

BOAT

Pennsylvania 

The Keystone State's Official Boating Magazine

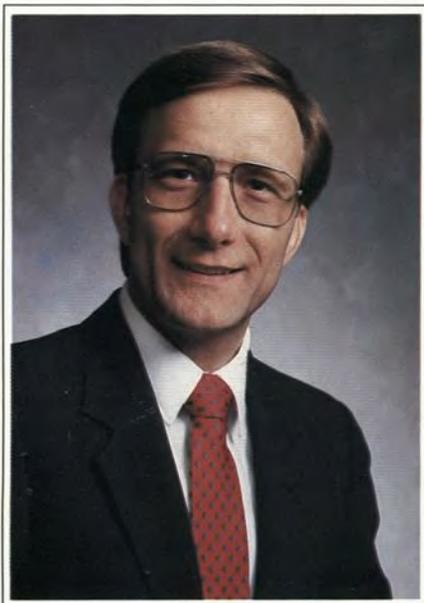
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Viewpoint



Who's at Fault?



John Simmons
Director
Bureau of Boating
Pennsylvania Fish Commission

One of the things that I enjoy after a day's work is a bicycle ride through the hills surrounding my home. For an hour I get to work out my frustrations, be by myself, and enjoy the outdoors.

The time on my bike also gives me time to reflect. On one recent trip I thought about how inconsiderate many motorists are. I couldn't count the many times motorists passed me on blind corners, passed too close, or tailgated me down a hill. I have had one bike wrecked when an individual passed on my left and immediately turned right, right in front of me. Many times I have had people make left turns or cross in front of my approach as if I were not there. I have been fortunate not to have experienced a serious accident.

I wondered how people could be so inconsiderate. I have as much right to the roads in my township as they do. But then I began to ponder my own driving habits. I found that I do many of the same things when the table is turned and I'm behind the wheel. I try to do better. Yet I do many of the same things driving my car that I think are really stupid when I'm the one on the bike.

I thought about some of the things I do as a bicyclist. I always wear a helmet and stop at traffic lights. I always signal my intentions. But stop signs become little more than an annoyance as I slide through. I go around potholes and don't always check behind me. I pass cross streets and, daydreaming, don't pay attention to the possibility of cars coming from my right. In short, I do things that are not safe and that probably aggravate motorists—and I should know better.

Boaters do many of the same things. I often hear big-boat operators complain about little fishing boats and angling boaters complain about the actions of the big powerboats. Everybody complains about personal watercraft. But ask yourselves, "Am I without fault?" When was the last time you checked your wake? Are big wakes created only by big boats? Do you always give a drifting fishing boat a wide berth? Do you assume as a sailboater that you can do whatever you want? Do you try to water ski in a crowded area? Do you fish where everybody else is trying to water ski? Do you look behind you before turning?

These are things that everybody knows but how often do we forget? It is so easy to think that all problems are caused by someone else. I would have a hard time counting the number of times people have told me they moved to a particular area to get away from the crowds and because they liked the atmosphere of a particular lake. "The lake isn't the way it used to be," they tell me later. "Why, when I came here..."

Few of these individuals realize or will accept that the lake has changed precisely because that individual and hundreds of others also saw that wonderful lake and thought the same thing. The lake didn't change after they came. It changed *because* they came.

Boating is a very popular recreational pursuit among Pennsylvania residents. Despite the recession, boating continues to grow. People are buying different types of boats than a few years ago—mainly big boats and small personal watercraft. This is changing the character of our boating waters. Education, regulation, restriction and law enforcement will help control this new population of boaters. But all boaters must become aware that they are part of the problem. It's not always the other guy.

"Physician, heal thyself," the saying goes. If boating is to continue to prosper, boaters must recognize that the problems we face come from within. We must adjust our attitudes toward others who share common waters. We must accept our share of the responsibility for a safe and enjoyable recreational boating experience.

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The covers

This issue's front cover shows Adrian Martin holding her own on a pull toy in the Susquehanna River near Goldsboro. On the back cover, Sue Hartman skiffs the wake. This action also took place in the Susquehanna River near Goldsboro. If water skiing or pull toys interest you, see page 4 for vital information. Paddlers won't want to miss page 8 and 26, and be sure to read pages 14 and 16 for fascinating bits of boating history. All boater have a stake in the problem of noise. See page 12 for details. Want to give a terrific gift this holiday season? Please turn to page 31.

How to be an Expert Observer

by Bruce Kistler



If this sounds like you, you've missed the whole point! The observer is not there merely to satisfy the dictates of the law. The observer is an indispensable member of the towboat crew, important to both the skier and the driver. Although a ski mirror is a valuable and recommended accessory, it cannot entirely replace the need for an observer. Expert skiers prefer to have an expert observer as well as an expert driver in the towboat.

Vital roles

The first thing that you must understand when you serve as an observer is that you are not just along for the ride. You have several important roles to perform, and the skier's safety and enjoyment depend partly on you. Pennsylvania regulations specify that a "competent observer" be in the towboat. Young or old, the key ingredient is to be attentive and to take the job seriously. Relax and enjoy yourself, but leave the daydreaming to the other passengers.

Your primary function as an observer is to be the communications link between the skier and the driver. Because it's impractical to shout back and forth with the skier, you must know the meaning of the water skier's hand signals. Communication takes place in both directions. The skier signals the driver for such things as the desired speed. The driver, on the other hand, wants to notify the skier of such things as which direction he intends to go when making a turn.

Sit down where you can comfortably see the skier. Normally you should sit on the opposite side of the boat from the driver, where your weight helps keep the boat on a level trim. Be sure to sit where you are close enough to the driver so that you can hear each other without having to shout. Never stand up in the boat to observe and never sit on the back of the seat or on the gunwale.

You can talk to the driver and others in the boat while watching the skier, but don't be a distraction. To do a good job, the driver needs to be able to concentrate.

Don't assume that the driver knows when the skier has fallen. Tell him immediately by calling out "Fall!" For the skier's protection, it is important that the towboat return to the skier right away, particularly in areas where other boats are operating.

Keep your eyes on the skier after the fall and watch for the skier to give the "skier OK" signal—two hands clasped over the head. If you see the signal, you know all's right; if you don't see it, you must assume that the skier is hurt and rush back to aid the skier as quickly as possible.

The observer does more than watch the skier. You should also watch for potential sources of danger. For instance, you should warn the driver of any boats approaching too closely from astern, which may endanger the skier if he should fall. If you cross any large rollers, signal the skier to expect rough water by making a wave motion with your hand. If the skier drops a ski, keep an eye on it, or at least note its general vicinity, so that you can more easily find it later.

On occasion, you should look forward as well as aft. There are times when the driver may have to turn around to look at the skier for more than a few seconds. If so, you can keep a forward lookout while the driver is occupied. Of course, this should be only for a very short time.

Equipment handler

You also play an important role before and after the ski ride as the equipment handler. You should help the skier get ready by bringing out the skier's equipment, adjusting the binders, attaching

the rope to the pylon, and helping the skier into his vest and wetsuit. When putting on skis, the skier should stay near the boat so that you can hand them over without having to throw or slide the skis very far.

As the towrope tender you must learn how to handle the rope without creating a mess. The rope should be neatly coiled. When the skier is ready, place the coils in the water and hand the handle to the skier. Don't just toss the rope overboard or you may create a tangle. If the rope isn't coiled, recoil it in arm-length loops, twisting each loop a turn so that each makes a neat oval and doesn't kink into a figure-eight.

With practice you'll get the feel of automatically making this twist with your wrist with each coil you pull in. Watch the towrope as the boat idles out and tell the driver immediately if any knots are about to form. Most tangles form when loops in the rope tighten around one another. Fixing a tangle is generally a simple matter of loosening the "rat's nest" and pulling the ends of the loops through. It's rarely necessary to pull either end of the rope through a tangle. Untie tough knots by pushing the rope ends together at the knot. Always untie a knot before it gets pulled tight, or you may never get it out.

Always let the skier give the signal to accelerate. The skier may look ready to go, but that isn't necessarily the case. Only the skier knows for sure if the towrope is clear and if the skis are in the proper position. The skier, of course, needs to be able to anticipate the pull of the boat.

After the fall

After a fall, the boat should return to the skier immediately. Help collect any skis that have drifted out of the skier's reach. If the skier is ready to come in the boat, help bring the skis into the boat, get out the boarding ladder if your boat has one, and help the skier on board.

If the skier is ever hurt and unable to get into the boat on his own, do not pull the skier aboard. Without knowing it, he may have sustained a back or neck injury that could be aggravated this way. In a situation like this, float the skier to shore where he can be moved on a stretcher or a backboard.

Always wait until the boat has settled into the water and has completely stopped or is moving at dead idle speed before getting out of your seat. Unless someone else is going to ski immediately, coil the towrope neatly and store it and the other equipment out of the way where no one can trip over them. Never under any circumstances try to pull the rope in when the boat is moving faster than idle. A loose ski handle can yank on the rope with an astonishing amount of power as it tugs and lashes behind the boat.

If you serve as an observer for competition skiers, you will have other important duties that take skill to execute and practice to perfect. In slalom and jumping you will be asked to time the boat through the course with a stopwatch to make sure the speed is within the tolerance allowed by the rules. For tricks, you might operate a quick release that frees the towrope from the pylon in the event of a fall during attempted reverse toeholds or other advanced tricks that involve an increased risk of injury from the towrope. Because the skier puts his career in the hands of the "release man," it is the ultimate in trust between skier and observer.

Remember that the observer is not an ornament. The observer is an invaluable member of the towboat crew that is vital to the safety and enjoyment of the skier. So when you ride "shotgun," take the job seriously.



AUTUMN

Regret... you've had it... You know the feeling. Last weekend you put the boat in winter storage. This weekend dawned clear and sunny. The air was crisp. The day had a golden quality that makes artists erect easels and photographers reach for cameras. While you were busy swapping screens for storm windows and raking leaves into neat piles so the dog could explode through them on a dead run, a small voice nagged your conscience: "Wouldn't it be great to..."

Well, try something a little different this fall. For most Pennsylvanians, Memorial and Labor days are the bookends of boating season. Autumn weekends usually mean football, tailgate picnics, class reunions and a "to do" list of pre-winter chores and projects. But the water still beckons.

Along the shore, a low cloud of campfire smoke drifts against a background of russet trees. It's "Indian Summer"—the term originated in western Pennsylvania 200 years ago. It's that special time after first frost, when summer greens become autumn reds and golds, when time itself takes on a special quality.

Gone are last summer's jam-packed weekends. Shorter days dictate a more measured and treasured pace. But there are compensations.

With summer crowds long departed, lakes, rivers and launch ramps are less crowded. In July your favorite cove may be packed with boats. In October you'll have it all to yourself. If you decide to make a weekend of it, most resorts and hotels feature reduced fees for accommodations.

And though fewer daylight hours require careful planning, there's no shortage of variety.

What better way to entertain friends than to offer a front-row-center view of October color from the cockpit of your boat? If the weather turns suddenly lousy, you can "park" the boat and explore the shoreline by car.

"Frostbiting" is a New England sailing tradition. In December 1931, a "yachty" little group at the Manhasset Bay Yacht Club complained about the racing inactivity during the winter months. They used a variety of small sailing dinghies.

A good Frostbite regatta ought to have rain, hail or snow. And a "regatta" can include personal watercraft, canoes and decked boats, in addition to sailboats.

The idea of Frostbite regattas, of course, is to prove that some people are crazier than others and those who are the craziest sail races in open boats in the middle of snowstorms—and enjoy it.



Like dyed-in-the-wool fishermen, sailors will put up with amazing discomforts for the sake of their sport. Why not organize an "end of season" race/regatta? Put the emphasis on fun rather than competition. With relaxed rules and ratings systems, a wider variety of boats can join in.

High-tech clothing

It's presumptuous to tell Pennsylvanians how to dress for cold weather. However, there are lots of new ways to do it. That World War II vintage Navy pea coat may carry great sentimental value, but there are better ways to stay comfortable. After

shopping the latest generation of foul weather gear you'll probably retire the old pea coat to a special place near the back of the closet.

Autumn boating puts additional demands on clothing. You want to stay warm and you want to stay dry. Replace traditional cotton, wool and nylon with high-tech synthetics, polyvinylchloride (PVC), Gore-Tex, hypalon, urethane and capilene.

If you've had past experience with traditional foul-weather gear, check out the newest examples. The latest generations of fabrics are lightweight, colorful, functional, flexible, long-wearing and stylish. This is clothing that "works." At the same

BOATING

by Dan Owen



transfer more perspiration to the next layers of clothing.

- **Second/insulating layer.** The insulating layer forms an air trap, retaining body heat. Wool or cotton are traditional materials, but they are augmented by synthetic piles or fleeces that maintain insulation but don't absorb water.

- **Third/repellent layer.** This is where style and color are most apparent and most important. In a "man overboard" situation, bright yellow, orange, red, light blue and white are the most easily seen colors. Strips of reflective material on shoulders and collar are an excellent feature.

This outermost layer must also repel wind, spray, rain, abrasion and tears. There is a wide variety of light-duty, medium-duty, and "batten down the hatches-weight" outer wear available. Important construction features to look for are:

- Double-thickness reinforcing on pants seat and knees.
- Ease of movement, particularly in arm/sleeve areas.
- Exposed seams and stitching—the fewer the better. This is where leakage first occurs. Better-quality gear has seams "welded" with strips of heat-bonded material.

- Fleece-lined or pile-lined hand-warming pockets.

- Jackets with built-in safety gear such as safety harnesses, air bladders and closed-cell foam flotation.

For the budget-minded, this clothing also serves for shoreside activities. The same jacket and pants that work so well aboard your boat can also keep you warm and dry when skiing, sledding or building your neighborhood's biggest snowman.

Evaluate each item carefully. Will it be easy to put on and take off? Are zippers and snaps easy to locate and use? Choose carefully and don't make the mistake of comparing price alone. Quality foul-weather gear lasts for years.

Autumn is a time for closing, a time for endings, a time to reflect, but for a very special experience, try autumn boating.

Before storing water skis and fishing gear, enjoy one last outing. It's fun. The child in each of us enjoys getting away with something. Heading out when most are hauling out adds a dash of adventure. Go ahead, steal those last few weekends before winter lay-up, anti-freeze and first snowfall. There's a long winter ahead.



W I N D

Chill Factor

WIND SPEED	CHILL FACTOR (TEMP. ON EXPOSED FLESH)												
	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25
40	-4	-15	-22	-29	-36	-45	-54	-62	-69	-76	-87	-94	
35	-4	-13	-20	-27	-35	-43	-52	-60	-67	-72	-83	-90	
30	-2	-11	-18	-26	-33	-41	-49	-56	-63	-70	-78	-87	
25	0	-7	-15	-22	-29	-37	-45	-52	-58	-67	-75	-83	
20	3	-4	-9	-17	-24	-32	-40	-46	-52	-60	-68	-76	
15	11	1	-6	-11	-18	-25	-33	-40	-45	-51	-60	-65	
10	16	9	2	-2	-9	-15	-22	-27	-31	-38	-45	-52	

AIR TEMPERATURE (°F)

A person loses more body heat when the wind is blowing than when conditions are calm.

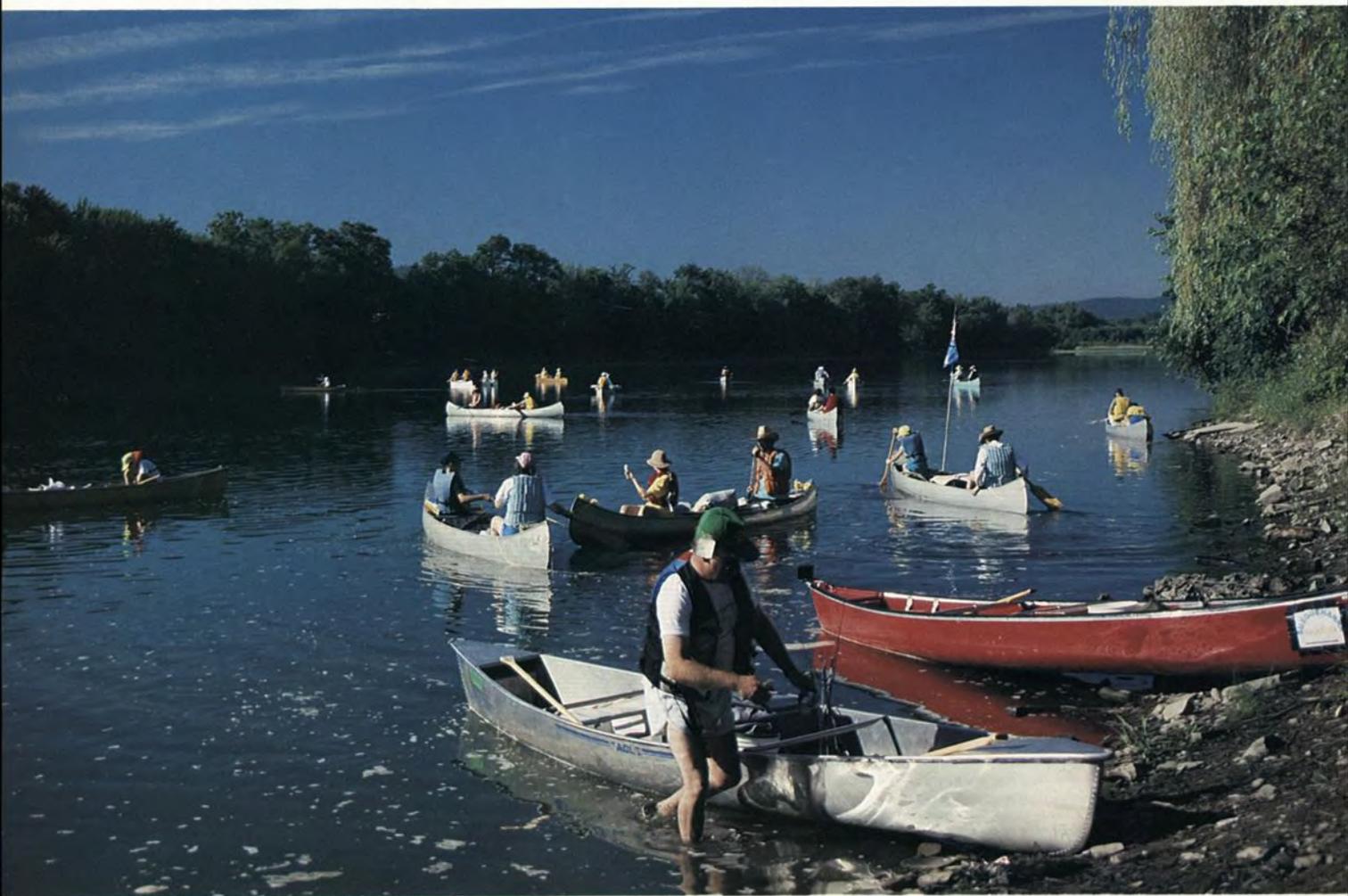
time, it repels the elements. It also "wicks" perspiration to the outer layers, where it can evaporate. Forget steaming inside a set of hand-me-down oil skins.

The secret is dressing in layers. Three layers of various synthetic and natural fibers, accomplishing separate tasks, work together as a system:

- **First/innermost layer.** This layer should "wick" heat-robbing moisture to the outer layers. In temperatures above 40 to 50 degrees, perspiration can be a problem. Polyester fibers such as polypropylene or capilene don't absorb moisture into themselves as do wool and cotton. This lets them

SUSQUEHANNA SOJOURN

by Mike Bleech
photos by the author



The Susquehanna River inspires a special kind of passion. It's not the sort of thing you shout about. It is something on which you reflect with a warm glow.

Last June I happily accepted an invitation from Don Dreese, of the Department of Environmental Resources (DER), to take part in the Susquehanna Sojourn, a canoe journey "to emphasize the beauty and natural resources of the river, and to call attention to it."

The Susquehanna Sojourn, created by a network of organizations and individuals, began at Sayre on Monday, June 24, near the New York border. It finished 100 miles downriver the following Saturday at Wilkes-Barre. I joined the group from Sayre to the halfway point at Laceyville.

The Susquehanna River is the second largest river system in the eastern United States, beginning as the outflow of Otsego Lake, New York, and finishing 444 miles downriver as the main feeder to the Chesapeake Bay, to which it contributes 19 million gallons of freshwater per minute. The drainage basin is 13 million acres.

The North Branch, the main branch, winds through the Endless Mountains of northeastern Pennsylvania, providing canoeists and other river travelers with a refreshing float during all but the winter months when ice locks the river.

The river valley is broad at Sayre. The river is flat, shallow and slow-moving. The soil on the valley floor, the flood plain, is fertile. Here, before European invasion, the area was cultivated by Indians, who grew at least six varieties of corn.

Most signs of civilization disappeared briefly when we departed Sayre Borough Park. The surrounding forest, though the trees were different kinds and smaller than the virgin forest, is still thick enough to get the sojourners in an outdoors frame of mind. We were voyagers in the spirit of the traders and trappers who came for beaver pelts 200 years earlier, but with a different goal. Our quest was to learn about the river, and to spread the word of Susquehanna River conservation.

In our company were two of the more skilled and experienced canoeists in Pennsylvania, DER Secretary and Mrs. Art Davis. Secretary Davis delivered a proclamation of devotion to the Susquehanna signed by Governor Casey at key points along the sojourn.

The first slow riffle was wide and very shallow. Several of the 39 sojourners had to get out of their canoes and wade. Many

wondered aloud how often we would have to wade. There had not been any rain here since May. The river flow was low. But in all the riffles after that there was at least one channel where the canoes could shoot the riffles, if they hit the "V" correctly. This was one of the main challenges of the voyage. Group leader Bill Eberhardt, of Silvara, schooled the paddlers on reading the river, watching for the slick "V"s that led into the deepest parts of the riffles and rapids.

Just past the first bridge, little more than a mile from our start, the river divides in channels and picks up speed. At one place the largest channel narrowed into one of the more exciting rapids of the float. Standing waves close to a few feet high splashed water into most canoes, so we stopped on a gravel bar just downriver to sponge. This and several other rapids stretched the skills of novice canoeists.

Like Pennsylvania's other gravel bed rivers, the river channels changed with each heavy water flow. It is a new experience every spring, at least.

Chemung confluence

We took our first break at mid-morning, near the mouth of the Chemung River. The Chemung is similar to the Susquehanna, though smaller. Terry Kerrick, who operates Tee Pee Canoe Rentals (RD #2, Box 138A, Towanda, PA 18848; phone: 717-265-3309), said that canoes would be dragged more than paddled on the Chemung during mid-summer.

In northern Bradford County the Susquehanna is more fast water—slicks, riffles, rapids—than slow pools. Folks who like to ride the current like this part of the river best. Keeping in mind that the river bed is ever changing, there are no major rapids, yet the challenge is intense enough for intermediate canoeists and interesting

enough for seasoned veterans. In times of somewhat heavier water flow, side channels offer interesting diversions. The most common hazards, other than boulders, are logs that could flip canoes, even when the flow is light.

Ducks and wading birds were common. There were broods of common mergansers and mallards on most pools. There were also wood ducks, and a few ducks I was unable to identify. I have never before seen great blue herons so numerous along such a long stretch of river. Some of the big herons perched on limbs while the sojourners passed within 25 yards. This always happened where the river ran tight against a steep hillside. Smaller green-backed herons were not as common, but they were more numerous than I am accustomed to seeing.

A few farms tapped the river for irrigation water. They are lucky to border the river, because crops were withering at most farms in the county. Mike Lovegreen, of the Bradford County Conservation District, said the drought was reaching near-disaster conditions.

North Branch Canal

Along the river banks we saw carefully laid stonework remnants of the old North Branch Canal, which was part of the great network of canals in Pennsylvania during the 19th century. The North Branch Canal followed the North Branch of the Susquehanna River up to the mouth of the Chemung River, which it followed to Elmira, New York.

Construction of the canal began about 1828, but it was not completed until 1857.

The canal provided a huge improvement for shipment of cargo and passengers over canoes and flatboats. However, the era of canals in this part of America was short-lived. By 1850 a railroad ran up the valley. Relatively flat river valleys were ideal places for railroads. The railroad bought the canal, and ran tracks where the canal had been. The last of the canal was drained in 1901. Today it takes some imagination to visualize what the canal might have been like.

As we approached Standing Stone the next morning, the river ridges were noticeably higher, and there were more vertical rock faces. The slow-moving river pools were getting longer, and a stiff breeze in our faces made it difficult to control the canoe without anyone in the bow.

Keeping up with the group was difficult, and I fell farther and farther behind as I





stopped for photographs.

A lonely old brick chimney caused me to stop and imagine what might have gone around that chimney sometime in the past. It was a tall chimney, maybe 20 feet starting from the wide oven at its base. All of that was supported on a tall platform of stones. It was situated on a steep, high bank, so the only likely access to it was from the river.

Perhaps it was an old iron furnace. Perhaps it was an inn or tavern where the river travelers stopped for rest, food and drink.

At the Standing Stone, a large boulder on the river edge appears to have been stood on its end as some sort of monument. The sojourners stopped for a cooling dip in the river. The air temperature had climbed well into the 90s.

Trucks could be heard roaring along the highway, halfway up the mountainside, but they really were not much of an intrusion. They were far enough away to be less noisy than the kingfishers, herons, mergansers and other birds that often sounded off as they flew overhead. We only got brief glimpses through the trees of the highway traffic, and then only if we looked for it. It is quite remarkable, if you think about it, that the Susquehanna could be so wild and so peaceful here, within a few hours' drive of Philadelphia and New York City.

French Azilum

Our Tuesday night encampment was at French Azilum, another of the curious historical traces along the North Branch. This village was built in 1793 by French aristocrats escaping the French Revolution and from Haiti where a declaration of equality for all people was making life difficult for the elite class. Some 30 homes were nestled inside this bend in the river at one time, but life on the frontier was tough, and the town was abandoned in a few years. Soon it became farm land, which it remains today.

In the last light of day I watched eight white-tailed deer feeding in a field above French Azilum. Four sported antlers in velvet.

This night I barbecued venison steaks, which I used to lure Cindy Adams Dunn, of the Alliance for the Chesapeake Bay, for a few words about the mission of the Susquehanna Sojourn. She was one of the primary organizers of this journey with a message.

"From my perspective, this sojourn helps us recognize that the Susquehanna River is connected to a larger system," she explained. "Activities up here affect people with livelihoods downstream. We also want to promote the river as a focal point for the region, because it is actually something that

The Susquehanna River is the second largest river system in the eastern United States. Its drainage basin encompasses 13 million acres.

people take for granted. The resource has to be protected.

"When you have 60 people signed up for some segment of this trip, if 60 people would go out there and make the Susquehanna a priority in their lives, then I'd say we really accomplished something," Dunn said. "That will be multiplied wherever they go."

Indeed it had already been multiplied many times over. Already the sojourn had been written about in newspapers, and broadcast on television. Their proclamations had been read to many people along the route, and signed at various points by officials and other citizens.

The pools below French Azilum got increasingly longer. The wind blew constantly in my face, making it nearly impossible to keep my canoe headed in the right direction. About six miles downriver we passed a Fish Commission access, and I

*The Susquehanna River
North Branch, the river's
main section, provides
paddlers with a
refreshing float in
spring, summer and fall.*

wished that I had made arrangements to pull out the canoe there. The river valley is still beautiful. It would have been a lot more fun with another paddler in the front of my canoe to share the work and to keep the canoe tracking true into the wind.

I have watched a few people seining at the heads of riffles during the past few days, presumably for fishing bait. Finally on my last day on the journey I stopped to ask two young fellows what they were catching.

"Clippers," they said.

That is the local name for hellgrammites—the larvae of the Dobson fly, and they are about the best smallmouth bass bait you can use. They are ugly creatures about two inches long, with lots of legs and a mean set of pincers—hence the name "clippers."

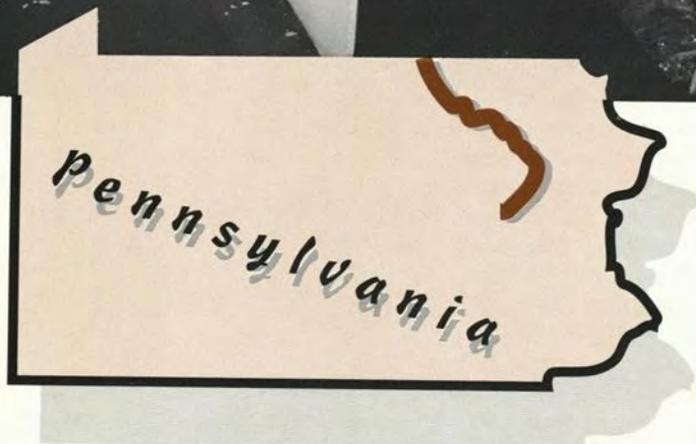
Approaching my take-out point at Laceyville I gazed at the rugged river ridges. My neck hurt, the price for an out-of-shape writer to paddle solo for 50 miles. I strained to raise my head to see the rocky cliffs at the tops of the ridges on the right side of the river. I was watching for the "ice cream cone," a rock outcropping that Don Dreese said would mark Laceyville.

With mixed feelings I left the river. I was played out physically. But at the same time I felt good. I will try to get back to see the rest of the river.

From Mehoopany to Vosburg is the most scenic part of the river, according to Bill Eberhardt. It is undeveloped, wildlife is abundant, and the mountains are higher still. The railroad passes out of sight through a tunnel. The old North Branch Canal is in nearly original condition. Near Mehoopany there are the remains of the place where the canal entered the river.

I will be looking forward to my next Susquehanna River canoe journey. 

For more information about the North Branch of the Susquehanna River, including maps, contact The Endless Mountains Association, Wyoming County Courthouse, Tunkhannock, PA 18657.





Not All Quiet on the Waterfront

by Cheryl Kimerline Hornung

Pennsylvania's lakes, rivers and streams provide boaters with the perfect setting to enjoy their favorite activity. However, this peaceful environment can be shattered by just one boat's offensive noise. Excessive boat noise is one of the complaints commonly registered with the Fish Commission. Legislation has been enacted in Pennsylvania to control and reduce emissions, but there are no procedures in place to ensure that boats are manufactured in conformance with these standards. Therefore, it is up to the boat operator and owner to see that their motorboats meet the established standards.

Hearing loss is the only known illness to be directly caused by noise. However, noise has been identified as an important cause of physical and psychological stress. Stress is linked directly to our most common health problems such as high blood pressure, headaches and fatigue.

To ensure a better quality of life for everyone, Pennsylvania law prohibits excessive boat noise. It is unlawful to operate a boat powered by any type of internal combustion motor unless the motor is equipped with an efficient muffling system or device. This device must be maintained in good working order.

The definition of a muffling system is a device that substantially deadens or diminishes the exhaust noise. Some examples

are mufflers, having at least two baffle plates and underwater exhaust designs. Noise emitted by a watercraft is considered excessive according to Pennsylvania law if any of the following applies:

1. The noise level is 82 decibels or greater measured from 50 feet or more.
2. In the observation of two persons, with one of them a waterways conservation officer or a deputy waterways conservation officer, the noise is substantially louder than the noise created by watercraft of similar characteristics under similar conditions.
3. In the observation of two persons, one of them a waterways conservation officer or a deputy waterways conservation officer, the noise is so abnormally loud that it constitutes a substantial and extraordinary annoyance or distraction to persons in the vicinity.

As noise continues to be a problem on Pennsylvania waters, waterways conservation officers are equipped with new sound measuring devices to test boat noise levels. They will be out on the waters enforcing the noise law.

Noise is measured in units called decibels (dB). The sounds perceived by the human ear range from zero on the decibel scale (the quietest sound the human ear can detect) to about 120 dB, where the noise is so intense it becomes painful. A sound that increases by 10 dB is said to be twice as loud.

Tips to be a quiet boater

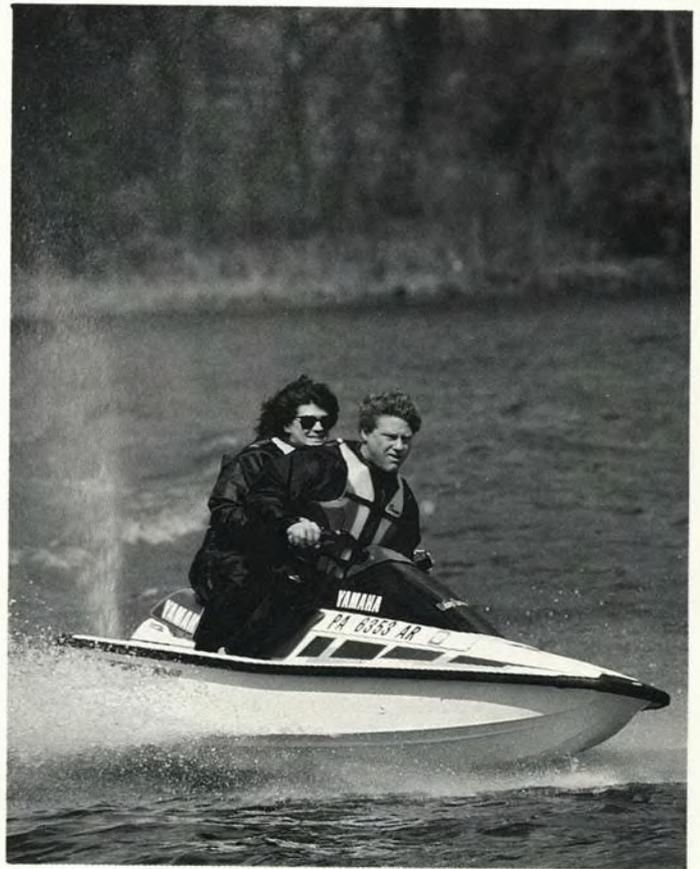
Equip your boat with a quiet exhaust system. Check it for defects and correct them. Listen to your boat's noise. If you can hear your exhaust noise clearly above all other noise, it is too loud. Most complaints about boat noise are related to exhaust noise. If enough complaints about boat noise occur, your favorite boating areas may be made unavailable.

Maintain slower speeds when close to shore. A boat operating at full speed makes considerably more noise than one operating at low speed. Avoid high-speed starts and racing close to shore. High speeds close to shore not only create noise problems but could result in zoning or speed limits on the water.

Avoid riding near shore especially in the early morning and late in the evening. People come to the water to relax and enjoy the peace and quiet. They do not want their weekends at the campground or cabin spoiled by the constant roar of loud engines. If you have to boat near shore, try to keep a reasonable distance away and keep your engine revving to a minimum.

The most common complaint about personal watercraft is that the noise irritates other boaters even though the noise decibel level meets the legal requirements. Personal watercraft seem noisier because they often boat in one small area all day, jumping wakes and waves. Vary your riding patterns to avoid this perception.

As more and more boaters flock to the waters, it is important that they boat conscientiously and respect the rights of others. Anglers and paddlers enjoying a quiet morning don't want to be blown out of the water by racing high-speed powerboaters. We must respect the rights of others and not allow the tranquility on the water to become a thing of the past.



dB Levels for Common Noise Sources

<i>Noise Level</i> dB	<i>Common Sounds</i>
140	12 gauge shotgun (3 feet)
130	Jackhammer (3 feet)
120	Jet take off (200 feet)
110	Rock band, chainsaw (50 feet)
100	Lawn mower, power tools (3 feet)
90	Heavy truck (50 feet)
82	Maximum decibel level for PA boat when measured on an A weighted scale from 50 feet
80	Normal boat with efficient muffling device (50 feet)
70	Normal automobile (50 feet)
60	Conversation (3 feet)
50	Quiet residential area
30	Whisper

WHEN DURHAMS RULED THE RIVER

BY FRANK T. DALE

Spring freshet! In the old days on the old Delaware, this was the time when the upper river bustled with activity. Ore from the mines, produce from the farms, and fur and timber from the forests were accumulated the entire winter in anticipation of the spring flood. Then when rainfall and snow melt put enough water in the river, rafts, barges and anything that floated started downstream to that eastern metropolis, Philadelphia. Quaker merchants there were eager to buy. In the years before roads and canals were built, this turbulent waterway offered the only access to the city for upcountry products.

The early history of the valley is primarily a story of river transportation, and of one craft in particular, the Durham boat.

Robert Durham, an engineer at the Durham Iron Works, designed the boat that conquered the river. The first one was built on the shores of the river near the foundry at Riegelsville, Bucks County, in 1757. This experimental craft carried 15 tons of pig iron through the river rapids to Philadelphia in just two days. The return trip took five days.

Durham boats were large for Delaware River vessels, 65 feet long and eight feet in the beam. They were pointed at both ends, canoe-like, and had no keel. When fully loaded they drew some 28 inches of water. The boats were open to the sky except for a small covered area in the bow and stern. Here, some of the crew of four to six men could sleep on straw, protected from the elements. Here, too, were kept a charcoal stove for cooking and warmth, and a gallon jug of whiskey for medical emergencies. The craft were propelled downstream by four oars and steered by a long "sweep" or oar-like rudder. The Durhams were usually painted black.

Durham boats could carry up to 20 tons of iron or 150 barrels of flour downriver. Wells Falls, Trenton Falls and Foul Rift were routinely conquered by these sturdy craft. In calmer waters, the captain would let the current carry the ship along, guided only by his sweep. Many of the vessels were rigged with a 30-foot mast and a triangular sail. A fleet of the boats thus rigged, moving silently and gracefully downstream, inspired rustic poets, and indeed, was a beautiful sight.

Getting these large craft upriver again was another story. They had to be poled against the current, which was especially strong at freshet time. Two to four men operated from "walking boards" fastened to each gunwale, pushing iron-tipped poles against the river bottom or bank. Sometimes the men pulled their boat along by catching hold of overhead branches. This was called "pulling brush."

Rings in the rock

Matthias Cummins, an upcountry riverman, recalled, "We tried to sell the boats at Philadelphia at the end of the trip, but

if we couldn't, we poled them back, getting through Foul Rift with the help of iron rings set in the rocks. We returned upriver only with light loads, mainly sugar and molasses."

The iron rings at Foul Rift were driven into the rock ledges on the Pennsylvania side. A crew member would walk along the bank and insert a rope through the ring and bring the end of the rope back to the boat. Then the crew would pull the boat upriver through the rapids to the ring. Then the process would be repeated. The rings are still there after almost 200 years.

Just below Wells Falls at New Hope there was a boulder in the river called "Dram Rock." Here, boats about to proceed up through the falls stopped for a dram or two before confronting these formidable rapids. They named the channel here "the Horse Race." Presumably, crews going downriver also stopped at "Dram Rock."

Special breed

It took a special breed of man to operate these muscle-powered craft up and down the Delaware during spring freshet. The captain was generally a stern taskmaster, feared and respected by river men and land-lubber alike. Each craft bore its captain's name. Many a valley lad dreamed of becoming a Durham boat captain someday and few parents objected.

Crew members were less idolized. They were young—often teenagers—but strong and athletic. The days were long and hard for the crew but they always had time for a laugh or a practical joke. River towns where the Durhams stopped were lively places, indeed, during spring flood. Taverns never closed and many of these youthful sailors never slept.

Durham boats were so successful that their use spread to all of the river, from Philadelphia to Hancock, New York. Soon, they numbered in the hundreds and began to appear on other rivers. They carried anthracite coal out of Wilkes-Barre on the Susquehanna, and coal and general produce on the Lehigh River. They were used extensively on the Mohawk River in New York state.

Although iron was the principal product carried in the Delaware boats in colonial days, they also carried grain, whiskey, livestock and virtually anything that needed moving on the river. Van Campen's mill at Shawnee shipped flour regularly to Philadelphia at this time.

In 1789, the Pennsylvania Assembly approved funds to improve navigation on the upper Delaware. Blasting and boulder removal were done at many of the rapids to make navigation by these boats easier. It was probably at this time that the rings were installed in the Foul Rift cliffs. We know for certain that the channel at the foot of these cliffs was cleared at this time. So effective were these improvements that travel time to Philadelphia was cut in half.



Pictured in a re-enactment is Washington's crossing the Delaware in a Durham boat. His Christmas surprise attack on the British at Trenton turned the tide of the American Revolution.

"Old Fox"

George Washington knew about Durham boats. He had seen the huge vessels at the docks at Philadelphia when he passed through on his way to take command of the Continental Army near Boston.

All too soon he was back at the Delaware in command of this army in disarray. He had been outflanked and outfought across New Jersey by the British army, under the command of General Cornwallis. The fact that he escaped with any army at all attests to Washington's skill. The British referred to him, with grudging admiration, as the "Old Fox."

With his back to the river and Cornwallis a mere 10 miles away, Washington collected all the Durham boats and other craft for 30 miles up and down the river and escaped to Pennsylvania. Men on the last boat to leave swore they could hear the skirling of British army pipers. Washington made it, just barely, with 6,000 men, artillery, horses and ammunition, all packed "like cod" in the commodious Durhams. He then ordered all the boats hidden. Many were secreted behind Malta Island at New Hope. The British, unable to cross the river, went into winter quarters in New Jersey, a large force stationed at Trenton. Cornwallis went home to England for the winter.

Countermeasure

Washington, his troops' enlistments expiring in three weeks and his officers anxious for their usual winter furloughs, decided on a countermeasure against the troops at Trenton on Christmas night. The troop-filled Durhams were manned by Massachusetts fishermen under the command of tough, old Colonel John Glover. Glover and his regiment had ferried Washington's army through the treacherous tides of the East River in New York, but this night crossing in a raging blizzard took all of their expertise. The craft were heavily laden and huge chunks of ice floating in the river threatened to overturn the vessels.

Every schoolboy knows the rest. "Old Fox" Washington defeated the enemy troops at Trenton in that Christmas battle of 1776, and the victory reversed what until then had been a dismal display of retreat and defeat. Winston Churchill described the victory precisely: "The effect of the stroke was out of all proportion to its military importance. It was the most critical moment of the war."

The success at Trenton would have been impossible without these improvised landing craft. As one crew member put it,

with a bit of exaggeration, "The battle was won by Glover and Durham."

After the war, Durham boats continued to dominate river transportation. Until they were replaced by canals and railroads in the mid-1800s, they were the workhorses of the river.

Canals and railroads

The first canals were built along the river in the 1830s. Their advantage was that they could operate all year long not dependent on spring freshet and they were free of obstructions. In addition, canals took water from the river, making it even shallower than it had been.

Railroads, of course, contributed to the decline of both Durham boats and canals. The piers of the railroad bridges spanning the river were additional hazards to river traffic and the railroads were much faster. To the hustling eastern businessman, time was money.

By 1840, Durham boats were disappearing from the river. A major flood in that decade destroyed many of the craft and they were never replaced. The canals took over the commerce normally seen on the river, and the few remaining Durhams were reduced to performing such menial tasks as hauling river rocks to Philadelphia for road paving.

At this time, a Durham captain named Lugar took a load of ships' keels made at Portland, Pennsylvania, downriver to the Delaware and Raritan Canal, thence on the canal to New Brunswick, New Jersey, and then under tow to the Brooklyn Navy Yard. The boat and its exploit attracted a lot of attention in the New York press, but this was its last hurrah. The final trip made by a Durham on the river was done in March of 1860, Isaac Van Norman commanding.

Its days of glory were over, but this sturdy river craft designed by an iron monger for use on this most improbable of rivers made an inestimable contribution to the growth and prosperity of our fledgling country. Philadelphia, our first major city, owed its early survival to the goods brought to it in the hulls of Durham boats.

Finally, we must never forget their essential aid in the success against the British army on the banks of the Delaware, and thus, to the final victory at Yorktown. Without Robert Durham's gift on the bitter Christmas night in 1776, the dream of American independence would have died that winter on the banks of the Delaware River.



The Niagara: *Sailing into* *Pennsylvania's History*

by Mubarak Dafir



photos provided by the Pennsylvania Historical & Museum Commission

With majestic masts looming 120 feet above the Lake Erie waterline and sails billowing in the wind, the flagship *Niagara* once again reigns supreme over the waters of Lake Erie. The historic battleship is the only surviving vessel from the Battle of Lake Erie and one of only three surviving early 19th century warships of the United States Navy. With the completion of its recent reconstruction and renovation, the ship is currently open to the public.

Now Pennsylvania's official Tall Ship, the 1813 war vessel sails the waters of Lake Erie as proudly as when it triumphed over the British in the epic victory of 1813. The recent renovation of the historic relic, with a price tag of \$4 million, represents the latest success in its legacy of survival.

During the War of 1812, the Great Lakes and the waterways that connect them were vitally significant militarily and strategically. They marked the northern battlefront between the American troops and the British, whose primary land base in North America was Canada. Control of these critical transportation routes would determine which side could supply the necessary men and supplies to defend the territory and use it to launch offensives on the enemy.

Accordingly, the Americans and the British became engaged in a frantic race to build superior fleets to seize and defend the crucial waterways. Historians claim the competition was so desperate that it was not uncommon for timbers of virgin forests to be felled and hammered into place on the ships in the same day.

Under the supervision of Erie native Captain Daniel Dobbins, and largely due to his influence, President James Madison authorized building a fleet of six naval ships at Erie. The site is the only natural harbor on the lake. It was chosen primarily because the curved arm of Presque Isle Peninsula protected the port. The sliver of land juts like a curved finger from the shorefront. This geographical formation provided a semicircular barrier surrounding the vessels during construction. So while the British could watch the building process from their positions on the lake, they could not manage a surprise attack on the unfinished fleet.

Confrontation

The actual confrontation of the two fleets took place at Put-in-Bay, Ohio, on September 10, 1813. There the American fleet, sailing from Erie under the direction of Commander Oliver Hazard Perry, met the formidable forces of the British navy from Fort Malden. The entire battle lasted less than



Visitors (above) tour the *Niagara* during the 1913 centennial celebration. Workmen (below) pose for a photograph during the warship's 1913 renovation.



three hours, but it proved to be not only a turning point in the war, but also a legendary landmark in naval history.

Perry originally commanded the American forces from the *Lawrence*, which took the lead early in advancing on the British line. However, after two hours under fierce fire from the enemy the *Lawrence* was reduced to a shattered hulk. Realizing his peril, Perry gathered his ship's banner and rowed with the remainder of his men to the brig *Niagara*. Hoisting the flag with the now famous slogan, "Don't give up the ship," he proceeded

with strategic daring to champion a previously unprecedented victory.

The British ships were armed with long guns, which had an effective range of a mile or more. The American warships, on the other hand, depended heavily on carronades. Carronades could deliver crippling blows at close range, but they were practically useless as long-range weapons. Perry knew his only hope was to sustain enemy fire until his ships could reach the close firing range they needed.

He therefore abandoned traditional nau-



The original hull of the Niagara was removed from Misery Bay in 1913. It was to be restored for the 100th anniversary celebration of the Battle of Lake Erie. The Niagara was scuttled in Misery Bay in 1820.

tical wisdom and used the *Niagara* to charge through the British line. His calculated gamble paid off, and the devastated enemy surrendered within the half-hour. Victory at hand, Perry sent his superior the celebrated message, "We have met the enemy and they are ours!"

Never before—or since—had an American commander successfully changed his flagship while emblazoned in battle. Nor had any previous commander in history succeeded in capturing an entire British squadron. Perry's triumph left the once feared British naval power west of the Niagara River vanquished. The victory also cut off the British contingency from crucial supplies.

Fight for survival

Ironically, however, the flagship's battle with the British was just the beginning of what would prove to be nearly 200 years of fighting for survival.

After the war, the *Niagara* served as a station ship at Erie until it was scuttled in Misery Bay in 1820. It remained there under 20 feet of water and six feet of sand until it was raised for the centennial celebration in 1913. That summer the flagship staged a triumphant 3,000-mile tour of Lake Erie.

But its glory was to be short-lived. When the *Niagara* returned to port in Erie at the end of the season, it was allowed to dete-

riorate from neglect while federal, state and local groups quarreled over ownership rights and maintenance responsibilities.

Stagnating in four-and-a-half feet of water with its spars blown down and gang plank removed in the interest of public safety, the *Niagara* was slated for abandonment when a private organization calling itself the USS *Niagara* Association raised enough money to purchase a land site to house the ailing vessel.

A second restoration effort began in 1931, but soon came to a halt under the economic pressure of the Great Depression. It took President Roosevelt's approval of a federal WPA grant for the sum of \$29,854 to save the tattered warship once again.

However, the ship was not destined to repeat the glory of its former sailing tour. During the launching ceremony on September 30, 1943, the failure of supporting timber caused the ship to heel at a 15-degree angle to starboard. This unfortunate incident damaged not only the original keel, which bore the brunt of the shock, but undoubtedly it tainted the popularity of preserving the ship as a floating vessel. It was soon moved to a dry dock near Erie's bayfront, where it remained until the most recent reconstruction.

Recent reconstruction

In 1973 the *Niagara* was entered on the National Register of Historic Places, and in 1984 the Pennsylvania Historical and Museum Commission embarked on the latest—and most comprehensive—reconstruction of the historic flagship.

John Zwierzyna, site administrator for the *Niagara*, says efforts will now be heavily

focused on proper preventive maintenance for the ship. It is currently covered during the winter and kept at a controlled temperature of 40 degrees.

"During fair weather," says Zwierzyna, "we give the deck a daily saltwater washdown. Salt is a natural fungicide. It kills the fungus that causes dry rot." Zwierzyna says salt is also hygroscopic—it attracts moisture and helps prevent the ship's wood from drying out and shrinking.

Today a visit to the grand ship is a trip into living history.

On the upper deck, tar-filled crevices accentuate the slim planks of Douglas fir that course in parallel lines beneath the feet. Men clad in scarfed white shirts and baggy pants huddle around the imposing central capstan to demonstrate raising and lowering the anchor.

Glistening in the summer sun are freshly painted bulwarks. Their thickness is characteristic of warships of the day—they were useful in protecting men from small-arms fire during battle. Blood-red gun ports line the main deck. Through them, 18-pound carronades poked their menacing heads and spit balls of iron fire to win the Battle of Lake Erie.

Ports are also provided for the 30-foot-long "sweeps," or wooden oars, used to propel the *Niagara* during periods of calm. A nine-foot tiller is not used to steer the vessel, although previous renovations outfitted the ship with a wheel. It is unknown which mechanism was used to direct the original *Niagara*, but naval architect Melbourne Smith based his decision on the dimensions of the vessel's rake and stern.

“Living history” portrayals

Men in period uniform mill about the flagship performing vignettes and answering questions. “What we’re trying to do is give the visitors an idea of what life was like on a 19th century warship,” says Ed Bolla, one of approximately 15 men of the reenactment group “Ship’s Company.”

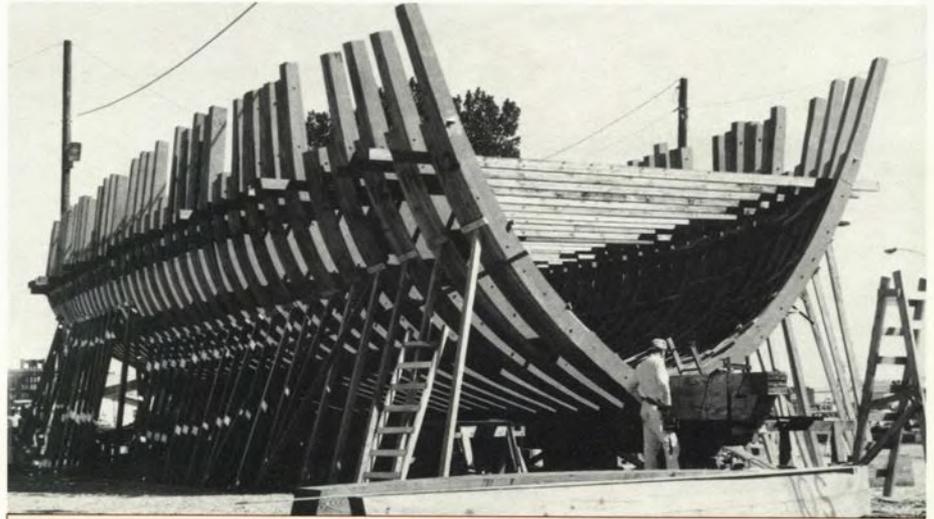
“The War of 1812 is an overlooked period,” he says, “and it’s just starting to come of age.” The 19th century reenactor role fits well with the brawny, mustachioed man who is a 20th century firefighter. Bolla believes the “living history” portrayals “provide a better teaching tool than a static ship, especially for the children.” But the enthusiasm with which he answers questions is evidence of a stronger motivation. “It’s a lot of fun if you’re into history,” he grins.

In the enlisted men’s area below deck, members of Ship’s Company swing in hammocks slung from beams below deck to illustrate how the majority of the ship’s 155-man crew slept on board.

Below deck lighting is provided by a series of ingenious devices called “dead lights”: chunks of prism-molded glass piercing through the deck and delivering natural illumination below. A skylight offers even more abundant lighting in the wardroom, which was used for operating on wounded sailors. Maneuvering hump-backed through the cramped quarters, it comes as little surprise to learn that 20 percent of Perry’s men were ill at any given time.

Some of the prized features of the ship include the original maritime compass Perry used to navigate the brig, an 1809 Mexican silver dollar (part of the common currency of the day), and a replica of the *Queen Charlotte Bell*, which was captured from a British ship during the battle.

Flying high in the wind overlooking the brig is a nine-square-foot replica of the flag transferred by Perry to the *Niagara* during battle. The original banner is housed at the US Naval Academy, in Annapolis, Maryland. Emblazoned on a dark-blue background, the white stenciled words, “Don’t Give Up the Ship,” capture the spirit of Pennsylvania’s ship that wouldn’t quit.



Original timber

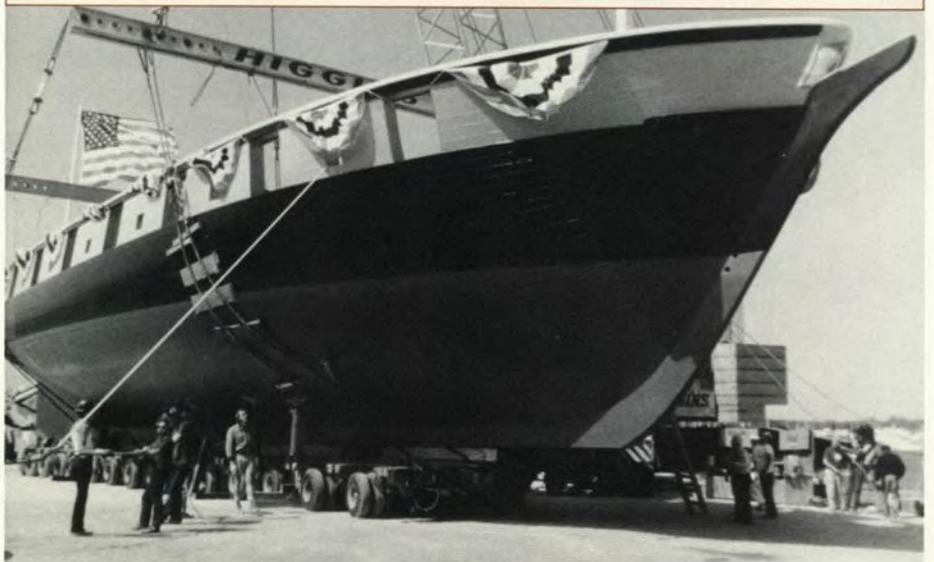
With nearly 10 percent of the wood used on the renovated flagship dating back to the original vessel, the *Niagara* can boast that it contains more original lumber than any other historic wooden warship in the country. The keel, keelson and a piece of the stern date back to the initial ship.

Original timbers were used to retain the historical identity of the *Niagara* rather than for structural support. The keel was used by “sistering” the old oak timbers with new wood. “Sistering” refers to the technique of placing new wood beside the old to bear the ship’s weight and the strain of sailing.

The finger-like projections of the ship’s ribbed structure are made from yellow pine. Douglas fir was used in the masts and planking. The ship’s large spars are laminated timbers—layers of wood glued together under pressure—rather than single members, as was the case in the initial construction. This gives them additional strength and durability. A clever paint job ensures that the visual integrity of the vessel is not compromised.

Other disguised technical innovations include wire-core ropes wrapped in tarred polypropylene to simulate the natural hemp appearance of the rigging. The ship’s cannons will be cast aluminum with inserted steel liners. This will allow them to be both operable and lightweight.

Such creative technology has produced a reconstructed *Niagara* that is safe and sturdy as well as aesthetically accurate.—MD



Rules of the Road

There are no traffic lanes or traffic lights to tell boaters where to go on the water. Special rules were made to keep boats from running into one another. These are called rules of the road, even though they are for the water and not the land.

Rules tell boaters several things. First, they tell boaters which way to turn if they meet close enough to get into an accident. If you meet another boat head-on, you must both turn to the right and pass left to left or you will collide.

The rules of the road tell boaters what to do when boaters cross paths. If another boat approaches you from the right, you must get out of the way. The area to your boat's right, or starboard, is called the danger zone. A boat in your danger zone has the right of way. A boat coming close to you from your boat's left, or port, side should let you pass.

The rules also tell you how to pass another boat safely. Decide which side you want to pass on and give the other boat plenty of space. The boat you pass must stay on the same course and not change speed.

Sometimes these rules are not used. Boats without motors such as canoes, rowboats and sailboats generally have the right of way over motorboats.

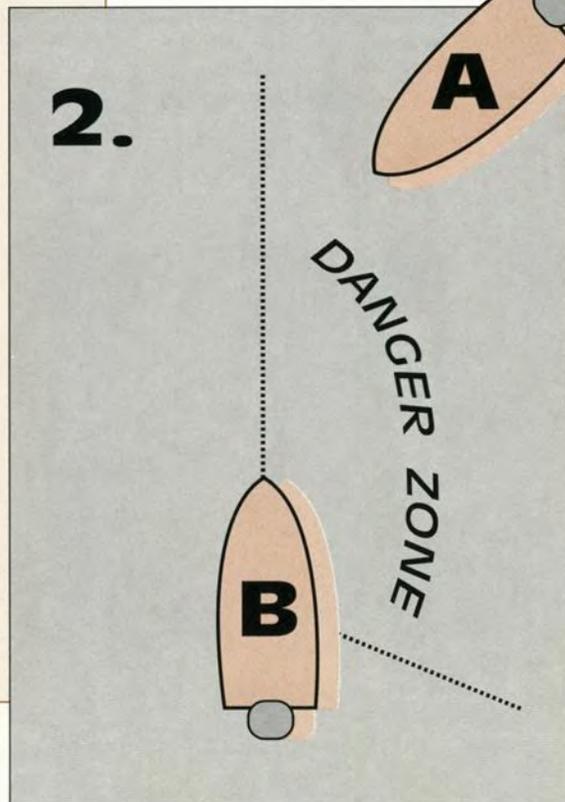
The most important rule is that you must avoid getting into an accident, even if you have the right of way. Steer clear of trouble.

Look at the drawings below. In each case, decide which boat has the right of way.

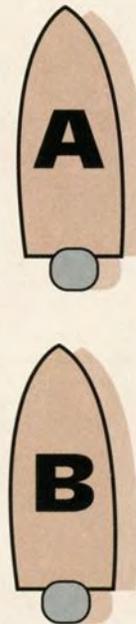
1.



2.



3.



1. _____

2. _____

3. _____

Answers: 1. Neither. Both boats must turn to the right and pass left to left. 2. a 3. a.



Dedicated to the sound conservation of our aquatic resources, the protection and management of the state's diversified fisheries, and the ideals of safe boating and optimum boating opportunities.

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Sharing the Water

The number of boats registered in the United States grew from fewer than 10 million in 1987 to almost 11 million in 1989, partly because boating appeals to such a wide range of ages and interests. Boating is fishing on a mountain lake, canoeing on a quiet river, shooting the rapids in a kayak, water skiing, hunting, picnic cruising, wind surfing, racing and offshore sailing.

But the increasing number of people drawn to boating are putting more demands on the finite amount of water. An environmental conscience and sense of fair play are important to protect these resources and to enjoy the opportunities they offer.

The angler fly casting for trout on the morning rise is a far cry from the helmsman of a high-performance ski boat towing tandem skiers. The silent canoe competes for the same water as the personal thrill craft.

In many cases, these diverse boaters share the water, and when they share the same spot at the same time, there are bound to be conflicts and injuries.

In areas of congested boating these risks have been minimized by time sharing or zoning.

In time sharing, the angler might have precedence in the early morning or twilight hours, and water skiers might have the run of the waterway during the afternoon.

Officials in other areas keep boats out of one another's way through a form of zoning. In its simplest form, a speed limit serves this function by keeping all craft within a safe speed. More complex schemes set aside segregated areas for sailing, water skiing or water biking.

Zoning has been used as a safety aid for many years. Navigation channels have been off limits to ships or boats at anchor and trolling fishermen. Swimming areas are buoyed and motorboats are zoned out. So there are precedents.

While the rules of the road provide a plan to keep boats safely out of one another's way, sometimes separating them physically is an added safeguard to ensure that everyone has the opportunity to share the fun and diversity of boating.—*Boats Garden.*

New Commissioners

Confirmed on July 11, 1991, the new fish commissioners are James Biery, Jr., from Swatara, and Paul Mahon, from Clarks Green. Biery replaces Leonard Green, from Carlisle, and Mahon replaces David Coe, from State College. Commissioner T.T. Metzger, from Johnstown, also received an eight-year reappointment.

Commissioner Biery graduated magna cum laude from Muhlenberg College, and he holds a masters degree from Temple University. He is a veteran of World War II and the Korean War. He is a past president of the Pennsylvania Federation of Sportsmen's Clubs (PFSC), and has served as PFSC liaison for the Fish and Game commissions.

Commissioner Mahon currently serves on the Red Cross Board of Directors and the Multiple Sclerosis Society Board of Directors. He is a veteran of the Korean War, and a recipient of the Benjamin Rush Award for outstanding efforts for the health and welfare of people in Lackawanna County. He is also a volunteer for the pre-season and in-season spring trout stocking program.—*Ann Kreisler.*

Notice to Subscribers

Act 1982-88 provides that certain records of the Pennsylvania Fish Commission are not public records for purposes of the Right-to-Know Law. This means that the Fish 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 nonprofit, 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, 1992. Send a postcard or letter stating, "Please exclude my name and address from *Boat Pennsylvania's* subscriber mailing list." Send these notifications to Art Michaels, Editor, *Boat Pennsylvania*, P.O. Box 1673, Harrisburg, PA 17105-1673.

10 Fueling Tips

- ✓ Always remove portable tanks from your boat for fueling.
- ✓ Shut off motors that could make a spark or heat. Turn off electric equipment and liquid propane gas tanks.
- ✓ Close all windows, doors and openings before fueling. Overcome the tendency to leave everything open. Closing all compartments prevents vapors from seeping into the boat.
- ✓ Try to fuel before dark. If you need light, use a flashlight or another light that is spark-proof.
- ✓ Never smoke near a fueling dock or when fueling. Extinguish tobacco that might smolder.
- ✓ When filling a tank from a gas can, touch the fuel pipe or tank with the spout while pouring. This prevents buildup of static electricity, which could produce a spark.
- ✓ Similarly, when fueling from a pump, keep the nozzle in contact with the tank.
- ✓ After fueling, wipe up all spilled gasoline, and air the rag after use. Never throw it into the boat or in the water. If it must be stored, seal it in a tightly covered metal container.
- ✓ Gasoline vapors from low pockets in the bilge must be drawn or forced out. Open all doors, windows, ports and hatches. Let the air blow through for at least five minutes. Use only explosion-proof fans with spark-proof switches to clear the air of fumes.
- ✓ Lastly, check all fuel lines and connections again for leaks. Sniff around gas lines, motor and bilges. When vapors are gone, start the motor.

How to Water Ski

Does skimming across the water on a pair of skis sound like fun to you? Something you'd really like to try? If so, you may be joining some 17 million other Americans who engage in the sport every year. But before you do, it helps to learn something about the sport, advises the American Water Ski Association (AWSA).

Water skiing, like modern-day baseball, is a sport that first appeared in this country and then spread to places all around the globe. An 18-year-old Minnesota lad by the name of Ralph Samuelson is credited with inventing water skiing in 1922, when he first got a pair of barrel staves. In the intervening years, water skiing has grown to be an international sport and one of the most popular forms of water-based recreation in this country and many other parts of the world.

It is a family recreational activity, and that's what makes it so much fun. Dad may be the boat driver, mom the observer coach, while brothers and sisters are the critics and cheerleaders.

There are many different kinds of water skiing, including the amazing form known as barefoot skiing. And the popularity of kneeboarding is growing fast. It doesn't take long to learn how to ride a kneeboard, a cross between the surfboard and the wide trick ski. For those interested in staying on traditional skis, there are slalom, tricks, jumping, show skiing and ski racing, the latter done on a specially designed slalom ski. All offer unique challenges that make being out on the water more fun.

In recent years, specially designed skis have been developed for handicapped persons, and each year AWSA sponsors national water ski championships for disabled skiers. This year the World Water Ski Championships for disabled skiers were held in Ann Arbor, Michigan.

Learning how to water ski is not difficult, and many skiers soon develop enough skill to learn how to slalom ski. A regulation slalom course has six buoys staggered in two lines and the skier tries to go around as many of the buoys as possible.

Another favorite form of water skiing is called "tricks." A skier performs turns, step-overs, side-slides, loops and other tricks using the wake behind the boat to get added lift.

Jumping off a ramp is an exciting form of skiing. Before you can jump you must become proficient on two skis and have learned the basics of jumping from an experienced coach.

Many books and instructional programs are available from AWSA, which is the national governing body for the sport of water skiing and a member of the United States Olympic Committee. Send a stamped, self-addressed envelope to AWSA, 799 Overlook Drive, Winter Haven, FL 33884 and ask for information about the Association's programs and literature on water skiing, and for a free copy of the pamphlet *AWSA's 10 Tips to Better Water Skiing*.

Children and PFDs

During a recent episode of the cartoon "Muppet Babies" on a Saturday morning, Miss Piggy reminded the others that they could not ride in her boat unless they put on life vests.

Reinforcing the lesson was a commercial interruption minutes later when Tony the Tiger was promoting Frosted Flakes during a whitewater trip, and he was also wearing his life vest.

More than the recent national media focus on boating safety practices for children, state law often requires that children under a certain age wear a personal flotation de-

vice, a PFD, when they are on a boat.

The National PFD Manufacturers Association recommends that when choosing a PFD for your child, you remember first that children's PFDs are sized according to weight range. Pick the one that's right for your child. Some manufacturers specify a chest size, so measure your child's chest, under the arms, before you pick one out.

Crotch straps are particularly important on children's PFDs because they keep the device in place. They should be used whenever the PFD is on.

If the child does not swim, a Type II child or infant device is recommended to keep the child's face above water.

Be sure to try the PFD on the child in

the store. Be sure it fits snugly. To test it, lift the child up by the shoulders of the PFD to make sure that it doesn't slip over the chin or ears. Children tend to panic when they fall in the water, which can make it dangerous even with a PFD. It is important to get them used to wearing it in the water.

Even though a PFD is designed to keep a child afloat, it does not substitute for supervision. Never leave a child unattended. Discourage running, pushing and boisterous play on a boat or near the water.

For more information about the brand names and manufacturers of children's PFDs, contact the association at (312) 836-4747.

Prevent Sailboat Mast, Rigging Failures

Most sailboat dismastings are caused by failure of the fittings that hold the rigging together, according to BOAT/U.S. The organization has produced a free *Mast & Rigging Self-Inspection Guide* to help skippers identify potential trouble spots and correct problems before an accident occurs. Produced by the BOAT/U.S. Damage Avoidance Program, the fact-filled guide contains a comprehensive checklist for routine inspections and regular maintenance of sailboat rigging.

According to the guide, most dismastings are caused by failure of tangs, turnbuckles, chainplates and the smaller screws, bolts and pins that hold everything together, as well as skewed spreaders and rotten bulkheads that are used to anchor the chainplates.

Here are other tips from this handy free guide:

- Use a magnifying glass to check terminal fittings for cracks, as well as distortion and rust. Take tiny cracks seriously—they can grow larger quickly.
- Turnbuckle barrels should be secured to the threads, either with rings or cotter pins, or by tightening locknuts.
- If the mast is stepped on deck, it must be supported properly below to avoid problems ranging from jammed doors to broken bulkhead bonds, to a sagging cabin top.
- Look for signs of galvanic corrosion (white powder), pockmarks at the maststep, or where dissimilar metal fittings (winches, cleats, etc.) are attached to the mast. Also check the maststep for distortion, which can occur when the mast is cocked to one side.
- Do welds on the mast and boom show any indication of crevice corrosion? Welds that aren't done correctly have sharp edges and crevices that encourage corrosion. Welds that are cracked or badly rusted should be rewelded immediately.
- Spreader should bisect the shrouds at equal angles. Spreaders that are cocked too far up or down can slip, causing the mast to buckle suddenly. Spreader ends should be secured to the shroud with seizing wire and then protected with tape or a rubber boot. Exposed spreader ends are sharp enough to shred the genoa when the boat is on the wind.
- Look for signs of leaking around chainplates. If water enters the deck's core, it could eventually lead to structural problems. Even more serious is a leaking chainplate attached to a wooden bulkhead beneath the deck. Water entering the wood can cause rot, which weakens the bulkhead so that it won't support the chainplate and the rig's heavy loads.

To receive a free copy of the *Mast & Rigging Self-Inspection Guide*, write to BOAT/U.S., Department G, 880 South Pickett Street, Alexandria, Virginia 22304, or call toll-free at 1-800-678-6467.

Life Vests Are Lifesavers

Safety belts are to motor vehicles as personal flotation devices (PFDs)—life vests—are to boats. They are simple devices that prevent serious injury or death.

In more than 80 percent of nearly 900 boating deaths each year nationwide, there are insufficient life vests on board, or they are inaccessible.

Most new, Coast Guard-approved PFDs are lightweight and comfortable. The five basic types of PFDs are:

- The type I PFD, or offshore life vest, with a required buoyancy of 22 pounds. It is designed to turn most unconscious people face-up in the water. It is the easiest to put on in an emergency because it is reversible and has at most three fittings.
- The type II PFD, or near-shore life vest, is suitable for calm inland waters and is designed to turn most people face-up even if they are unconscious.
- The type III PFD, or flotation aid, is the most popular. It is designed for freedom of movement and comfort. Many are designed for water skiing, paddling or fishing, but they are not designed to turn an unconscious person face-up in the water.
- The type IV PFD, or throwable device, is tossed to someone in the water. It is not recommended for children.

● The hybrid PFD has foam flotation combined with an inflatable chamber activated by blowing air into it or by pulling on a cord. These PFDs have become popular because they are lightweight. They are suitable only for people who can swim.

Falling overboard is a frightening experience, and most people will panic, and even drown. Wearing a life jacket when you fall into the water can save your life.—*Lisa Grady*.

Hypothermia

Boaters can fall prey to a silent killer during the winter months: Hypothermia. It is estimated that hypothermia, lowering of the body's internal temperature, is responsible for half of all drownings. At least 223 of the 896 boating deaths recorded nationwide in 1989 occurred from October through March, often as a result of capsizing and falling overboard.

When you fall into cold water, the body cools rapidly, 25 times faster than in cold air. In minutes the temperature of the heart, brain and other organs begins to drop. Unconsciousness can occur when your core temperature falls below 90 degrees.

A sudden plunge into cold water can trigger hyperventilation, or a gasp reflex. Either can be fatal. The cold water quickly numbs extremities, and your cold fingers are unable to buckle or hold on to a life jacket, rescue line or overturned boat.

If you fall into cold water, concentrate on getting out. Right the boat and climb in it, or climb on top of an overturned boat.

If you cannot get out of the boat, remain as still as possible, and huddle to preserve body heat. Wearing a hat and life jacket can keep you warmer, because moving to keep afloat drains heat from the body. Keep your clothes on and button up collars and cuffs.

Stay with the boat—you are easier to spot when rescuers come. Even if the shore is close, you cannot swim far in cold water.

Any person pulled from cold water should be treated for hypothermia. Symptoms include intense shivering, loss of coordination, mental confusion, cold and blue skin, weak pulse, irregular heartbeat, and enlarged pupils. Once shivering stops, core body temperature begins to drop below critical levels.

Hypothermia victims require professional medical attention. Keep them warm by removing wet cloths and bundling them in warm blankets, or huddle them between two other people to share body heat. Never give alcohol to a hypothermia victim.

For a free brochure on hypothermia, write to: Boat/U.S. Foundation for Boating Safety, 880 South Pickett Street, Alexandria, VA 22304.—*Susan Wright*.

Personal Watercraft

Cheryl Kimerline Hornung

More and more people flocked to the water to enjoy boating activities this past summer. Their increasing numbers do not include mostly traditional boaters. Instead, they are enjoying personal watercraft. They just don't sit in their boats. Instead they stand, kneel or ride on top of these new water vehicles.

Boating has changed dramatically in the past 20 years. Today more people compete for prime time on Pennsylvania's boating waters. Anglers are out in the early morning hours hoping to land that prize-winning fish. Water skiers want to ski on that glassy water before the chop from powerboats spoils that perfect run. Sailors hope for some wind and they want to enjoy a smooth, quiet ride. Paddlers enjoy some exercise and the beautiful serene environment.

Suddenly the pack of personal watercraft operators rolls in and everyone's peaceful image is shattered. The personal watercraft's motors rev as they perform high-speed turns, turn doughnuts and jump wakes. They can be as annoying as a group of pesky flies hovering around a picnic lunch.

Although all these boaters would welcome exclusive use of their favorite waterway, the need to share the same waters is increasing. Why does there seem to be such a problem with personal watercraft? Too many of these new boat owners do not consider themselves boaters and they ignore or never bothered to learn the laws governing our waterways. A personal watercraft user can enjoy a favorite waterway by remembering that a personal watercraft is a powerboat and that operators must obey the rules and regulations. Some of these rules vary from waterway to waterway. The boat owner's responsibility is to know the water even before leaving the launch ramp.

Legal requirements

The personal watercraft is classified as a Class A inboard boat that uses an internal combustion engine powering a water jet pump as its primary source of propulsion. In Pennsylvania, all powerboats including personal watercraft must be registered. They must display the registration number and a validation decal on the boat bow above the waterline. The colors of the numbers and letters must contrast with the hull. They must be in block characteristics of good proportion not less than three inches high painted or attached to each side of the bow reading from left to right. The registration certificate must be carried aboard when the boat is in use. The waterproof compartment is the safest place for it to be placed.

Under Pennsylvania law, all persons aboard the personal watercraft must wear a Coast Guard approved personal flotation device (PFD). The PFD must be in good condition and the correct size for the person wearing it. A Coast Guard approved Marine Fire Extinguisher is also required aboard. It is stored in the waterproof compartment.

Most personal watercraft have a lanyard attached to a kill switch. This lanyard must be attached to the boat operator. If the operator falls off, the engine shuts off. This keeps the boat close to the operator and the swim will not be as far. Some other models circle very slowly when the operator falls off.

A sound-producing device is a must. You can hang a whistle on your life jacket or carry a compressed air horn in one of the boat's compartments.

The motor must be equipped with an efficient muffling system or device that is maintained in good working order. It is illegal to operate a motorboat with a poorly maintained or modified exhaust system. Excessive noise irritates others and gives personal watercraft users a bad name. Be considerate of others who enjoy the peace and quiet of the waterfront.

Other recommended equipment includes wearing protective eyewear, headgear, wetsuit, gloves, footwear and mirrors.

Navigation rules

The purpose of "rules of the road" is to provide a safe flow of traffic on the waterway and to prevent collisions. Personal watercraft are boats and these laws apply to them every time they are out on the water.

One of the navigation rules is to keep a proper lookout. Boat operators must keep their eyes and ears open to their surroundings. This means keeping a lookout for debris floating in the water, boat traffic and swimmers. Continually look around for other traffic and know where other boats are before making turns. Personal watercraft are like motorcycles on the highway. Because they are so small, they are harder to see. Unfortunately, they are becoming involved in more accidents. It is crucial to keep a constant lookout because others may not see you.

Another rule is to maintain a safe speed at all times. Always operate slowly enough to keep the boat under control to avoid collisions.

Give sailboats and manually propelled boats the right of way. Always try to cut behind them instead of darting in front of them. Your boat wakes can make operating difficult for them.

When approaching another powerboat head-on, neither boat has the right of way. Both boats turn to the right (starboard) passing on the left (port).

When overtaking another boat, stay clear and pass either to the right or left. The boat passed has the right of way but must maintain its course and speed.

When approaching another boat at an angle (crossing), the boat on the right has the right of way. The other boat must slow down, stop or change course to permit the boat to pass. All boats have a danger zone from dead ahead to 112.5 degrees abaft the starboard beam. Any boat approaching your boat from your danger zone has the right of way.

Pennsylvania operating laws

Motorboats operating on impoundments such as dams, reservoirs and lakes in areas not marked by well-defined channels must operate in a counterclockwise fashion as is reasonably possible.

The speed of all motorboats is limited to a slow, minimum height swell speed (no wake) when within 100 feet of the shoreline, floats, docks, launch ramps, swimmers or downed water skiers, and anchored, moored or drifting boats.

On Our Waters



Operator's duties

Operating a personal watercraft is a thrilling experience and it can be safe if drivers take precautions. Unfortunately, some operators take unnecessary chances. Jumping wakes behind powerboats, cutting in front of other boats and operating recklessly at high speeds or on congested waters causes most boating accidents.

The operator of the boat should know how the boat operates and the rules and regulations that govern the craft. Know the distance it takes to stop. Know the turning radius and the most efficient cruising speed. The operator is responsible for the safety of the passengers aboard and for the wake created behind the boat and the damage it may cause. If you are carrying passengers, make sure you never carry more than the maximum number of people specified by the manufacturer.

If your course takes you across the wake of another boat, keep a reasonable distance away from the boat creating the wake. Personal watercraft users typically enjoy jumping wakes. They follow to maneuver too close behind powerboats to catch these wakes. The consequences of tailgating are the same on the water as they are on the highway. Make sure your visibility is not restricted and make sure the other boats see you at all times.

There is more to operating a personal watercraft than just learning how to steer. If you are allowing other people to operate your boat, make sure they know and understand Pennsylvania's boating rules and regulations.

If your course takes you across the wake of another boat, keep a reasonable distance away from the boat creating the wake.

Courtesy

Maintain slow speeds when operating close to shore. A boat operating at full speed makes considerably more noise than one operating at a slow speed. Avoid high speed starts and racing close to shore.

Avoid riding close to shore in the early morning and late evening. It is illegal to operate a personal watercraft in Pennsylvania between the hours of sunset and sunrise.

Personal watercraft seem noisier because they often boat in one area all day jumping wakes and performing high-speed turns. They also tend to boat in groups. Vary your riding patterns to avoid creating the perception that personal watercraft are exceptionally noisy.

Seamanship

All boaters must learn to share the waters with other boaters. Respect everyone's rights to use the water. Ride responsibly by using good judgment and follow all the safety rules and regulations. Safe boat operation is the responsibility of all boaters. As the boating season slows, it is a good time to take a safe boating course to learn operating requirements and safety equipment.



Canoeing in Winter

BY CLIFF JACOBSON



Cliff Jacobson

At the outset, I should make it perfectly clear that when winter comes to my home state of Minnesota, I don't go canoeing! Not that I haven't tried, you understand. It was February when I finished building the wood-strip prototype of Mad River's popular "Slipper," and I couldn't wait until spring to try it. A patch of blue in a nearby pond suggested there might be space enough to pirouette a new boat.

Friends Darrell Foss and Bob Brown joined the show. Enthusiasm ran high, for each man also had a new wood-strip solo canoe to try.

A balmy 15-degree temperature suggested perfect paddling conditions. Dressed in warm woolens, I felt smugly comfortable. No matter that our paddling hole—kept open by an air bubbler—was barely large enough for the three of us, or that water droplets froze on the gunwales whenever I switched paddle sides. We were canoeing. In winter. In Viking land!

Then I saw the ice chunk that a gentle breeze had pushed my way. I was trapped. To the left was the jagged icy shore; to the right, the bathtub-size block of ice. I might make it through the narrow slot of water in between, but not without scratching my

polished new canoe. Or maybe, just maybe, I could push that ice chunk out of the way with the tip of my paddle. Anyway, it was worth a try.

Seconds later, I was neck deep and hyperventilating in icy water. Some 50 feet to shore seemed an impossible distance to swim, even with a life jacket on. Right then, I learned that the most important lesson in winter canoeing is don't tip over! To this add good judgment, the right equipment and a friend to bail you out if you screw up, and you'll be okay.

The right equipment

Ask expert paddlers what to wear for winter paddling and they'll go into a dissertation on wet suits (farmer John or standard two piece?), dry suits (side zipper, back zipper or no zipper?); and watertight nylon paddling shells (fitted neoprene collar and cuff, or leaky Velcro closure?). When the smoke clears, you'll discover that these solutions are all hot, uncomfortable and very expensive. If, like me, your love is cruising gentle waters before ice-in, you'll forget waterproof attire and choose more versatile clothes.

The fabrics you seek are pile, polypro-

pylene, wool or polyester—no matter. They all work, and differences are less pronounced than manufacturers admit. Winter cruising is not whitewater canoeing, so you won't be going swimming! Rather than protection from the icy wet, you need warmth, resistance to spray and protection from the howling wind.

Consider too the bulk of your garments. Pile sweaters, for example, are luxuriously warm and comfortable. But they hang so loosely that they don't fit well under other garments. If you choose pile garments—and most serious paddlers do—select a roomy wind shell that fits over them.

My preference? I wear discount store polypropylene underwear beneath a pure wool shirt and trousers. A short-sleeved pile paddling shirt goes on top, followed by an oversize porous nylon wind shell. In bitter weather, I add a two-ply Gore-Tex parka or foul-weather (sailing) rainsuit. A genuine souwester worn over a wool stocking cap tops my outfit. Gloves are neoprene, Gore-Tex or rubber-dot acrylic.

For cold-weather trips that include portaging and wading, my footwear includes Cabela's 16-inch-high full-lace rubber boots that accept L.L. Bean sheepskin/leather

insoles. With two pairs of wool socks inside, they're toasty warm in all but the snowiest weather. For this, I wear neoprene wet-suit socks inside oversized sneakers. Another footwear favorite is high-topped canvas sneakers with wool socks and knee-high Gore-Tex over-socks.

In today's high-tech world, options abound. There is no "right way" to dress for winter paddling.

The closest I get to winter canoeing in Minnesota is a late-October solo trip in the Boundary Waters Canoe Area. Here, the daily high can be just above freezing, and nighttime temperatures often plunge into the teens. The rocky portaging/camping nature of this area suggests a traditional (wool, pile, and polypro) approach to outdoor clothing. Scuba gear would be too uncomfortable to wear all day, especially where frequent portages are the rule. And neoprene clothes would freeze solid when the mercury dips below freezing at night. Ditto for November outings in the Keystone State. All this suggests you should match your paddling gear to your winter canoeing style and to the type of canoe you paddle.

Boats

If you paddle a tender slalom beast, you'll want to follow the lead of the whitewater crowd and clothe yourself in sweaty neoprene. Otherwise, you'll wear more traditional (comfortable) clothing and adapt your canoe for cold-weather travel, as follows:

If you paddle solo, you'll want a two-piece fabric splash cover for your canoe. Without one, icy water drips into the boat (and freezes there!) every time you change paddle sides. A cover also cuts wind resistance by half and keeps you warm in blowing rain and snow. I can't say enough good things about my canoe cover!

The bow section of a two-piece solo cover should stretch to the aft thwart where it overlaps and Velcros to the tail piece. An oversize cockpit (for latitude in adjusting a sliding seat) has ties around the base so the sleeve may be rolled and tied for easy exit. A quick-release Velcro/snap arrangement at the sleeve hem allows rapid exit in a capsize. The forward piece may be rolled and reefed just in front of the paddler to catch drips when switching paddling sides, or it may be secured near the bow to allow a good view when portaging the canoe.

For tandem canoes, a three-piece splash cover with removable belly section is more versatile than a two-piece model. It provides these options:

- To portage, roll and reef the end caps (leave 'em on the canoe) and detach the belly section.

- In rain or snow, Velcro the end caps to the belly and snug the cockpit skirt around your waist for a tight seal.

- When lining around obstacles, leave the belly on but roll and reef the ends so you can get in and out of the canoe without crawling through the fabric sleeve.

- When paddling shallows, roll and reef the cockpit skirts for easy exit and entry.

Other equipment concerns

For day trips, a change of clothes is generally sufficient protection against hypothermia or a capsize. Over-nighters require the ability to dry wet things, which isn't easy in frigid weather.

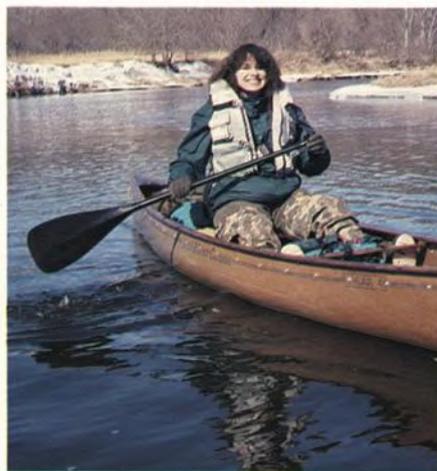
For this reason, I always carry full-bore fire-making equipment, which includes a strong knife, folding saw, hand-axe, chemical fire-starters and candle. The hatchet is not for chopping. It's a splitting wedge to cleave big logs. One person holds the axe. Another pounds the head through with a chunk of wood. The result is lots of good, dry wood and no "axidents."

A 12-foot x 12-foot nylon rain tarp, customized with extra ties on the face and edges, allows you to cook and work in sleazy weather. And in the event your woodsmanship fails, don't forget a stove.

Amenities

A detachable seat pad makes a convenient duff warmer in the canoe and camp. Commercial models are available, or you can make your own.

Knee pads also take the sting out of cold-water paddling. You can easily make them from a closed-cell foam sleeping pad. Cut the foam to shape (lightly blow-torch the edges for a finished look) and glue it into the hull with waterproof contact cement.



It should go without saying that critical items must be protected against rain (and snow) and a capsize. You can buy expensive PVC rafting bags or use the "sandwich" method of packing.

The procedure begins with packing whatever you want to keep dry in a fabric sack, which need not be waterproof. Place this sack inside a plastic bag and seal the bag mouth with a loop of shock cord. Nest this unit inside an oversized fabric sack. Note that the delicate plastic liner (the waterproof layer) is protected on both sides by tough nylon. Apply this "sandwich" principle to everything you want to keep dry.

And don't forget:

- The inside of your canoe won't dry in chilly winter weather, so bring along a sponge to clean up icy paddle drips and accumulated water.

- Nights are much longer in winter than in summer, so campouts require long-lasting batteries (extras, too) for your flashlight. A full-sized head lamp is a welcome companion this time of year.

- A glass or stainless steel vacuum bottle brings you hot coffee, tea or soup any time of day.

- A telescoping candle lantern raises tent temperatures 10 to 20 degrees.

- Bring a large brimmed hat to keep blowing water or sleet off your glasses. Best is a traditional souwester worn over a wool stocking cap.



Judgment

Capsize on a farm pond when air and water temperatures are both below 40 degrees, and you'll understand the need for extreme caution. Unless you're wearing full scuba gear or a nylon paddling suit over polypropylene and pile, you'd best confine your winter travels to easy waters in the company of friends—if you paddle at all in cold weather.

It takes time to develop the proper respect for a waterway on which help is not immediately available. And in winter, almost every lake and river qualifies. Don't rush the learning curve. Fear is nature's way of telling you to slow down and think before you act. Icy undercut banks, floating ice chunks, a combined air/water temperature of less than 100 all spell trouble even when you're well-prepared.

Start out easy, equip right, surround yourself with caring friends, and you'll be well-prepared for the dangers of the water and the weather.—CJ

Boat Training for New WCOs



The graduation ceremony was held for the 10th student class of waterways conservation officers (WCOs) last May at the Capitol in Harrisburg. These 15 officers successfully completed eight months of intensive training at the State Police Academy in Hershey, the H.R. Stackhouse School of Fishery Conservation and Watercraft Safety in Pleasant Gap and the U.S. Army Corps of Engineers facility at Crooked Creek Lake, and six weeks of coach/pupil field training.

Along with basic police training, these officers trained thoroughly regarding the Fish and Boat Code. Part of their training on how to enforce the Code involved boat training, ranging from the use of canoes, inflatables, flat-bottomed boats, personal watercraft, and V-hulls to large powerboats. For many WCOs boats are the primary patrol vehicle to enforce Fish and Boat Code violations and to respond to accidents. It is crucial that these WCOs feel at home as much on the water in their patrol boats as they do on land in their patrol cars.

These new WCOs have a variety of boating and fishing backgrounds. Some are experienced on small river boats and have never operated 22-foot boats on open water. Others experienced with large powerboats have never had the opportunity to maneuver a canoe in a straight line across a choppy lake on a windy day. Their 10 days of intensive boat training brought them countless new boating experiences. These experiences were invaluable as many of these officers still do not know their county assignments or which waters they will be assigned to patrol.

The first two days of boat training began with the American Red Cross Fundamentals of Canoeing and Basic River Canoeing courses. The rest of the training was conducted from the Professional Motorboat Operator's Course developed by the U.S. Army Corps of Engineers. The on-the-water training took place on Crooked Creek, Crooked Creek Lake, the Allegheny River and the Three Rivers area of Pittsburgh.

Brutal lessons

On the first day of on-the-water training, the winds and waves kicked up on Crooked Creek Lake to give the WCOs some brutal lessons on how to steer a canoe around buoys on a small, choppy lake with gusty winds. They learned canoeing strokes such as the draw, pry, push-away, J-stroke and sweeps. They had to practice these strokes on the beach before they took to the water. To maneuver through the buoys, they had to know the turning strokes in addition to the forward and reverse strokes. Only one canoe experienced the cold plunge as the officers practiced racing around buoys to make a better time than their training partners.

As the day progressed, the canoes were moved out to Crooked Creek, the large stream that begins at the lake discharge, for the moving-water training. Officers practiced eddy turns, peel-outs and ferries. The wet part of the day came when people started practicing surfing waves. This was the key test to handling a canoe in moving water,

by Cheryl Kimerline Hornung



and this was when WCOs started getting wet. Getting wet is part of learning to paddle. If you never had to swim a rapid, you've probably never really pushed your skills.

Motorboats

The next part of the course involved completing the Professional Motorboat Operator's Course. Classroom topics included safety equipment, boat and boat maintenance, trailer and trailer maintenance, navigation/rules of the road, marlinspike and course familiarization. The bureaus of Boating and Law Enforcement taught the curriculum.

The trainees learned fire suppression and the use of fire extinguishers at the Armstrong County Fire School. Officers learned about different types of fires and extinguishing agents, and they had the opportunity to practice putting out fires.

They learned quickly that the time of discharge is brief and that it's crucial to aim the extinguisher at the base of the fire using short bursts and sweeping from side to side.

They were taught "first aid" fire fighting. The equipment and techniques are designed to knock down a very small fire or at least slow it until occupants exit and professional help arrives. They were reminded that the priority is to save lives, not property.

The next station was boat orientation to make the new officers familiar with the characteristics of outboard and I/O (inboard/outboard) motors, proper starting procedures, equipment checks, equipment maintenance, mooring procedures and getting under way. The WCOs had to identify all characteristics of the boats and motors, and go through the starting procedures to get under way and how to refuel the boat.

The next station was operating powerboats through various course layouts. Negotiating the serpentine course helps the trainees see their relationship to a fixed object while maneuvering to the port or starboard, to learn the steering capabilities of the vessel, to develop steering and throttle coordination and to prevent cavitation.

Another station was the transition course. It is designed to develop parking and backing maneuvers, to do a transition smoothly from a cruising speed to a parking situation, to use the throttle to brake, and to learn to engage the gears correctly.

Learning to maneuver alongside another boat gave the new WCOs hands-on practice pulling alongside a stopped vessel in open water from port and starboard sides and from upwind and downwind directions. The officers practiced by having one boat stop while the other boat pulled alongside from the port and then the starboard side. Officers continued until everyone had a

chance to complete alongside maneuvering from all sides. They followed safety considerations such as using adequate fenders on both vessels, using clear communications, using a slow, controlled approach and using the wind and current advantageously.

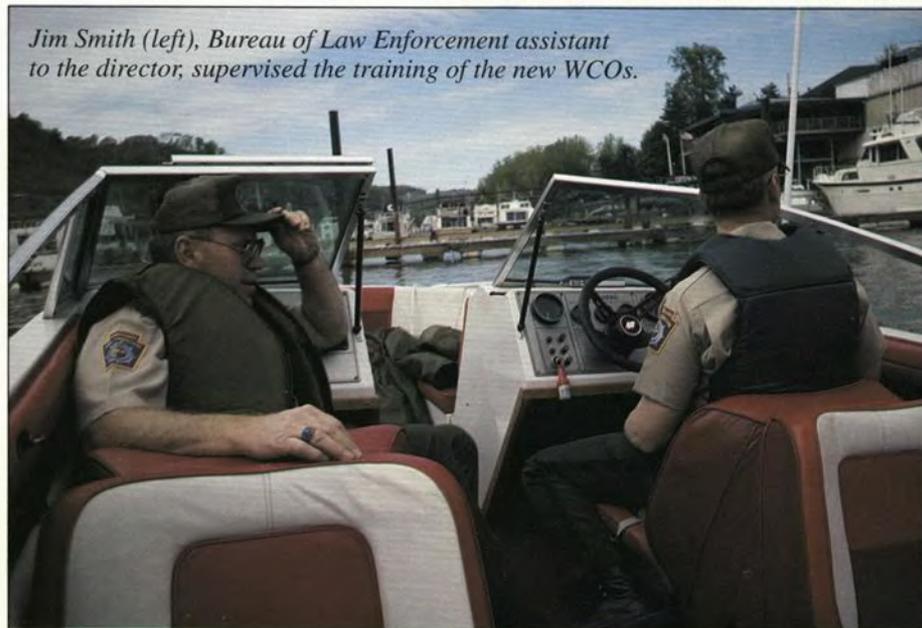
At this time, a strong wind had started to blow across the lake, making any type of close maneuvering difficult. If these WCOs could pull alongside in that wind, they could maneuver in almost any weather.

Pulling away from the stopped boat was also practiced. Officers learned to watch the stern of the boat when pulling away. They considered the wind and wave action, and pulled in the fenders. They made sure the other vessel is operational.

Trailer

Instructors set up a station for trailering so that students could learn how to pull forward efficiently and back a trailer around obstacles, and how to launch and retrieve a motorboat. The students in this station also became familiar with safe trailering techniques and equipment. Instructors set up a practice course with safety cones so that students could back through a lane created by the cones and into a stall. The students were taught launch ramp etiquette by preparing the boat to launch in the parking area or at the top of the ramp.

They also practiced retrieving boats. It was so early in the season that the courtesy docks were not placed yet at the ramp, just like the typical first time out on the water for the season. The water level was low and the ramp was not a steep grade, so some of the larger boats had problems getting off



Jim Smith (left), Bureau of Law Enforcement assistant to the director, supervised the training of the new WCOs.

the trailer—nothing unusual that boaters don't commonly experience.

The WCOs practiced towing disabled boats so that they could acquire safe towing skills, learn the different types of tows and lines, and identify the required towing equipment.

The new WCOs rotated through these stations throughout the day until everyone felt confident with the basics of boat operation. If they could operate the boats in these winds, they felt sure they could do it on their own patrol boats.

That night, students had an opportunity to operate a personal watercraft and a 14-foot runabout. The Yamaha Waverunner Personal Watercraft was loaned to the Commission for educational purposes by Don's Kawasaki in York. Several WCOs were interested in acquiring a personal watercraft for patrolling some of their county waterways.

The next day, emergency operations were added as part of the course. The WCOs practiced getting an overboard victim up into their boats using the roll-aboard and stirrup techniques. After several hours of practice, they went back to the classroom to review the basic information and to take a written exam.

Next on the agenda was the transfer of equipment to the Allegheny River. Hunt's Marina in Oakmont was the base of operations. The officers needed to practice operating a variety of boats in tight situations. While on the river, they practiced river boating exercises, law enforcement operations and boarding procedures.

Boardings

As WCOs, they will undoubtedly make a variety of "stops" on the water, and instructors designed this course segment to give the officers the information needed to make a proper boarding.

WCOs, in most instances, have three reasons to stop a boat—when they observe a violation, when someone aboard needs assistance and for a spot check. Officers practiced pursuit and stop techniques using emergency blue lights and sirens. The

WCOs practiced informing the skipper to "place your boat in neutral. We're going to come along your (port or starboard) side." The blue light may be turned off after the stop, unless in a high-activity area, in a traffic channel or when the officer wants high-visibility enforcement.

Instructors emphasized the importance of a good approach. Some of the techniques they learned to avoid boarding problems were to check both sides of the boat bow



for registration numbers and a valid license. Officers learned to approach from downwind for better control, to put out fenders as needed, and to have boat occupants pull in fishing lines if they are in the way.

WCOs learned to approach from the stern, if possible, so they can see everyone on board. They learned to caution passengers (especially children) not to grab the patrol boat so they do not pinch their fingers. They practiced coming in slowly and smoothly, letting the current, wind and inertia propel the boat. The boarding WCO or second mate then fends off the patrol boat from the stopped boat.

Now that the WCO is alongside, the officer can confront the boater. The new WCOs were taught that they have the ability to set the tone for the boarding. The manner in which they speak and the tone of voice play an important part in letting the boater know that the WCO is firm and fair in his judgment.

As a WCO, it is important to try to make each boarding as informative as possible. WCOs learned to take time to inspect the

boat for required safety equipment, and explain how to check PFDs, fire extinguishers and flame arresters. They also explain any special rules and regulations that might be in effect in some waters.

If a citation is issued, the WCOs were taught to make sure the operator understands the violation for which he is receiving the citation and the right to a trial, or waiving the citation and pleading guilty on an acknowledgement of guilt. When this is explained, WCOs ask if they have any questions. WCOs learn to make each stop as informative as possible. They are told to remember in most cases that if you treat boaters courteously, they will treat you the same way.

Now that the WCOs were taught proper boarding procedures, they spent the afternoon doing mock boating scenarios in which they stopped powerboaters, fishermen, personal watercraft operators, and others for violations. Violations ranged from fishing without licenses, having expired boat registrations, not having identification, fleeing

from officers, reckless operation and refusing to answer questions. The new WCOs had to go through all the proper boarding procedures by starting out by introducing themselves, requesting the boat registration card and other identification, performing a check of the required safety equipment and issuing a citation if a violation has occurred. These boating violator "actors" were staff from the Bureau of Boating, deputies from the Bureau of Law Enforcement and U.S. Coast Guard Auxiliaries.

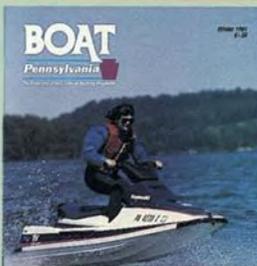
Under the watchful eyes of experienced WCOs, the officers spent the next few days in more specialized training, including operating through locks and dams, observing a dredge operation and boarding the dredge Allegheny, near Freeport. Chart reading and night operation on the Three Rivers was the final phase of training.

Their 10 days of intensive boat training should be invaluable to them as new officers in the field. It was training that many senior officers never received in the past. They had to learn boating the hard way.



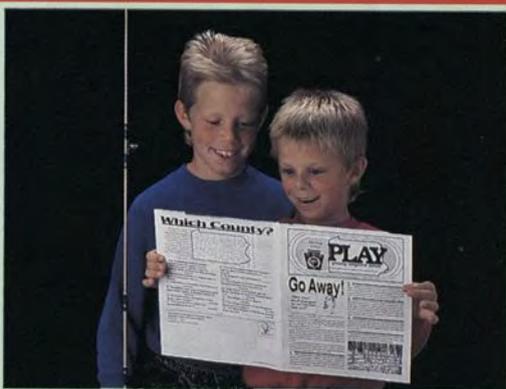
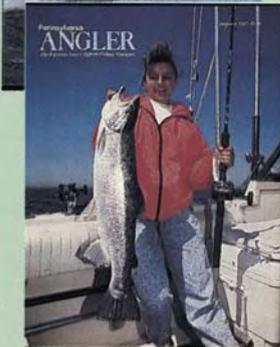


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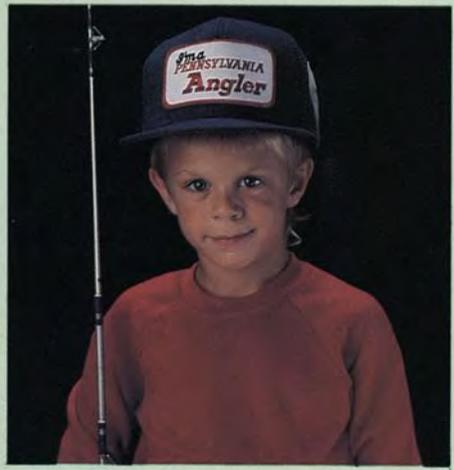


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