range from between 60 and 70 inches long.

Signaling

The signals to prepare for takeoff are vocal. When the skier is comfortable in the water and in the "cannonball" position, he informs the driver that he is "in gear." Then the boat moves forward, taking up the slack in the line. When the line becomes taut, the skier yells, "Hit it!" and the driver opens the throttle for takeoff.

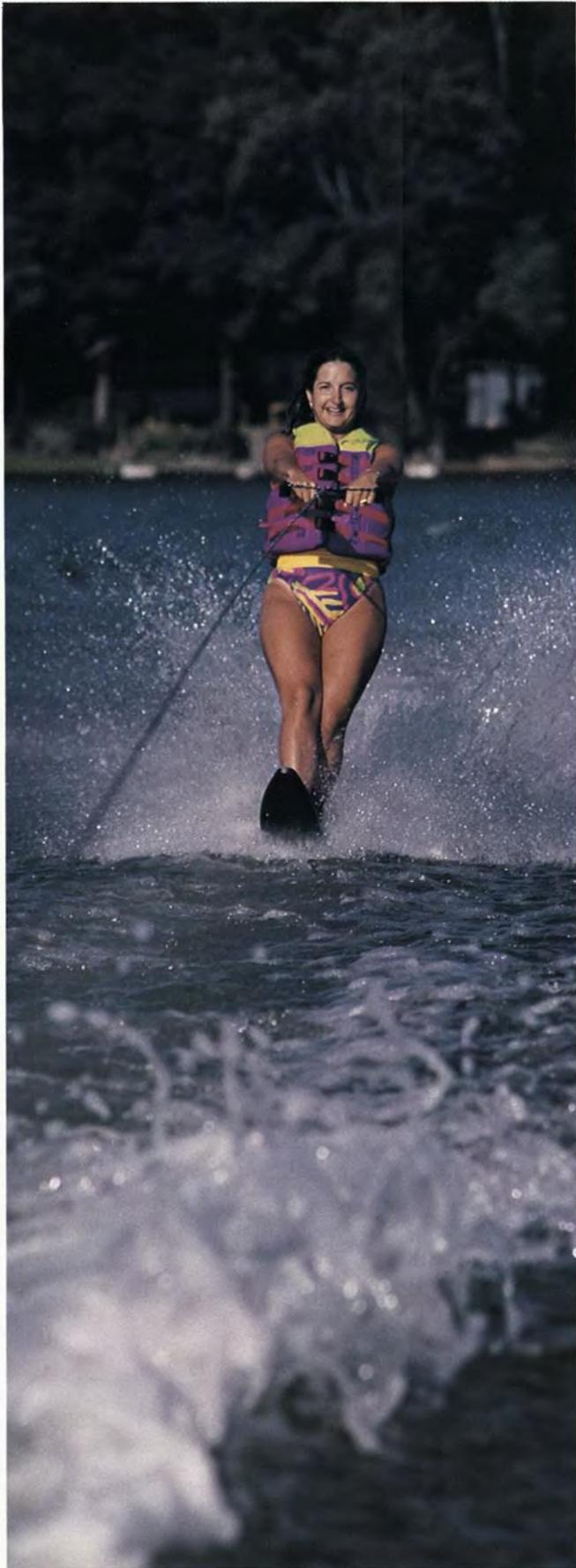
Once the skier is skiing, he can signal with one hand. A thumb-up hand position requests more speed, and a thumb-down hand position signals the driver to slow down. When the speed is comfortable for the skier, he can signal with the thumb-and-forefinger "OK" sign.

When the skier wants to turn, he makes a curving motion with his right or left arm, depending on the turn direction. The arm is extended in a horizontal position with the palm facing forward toward the boat. When the skier wishes to stop, he signals the driver with a "policeman-style" signal, with his arm extended in front of him and his hand in a vertical position. Or he can signal to cut the throttle by simply drawing his finger across his throat. Another option for the skier is to drop the tow handle.

Once the skier is down in the water, the signal to let the driver know his position, as well as if he is all right, is to clasp both hands over the head, or raise a ski into the air.

Basics

When learning the basics of water skiing, the novice skier should initially seek professional instruction. This also applies to more advanced skiers when attempting more difficult maneuvers like barefoot skiing, slalom, jumps and tricks. Here are some tips, offered by Pennsylvanians Joe DeJesus, former competitor and American Water Ski Association (AWSA) official; Bill Baker, former competitor and AWSA official; and Bob Hughes, member of the U.S. Junior Team.



Let a fresh review of the basics of safety and technique help you increase your water-skiing fun.

Joe DeJesus, of Reading, explains that when a beginning skier attempts to stand up over the water, the position is similar to sitting in a chair. Bob Hughes, of Media, says that the arms should be bent slightly and you should focus your eyes on the horizon. Bill Baker, of Norristown, suggests that beginning skiers start in the water in a "cannonball" position. Hold the tow handle in a baseball bat grip, with one hand up and the other hand down.

Baker says that it is easier for beginning skiers to keep their arms straight while skiing. But after the skier learns balance, the skier should bend the arms and slightly bend the knees. The body position should be still while skiing. The elbows and knees act as shock absorbers, and they help the skier maintain balance.

Crossing the wake

As the novice skier improves, he may want to attempt to cross the wake. The basic technique is to lean on one ski, relax the knees across the wake, and then stop putting pressure on the one ski after you have crossed the wake.

Jumping the wake

To be able to jump the wake, you first must be able to cut back and forth in control behind the boat. Ski outside of the wake about 10 feet. Turn and point your skis directly toward the wake. Cut directly toward the wake, skiing to the top. Remember to keep your skis close together when you jump. Use your knees as shock absorbers on the landing and pull in on the line to compensate for the increased pull as the skis hit the water.

Dropping one ski

Before learning to ski on one ski, you must first discover which ski you feel more comfortable on. Then pick up one ski, and lift up the toes higher than the heel, loosen the binding on the heel piece and step out of the binding. Your weight should be on the other ski. Next, drop the ski and use your toes for balance by dragging them in the water. Gradually move your foot into the back piece with your weight on the front foot.

Start on one ski

This starting position is similar to that of the start on two skis with the exception that your free leg trails behind you. You use it as an outrigger to help retain your balance. When you first learn to drop one ski, use a ski with a wide tail, if one is available. A slalom ski with a severely tapered tail is much more difficult to get up on.

As the boat accelerates, keep your head and chest against the knee of your skiing leg. Keep the handle low and pulled toward you as you exit the water, and hold the handle on the side of your free leg. Stand up slowly, and gradually place your foot in the rear binder.

If you're a beginner, heed these ideas. If you're more experienced, review these ideas before next season. Either way, remember the basics of safety and technique—then go have a terrific time!





WARM AND DRY

by Cliff Jacobson

April sunrise on a free-flowing Pennsylvania stream. Two 17-foot canoes beckon, resting at the water's edge, awaiting their first float of the season. A ray of penetrating warmth streams weakly through the chilling fog that hangs deep in the river valley. You squint at the small thermometer on the zipper pull of your jacket. "Thirty-nine degrees," you call proudly. "Only fools and them that knows what they're about will be here today. Got this river to ourselves: let's hit it, gang!"

In hushed tones, gear and bodies are eased into the canoes and the trip begins. It's an easy river with no real rapids. Obstacles are easily avoided with simple prys and sweeps. There is no need for sophisticated whitewater maneuvers. You and your friends have capably paddled much more difficult water.

Nonetheless, you don't feel comfortable in your canoe today. In mid-summer, you would have artfully pirouetted around the last rock, smile on your face and gunwale awash. But today—on this first trip of the season—you are hesitant to show off. Your balance is questionable, your strokes imprecise. You are not sure you can recover from a mistake in judgment. A hint of snow lingers along the shore, and skim ice clings to the tree-shadowed eddies. The water temperature is 36 degrees—too cold to fool around and capsize.

Suddenly, you realize there is merit in conservatism. It's been five months since you've paddled a canoe; your "wings" are stiff and unpracticed—no wonder you are flying so wobbly. Hopefully, a few hours of practice will reinforce old ways.

It's customary to begin an article on spring paddling with a treatment of essential paddling gear—you know, PFDs, polypropylene and such—things you need to combat an upsetting experience. We'll cover these things and more, but first you need to know that the most important rule of spring paddling is: Don't tip over!

Five months of shoveling snow and watching TV have

numbed your paddling skills and judgment. Best take things slowly at first and follow this plan:

1. Your first spring trip should be on a river that's well below the paddling ability of you and your friends.
2. Be conservative. Don't practice sophisticated whitewater maneuvers unless you're dressed to capsize (which means a wet or dry suit), and have a support team with ropes, carabiners and other essential safety equipment.
3. Shorten your time on the river. Darkness comes early this time of year and cruel, unpredictable weather is part of

the game. Winter storms may have blown down trees (sweepers!), which you may have to line or portage around. Some protected stretches of river may have skim ice that will slow your course. Floodwater debris may choke the outside bends and necessitate an overland carry. The spring ice melt may have carved new channels and obliterated familiar ones. You are paddling a re-borne river whose obstacles and flow patterns may differ from the year before.

Take a narrow, fast-flowing stream with an erodible gravel bottom, add an entanglement of old, overhang-

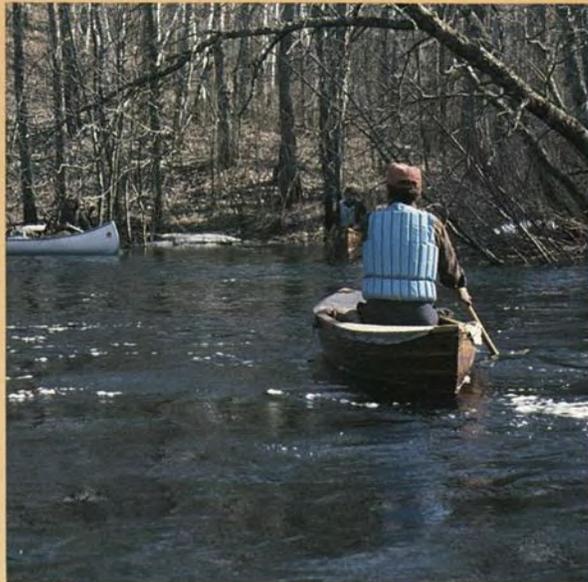
ing trees, winter sleet storms and flood-stage runoff, and you have all the makings for an "adventure" on your hometown river.

4. Strainers (downed trees that block the river) are dangerous—and common—obstacles in small waterways. In previous articles, I've extolled the virtues of the backferry—the premier maneuver for avoiding these barriers. If you paddle quick-flowing rivers at any time of year, you should know the technique. Failing that, put ashore and scout every bend and downed tree you can't see around.

Religiously follow rules 1, 2 and 3 and you won't have to rely on rescue techniques and all the warm clothes we're about to discuss.

Clothes

Your paddling armor begins with a suit of long underwear.



In his 1917 book, *Camping & Woodcraft*, outdoorsman Horace Kephart recommends wearing two layers of pure wool long underwear next to the skin. A heavy wool mackinaw shirt, topped by an oiled cotton jacket for wind and rain, keeps you warm in the coldest weather, says Kephart.

Seventy-five years after Kephart, the advice to wear long underwear is still sound. Pure wool still ranks highly but there are lighter and less scratchy alternatives. For canoeing, one set of longies is enough. However, you'll need a second pair to change in to if things get out of hand and you do tip over!

You can choose polypropylene, polyester, wool or cotton blends. Every paddler has favorites, and can provide good reasons why. Of them all, only cotton—which when wet, wicks moisture and body heat away from the skin—is unsuitable for spring paddling. I've alternately used wool and synthetics, alone and in combination—and though my preference runs to soft merino wool or quick-drying dacron, I feel safe with any of them.

My wife Susie says to remind you that "girls don't wear polypro" because the stuff absorbs body odors and holds them tenaciously. To that, I'll add that for a day trip or an overnighter, it's a problem you can live with. Polypro suits are very inexpensive: Every discount store has them.

Note: You can pay high prices for brand name long johns at ski shops and camping stores, or get similar, no-name copies at discount stores. Except for the cherished label, there is little, if any, difference in performance. Ditto for expensive pile pullovers and hats.

Right now, polyester is probably the most popular fabric for long johns. The material is soft and luxurious, very warm, and it retains minimal odors and dries quickly. However, like all synthetics, you can't machine wash it in warm water or use heat when drying. Heavy tumbling may cause some garments to pill.

Outerwear

If you're allergic to wool but are put off by the high price of pile, polypropylene and dacron, try a wardrobe of 100 percent acrylic fibers. Acrylics don't quite match the thermal efficiency of polyester, polypropylene or wool, but they come very close, even when soaked with green river water. You'll find acrylic hats, sweaters and gloves at every discount store and garage sale. They are ideal for growing children and budget-minded adults. Verlen Kruger and Clint Waddell relied on home-sewn acrylic clothing on their epic 7,000-mile, Montreal-to-Alaska trip in 1971.

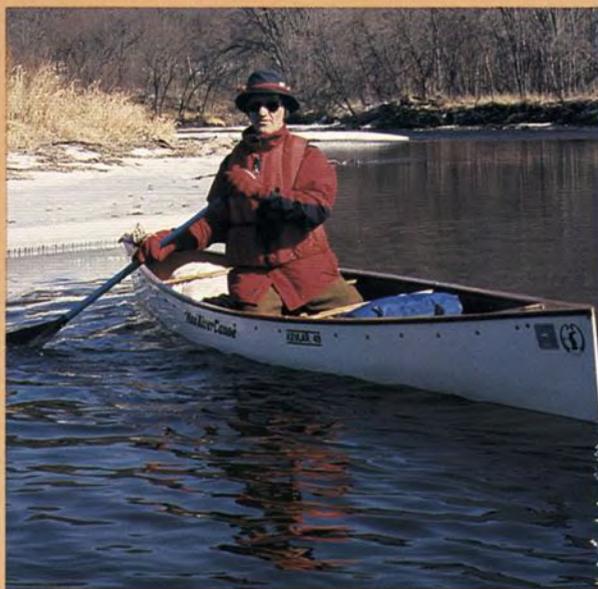
A medium-weight wool (my preference) shirt or polyes-

ter pile pullover, topped by a light nylon windshell and tubular or panel-style PFD, keeps your torso warm down to freezing. Trousers should be wool or quick-drying cotton polyester. If the weather turns sour, you'll want a wool or pile stocking cap and quick-drying polypropylene or acrylic gloves (those with rubber dots on the face provide a good grip on the paddle). Wool mittens and gloves are good only if they have non-slip leather palms. Some paddlers prefer neoprene fishing or water ski gloves.

A two-piece rainsuit with hood, and a wool or acrylic sweater plus neck warmer or scarf, completes your paddling attire. A set of spare clothes from nose to toes is the rule for every canoe trip in any weather.

I can't stress enough the importance of a fully waterproof hat. The traditional souwester reigns supreme. There are times when fold-down ear flaps are a blessing. When the weather deteriorates to icy sleet, I wear my stocking cap under my souwester.

A polyester or acrylic balaclava is also useful. The balaclava can be worn in proper fashion to protect your neck and ears from biting wind, or scrunched down scarf-like around your neck to stop drafts. The thin balaclava fits nicely beneath a souwester or baseball cap. Packed, it takes almost no space at all. On cold nights I wear it inside my sleeping bag.



Things to avoid

Stay away from long, bulky coats that hinder paddling and are too warm. Several lightweight garments layered over one another are warmer and more versatile. A porous nylon wind shell is better than an expensive, double-layered storm parka. Your wind shell should roll to fist size so you can shove it under a pack flap or into a thwart bag when you don't need it. You'll find suitable shell garments for under \$20 at every discount store.

Leave airy ponchos and ankle-length rain shirts (cagoules) at home. Ponchos dribble through in rain and may wrap around your legs in a capsized. Cagoules are great for powerboating but they're dangerous in a canoe for the same reason.

Avoid rain garments that have zippers under the armpits. Even the most thoughtfully designed jackets leak here in prolonged rain. My expensive mountain parka has double-baffled "pit zips" that fail the paddling test. "An hour under a shower" or a hike down a wilderness trail is not the same as canoeing all day in a thunderstorm.

Always size garments as large as you can tolerate. Except for underwear, which should fit relatively close, outerwear

is best sized as large as you can comfortably tolerate. Rain gear should be larger still and have a drawstring (no suspenders) at the waist.

Consider this scenario: You're canoeing along and a light rain begins. Your life vest comes off, your rain jacket goes on, followed by your PFD. Minutes later, the rain intensifies, so you put on your rain pants. But first, you must remove your upper garments to secure the suspenders. When the rain quits the procedure comically reverses.

Instead, try this: As the rain begins, slip your extra-large rain parka over your PFD. Later, put on your hemmed-waist rain pants. There are no over-garments to remove, so it's easy to reverse operations when the storm lets up.

Footwear

Spring paddling footwear is so controversial that it deserves a feature story. My article "Footwear for Paddlers," in the Winter 1991 *Boat Pennsylvania*, details the options.

Whitewater enthusiasts wear zippered neoprene booties or neoprene socks inside decrepit running shoes. Country folk slip on knee-high rubber boots or five-buckle galoshes, or they wear light, flexible rubber boots over their sneakers or street shoes. Some boots are stylish enough to wear to the office and tough enough for serious canoeing. You'll find them in fashion stores and industrial supply centers.

These next items add to your comfort on the river and at rest stops. As the ladies and gentlemen of American Express say, "Don't leave home without them!"

- **Insulated pad for your canoe seat.** Buy a commercial model or make your own by covering a piece of closed-cell foam with nylon or canvas. Equip your pad with straps or ties so that you can secure it to your canoe. Friends who poke fun at your hot seat will beg to use it at rest stops along the river. Might as well make some extras while the sewing machine is hot.

- **Insulated knee pads for your canoe.** Kneel momentarily in the bottom of your aluminum or fiberglass canoe when water temperatures are below 50 degrees and you'll instantly realize the importance of knee pads. You can buy

pre-cut knee pads at canoe shops, or simply make your own by gluing in squares of closed-cell foam cut from a sleeping mat. Waterproof contact cement is an excellent adhesive for securing foam to slippery canoe bottoms.

- **A 10-foot square nylon tarp, with sufficient cord to rig it,** provides protection from wind and rain during lunch and rest stops. Just string a tight line between two trees and tie your tarp to this line. Stake out the back and punch out the center with a canoe paddle and you're set for lunch.

- **A six-foot square of plastic sheeting** makes a great tablecloth and lounging area for river stops.

- **A vacuum bottle filled with hot soup or beverage** is welcome on every canoe trip.

- **Something waterproof in which to store all this stuff.** A packsack lined with two plastic bags works fine, as does a plastic ice chest with a tight-fitting lid. Double-bag in plastic everything you absolutely, positively must keep dry.

When kids are along

An air mattress or thick boat cushion keeps tender bottoms away from the wet, muddy bottom of the canoe. Your little passenger will love an umbrella on a rainy day. Don't forget that kids need the same protection as adults, which means long underwear, stocking cap, waterproof hat and warm mittens. Poly bags placed between socks and shoes are a marginally reliable short-term substitute for the recommended knee-high rubber boots. Be sure to provide a "plastic rain coat" (poly bag) for your child's favorite stuffed animal.

To prepare for early season paddling, choose a river that does not exceed the skill level of

the weakest member of your crew. Be aware that downed trees, ice or high winds may turn your float trip into a real "adventure." Your paddling wings are still stiff from the winter blahs, so don't hotdog around or engage in other juvenile behavior that puts you at risk. Bring wool or synthetic clothes that "layer" and pack well, and waterproof everything you must keep dry. And by all means, bring along a flashlight, map and compass if you crash along the river and have to "walk out."

Rules for Safe, Spring Paddling

- Pick a familiar route. A cold, spring river is no place to experiment.

- Shorten your trip to reflect reduced daylight and unforeseen dangers.

- Your paddling skills have atrophied over the winter, so plan accordingly.

- Spare clothes are essential, even on a placid stream whose every turn you know by heart.

- Use a checklist so you won't forget anything. Don't rely on friends to supply extra paddles, first-aid equipment or waterproof containers.

- Outfit children as you would adults. Wool or synthetic clothes and reliable raingear are as important to their comfort and safety as they are to yours.

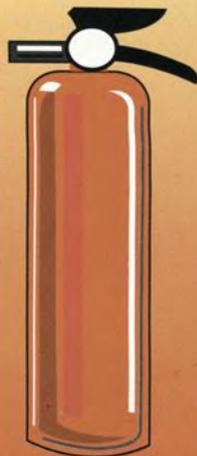
- Wear your life jacket at all times. Besides its obvious life-saving function, a good PFD insulates from wind and cold and protects you against hypothermia if you capsize.

- Provide each child with a foam-filled properly sized life vest that is warm and comfortable. Avoid traditional "horse collar vests," which chafe the neck and arms. If you can't afford a PFD that's matched to your child's size and weight, you can't afford to bring the kid. Children have drowned because their "adult-sized" life jackets held them underwater upside down.—CJ.



FIRE PREVENTION

by Cheryl Hornung



Fire aboard a boat can be a terrifying experience. According to the U.S. Coast Guard, each year boat fires and explosions injure hundreds of Americans and cause millions of dollars in property damage. Fuel and fuel vapor are two of the leading ingredients in boat fires and explosions.

Most boat fires and explosions can be prevented. The first line of defense is prevention. Regular inspection of your fuel system is critical. According to a BOAT/U.S. Marine Insurance publication, "the most likely point of failure in a boat's fuel system is the fuel tank, followed by the fuel fill system, fuel filters, fuel lines and the fuel pump." The longer gasoline remains undetected, the more violent an explosion it could cause.

Explosions are most likely to occur soon after refueling. This is why the most reliable gasoline fume detector is the human nose. It's important to sniff the bilges and make sure the boat is aired out. Precautions don't guarantee that a fire will never start, but they do greatly reduce the possibility. In all cases, the importance of having fire extinguishers readily accessible cannot be overemphasized. This is why the marine fire extinguisher should never be mounted next to the fuel source or engine.

A fire needs fuel, heat and oxygen to burn. Remove any one of these elements and the fire will go out. Fires are usually

extinguished by cooling (dropping the temperature below that which supports combustion), smothering (shutting off the air supply) or by blocking the chain reaction.

What to look for

Inspect your fuel tanks often. Check the bottom of the tank for rust or damage from rubbing and abrasion. If the tank is metal, make sure it is securely fastened so it doesn't move around. It should be insulated from wood supports or other surfaces that would hold moisture and cause corrosion. If carpet touches the tank, the carpet should be replaced with a non-porous material.

If the tank is plastic, it must be securely fastened in place and protected from rough surfaces. Rough fiberglass, screw heads and any sharp points can damage or puncture a plastic tank.

When refueling, fill portable fuel tanks on the dock. Vapors are displaced from the tank and spills are possible. Make sure the vents are closed and that the tank has a vapor-tight, leak-proof cap. The vent on a portable tank should be left open when the motor is running. When the tank is not in use, close the vent tightly.

IN CASE OF FIRE

Stop your boat and don your PFD. Turn off the engine, blower and main electrical switch, if possible. Use the extinguisher immediately. **Remember that the time of discharge is brief.** Use the P.A.S.S. technique four to six feet from the flames.

**P
A
S
S**

Pull pin

Aim at base of fire

Squeeze handle

Sweep side to side using short bursts, 1/2 to 1 second each; check the flames after each sweep, and watch for flareups.



When refueling, close all openings (hatches, windows, etc.). Shut off the motor and never smoke. Make sure the dock attendant puts gasoline in your fuel tank and not in a rod holder or water tank. The deck fill cap should be marked "gasoline." The fuel fills must drain overboard in case of an accidental overflow. Gasoline spilled in the boat spreads to the lowest place and produces vapors that can cause an explosion. Stop filling your tank when it is five to 10 percent less than full. This prevents gasoline from standing in the vent hoses. This also stops gasoline from expanding and flowing overboard, polluting the water.

The tank vent should terminate outside the hull away from port holes so that fumes aren't pulled back into the boat. The vent should be covered with a screen to prevent fumes in the line from igniting. This screen also prevents insects from building nests in the line, blocking the fuel flow.

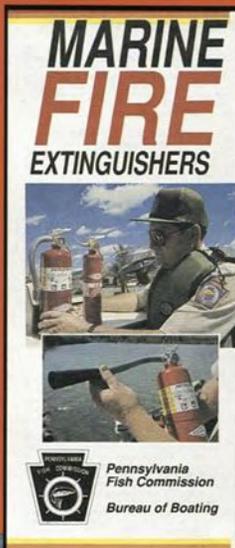
After refueling, wipe up any spilled fuel, open hatches and let the boat air out. "Sniff" your bilges. Operate the bilge blower for at least four minutes before starting your engine. If your boat has powered ventilation, make sure the blower operates. Be extra cautious. Remember that most fires occur soon after refueling.

Check fuel fittings and hoses. They wear out over time. Heat can accelerate deterioration. Danger signs to look for on lines are dry, cracked or swollen ends, soft, mushy lines or corroded fittings. If they look worn out or if you smell gasoline, replace them immediately.

Your boat's fuel filter should be securely mounted. The bowl should be metal or a heat-resistant glass to avoid shattering and heat. Make sure the connections are always dry. The fuel filter is a common place for leaks to develop. Make sure yours is in good condition.

These suggestions are for you to take corrective action when inspecting your gasoline-powered boat's fuel system. If you have any questions, talk to your local boat mechanic.

Marine Fire Extinguishers



Marine Fire Extinguishers is the title of a full-color pamphlet that describes the different kinds of fire extinguishers available, legal requirements for your boat, information on how to use them and what to do if a fire breaks out. For a free copy, contact: Boating Publications, PA Fish & Boat Commission, P.O. Box 67000, Harrisburg, PA 17106-7000. With requests please include a business-sized self-addressed, stamped envelope.

Electrical systems

Electrical systems can also cause boat fires. Inspect for bare wires or loose electrical connections. They could cause a short in your boat's electrical system, which could cause a fire.

If you cook or heat aboard, make sure the appliances are secured and operate properly. Check your owners manual for inspecting for leaks. Make sure that flammable items are stowed safely away from your cooking or heating appliances. Do not store charcoal lighting fluid or propane cylinders on board.





WHITewater CANOEING TRICKS.....	4
PA'S EASIEST WHITewater.....	7
EASY YOUGH PADDLING.....	18
WATERSKIING BASICS.....	23
WARM & DRY IN YOUR CANOE.....	26
FIRE ABOARD!.....	30