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BOAT

Pennsylvania



The Keystone State's Official Boating Magazine



Viewpoint

Your Marine Fuels Tax



John Simmons
*Director
Bureau of Boating
Pennsylvania Fish & Boat Commission*

Boat owners whose registrations expire this year should have received notices to renew their registrations for the next season. On these renewal notices is a question that is vitally important. That question deals with the amount of fuel used in your boat during the previous season.

Why do we ask for this information? It is very simple. By law the tax you pay when you buy gasoline is refundable to the Commission for use to provide services to boaters. The tax on motor fuel in Pennsylvania now amounts to 12 cents per gallon. This may not seem like much, but when multiplied by the millions of gallons used, the revenue generated is significant. Last year the Boat Fund received \$1.9 million from this source. Almost one-third of boating expenditures is funded by marine fuels taxes.

Why am I telling you this? First of all, you have a right to know where your tax dollars go and from which sources your boating programs receive their funding. Secondly, I want you to be assured that we do not use this information to make judgments concerning the amount of use of your boat to increase registration fees. On the contrary, the refund of the marine fuels tax is used to keep your registration fees down.

Thirdly, I want you to know the importance of reporting a correct and accurate estimate of the amount of fuel you use. Reports that are either too high or too low skew the calculations used to determine the amount of the refund. This results in the Boat Fund not getting the total amount of revenue that it deserves.

Last year boaters reported using the following average amounts:

- Boats less than 16 feet—28 gallons
- Boats 16 feet but less than 26 feet—94 gallons
- Boats 26 feet but less than 40 feet—249 gallons
- Boats over 40 feet in length—495 gallons

I have talked with many boaters and when I ask how much fuel they purchase, I find that the amount they tell me far exceeds these averages. I am especially concerned with boats in the class 16 feet to less than 26 feet. Many boats in this class have fuel tanks equal to half this amount. Boat owners with these kinds of boats use a full tank in one day of boating. I can conclude only that there is much under-reporting taking place. If this under-reporting is intentional, boaters must know that they are hurting only themselves. The tax has already been paid, and if the Commission does not get the refund for its boating programs, the highway fund will use it for its projects. One may argue that the highway fund needs money, too, but the \$1 million to \$2 million that we are talking about is a drop in the bucket for them, but it is a substantial amount for the Boat Fund.

When completing your renewal application, please give serious thought to the amount of fuel you purchased last year. Don't inflate the figure, but be sure it accurately reflects the purchases you made. Tell your fellow boaters about the importance of accurate reporting. The ability of the Commission to provide facilities and programs and future boating fees depends on it.

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This issue's front and back covers were photographed by Tom King. If you're looking for a spot to try this spring, check out Mike Bleech's article on paddling Tionesta Creek, on page 4, and Jeff Knapp's tour of the Armstrong County portion of the Allegheny River, on page 28. In addition, tour the Delaware River on page 23 with Area Boating Programs Specialist Heidi Milbrand and WCO John Sabaitis. If you're a novice water skier, check out Bruce Kistler's article on basic techniques, on page 8, and if you're a more experienced water skier, please turn to page 26 for a glimpse at what could be on the horizon for you. If you own a powerboat, the information on props beginning on page 12 is important, and the ideas on launching and retrieving on page 16 could make your life easier this season.

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SPRING RUSH **on the Tionesta**

by Mike Bleech

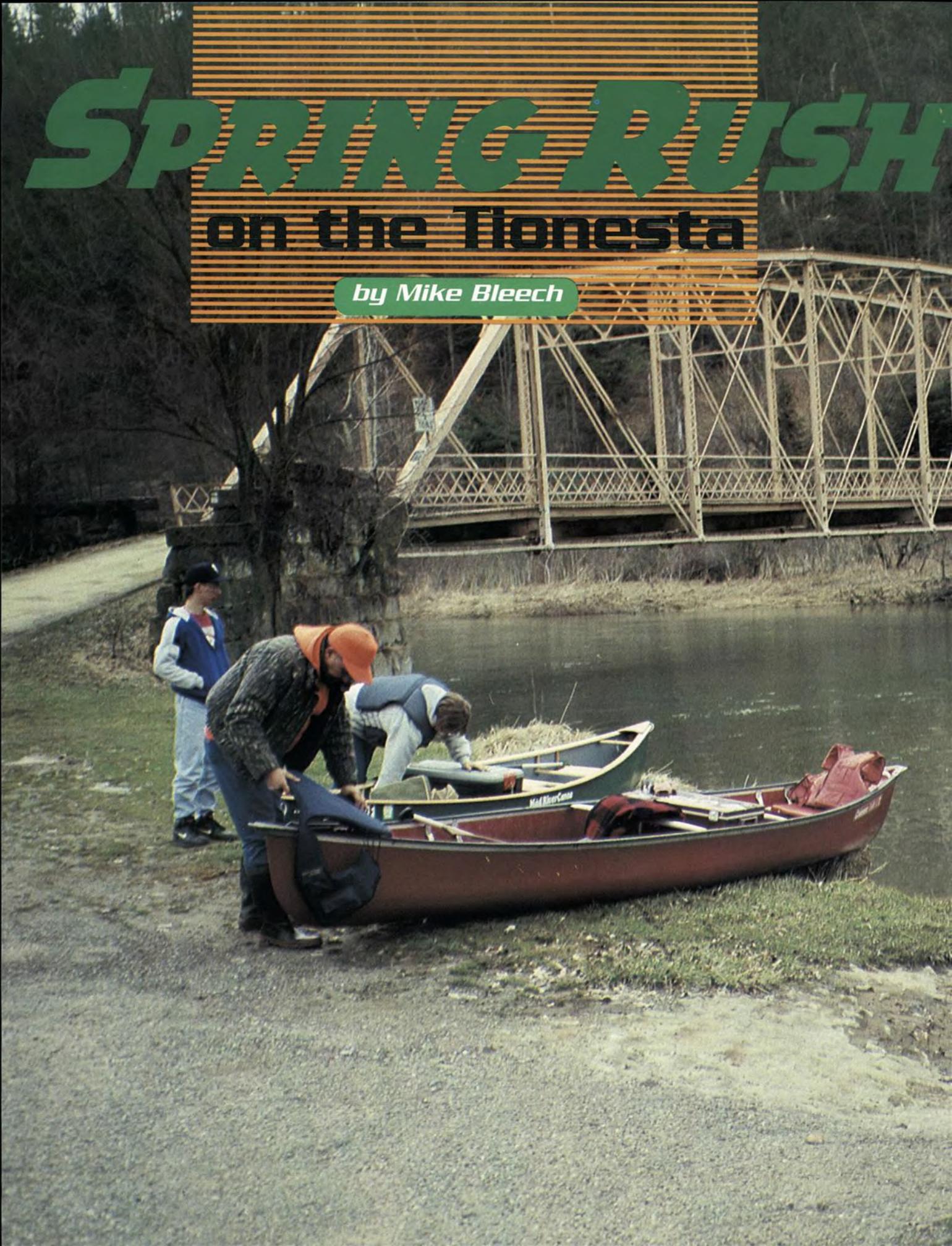




Photo: Mike Bleach

From a distance the Allegheny Highlands are still brown and gray. Only recently did the winter white disappear, though if you look in the recesses of the narrow valley sides that do not yet get direct sunlight, you can still find patches of snow and ice. Most creeks and rivers are high and muddy. Their swirling waters penetrate the brush and trees along the bank, making canoeing treacherous. If you get into trouble on water like that, there might be no place where you can escape to shore.

The Tionesta, however, is headwaters. It drains mostly from the Allegheny National Forest. Rather than rushing across blacktop and down gutters into flooding streams, much of the valuable water from spring rains and snowmelt soaks into the ground. It seeps out of the ground in springs through the hot summer months, providing enough flow to sustain life—while more civilized streams have gone dry or receded to a few smelly, stagnated pools. The Tionesta does flood its banks, but it recedes more quickly than many creeks.

Jim and Jesse McMichael, Worth Hammond and I wanted to go canoeing. It had been a long winter. As we say back here in the hills, we needed to get the stink blown off us.

The Allegheny River was swirling, flat, and not at all appealing. Conewango Creek was brown and over its banks. North of the New York border where we would have begun floating it, instead of a narrow, meandering creek, it was a vast tree-studded lake. Then I checked the Tionesta. It was perfect—bank-full, a pleasing green, swift, and high enough to navigate the riffles that are too shallow to float during summer.

Early the next morning we lifted the canoes off the tops of our vehicles at a pull-off just downstream from the Henrys Mill bridge. Our plan was to take my van to the bridge at Kellettsville where the float would end. At the end of the trip we could haul both canoes back up the creek in the van to Jim's car, where the trip began.

Tionesta Creek, the "big" Tionesta, forms near Barnes, where the West, East and South branches come together. It was near here in 1812 that my first ancestor came to Pennsylvania, to buy a lumber mill. I have floated the West Branch, the larger of the three main branches, all the way from Weldbank, about 6 miles upstream, but that stretch of water is littered with fallen trees, making numerous short portages necessary. I would not float it again.

The better starting points for floating

the Tionesta are near the junction of the South and West branches, and downstream. The farthest downstream take-out points are either the Nebraska Bridge, which is near the head of the Tionesta Reservoir, or at the Corps of Engineers boat ramp near Tionesta Dam. The entire stretch from the beginning of the big Tionesta to the Corps of Engineers boat ramp is about 38 miles.

A bridge at Henrys Mills, now a cluster of camps, is 3.5 miles from the start of the big Tionesta. Other easily identifiable locations are the bridge at Lynch—6.5 miles, Minister Creek—12.5 miles, the bridge at Mayburg—17 miles, the bridge at Kellettsville—21.5 miles, Nebraska Bridge—33 miles, and the Corps of Engineers boat ramp near the dam—38 miles. Actually, Minister Creek is not so easy to spot, but because a campground is nearby, this is a noteworthy location.

Avoid floating the Tionesta during the first few weeks of trout season because the stream is crowded with anglers.

The main Tionesta is a delight for floaters during the spring run-off period. It flows through a narrow, steep, almost completely forested valley. A blacktop road winds through the valley down to Kellettsville, but traffic is light. You hardly notice the road, except at a few bridges and clusters of camps. The only time this valley gets busy is during the first month of trout fishing season and during hunting season. Even then it is busy only by forest standards.

The headwaters of the Tionesta are in Warren, Elk and McKean counties. Just below Henrys Mills it flows into tiny Forest County, where there are no four-lane highways, no traffic lights, where a lumber mill is the largest employer, where there are more camps than homes, and far more deer than people.

Steam rose from our cups of hot tea and coffee. Jesse and Worth had gotten chilled while Jim and I had shuttled the van to our take-out place. Even to Jim and me, who had the heater on during our ride back to the starting point, the heat from the hot drinks felt good on our fingers. Soon enough the exercise of paddling would warm us, and the sun would bring the air

SPRING RUSH

on the Tionesta



The author admires a spring morning on Tionesta Creek. The Tionesta offers some 38 miles of paddling.

photo-Mike Bleech

temperature up to the mid-50s by early afternoon. Standing there contemplating the Tionesta, though, it was chilly. Getting started was the hard part.

I suspect that Jim's mind drifted back to past trips down the Tionesta, like mine. Jim had canoed the creek many times with the Boy Scouts. The last time I canoed the Tionesta was with Jim and several other friends the spring after I returned from Vietnam. That was a memorable outing—one I needed very badly.

"Well," Worth said, startling me out of my flashback. "Let's get going."

A canoe seems most squirrely the first time you step into it in the spring. Worth held tight to a root while I crawled into the stern seat, yet I almost expected a cold dunking. It did not happen, thank heavens. Once I settled into the seat, Worth pushed away from the bank and we were under way. Each paddle stroke, each small movement either Worth or I made worried me at first, but after a mile of creek was behind us, I felt as comfortable as I had during the last canoe trip of the previous fall.

"I hope we haven't planned to canoe too far," I said to Worth. "That ride down to Kellettsville and back was longer than I thought. I sure don't want to have to finish this in the dark."

"How far is it by water?" he asked. "Eighteen miles," I answered. "That might be stretching it for our first trip of the year," Worth suggested. "How fast do you think we're moving...maybe 4 mph?"

"That fast anyway," I answered. "Yeah, we'll make it in plenty of time if we don't take too long for lunch."

Worth timed us to the first landmark, the bridge at Lynch. It took a half-hour to get there, a distance we estimated to be about two miles. That worked out to be

Tionesta Creek is almost entirely inside the Allegheny National Forest, so there are numerous potential access points, making a broad variety of floats.

exactly the speed Worth guessed. However, as we later discovered, the distance from our start to the Lynch bridge was closer to three miles. We were traveling faster than we figured, more because of the current than our paddling.

Time passes quickly on the Tionesta. It kind of sneaks past you while your mind is occupied by the forest scenery. The hardwood forest crowds right to the edge of the creek. The light, blotchy bark of sycamores, and the rich green of hemlocks and white pines contrast against the leafless oaks and maples.

Mergansers and a couple of Canada geese seemed to be playing a game by flying ahead of us when we got too close. They would fly only a few hundred yards, then settle back onto the creek. Each pair of birds—spring is the time for pairing—would repeat the process several times before getting disgusted and flying back upstream. They scolded us as they passed overhead.

We debated whether to eat lunch at noon or somewhere near the half-way point. By the time we decided to get at least half of the journey behind us, we were already well beyond that point. That was before I sat down with calipers to estimate the stream mileage. We pulled onto the south bank near Mayburg, where a small tributary entered. The flat top of a long abandoned

railroad grade provided a perfect place to set up our field kitchen.

Worth and I are notorious for our meals in the field. We treat them as the art form they deserve to be. For that particular meal I had prepared venison chili, a dish Worth taught me. I was testing a recipe variation for the next Pennsylvania State Championship Chili Cook-Off.

Relaxing with our feet on dry land reminded us how cool the day was. Just 50 feet from the cooking fires we huddled around, the shaded creek side cliff was still decorated with icicles. Several times in the morning we got glimpses of blue sky. The sun felt very good, but the gaps in the cloud cover closed quickly. After about 11 o'clock we did not see it again that day.

Worth heated water, and we made hot chocolate with marshmallows. I had tucked those packets of hot chocolate mix in my dry bag as a surprise. Worth commented on what a good one it was!

There is a big difference between an adventure and an ordeal in the way it feels, but the difference in arriving at one or the other is much less obvious. Worth often says, "If you don't have it, I probably do, or we don't need it." We have been confronted with torrential rain, snow, frigid temperatures, heavy winds, lightning, just about anything that can go wrong, yet we still have a good time. We have adventures.

A chilly day in early April is just an excuse for a cup of hot chocolate with marshmallows. As I think back on that day, I can't recall how chili and hot chocolate went so well together. But they did! We savored those 3/8-inch cubes of venison in their thick, reddish-brown gravy, dipped

right out of the pot with tortilla chips. And the warm, aromatic aftertaste lingered delightfully when we continued downstream.

The journey was over quicker than we had anticipated. Even with an extended lunch break we spent only four hours from start to finish. The stream had been at the perfect balance of speed, bottom clearance and limited hazards.

As flow falls from the bank-full stage, more mild whitewater develops. The likelihood of scraping on the bottom or striking midstream boulders increases. Avoid floating the Tionesta during the first few weeks of trout season because the stream is crowded with anglers.

Tionesta Creek is almost entirely inside the Allegheny National Forest, so there are numerous potential access points, making a broad variety of floats. You can float an hour, or for a couple of days with a relaxed camp between. Note, however, that not all the land bordering the creek is public. About a third of the land inside the Allegheny National Forest boundary is private. Some of the private land is not posted, but floaters should use good judgment in respecting landowner rights. National Forest land is fairly well-marked, and it can be located with the aid of a map of the forest.

Allegheny National Forest maps are available for \$2 from: Allegheny National Forest, P.O. Box 649, Warren, PA 16365. Ask also for information about canoeing in the forest.

Mike Bleech is the winner of the 1993 Pennsylvania State Championship Chili Cook-off.

Tionesta Creek Back in Time

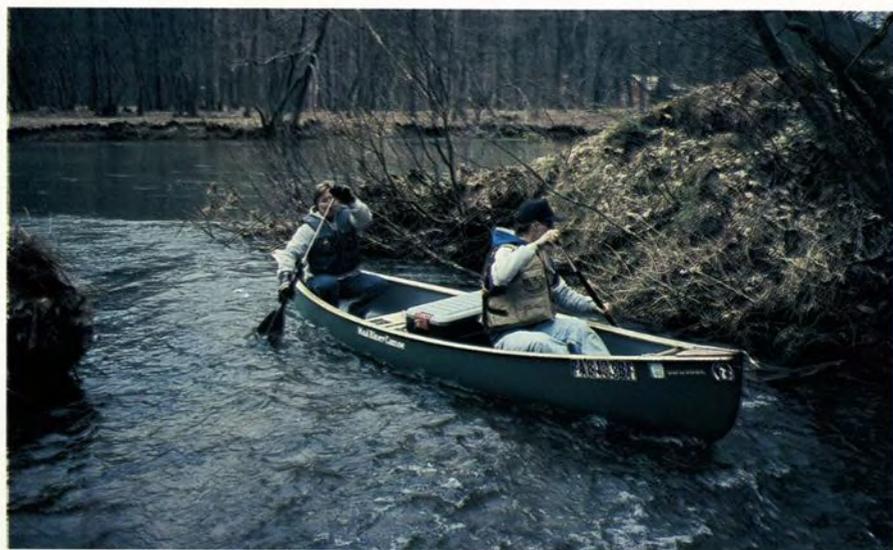
Though early voyagers had passed the mouth of Tionesta Creek, its valley was not settled by citizens of the very young United States of America until about 1800. Lumber was the main attraction. First it was the giant white pines. According to an early account, the valley was about 70 percent hemlock with some white pine and hardwoods. The only way to get the lumber out was by floating it down the Tionesta or hauling sawed lumber on wagons.

In 1864, the Pennsylvania Railroad completed the Philadelphia and Erie line, which ran from Sunbury westward across the Allegheny Highlands to Lake Erie, following the Tionesta Valley a short distance. This link with outside markets opened the Tionesta Valley to devastating exploitation. Beautiful as the valley is today, it is much different from the valley the logging crews found two centuries ago.

The railroads brought the leather tanners, who needed hemlock bark. In 1880, the largest tanneries in the world were in the Tionesta watershed. A railroad was operating up and down the Tionesta valley, with spur lines up several tributary valleys. Giant white pines still were falling. When all the pines and hemlocks had been cut, the pulp cutters took whatever else was standing. At about the same time, oil was discovered. Chemical plants were built along the creek. Fortunes were made. Here was the heart of the rapidly developing nation.

By the early 20th Century, hardly a tree was left standing on the banks of the Tionesta. With each rain the runoff carried huge loads of soil, cutting deep scars in the hillsides. The periods of high water became higher, and the low-water periods lower. Industry abandoned the valley, and many people followed.

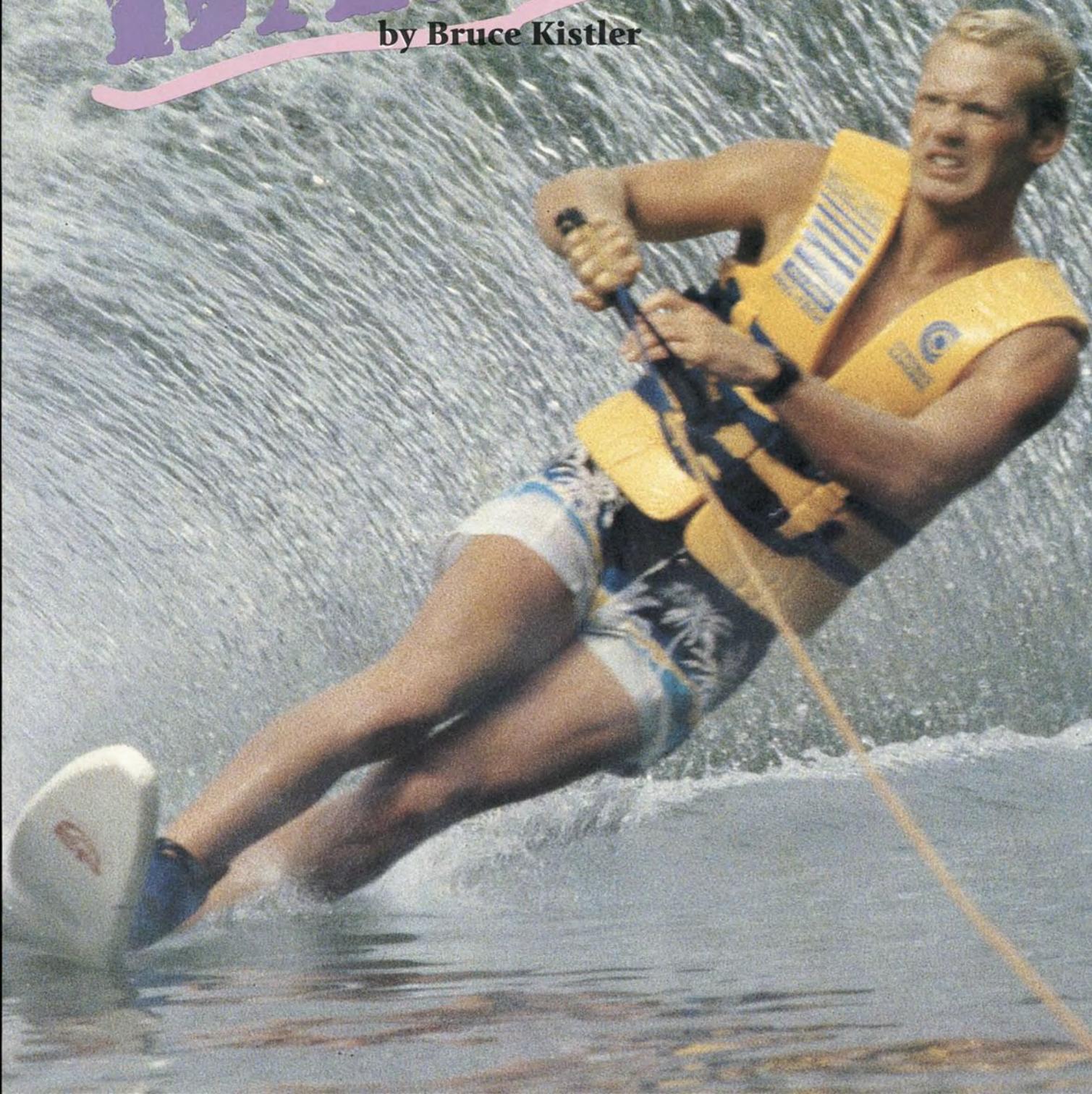
Today the valley enjoys a slow pace of life. A large portion of the people who use the valley are there just to amuse themselves. The forest has reclaimed the hillsides, though it is not the same composition it was before the waves of loggers. Some pines and hemlocks are there, but it is distinctly a hardwood forest. Nevertheless, Tionesta Creek is a forest creek again.-
-MB.



The main Tionesta is a delight for floaters during the spring run-off period. It flows through a narrow, steep, almost completely forested valley.

Water Skiing BASICS

by Bruce Kistler



The superstars of football, baseball, and tennis--any sport you name--may seem to have gotten where they are solely on talent, but you can be sure that they spent countless hours practicing fundamentals before achieving stardom. The same is true of water skiing. If you want to become a champion, or if you just want to ski better than anyone else on your lake, take the time to learn and practice the basics.

Like most skiers, you are probably faced with having to learn by trial and error. Because you haven't had the benefit of formal instruction, you most likely have developed some bad habits that can hamper further progress. And don't think that a new ski or some expensive accessory can make up for bad habits. The guy with the \$500 skis who hasn't bothered to learn proper technique is like a Sunday driver in an Indy car--he's got more ski than he can possibly handle. Sure, you need decent equipment, but get the basics down cold before investing in top-of-the-line skis and accessories.

What you are seeking is control--the ability to accelerate, decelerate, turn and jump smoothly and precisely. Your body is the medium through which the power of the towboat is transmitted to the skis. You have to be able to use your arms, torso, legs and ankles to do this effectively. Here are some fundamentals on which you should concentrate.

- **Ski with your back upright and with your knees well-flexed.**

Many skiers, unfortunately, never get over what I call the "beginner's syndrome"--bending forward at the waist, which in turn causes the legs to straighten. Proper control is impossible when your legs are straight and stiff.

Bend those knees. Crouch down. At the same time, straighten your back and keep your head up. On two skis, your head, shoulders and hips should be directly over your binders and your knees should be pushed forward. On a single ski, although a more backward lean is normal, the same principle applies. Your knees should still be bent and your back should be erect--not broken at the waist.

- **Keep the handle low and compensate for changes in pull by tucking the elbows into your hips.** It's good to keep your arms straight when you're learning to get up on two skis, but then you should learn to "work the line." While riding straight ahead, keep the handle at waist level and your arms moderately flexed, ready to pull in or extend the handle slightly with changes in tension in the line. When accelerating--when you cut outside or back toward the wake--it's most effective to pull the handle toward the belt line. When pulling, tuck your elbows in toward your hips, not splayed out like chicken wings.

When decelerating in relation to the boat, such as when you are preparing to turn back toward the wake, extend the handle smoothly and slowly in the direction of the pull to prevent too much slack. Never raise the handle above your head to compensate for slack. Also, don't use a double-handled ski line if you want to do well as a water skier. A little technique eliminates any need for such a crutch.

- **Use your body lean to control the angle of your ski edges.**

The edges of your skis act as a full-length keel. The angle of the ski edge in relation to the surface of the water and the direction of travel determines if you speed up, coast or slow down. If you lean to the right and at the same time point the ski in that direction, you shoot to the right faster than the boat is moving. How fast depends on how hard you lean. As you stand upright and the ski flattens out, your speed once again quickly becomes the same as the boat speed.

These rudiments are some of the same basics that world and national champions have learned and practice routinely.

An illustration on how the ski edges can be used to slow you down is the 2-ski "snow plow." If you are a snow skier, you know what that means. Let's assume you have pulled far to the outside of the wake, have flattened out and are now moving faster than and parallel to the boat--a situation that can create copious amounts of slack if not handled correctly. To slow down and avoid too much slack, apply pressure to the inside edges of your skis by skiing "knock-kneed," while at the same time spreading the skis apart to form a wedge. Remember, when decelerating, extend the handle slowly to prevent slack. This technique can be practiced by dropping the handle and snow-plowing to a stop.

Now, apply all these techniques by learning how to do continuous slalom turns. Once you learn how to ski on one ski, you probably learned quickly how to pull to one side and "throw a lot of spray." If you pull out and simply stop pulling, you drift back into the wake. To do continuous "slalom" turns as if you were going through a slalom course, you have to learn to cut toward the wake to pick up enough speed to send you past the wake on the opposite side. This move might seem awkward at first, but with practice you'll soon get the hang of it.

First, pull out to the right side of the wake about 10 feet. Remember: Keep the knees well-flexed, back straight, body leaning away, and apply pressure to the outside ski edge to accelerate, arms at your hips, and handle pulled in close to your body. Stop pulling to make a broad, sweeping turn to your left as if you were skiing around something floating in the water.

To do this, you must change from a right-shoulder-down lean to an upright stance (while slowly extending the handle with two hands), to a left-shoulder-down lean (as you resume pulling with the handle pulled in to the waist). As you get better and make sharper turns, you let go with the outside hand and extend the inside arm more. For now it's best to practice the extension with both hands on the handle.

Before the turn, your ski was pointed away from the wake and the spray was coming off the left edge of your ski. If you executed the turn properly, your ski will now be pointed in the direction of the wake, and the spray will be coming off the right edge of the ski. Now, if you lean away (back straight, knees bent) and pull (handle in and low), you will quickly accelerate toward the wake. Don't flatten out at the wake or your ski will fly into the air. Instead, cut through both wakes to the other side. Let up at the second wake, and let your momentum carry you to the left side of the wake. Begin extending the handle slowly and begin a broad, sweeping turn to your right. Once again, your lean will change, in this case from a left-shoulder-down lean to a right-shoulder-down lean, and you will have "changed edges" so that you can pull toward the wake and coast out to the right side again.

By skiing in the manner described, you can do continuous slalom turns as long as you keep your momentum going as a pendulum on a clock. Once you have mastered this skill, you will be ready to tackle the slalom course.

As you can see, by applying a few basic principles, you can learn more complex maneuvers. The rudiments outlined above are some of the same that world and national champions have learned.

If you want to do better as a water skier, you should learn them, too. 

What Do Safe Boaters *Want?*

by Heidi Milbrand



The biggest concern voiced by boaters today is to make boating education mandatory for everybody who wants to operate a boat--whether it's a non-powered craft or powerboat.

As an Area Boating Programs Specialist, I often have the opportunity to travel throughout the state. And of course, I get to observe much activity, whether it's people launching their boats incorrectly to a family enjoying a safe outing on the water to someone operating a boat in a reckless manner.

A priority in my job is to teach safe boating programs to those who request or need them. Unfortunately, the people who do end up taking these classes are most often the ones who do not need them. The people who should attend safe boating classes are the people launching their boats incorrectly or the boater operating in a reckless manner.

The people requesting the classes, the ones who want to be there, are going to be some of the state's safer boaters.

What are these boaters concerned about? What do they want to learn? What do they ask me to teach them?

The biggest concern voiced by boaters today is to make boating education mandatory for everybody who wants to operate a boat--whether it's a non-powered craft or powerboat. Boaters think that by taking a safe boating course, no matter what your age is, you will be a safer boater. Boaters will know what a "slow-no-wake" zone is, they will control their boats in a safe manner when approaching a downed water skier, they will operate their boats in a controlled manner when boating at night, and the list goes on.

Another concern boaters often tell me is that boats go "way too fast" when operating on an unlimited horsepower waterway. They think that speed limits should be set and everyone who operates a powered boat on these waters should obey the speed limit.

Another concern boaters have is that the waterways are becoming extremely overcrowded. They would like to see limits set

Another concern boaters have is that the waterways are becoming extremely overcrowded.



photo-Art Michaels

on the number of boats allowed on the more popular waterways. Overcrowding, they think, leads to more accidents and more reckless and negligent operation. By setting limits, they believe, the waterways will be safer to operate boats on and will allow more freedom in "cruising" on the water.

What do boaters want to learn? Their biggest questions concern which safety equipment they need to carry on their boats to meet the legal requirements. Out of the five pieces of safety equipment required by all powerboats, most boaters usually have only two—life jackets and fire extinguishers. But even though they have them on board, they normally do not have the correct sizes, the correct number for those on board their boats, or they do not even know where they are stored or they have them stored improperly.

The other three pieces of required equipment—sound-producing devices, visual

distress signals and lights—they are aware of but do not realize that they have to have them on board. In most cases, boaters know they have to have lights, but they are not sure when they need to be displayed or exactly where they belong on the boat.

Lights are required to be displayed from sunset to sunrise and during times of restricted visibility. On powered boats, a white light needs to be on the stern (back) and a red and green light on the bow (front), with the red on the port (left) and the green on the starboard (right). On unpowered craft, a white light must be displayed to prevent a collision with another watercraft.

Visual distress signals (VDS) must be U.S. Coast Guard approved and all recreational boats 16 feet or more in length are required to be equipped with VDS (day and night) when operating on coastal waters, including the Great Lakes. In Pennsylvania, VDS are required only on Lake Erie. Many people are not aware of this requirement. Even though VDS are required only on Lake Erie, they are recommended elsewhere.

An efficient sound-producing device (horn, bell, whistle) audible for at least a half-mile must be carried on boats under 40 feet in length. Most powerboats come equipped with a horn. If yours does not have a sound-producing device, a loud whistle will do the job.

I'm asked to teach everything from A to Z that has to do with boating. Whether it's filling out boating accident report forms to hypothermia to locks and dams, an answer is what the public is looking for. And no matter what the question is, it is

always an important one to me.

And of course, my job is not complete if not for telling stories of everything I've seen or done. Recalling events, whether of a tragic or funny nature, usually can set me talking for hours.

A car, boat and trailer completely submerged in the Delaware River and the guy asking if we could call a tow truck. Watching kids "swamp" canoes and then have them asking how are they going to get back to shore. Driving around a small northcentral Pennsylvania town with a canoe trailer, completely lost, finally stopping to ask for directions only to have someone tell me, "There's no such town as that is this neck of the woods." Taking pictures of a boating accident—a sobering moment in one's life. Hearing the laughter of kids while canoeing. Waking up in the middle of the night at a state park, looking out my tent, only to see a black bear checking out my canoe trailer. Maybe he wanted to go canoeing?

My job is always full of fun and surprises—and full of work. But I would not trade it for any other job. Where else can you get the satisfaction of knowing that maybe, just maybe, you saved the life of a boater by telling someone how to launch properly, or how to navigate safely through a lock, or just to have a day of safe boating?

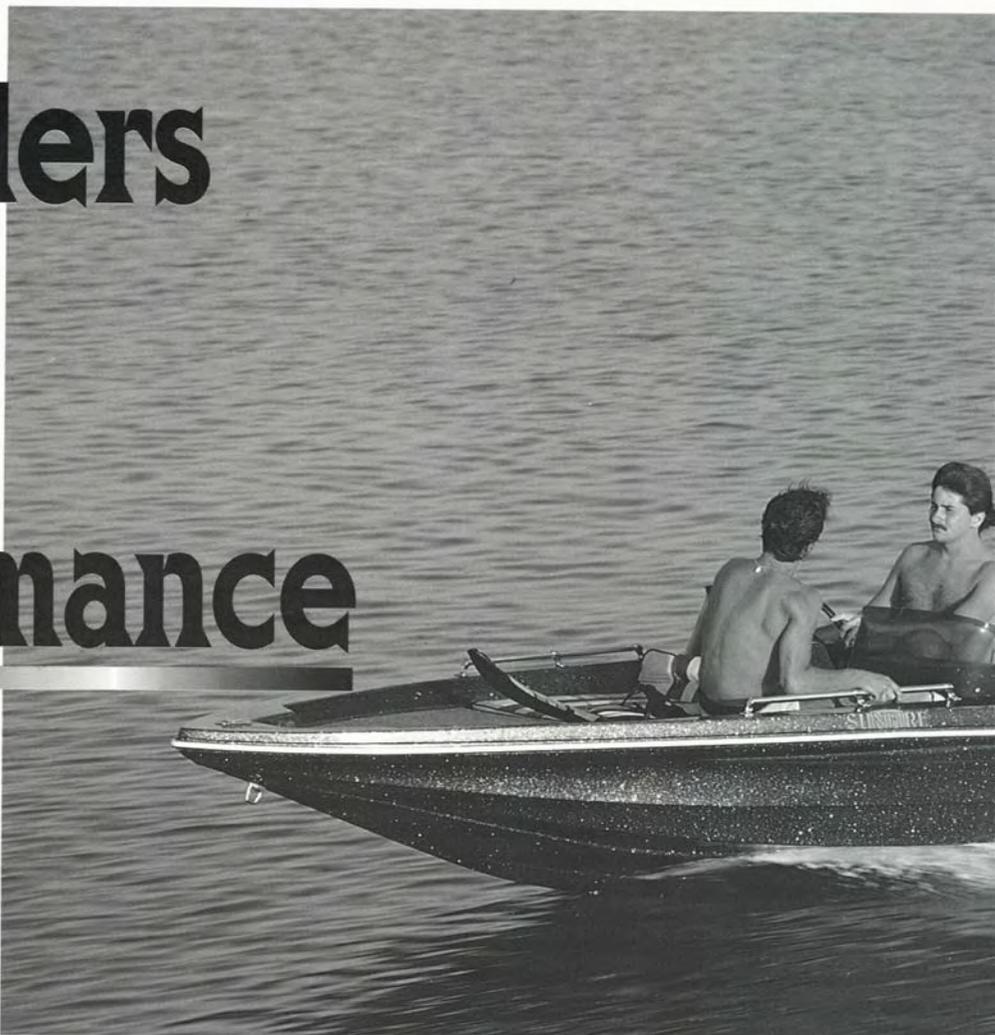
The author is a Commission Regional Boating Programs Specialist. If you would like to offer your club or organization a safe boating class, or for more information on any boating safety class, contact the Commission at (717) 657-4540.

photo-Mariner Outboards



Propellers and Peak Performance

by Mike Bleech



Propellers are the most important performance variable for boaters, after you pick a boat and motor. Props have a profound effect on a boat's handling, speed, acceleration, fuel economy and riding comfort. But many boaters are not aware of the various propeller options available for most motors.

Basically, a prop is composed of blades affixed to a central hub. Each blade has a leading edge, which is the edge nearest the boat, a trailing edge along the opposite side, and a blade tip at the maximum distance that each blade reaches from the hub. The blade face is the broad surface facing away from the boat, and the blade back is the opposite surface. Many blades have a cup, a curve or lip along the trailing edge. It allows the prop to hold water better, similar to the way high-traction automobile tires work.

The hub attaches to the drive shaft in the motor's lower unit. Exhaust gases are vented either through the hub or around it.

Propellers have also been called screws, and this name reveals how they work. A propeller forces its way through the water in much the same way as a screw passes through wood.

A push-pull process caused by a spinning propeller creates the thrust that moves a boat. The leading edge pulls in water from an area larger than the diameter of the prop. This water accelerates as it passes through the prop, and is pushed out past the trailing edge in a concentrated stream, or jet.

Pitch

Most boat motors can use a variety of propellers, each designed for a different purpose. Outboards of about 40 hp and higher don't often come with a prop, because manufacturers know that you could select several different props for use with your boat.

Props vary in three basic ways: Pitch, diameter and number of blades. The pitch is determined by the theoretic distance the prop travels through the water in one revolution. Another way of looking at pitch is the distance the prop would travel if it were rotated one revolution into a soft solid. Diameter is the size of the circle traced by the tips as they spin.

Pitch is the most telling propeller variable. It is important to match pitch to the job that the boat and motor will perform. My 16-foot aluminum boat and 70-horsepower motor, for example, get their best fuel economy and speed with a 19-pitch prop. For slow trolling, a 15-pitch prop is necessary. A 17-pitch prop does a good all-around job, including pulling a water skier.

Rpm, mph

A tachometer is essential to determine the best prop. Run the boat at full throttle and watch the tach. The motor should run in the rpm range specified by the manufacturer. If the rpm run too high, the prop should have more pitch, and if the motor does not reach rpm, the prop should have less pitch. Cutting back one inch in pitch adds about 200 rpm, and vice versa.



photo-Mariner Outboards

Use both the tachometer and the speedometer to find the most efficient rpm to mph combination. The prop indicated by these tests gives your boat its best all-around performance. Beyond that, special circumstances may call for different props.

A prop with less than maximum pitch gives your boat more power. It will jump out of the hole quicker, respond to the throttle faster in the lower rpm range, and troll at slower speeds, but the maximum speed will be lower and it will consume more fuel. Another disadvantage, potentially serious, is that the motor could be damaged if you run it at full throttle, because it would be running over the maximum rpm recommended by the manufacturer. Still, it can be a real advantage in some fishing situations, or when pulling water skiers.

In general, use low pitch for trolling and water skiing, medium pitch for general applications, and high pitch for cruising, for bass boats, and for achieving top speed.

The diameter is usually connected with pitch, and you need not pay it much concern, if you stay with props recommended by the motor manufacturer. Similarly, the number of blades is of little concern to sport boaters, but it does deserve some comment. Increasing the number blades decreases efficiency, but it also reduces vibration. Three blades is the standard compromise for powerboats.

Propellers are the most important performance variable for boaters, after you pick a boat and motor. Props have a profound effect on a boat's handling, speed, acceleration, fuel economy and riding comfort.

Options

In addition to these basic propeller variables, there are specialized options. One is the prop material. Standard props are usually aluminum, which bends or breaks on striking just about anything. Aluminum props can be repaired, if the damage is not too severe, by a professional prop shop.

Other common prop materials are plastic, bronze and stainless steel. Bronze is fading out of the picture, except for some in-board motor applications. Plastic is used for some low-horsepower motors, because it is lightweight and corrosion-free. Stainless steel props are much more durable, but they are also much more expensive.

A common misconception is that stainless steel props are high-performance props. Still, stainless steel props are as much as five times stronger than similar aluminum props, and stainless steel props flex much less than aluminum props.

One example of a high-performance prop is the "chopper." This prop has thinner blades, and does not vent the exhaust gas through the hub. It may also have more rake. Rake is the slant on the blade. High rake lifts the bow on light, high-performance boats. The big advantage of a chopper prop is that it allows higher motor-mounting, which produces more speed, a significant factor only with high-performance boats. These props are very popular among bass boaters.

Propellers are reasonably easy to change, so it is practical to carry more than one prop and change them as the need arises. Remember to pull the key and spark plug wires before working on the prop, and tie a line to parts when changing props on the water. ▼



photo-Dan Martin

BREAKING

Your New Outboard

by Bob Stearns



photo-Mariner Outboards

Give it the right start in life and your outboard will reward you with years of quality performance. We're talking the break-in procedure here. How you use it during its first two hours on the water—without a doubt the most critical time of all—is so important that making a mistake here could easily cut the usable life of that engine in half.

Perhaps to add a slight bit of confusion to all this is the current availability of oil injection to many makes and models, plus the fact that most of the major outboard makers revamp their recommended break-in procedures for both oil-injected and non-oil-injected engines from time to time. The procedure you used two or three years ago might not be entirely correct in 1994.

Therefore, the very first thing you should do when you buy a new outboard, even if it's exactly the same make and model you were using last year, is to read the owner's manual carefully—especially the section on break-in procedures. In fact, read it twice just to be sure.

Mercury Marine's Tom Ireland, who has been in the field with outboards of all makes and models for several decades, also thinks the break-in procedure is critical. If the manual calls for extra oil, for example, then do it—by the book. Don't be in too much of a hurry to go fishing or water skiing before the break-in procedure has been completed.

Tom quickly points out that heat is the biggest enemy of any new engine, espe-

cially during initial operation, because that is the time when all the internal moving parts "settle in." He also emphasizes that the high horsepower-to-weight ratio of today's engines is only possible because of much smaller internal tolerances and a tighter fit between pistons, rings and cylinder walls.

"The internal mechanism of a modern outboard consists of both very hard and relatively soft components," he explains. The cylinder walls, crankshaft, connecting rods and bearings are all extremely hard. By comparison the pistons are quite soft. Improper break-in procedures tend to create high spots on the harder surfaces."

These high spots become areas of higher-than-normal friction and therefore greater

heat. In many cases enough heat can be generated to flow aluminum and momentarily weld the piston to the cylinder wall. In all but the most severe cases, horsepower overcomes this "weld" and the piston breaks free, but if this situation persists, expensive damage results.

These high spots result not from "loading" the engine sufficiently at the right intervals during the first hour or two. Low rpms in gear and even high rpms out of gear fail to load the engine enough to break in the hard components, but they do break in the softer pistons. Thus it is important to idle the new engine at 1,200 to 1,500 rpm for the first 10 minutes or so during its first trip on the water, but at the same time just tying the boat to the dock and letting the engine idle for an hour or so while you go to lunch does nothing to break in the hard components. That can only happen when the engine is run (in gear) at various speeds in the middle rpm range during the first hour and at higher revs during the second.

Incidentally, excessively worn-in pistons and high spots on the cylinder walls add up to significant horsepower losses for the life of the outboard.

On the other hand, heavily loading the engine early on creates all of the same problems by excessively wearing down both hard and soft components, reducing the tightness of fit to the point that the pistons actually wobble as they move back and forth in the cylinders. Both horsepower and longevity suffer accordingly.

Insufficient and/or improper oil just adds more grief to these problems. That's why many engine makers specify that a 25:1 gas/oil ratio is so important during the 10-hour break-in period. In fact, there is even evidence, says Yamaha's product manager of marine services Claude Von Plato, that using a 25:1 gas/oil ratio during the break-in makes the engine more tolerant to accidentally reduced oil later on. The testing labs that have reported this cannot explain exactly why, but the current theory is that there probably is a certain amount of oil impregnation in the metal. Regardless of the reason, just consider the extra oil during break-in as extra insurance against troubles later on.

The only exceptions to the 25:1 break-in gas/oil ratio seem to be some of the smaller engines (some makers think it's not necessary for their engines of 25 hp or less). And on the other hand, there are even a few engines that require 25:1 at all times, such as some high-performance

models, and racing engines.

As a rule, most manufacturers of oil-injected outboards recommend that for those engines the fuel in the tank be mixed with oil at 50:1 if the oil injection system is hooked up and the reservoir is filled for the break-in period. This ensures 25:1 during periods of higher revs when it is needed most. The other option, preferred by some, is not to hook up the oil injection system until after the break-in period and use fuel from a tank that has a 25:1 mix. This would provide an added measure of protection against any human error where the oil injection system installation is concerned.

According to Robert Crinion, Mercury Marine's Outboard product service manager, the type of oil used during this initial period—as well as throughout the rest of the time you own that outboard, too—is critical. It should be either any outboard maker's brand or if from a gas station, marina, etc., it should have BIA certification for heavy duty two-cycle use. There are several types of two-cycle oils on the market, but if the can doesn't have the BIA logo and the words indicating "for TC-W service," it is definitely not the right oil and you're taking a big risk if you use it. The bottom line is that not all two-cycle oils are suitable for use in modern outboards, and the damage won't necessarily show up right away. It might take many hours of operation before the powerhead blows and a post-mortem examination reveals badly scored cylinders, etc.

Be aware that as of 1993 most of the bigger outboards now require a new type of oil: TC-W3. It has additives that prevent destructive carbon buildup in the cylinders that will shorten the engine's life by more than half, plus a carburetor varnish inhibitor. TC-W3 oil is essential because of the poorer quality of today's gasolines.

All the outboard engineering people I've talked to agree on the basic procedures that should be used to break in a new engine. Besides the great importance of those first two hours and the right oil, they think it is definitely not good to go through the first two hours always at the same rpm. Most manuals recommend that half throttle (e.g., 3,000 to 3,500 rpm) not be exceeded during the first hour. While this is quite important, it is also equally critical that you do not try to run at a throttle setting that "lugs" (strains) the engine for even short periods. A perfect example of

this would be that speed where a planing hull is struggling to get "on top" or "on step," but just cannot quite make it.

As a rule, it's OK toward the end of the first hour to use a little extra throttle momentarily to get the boat fully on plane if it will easily stay there at half throttle. And it is equally important for proper break-in that for brief periods (typically 1 to 2 minutes) during the second hour the engine be opened up to full throttle, then reduced to half throttle. This brief period of high-speed operation allows the hard components to be properly broken in.

Incidentally, don't depend on a temperature gauge or holding your hand at the cooling water outlet to tell you the engine is overheating. By the time the gauge registers the higher temperature, or even by the time the outlet water begins to feel warmer to your hand, damage may be done. Excessive periods of high revs in an engine that is still "tight" generates heat extremely quickly—and as I mentioned earlier, heat is your worst enemy during break-ins.

When you do finally get to the point when you can begin to run at full throttle for brief periods, if your rig has a tachometer (something I believe is a must for engines of 50 hp and up to help protect your investment), be sure to note if the max revs are in the range they should be. If either too high or too low, halt the break-in procedure immediately and go back to your dealer for the correct prop. The wrong propeller will eventually damage any engine, but one that's new and still "tender" is even more vulnerable.

Because of the many boat tests I do each year, and also because of the numerous other outboards I've owned or used extensively over the past 40 years, I've had lots of break-in practice. As of yet (thumping my wooden noggin for good luck), I have yet to blow a powerhead, and I think that's because I follow the recommended break-in procedure religiously.

I've always picked a location where I would not be distracted from the task at hand during that first trip out. The engine gets my full attention until the first two hours are completed. Yes, it is a bit boring, but the results are well worth the minor inconvenience. Just keep in mind that even the smallest outboards represent a serious investment. And by the way, trolling is definitely not the right way to break in a new engine.

Launch and Retrieve *Safely and Efficiently*

by Art Michaels



photo-Art Michaels

When I first owned a brand new boat, motor and trailer, I was a novice when it came to launching and retrieving. I tied up plenty of ramps and angered lots of boaters, and I unnecessarily damaged plenty of my own equipment before I learned to do it safely and efficiently.

Don't let launching and retrieving be an expensive ordeal for you, as it was for me. Rigs cost too much money, and launch ramps these days are often crowded with other boaters waiting to get in and out of the water. At stake is our safety, the well-being of everyone with us, and avoiding expensive, unnecessary repairs.

Even an experienced boater with a set procedure for launching and retrieving can find something new to improve his prac-

tices. Smart boaters always look for ways to make launching and retrieving safer and quicker, so check out this strategy and use what works for you.

I apply these procedures to launch and retrieve a 16-foot runabout with a 65 horsepower outboard, and a 14-foot open aluminum semivee with a 9.9 horsepower motor.

First, always inspect a ramp before you launch. The steepness of ramps differs. Some are shallow. Others are more angular. Knowing a ramp's steepness helps you figure out how deeply to back up the trailer into the water. You don't have to back deeply onto steep ramps. You have to move farther down shallow ramps.

If you can see into the water, look for

obstructions and debris that might damage your trailer or make launching and retrieving difficult. Boaters who gun their engines excessively while driving their boats onto trailers gouge the bottoms of some ramps, creating holes. At other ramps, currents and deterioration have broken off concrete pieces at the ramp's end, and these chunks become insidious dangers for boat hulls, outboards, trailer wheels and axles. Storms can also damage accesses, and high water can deposit debris on ramps. For these reasons, before launching, always check out ramps with which you're familiar as well as new spots.

Other considerations on how far to back the trailer down the ramp include the kind of trailer you own and your boat's weight

and length. If you have a trailer with bunks, you must immerse it deeper to launch and retrieve than you do if you own a trailer with rollers.

With a bunk trailer you probably have to sink the hubs every time to launch and retrieve. To launch and retrieve with an all-roller trailer, you hardly ever have to submerge the hubs.

Still, when you launch and retrieve, keep the wheel hubs out of the water as much as you can. Doing so lessens the chance of water and dirt entering the hubs and rusting, corroding or pitting the wheel bearings and other internal hub parts.

Rigging, derigging areas

Use a boat access rigging and derigging areas, if it has them. The rigging area is the place where you ready your boat for launching. In a derigging area you prepare for hitting the road after retrieving the boat. Many accesses designate these areas in spots that are near the ramp but away from the flow of traffic.

Rigging and derigging areas let boaters prepare for launching and leaving without monopolizing the ramp. If all boaters used these areas, a surprising number of boaters could launch and retrieve reasonably fast at busy accesses.

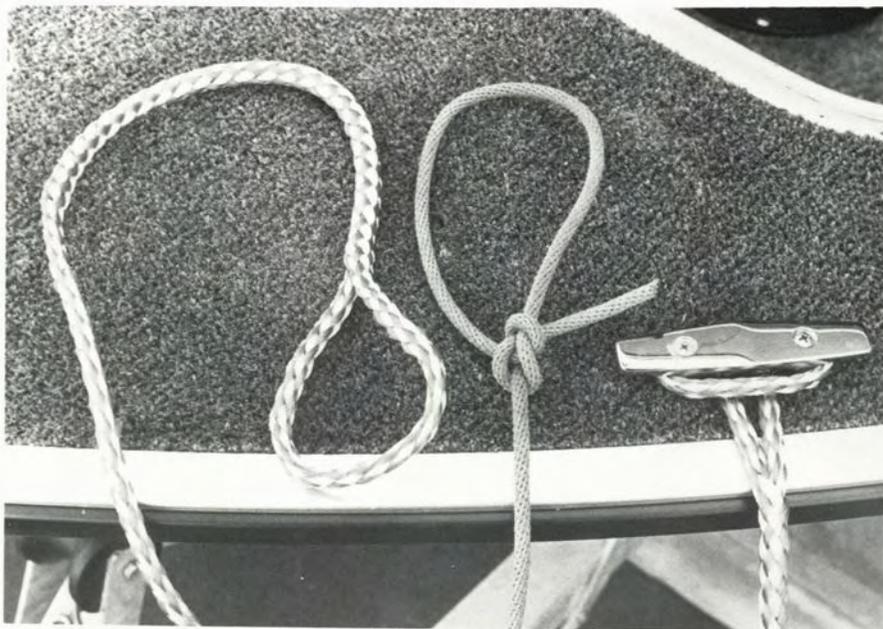
If an access you use has no rigging and derigging areas, accomplish these tasks in a parking spot. Don't tie up the ramp by getting ready to launch or load on the ramp. Furthermore, plan how you're going to position the tow vehicle and trailer to back the rig down the ramp. Consider how much room you have for maneuvering. In this way, you can get on and off the ramp quickly.

In the rigging area, load your gear, hook up your electronics, remove the tie-downs and be sure to put in the boat plug.

If I'm boating alone, my electronics and other valuables remain in the tow vehicle until I park the vehicle and board the boat. Only when I'm with a partner or two do I hook up electronics and load valuables before I park my tow vehicle. My partners watch the boat and the equipment while I park the tow vehicle.

In the rigging area I also raise the out-board to its highest "trailing" position. I unscrew the portable gas tank vent, and I prime the tank bulb by squeezing it gently until it's firm. The engine stays high this way until the boat floats freely at the dock, or if there's no dock, until I know the water is deep enough to lower the engine to its "run" position.

Every boater wants to launch and retrieve safely, quickly and efficiently. Heads-up boaters keep looking for ways to do so better each time.



On the left is an eye-spliced mooring line. In the middle is a different kind of mooring line with a loop formed by a bowline. Both work well. On the right is another eye-spliced mooring line properly attached to a deck cleat.



Store your boat plug in a stern fender hook. In this way you are less likely to forget to put the plug in, and if you do forget, this placement makes the plug easily accessible.

If you have enough road clearance in a "run" position, trailer your boat with the engine in this position, not in the "trailing" position. It'll save your transom and engine from unnecessary pounding, and the engine may not need any other support.

Launch and Retrieve Safely and Efficiently



If your trailer has rollers, you probably don't need to back down most ramps any farther than this. Keeping the wheel hubs dry this way extends the life of the hubs.

photo-Art Michaels

Docking lines

After raising the engine and taking care of the fuel, I attach bow and stern docking lines to deck cleats. If there's little wind and no current to push the boat stern, I launch and retrieve using only the bow docking line.

Of course, you'll want to tie the lines onto the deck cleats on the boat side nearest the dock, or if there's no dock, tie on the lines on the boat side nearest you.

Docking lines for launching and retrieving a small boat need to be several feet longer than the boat length. The extra length lets you hold the line during launching as the boat clears the trailer. It also lets you attach a line to a stern cleat and hold the boat securely for launching and retrieval when the wind, tide or current pushes the boat stern.

You can buy docking lines from marine supply catalogs and boat dealers. These lines are already eyed (they have end loops) and they come cut to lengths in about five-foot increments from 15 feet to about 30 feet. When in doubt about which size is right for your boat, buy the size that's about 1 1/2 to two boat lengths long.

Fenders

Place your fenders next, but don't hang them from deck cleats. I used to do this

for the sake of convenience, but when I ruined my boat's hull by letting several docks bash it while the fenders stayed clean and white, I realized that the placement of the bow deck cleats most often doesn't let the fenders work properly, and the stern deck cleat on small boats is too small to accommodate both a docking line and a fender.

For these reasons, I attach only docking lines in deck cleats, and I screwed three fender hooks to the gunwale on each side of my 16-foot boat, where the gunwale touches the deck.

You can buy fender hooks in different styles, shapes and sizes in marine supply stores and catalogs. Buy the size and style that works best for your boat and for the diameter of the docking line you use. Place the hooks more amidships than deck cleats. Instead of fender hooks, you might want to hang your fenders from grab rails, if your boat has them.

Fenders are available in different lengths and widths. Buy the size that's long enough to protect your boat's hull. For small-boat applications, the fender's width isn't a consideration. However, do consider where you dock most often. Make sure the length of your fenders cushions your boat adequately at your favorite docks.

Just before I launch, I detach the bow

hook and safety chain. My trailer taillights and wiring are waterproof, so I don't unplug the lights. If your trailer taillights aren't completely waterproof, and most aren't, unplug the lights before you immerse them to avoid blowing a fuse or burning out the light bulbs.

As I push the boat off the trailer, my partner holds the dock lines. If I'm alone, I hold the lines as I push.

When the boat is in the water, my partners tie up the boat at the dock while I park the tow vehicle and trailer. At accesses that have no docks, I beach the boat while I park the tow vehicle and trailer.

Just before I pull away from the ramp, I test my electronics and lights to make sure they work properly. Then I bring in the fenders and stow the docking lines.

Retrieving

To retrieve my boat, I begin the procedure when I know I'm going to call it quits on the water. My partners and I stow equipment and secure other gear. We accomplish these tasks while still on the water, or at the dock if the access has uncrowded, sufficient dock space. At some accesses, I beach the boat to wait for my turn at the ramp.

As I approach the ramp, if there's a dock, I place the fenders in their hooks on the

boat's dock-side, and tie the docking lines onto the bow and stern cleats. I coil the lines and drop them onto the deck so they're ready when I need them.

When the boat inches into the dock, one of my partners climbs onto the dock and steadies the boat with the docking lines. Then he attaches the lines to the dock cleats. On each line he uses two figure-eight cleat hitches.

After my partner secures the boat to the dock, I raise the outboard to the highest trailering position. Before I leave the boat to get the tow vehicle, I make sure all electronics aboard are turned off.

I always take the boat's ignition keys with me when I get my tow vehicle, and when I'm with a partner or two, someone always remains with the boat. When I'm alone, I remove all valuables from the boat when I get the tow vehicle. Use a duffel bag or similar item to carry your valuables when you have too many to carry all at once.

I back the tow vehicle and trailer down the ramp, set the parking brake, place the tow vehicle in "park," and turn off the engine.

My partners undo the lines from the docks, and with the bow docking line they center the boat on the rearmost trailer rollers and hold it there while I attach the bow hook.

For a long time I used to put on knee-high rubber boots at my tow vehicle just before I went to retrieve the boat. After I'd shut off the tow vehicle at the ramp, I'd release the bow winch gear, grab the bow hook, and wade carefully into the water to place the hook on the bow ring. On most trips I didn't want to get wet, and holding onto the trailer tongue, winch stand and roller assemblies I could safely wade the few feet necessary to attach the bow hook, even on the most slippery ramps.

Nowadays, manufacturers make walkways you can install on your trailer tongue. Walkways let you place the bow hook on the bow ring without getting your feet wet. I've equipped my trailer tongue with walkways. A less expensive option is to buy brackets for your trailer tongue onto which you bolt your own boards. Walkways and brackets are available in marine supply mail order catalogs and at boat dealerships.

Boaters have been hurt performing a balancing act on slippery trailer tongues to attach the bow hook. So either equip your boat with wider, slip-resistant walkways or boards, or don boots and wade in carefully.

After my partners and I have pulled the boat onto the first set of rollers, I begin cranking the winch handle and the boat centers itself as I retrieve it. I observe the winch rope during retrieval to ensure that it coils evenly onto the drum. Rope loops that coil on top of one another can loosen the hook's pull on the bow ring as they tighten and slip through one another, and the coils can tighten onto one another enough to snap the winch rope.

If I'm retrieving where the wind is negligible and there's no current, my partners don't have to hold the boat in position while I crank the winch handle. If the wind is strong enough to push the boat stern upstream or downstream, or if the current moves the stern downstream off-center on the trailer, a partner holds a stern docking line to center the boat on the trailer while I continue to crank.

As soon as we load the boat, my partners toss the docking lines into the boat. I attach the bow safety chain and slowly drive the rig to the derigging area.

In the derigging area look beneath your trailer to make sure the boat is seated properly on the trailer. If it's not, launch again and bring it back onto the trailer correctly.

I board the boat in the derigging area and make sure everything is stowed that should remain on board. I place everything onto the forward gunwale and bow that I intend to take into the tow vehicle, and my partners help load this equipment. Then I look around in the boat to make sure I haven't neglected any loose items. I pull the boat plug and store it in the portside fender hook at the stern.

After I store all the gear that I carry in the car, I check the ground around the derigging area to make sure no item has been left.

To prepare the outboard for the trip home, I place it in the highest "run" position. This position provides plenty of road clearance, but it doesn't hold the engine so high that it increases the punishment the engine and transom endure from every jolt and pothole while I travel.

If you have enough road clearance in a "run" position, trailer your boat with the engine in this position, not in the "trailer" position. It'll save your transom and engine from unnecessary pounding, and the engine may not need any other support.

Lastly, I attach the gunwale tie-down strap and check to make sure the trailer lights work. Then I drive away.

All in all, every boater wants to launch and retrieve safely, quickly and efficiently. Heads-up boaters keep looking for ways to do so better each time.



Boat plugs and that sinking feeling

Have you ever forgotten to put in the boat plug when you launched your boat? I have. The mistake has never cost me anything more than wet feet, a little embarrassment and scrambling to plug the hole. Nevertheless, this seemingly trivial detail has cost boaters' lives, so make sure you take care of this concern in your launching procedure.

Find ways to remind yourself to put in the boat plug before you launch, but if you forget, the worst procedure is to panic and do nothing--then you'll surely sink.

After you launch and you notice that water is pouring in through the plug hole, if you can quickly put in the plug, do so and bail the water out of the boat. It pays to store your plug in a stern fender hook. The plug is more visible then, and this placement helps remind you to put it in as you prepare to launch. If you forget, this placement also makes the plug immediately accessible.

What if your boat's bilge is hidden by a deck and you can't easily reach the plug hole? If only a little water has entered the bilge before you notice the problem, start the engine and cruise near the ramp. If you can get the boat on plane, getting under way can remove much of the water--enough to keep you afloat. If you're with a partner, let your partner plug the hole while you operate the boat. If you're alone, and you can get the boat on plane, beach the boat. Then plug the hole and bail.

If you can't run the engine and bring the boat on plane, plug the hole and set your anchor to hold your position. Then bail. The built-in flotation of most boats keeps even swamped boats afloat.

If you launch and discover that the hole isn't plugged and that you have no plug, beach the boat. This minimizes the amount of water you take on.--AM.

Buying a Family Boat

by Eric B. Burnley



photo-Mercury Marine

Buying a boat is an investment, so here are some ideas you can bank on for help.

This is the time of year when many people shop for a boat. Some buy a new one, while others find what they want in a used craft. There are those in the market for the first time and those who look for a bigger boat to support a growing family or just to step up because they can afford to. No matter which category you fall into, there are certain rules to boat buying that you may want to follow to avoid disappointment with your purchase. First, before you visit the boat dealer, determine which type of boat you need and how much you can afford to spend. These two items go together like love and marriage. If you separate them, the result is usually a disaster.

Crucial questions

Ask yourself some questions. How will you use the boat? Will you water ski, fish, cruise, water ski and fish, or just stay at the

dock and tell stories? What kind of water will you use the boat on—rivers, the Great Lakes, nearby seashores or big reservoirs? Who will go with you—your family, fishing buddies or business acquaintances? All these factors determine the kind of boat you need.

Next, look at the cost. When setting a budget for the boat, consider all the things connected with it, not just the monthly payments. There are fuel expenses, docking fees, accessories, maintenance, trailer license and insurance. You may also want electronics and perhaps some new fishing tackle. All these things cost money, which has to come from somewhere. It's no fun to have a boat you can't afford to run.

You will probably use your boat for a variety of purposes and with a variety of people. Some will stick with the small fishing boats or canoes and others may run a boat only to pull skiers, but on the whole, most of us have family and friends who we enjoy taking out on the water to fish, cruise or ski.

Unfortunately, the perfect boat for all these purposes has not been made. There are boats that are designed for a single purpose, but none designed to do everything. As you shop for a boat, this truth will become apparent.

Boat types

Generally, boat can be divided into three categories. Runabouts, with the steering forward and no cabin, are used primarily as ski boats or family day cruisers. Center consoles are used as fishing boats. Cabin cruisers can sleep people overnight and serve as long-range cruisers. Of the three, the larger runabouts work best as utility family boats.

There are many fine cabin boats in the 20-foot to 26-foot range that can be trailered or left in a slip. They have plenty of room for storage and will usually sleep two or four people.

The cabins come in two styles, cuddy or walk-around. The cuddy has more room, but the walk-around allows access to the bow for fishing. Either style can be buttoned up with canvas for protection from the elements, and most important of all, they have a private head.

Boats in this size range can be powered with outboard or inboard, or powered with outboard, inboard or I/O. The outboard and inboard have more room in the cockpit, while the I/O has good fuel economy and can be easily trailered. Most buyers choose either the outboard or I/O, unless they purchase a boat over 26 feet in length.

Center console boats are great for fishing, but will leave the family out in the cold. There is very little protection from the elements unless you have some custom-made canvas installed. There is also a problem with privacy for anyone using the head.

Runabouts are great fun and can usually be purchased for less money than cabin boats. They have some shelter for the crew under a canvas top, and if you don't plan to spend long hours on the water, they can serve your purpose. This boat is probably the best buy for the family just getting into boating.

Assuming that you have decided that a 21-foot cuddy cabin cruiser is the boat that best fills you needs, how do you decide which boat to buy?

First, visit as many boat shows and dealer showrooms as possible. Do not buy the first boat you see, and don't buy a boat on your first visit. Check them all out. Then go home, discuss it with the family, shop for financing, and then finally, make the purchase.

Kick the tires

When looking at a boat in the showroom, do a little tire-kicking. Hit the hull with your fist. It should sound and feel very solid. Walk across the deck. It should not feel spongy or creak. Look at the fastenings, too. Are they stainless steel and are they through-bolted? Stand behind the wheel. Can you see the bow and both corners of the stern? Are the instruments in plain sight, and is the motor easy to get to and work on? Check the fastenings where the interliner meets the hull. Are they solid, or are they just slapped together? Can you stand up in the cabin? How much canvas comes with the boat? What kind of fuel economy does the boat have? How much fuel does it hold?

Asking all these questions and looking over a boat this way also tests the dealer. If he remains helpful and friendly, he will probably give you good service after the sale. If he becomes impatient or keeps pressuring you to buy right away, look elsewhere.

Service after the sale is very important. Seldom is a new boat perfect, and you normally find some problems after using it a few times. The dealer will fix these, but how long it takes and how well it's done depend on who you deal with. Word of mouth and time in business usually determines who does the best job. If a dealer has been in business for a long time selling the same line and his customers are pleased with his service, you can expect good treatment.

Financing

After you decide on the boat you want and the dealer you want to buy from, the next problem is money. An 18-foot runabout package, which includes the boat, motor, and trailer, can easily cost \$10,000 to \$20,000, depending on the manufacturer, the power, and the kind of trailer.

This is a major purchase, and you should shop around for the best financing deal. Some lending institutions don't want to finance boats. Others seek this business. There are usually lots of banks advertising at boat shows, or you can call around and check the rates. The dealer you buy from is probably connected with a bank, but this arrangement may not produce the lowest rate. It may take some time to find the best deal, but you could save thousands of dollars over the life of the loan, so it pays to search for a loan as you search for a boat.

Before you sign the final check, be sure to take the boat out for a test cruise. I can't imagine spending 10 grand or so on a boat I had never driven. Run it up and down, across and backward, fast and slow. Take the entire family along to be sure everyone is satisfied. In all probability you won't have any major complaints, but I think it is better to test it while it still belongs to the dealer.

Used boats

Buying a used boat requires even closer scrutiny. If you buy from a reputable dealer or broker, the dealer will normally stand behind the boat by way of some kind of warranty. Buying from a private individual can be risky.

Check out a used boat thoroughly. If you don't feel confident, take someone with you who knows boats and motors. Look over every inch of the hull and motor before putting the boat on the water. When test driving, run it as long as you can and at different speeds. Get a mechanic to check the motor, and if you are looking at a boat that's over 30 feet long, get a marine surveyor to examine the boat for seaworthy qualities not easily recognized by most boat owners.

When you buy a boat from an individual, it's yours. You can't take it back, and the seller isn't going to give you a service warranty. You can contact marine surveyors through marinas and marine supply stores. A thorough survey of a large boat could cost several hundred dollars, so don't ignore this expense when considering a boat.

Finally, the most important factor in buying a boat, new or used, is patience. Don't be pressured into something you don't want or need. Don't buy it because it looks nice and the salesman told you it is the best deal on the market. Hundreds of boat manufacturers build thousands of boats every year. Shop around, look them over, talk about it with family and boating friends, and then decide which boat is right for you. Take your time. It will pay dividends in boating seasons to come.



Best of the Field

What's sure to be welcome news to *Boat PA* readers is that a hardcover 275-page collection of *PA Angler* "Notes from the Streams" and *PA Game News* "Field Notes" is now available. The Conservation Officers of Pennsylvania, an organization of Fish & Boat Commission and Game Commission officers, has published *Best of the Field*, a collection of the most interesting and humorous "Notes from the Streams" and "Field Notes" that have appeared in *Game News* since 1932 and in *PA Angler* since 1931.

Copies cost \$11.95 plus 6 percent sales tax and \$1.95 for shipping and handling.

To order *Best of the Field*, send a check or money order to: Conservation Officers of PA, P.O. Box 3304, Williamsport, PA 17701.

Spring Pre-Launch Checklist

The Boat Owners Association of the United States (BOAT/U.S.) offers the following tips for a basic safety and maintenance inspection of your boat before that first spring boating excursion.

- Disassemble and lubricate seacocks and inspect the hull for damage such as cracks or splinters. To help protect the gelcoat and restore faded colors, apply a coat of wax.

- Check fuel lines for leaks and replace hoses that are stiff or cracked. Make sure clamps are tight and corrosion-free. Clean battery terminals with a wire brush and check electrical connections to be sure they are clean and tight.

- Props should be inspected for dings or pitting and to ensure that cotter pins are secure. A machine shop can often rejuvenate damaged props.

- Lubricate outdrive steering and control cables and check the power steering and power trim oil levels. Replace zincs that are depleted.

- Fire extinguishers should be inspected and filled or replaced. Check stove fittings and hoses for leaks and replace old propane canisters and outdated flares.

- Inspect the treads and sidewalls of your trailer tires and check the wheel bearings. Rusted areas on the chassis should be sanded and painted.



photo—U.S. Army Corps of Engineers

The U.S. Coast Guard helicopter rescue unit cruises over Blue Marsh Lake during a search-and-rescue demonstration at the 1993 Water Safety Festival. Several other organizations participated in the event, demonstrating various water-rescue techniques and educating the public on water safety. This year's festival will be held June 12 at the Dry Brooks Day Use Area of Blue Marsh Lake.

Water Safety Festival

The public is invited to attend the U.S. Army Corps of Engineers Seventh Annual Water Safety Festival on Sunday, June 12. The event will be held at the Dry Brooks Day Use Area of Blue Marsh Lake in Berks County. The day use area is located approximately five miles north of Reading off Route 183 along Palisades Drive.

The Water Safety Festival stresses safety awareness and is an excellent introduction for new visitors to Blue Marsh Lake. Thirty-six organizations participated in last year's festival, and this year's festival promises to be even bigger.

Highlights of last year's festival included several helicopter rescue units from the U.S. Coast Guard, the Pennsylvania Army National Guard with the U.S. Army Corps of Engineers Blue Knights diving team, Hershey Life Lion Air Ambulance, and the Pennsylvania State Police. A demonstration on the use of personal watercraft for rescue and law enforcement purposes was held by the Personal Watercraft Industry Association. The Coventry Canine Search and Rescue Unit demonstrated how dogs are used in water-based rescues. The Reading Fire Department Underwater Rescue and Recovery Squad, the Schuylkill River Power Squadron, and the U.S. Coast Guard Auxiliary also participated.

Other organizations and businesses had displays and area dealers were there to show off the latest models of powered and non-powered craft. Children were encouraged to participate in a casting contest, and a local radio station broadcast live from the event. The finale of the festival was a water ski show by the Reading Water Skiers.

For information on this year's event, contact the park manager, Blue Marsh Lake Recreation Area, R.R. 1, Box 1239, Leesport, PA, 19533. Phone: 215-376-6337.

CRUISING

Philadelphia's Waters

by Heidi Milbrand

The Delaware River at Philadelphia is a unique Pennsylvania waterway. It is the only area that has commercial sea-going traffic, in addition to Erie. But it's also the only area in Pennsylvania that's tidal, and it's patrolled by four different agencies--the Philadelphia Marine Police, the U.S. Coast Guard, the New Jersey Marine Police, and the Fish & Boat Commission. The pleasure-boating, the commercial traffic, and the kinds of boats that can be found there also make the area unique.

I recently toured the lower Delaware with WCO John Sabaitis, who patrols the Delaware, and Leo George, WCO for western Philadelphia County. Join me for the ride and get an up-close look at the Delaware.

Heidi Milbrand: What area of the river do you patrol?

WCO John Sabaitis: Approximately an 18-mile stretch of the Delaware from the Bucks County line to the Delaware County line.

HM: Any other waterways?

JS: Yes. Pennypack Creek and Wissahickon Creek, although they are not heavily boated, and the lower Schuylkill River, below the Fairmont Dam.

HM: What about access to the Delaware?

JS: In my stretch of the river, there are three public accesses. These accesses give the city people a chance to get away, because the majority of the land is privately owned or taken up by marinas.

Linden Avenue, which is owned by the city, is a small access area with only one launch ramp and one floating dock. This one gets quite congested during the summer months, with lines forming quickly. Tacony Access, which is beside the Quaker City Yacht Club, is owned by the Fish and Boat Commission. It is also a small access. It is always at or near capacity during the

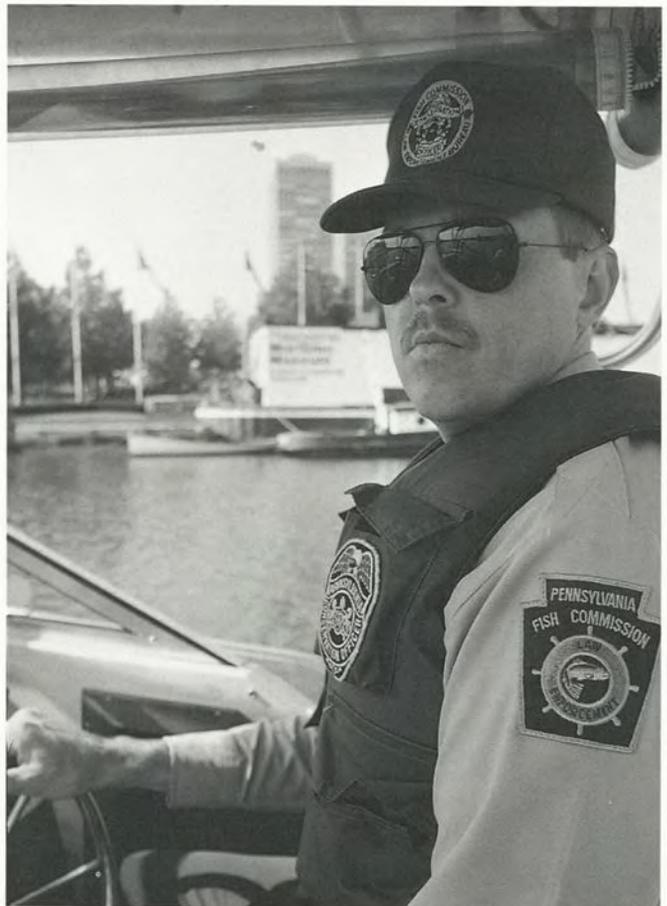


photo-Art Michaels

When boating on this section of the river, recreational boats must not hamper the operation of large vessels, which cannot navigate outside the channel.

summer. The Frankford Arsenal Access, also Fish and Boat Commission owned, is the biggest one. It features a six-lane launch ramp, two floating docks and a large parking lot. It also has security 24 hours a day, 365 days a year. It is a well-used, well-maintained access area.

HM: What does this security force provide to the public?

JS: They assist people with information concerning boating, where to go, and they direct traffic, make sure the vehicles are secure, watch out for the boaters, etc. They do not answer questions about law enforcement.

HM: What are some of the major attractions on the lower Delaware?

CRUISING

Philadelphia's Waters

JS: The biggest attraction is on the 4th of July with a boat parade and a major fireworks show in front of Penn's Landing. There are also concerts held at Penn's Landing, some with top-name performers, that draw a lot of boaters. Regattas are also held frequently as well as boat shows, which usually last a week.

A hazard I see with the boat shows is that the dealers tow four or five boats to and from the boat show, which can cause some problems with the general public. The public has a tendency to forget the "slow-no-wake" rule, which creates havoc with the dealers towing the boats.

HM: What should boaters avoid?

JS And Leo George: Definitely the big boats, including tugs, barges and cruise ships. They create big wakes that can cause some concern among the smaller boats. Also, stay out of the shipping channel if you are anchoring. Remember that big boats have trouble stopping fast and also that they need a wide berth when slowing or stopping.

Boaters should also avoid creek mouths and entrances to bars and/or restaurants, plus any extremely busy area, such as Penn's Landing. Our advice to boaters is if you really do not have to be there, stay away.

One other item of concern that boaters should avoid is overconfidence. These boaters are the ones who usually end up in trouble. Boaters have to realize that there is a lot of traffic on the river, a lot of big boats on the river, and you need to respect them. This is not like your other rivers in the state--this river is constantly changing and you as a boater need to be aware of that fact.

HM: What should boaters be aware of?

JS and LG: Most definitely the tides. Boaters who have never been on or near tidal water should go out with someone who has been boating on and is familiar with tides. New boaters who try and launch boats or even try to anchor or dock soon realize that it can be quite frustrating. You see today what could happen to someone trying to launch a boat. They get their vehicle and boat down the ramp, take too long to launch the boat and the tide starts to come in, and before you know it, boat, trailer and car are in the river.

Along with the tides, make sure you practice and run your boat during the day before trying to boat at night. More people have had problems returning when they realize they cannot get back to the launch ramp because the tide is out. It's nighttime and they have no idea what to do.

Also, be aware of storms that occur up river. After storms, there is usually a lot of debris in the river--primarily in the main channel where a lot of people boat and where a lot of people knock their props off. Always keep a sharp lookout for debris in the water.

Two safety items boaters should definitely have are a marine radio and a depthfinder.

HM: What do you see boaters not doing?

JS and LG: Going way too fast for conditions, such as after a concert, and they are trying to get back to their docks or launch ramps as quickly as possible, or there could be a lot of traffic on the river or even going too fast past anchored, moored or drifting boats. Boaters need to keep a proper lookout and maintain a safe speed when conditions call for it.

Boaters are not real big on "right of way." Most think that because they are in smaller and more maneuverable boats, they should have the right of way. But when boating on this section of the river, recreational boats must not hamper the operation of large vessels, which cannot navigate outside the channel. Also, powerboats must stay out of the way of sailboats and manually powered craft (canoes, kayaks, rowboats). This is where maneuverability comes into play. As soon as you see these kinds of boats, start to get out of their way.

Some other problems we see boaters not doing are having a full tank of gas, especially if they are going to be out after dark. A lot of the gas docks are closed, and we have seen quite a few boaters stuck out at night.

Boaters often have a tendency to "blow" wakes during concerts or while going past anchored boats. You have to remember that you are responsible for any damage done by your wake. A good point about that is most boaters are looking out for one another and have no problem "telling" on the boater who went screaming through all the anchored boats.

HM: What about safety hazards on the boats?

JS and LG: The biggest one is not carrying enough of the proper equipment or not carrying any at all. When we do stop a boat, we always do a safety check--make sure they have personal flotation devices (life jackets) and fire extinguishers. Usually, they have the minimum amount required for the length of their boat. Our suggestion to them is always to carry more than just the minimum. It is always better to be safe than sorry. Also, make sure the equipment is accessible. It should not be hidden in compartments, life jackets should not be in the plastic shrink wrap they came in, and you should know where your safety equipment is kept.

Two safety items boaters should definitely have are a marine radio and a depthfinder. The marine radio keeps you informed on where there might be a boating accident or any "hot spots," and it can help you out if you find yourself in need of help. The depthfinder comes in handy when you are boating in low tide and "forget" the locations of sandbars.

HM: There are four agencies of jurisdiction on the Delaware--U.S. Coast Guard, New Jersey State Police, Philadelphia Marine Police and the Fish and Boat Commission. How do you coordinate your efforts?

JS: The U.S. Coast Guard holds two meetings a year to coordinate everybody's efforts. I think we all work well together and can depend on one another in any kind of situation. We have all been working together for a few years now and we know what each agency can and cannot do as well as who we can call on for whatever the case may be.

HM: Any comments you would like to add?

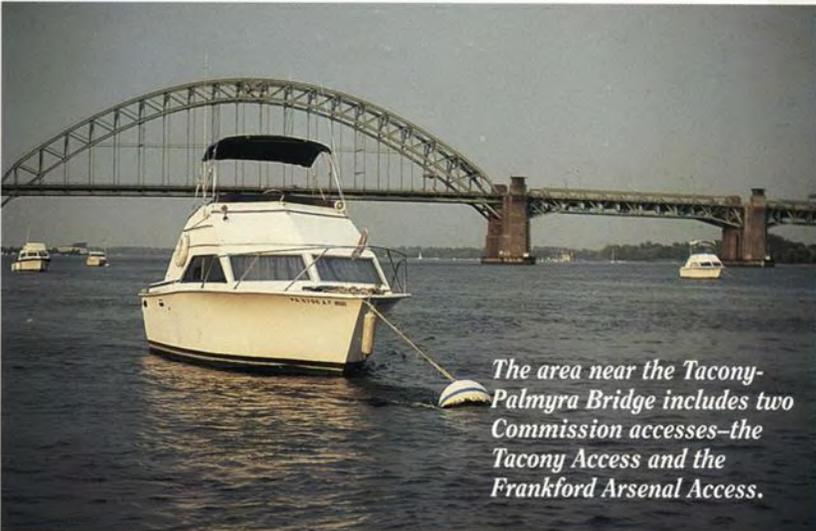
JS and LG: Have fun, but use common sense and good judgment. Don't forget that there are other boaters on the water and that you need to share the water. Don't be afraid to ask for help when needed and give aid when needed. We want our waters to be a safe haven for boaters but it will not occur without your efforts. Boat smart!



A Tall Ship visits for port of Philadelphia.



WCO John Sabaitis patrols near Penns Landing.



The area near the Tacony-Palmyra Bridge includes two Commission accesses—the Tacony Access and the Frankford Arsenal Access.

photo-Heidi Milbrand

Tugboats can create surprisingly big wakes.



photo-Heidi Milbrand

photo-Art Michaels

Barefootin' FUN!

by John M. Cornish

In any sport there is a progression of advancement from the beginning stages to harder and more impressive feats, and water skiing is no different. Every recreational skier has felt the thrill of getting up on two skis for the first time and eventually raising enough courage to venture outside the wake. In pursuit of more excitement, the skier attempts small jumps off the crest of the wake. It isn't very long before he or she has the urge to try a slalom ski, and in time masters it.

The skier might now reach out to several options of challenge and excitement by riding trick skis, show skis, knee boards and other similar devices.

"What's next?" the skier asks. Someone is always quick to reply, "barefooting."

Barefoot water skiing is probably the summit of recreational skiing. "Footin'," as referred to by all barefoot water skiers, requires faster speeds, critical and more precise body positions, and great personal fortitude. The entire idea of standing on top of the water on your bare feet goes against all our notions. This is what challenges most people to try it, and it gives you the feeling of exhilaration when you succeed.

How can a recreational skier learn to barefoot? There are two basic methods: Stepping off a slalom ski or standing up from a kneeboard. The most obvious and safest start into the world of barefooting is to attend a ski school and learn this skill with the aid of a water ski training boom. This strategy could save you a lot of time and physical abuse.

Here are some guidelines if you want to try barefooting on your own. Regardless of which of the two methods you try, when learning to barefoot, there are some safety facts to consider.

Safety

Barefootin' is done close to the surface of the water in the midst of a spray of water. Wear a heavy pair of shorts. A wetsuit or rubber shorts are strongly suggested. Second, wear a good, safe personal flotation device. Wearing a barefoot wetsuit in addition to a PFD also adds security. In addition, the skier needs to be comfortable on skis at speeds of 35 to 40 mph with a knowledge of how to tuck for falls. It is imperative that the skier roll up for falls rather than open up to break the fall.

A rule of thumb for barefooters to set their speeds is to divide the skier's weight by 10 and add 20. This figure gives the approximate boat speed in miles per hour within one to two mph either way. For example, a skier weighs 180 pounds. Divide 180 by 10 to get 18. Then 18 plus 20 equals 38 miles per hour. This formula should be used as the top speed for the boat operator to attain. The water needs only to feel solid under the skier's feet. Keep in mind that faster speeds mean harder, more dangerous falls.

Kneeboard starts

The first step is to learn to sit on the kneeboard with your feet sticking out over the front as you straddle the board. The driver and skier must make plans beforehand because the skier will be covered with spray and will be bouncing, making hand signals impossible. The driver gradually increases the boat speed to barefoot skiing speed. When the skier feels the water becoming hard under his feet, he should apply some weight on the heels and slowly stand up, reaching barefoot skiing position as the boat speed levels off.

It takes several attempts to get the feel of the position. Barefoot skiing position is a semi-crouched position with the feet shoulder-width apart. The skier should look as if he or she were sitting in a straight-back chair. Barefooters call the skiing posture the "chair position." The shoulders should be back and the handle kept low. The skier should keep the head straight and look at the tree line. The knees must be bent, allowing the skier's weight to set the heels in the water and toes up.

Step-off method

The step-off method begins with an easy-riding stable slalom ski. To alleviate other obstacles you may want to remove the front toe rubber to allow easy exit for your foot. The skier should get up and ride on the ski as one normally would with some exaggeration of the bend in the knees.

The boat should be accelerated to barefoot speed after the skier maneuvers outside the wake to the side so that the plant foot will be next to the wake. The "plant foot" is your rear foot on the slalom ski, which you place on the water first. With the knees bent and beginning to get in the chair position, the skier plants his heel in the water easily but firmly. The skier's feet should be approximately shoulder-width apart. The knees are bent, and the toes are up.

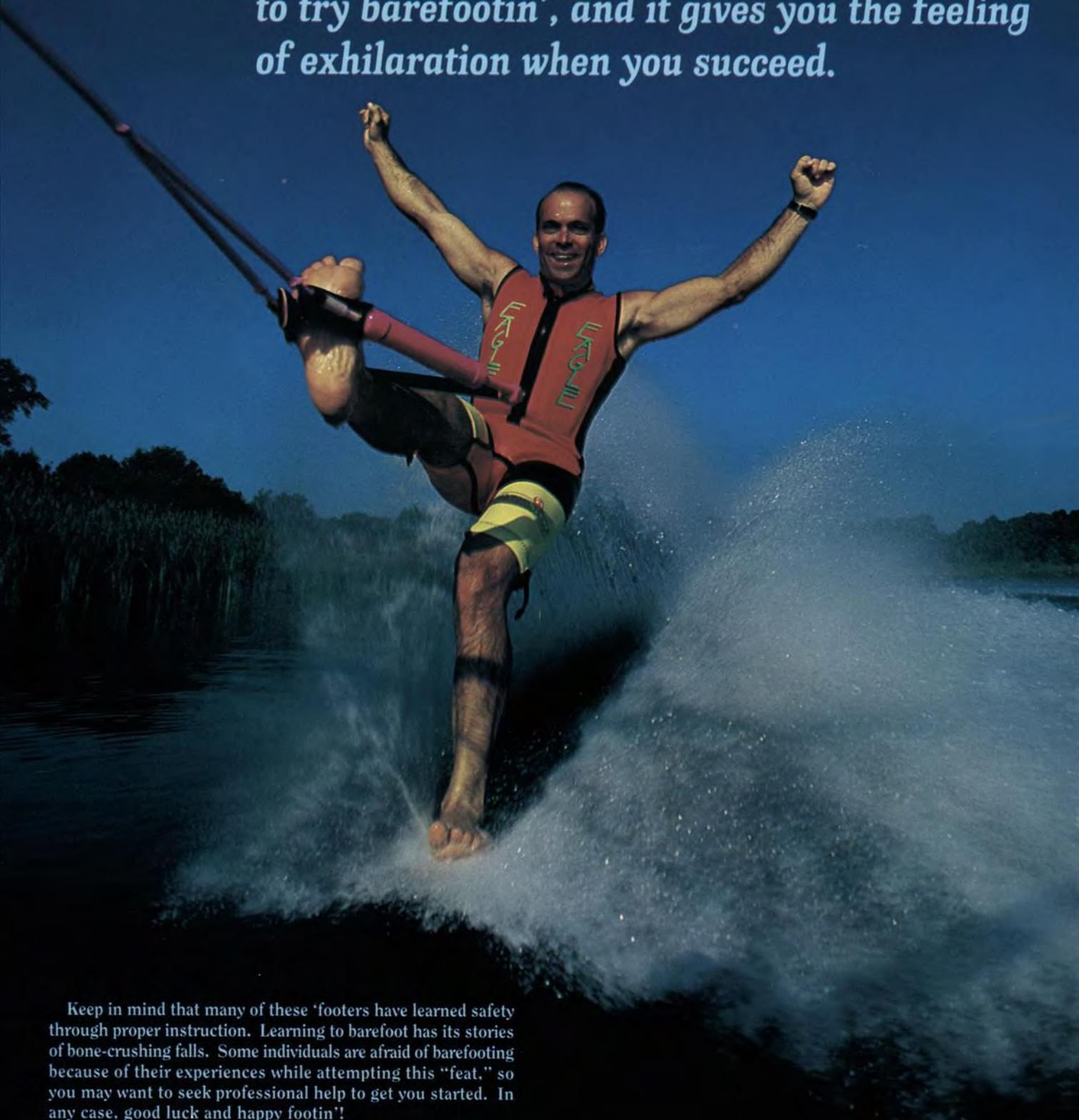
If the skier's foot is getting pushed behind him, it's because the skier is not keeping in the crouched position with the body weight keeping the foot in front of him. The skier must shift his weight over the plant foot just as though he were on two skis.

Continue to shift the weight onto the plant foot until you can lift your foot and gently set it back down beside the ski. Continue to shift your weight evenly to both feet.

This method of learning to barefoot is probably the hardest but the more thorough in learning technique and proper barefoot skiing position. Both methods require the same safety procedures and speeds.

Seeing a barefooter spraying water high in the air as he speeds over a lake is much more common today than it was a few years ago.

The entire idea of standing on top of the water on your bare feet goes against all our notions. This is what challenges most people to try barefootin', and it gives you the feeling of exhilaration when you succeed.



Keep in mind that many of these 'footers have learned safety through proper instruction. Learning to barefoot has its stories of bone-crushing falls. Some individuals are afraid of barefooting because of their experiences while attempting this "feat," so you may want to seek professional help to get you started. In any case, good luck and happy footin'!

Cruising Armstrong County's *Allegheny River*

by Jeff Knapp



The limiting factor upriver is the end of navigable water, near East Brady. As far as going downriver, there really is no limit.

The navigable section of the Allegheny River provides 72 miles of slack water suitable for a wide variety of boating activities. Well over half of this length, nearly 44 miles, flows through Armstrong County.

You'll find many interesting features along Armstrong County's section of the Allegheny. Five of the river's eight lock and dam systems are located there. Towns such as Freeport, Ford City and Kittanning stretch along the river's banks and portray a special kind of character often found within "river towns."

The Allegheny's importance in industry and navigation peaked many years ago. The passing of an industrial era is evident. Huge factories sit inactive, or operate at a fraction of the level they once did. "Push boats" and barges still remain to an extent,

moving the sand and gravel that continues to be dredged, in places, from the bottom of the river. Barge traffic is much higher on the Monongahela and Ohio rivers than on the Allegheny.

Today much of the commerce derived from the river comes from its recreational value. Settlements of cottages and cabins are prevalent along some areas of the Allegheny. Still, in some spots the river probably looks much the same now as it did centuries ago, save the elevated level caused by the dams.

Abundant and varied fish populations provide angling on a 12-month basis. During the warmer months, Armstrong's Allegheny becomes a watery playground. On a typical summer day you'll likely see everything from canoes to craft that would seem better suited for the ocean. Most common are ski boats and vee-bottomed cruisers in the 20-foot range. Quite a few houseboats show up as well.

Many who take advantage of the recreational boating opportunities of the Allegheny are folks who have camps on the river. Still, adequate access to much of the river

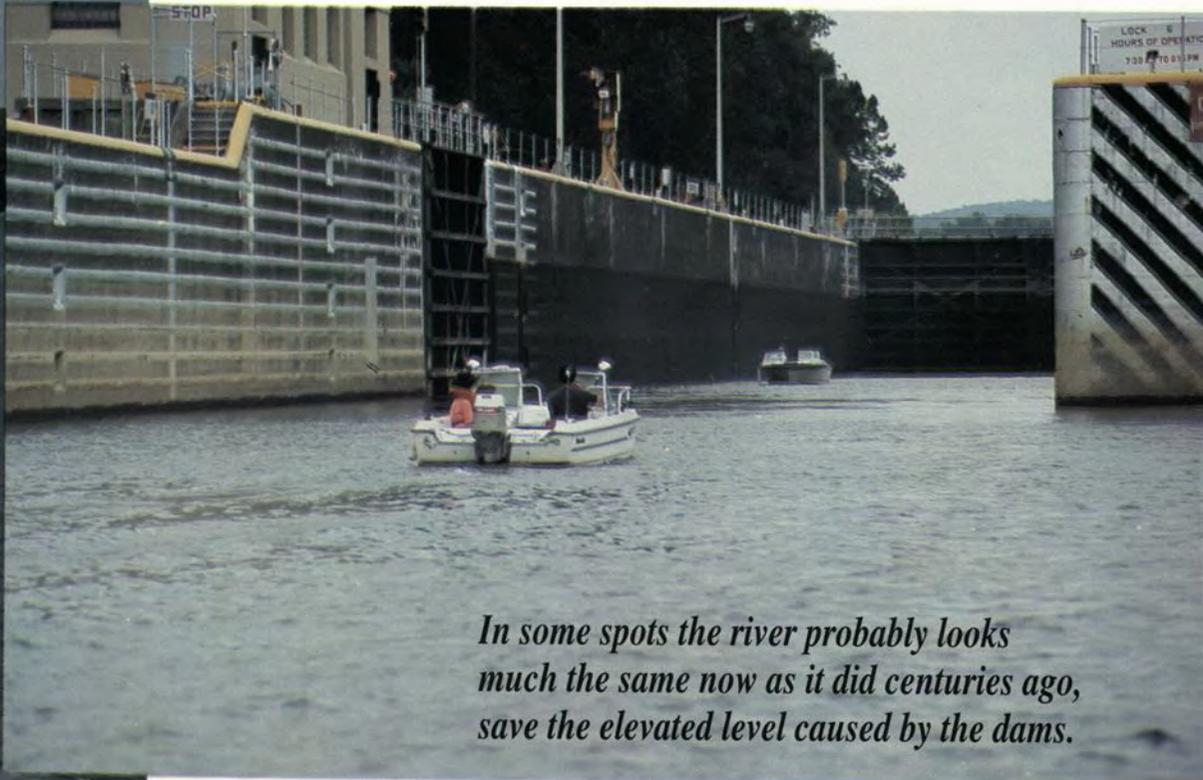
Mississippi--are navigable to the Gulf of Mexico. But we're certainly getting beyond the "day use" aspect.

Let's take an imaginary cruise on this portion of the Allegheny River.

Armstrong County's chunk of the Allegheny starts where Buffalo Creek empties into the river near the town of Freeport. This is just a couple of miles downriver of Lock and Dam (L&D) 5.

The borough of Freeport, which is on the river's west bank, has a launch ramp within its riverside park. This access area tests your driving skills. It's fairly steep and narrow, but larger boats are launched there regularly. Its yellow brick surface can be slippery, especially if it's covered with leaves, so take it slowly. Parking is available in a vacant lot a few blocks upriver of the ramp.

Once on the water, it's a short cruise up to L&D 5, which is on the west side of the river. The Kiskiminetas River dumps in just below the dam on the river's east side. The Kiski, which is much cleaner now than in years past, is navigable for a half-mile or so up from its mouth.



In some spots the river probably looks much the same now as it did centuries ago, save the elevated level caused by the dams.

makes it ideal for a day trip. The lock and dam system opens up miles of river. The limiting factor upriver is the end of navigable water, near East Brady. As far as going downriver, there really is no limit. All waters--the Allegheny, Ohio and Mis-

The Freeport Terminal is located just upriver of Freeport. Barges take on cargo at this point, and the area has a definite industrial look about it. But that will soon be left behind.

Gently guide the boat along the edge of

photos-Jeff Knapp

Cruising Armstrong County's Allegheny River

the lock's approach wall. A pull on a rope alerts the lockmaster you'd like to "lock through." A short time later you're above L&D 5, speeding upriver.

Pool 5

River sections are named for the structure that impounds them. Pool 5 is one of the least accessible portions of the Allegheny. Plenty of ramps are present, but these are the property of private camp owners.

Plan on locking through to get to Pool 5.

Directly above the dam on the east side of the river is one of the examples of idle industry, the former Schenley distillery. After passing the huge complex, the scenery takes on a "remote" character--heavily wooded hillsides and little development. Murphys Island, about two miles above the dam, is a popular place to get out to stretch the legs and have lunch.

Above Murphys Island there are clusters of camps on the east side of the river, and beautiful riverside homes on the opposite banks in the town of Clinton.

In all, it's about six miles up to L&D 6.

Pool 6

Pool 6 is one of the more interesting sections of the Allegheny. It's fairly long, nearly 10 miles. After locking through, an old smokestack marks Logansport, another ghost area comprised of yet another shut-down distillery. Just upriver, on the opposite (west) side of the river, are the scars of former mining operations. This is near the town of Cadogan.

Boating upriver you find a complex of islands, the largest of which is Ross Island. This is near the place where Crooked Creek dumps in. An unimproved Fish and Boat Commission access area is located at the mouth of Crooked Creek. The water's deep enough to launch a larger boat, but everything's gravel. Coleman's Marina is just upriver from the creek mouth.

The navigable channel is around the west side of the islands. Pay attention to the buoys because there's plenty of shallow water in this area. The water is deep enough for boating on the east side of the

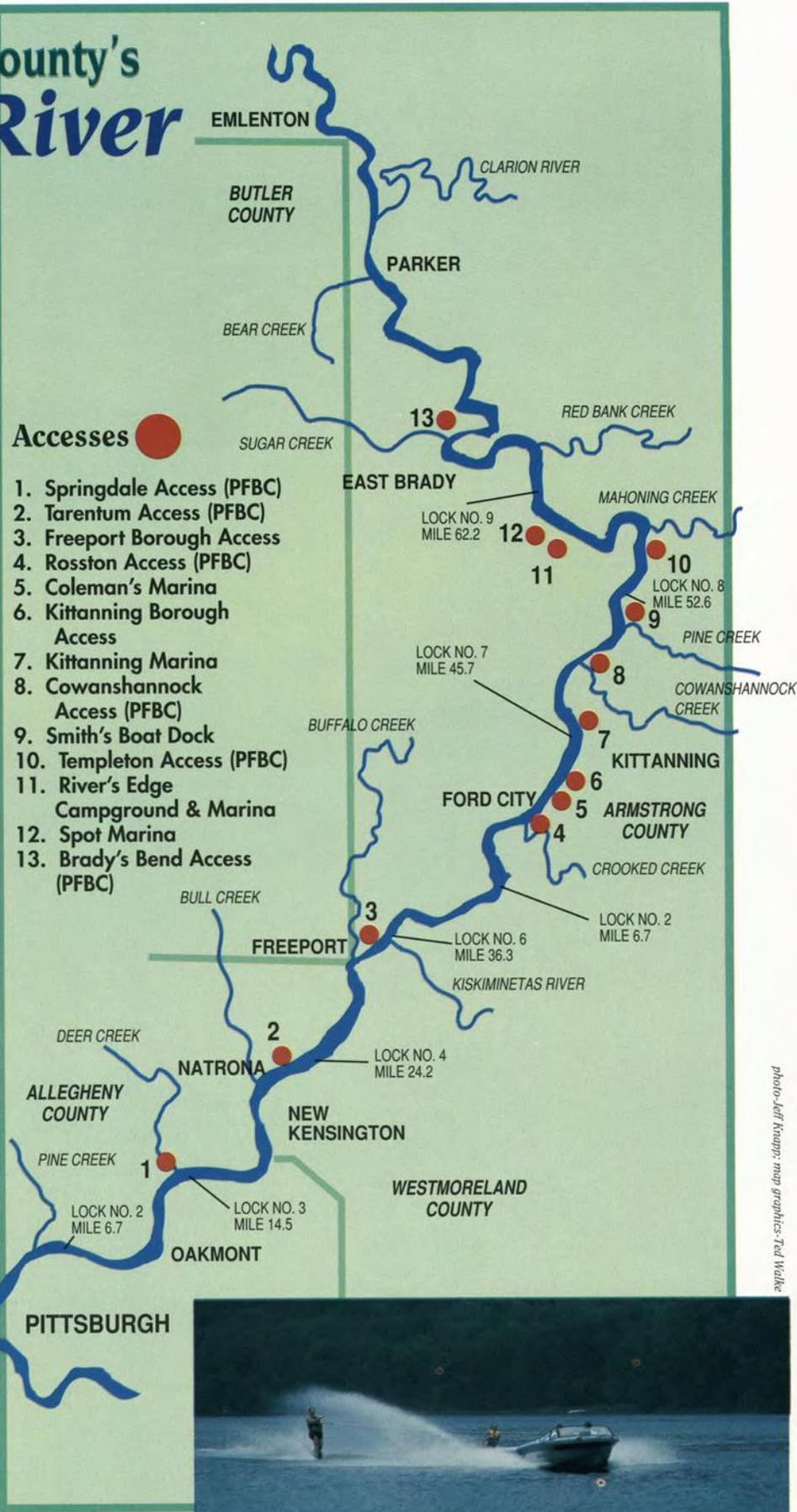


photo: Jeff Knapp; map graphics: Ted Walke

islands, but extensive shallow flats lie off the upriver portion of Ross Island, making it tricky to get back to the main channel. Again, pay attention to the markers.

Now that you're back in the channel, stay to the west side of the river until you've passed under the Ford City bridge. A huge series of shallow humps is located just off the channel, and again, it is marked.

Industry hugs the east side of the Allegheny in Ford City. The river is narrow here, but opens up as you approach the Cogley's Island Complex, an extensive system of islands and backwaters that stretches for over a mile along the west side of the river. It's an interesting area, but much of it is quite shallow, so use caution. Buoys mark the main channel.

In Kittanning, you see the borough's public ramp just below the old Route 422 bridge. The next stop is L&D 7. Soon you say goodbye to the larger towns, for the rest of the trip reveals most development in the way of cottages and cabins.

Pool 7

It's seven miles between L&D 7 and L&D 8. Much of the river has been dredged, not for navigation purposes, but to get the commodity of sand and gravel--not necessarily good for the aquatic environment, but it has eliminated most boating obstructions. Depths of 25 to 30 feet are common.

Above L&D 7 is the Kittanning Marina. The Fish and Boat Commission has an access at the mouth of Cowanshannock Creek, about two miles above the dam. The ramp and parking area are first rate, but the channel is quite narrow. At typical summer levels it's shallow from the ramp out to the river, a distance of less than 50 yards, so trim up the motor and idle out.

Smith's Boat Dock is located near Mosgrove, about two-thirds of the way up toward L&D 8.

Pool 8

Pool 8 is very similar to Pool 7, though it's a bit longer, about nine miles with lots of deep water, wooded shores and clusters of camps. The Game Commission has an access on Game Commission property near the town of Templeton. Mahoning Creek enters just upriver of here. You can explore back into this creek a short way before the water gets too thin.

At the upriver section of Pool 8 are two private marinas, the Spot Marina and River's Edge Marina. Both are on the west side of the river, across from the town of Rimer.

Pool 9

L&D 9 is the last navigation impoundment on the Allegheny River. There are 10 miles of slackwater above it before the river is again free-flowing. The Fish and Boat Commission has a roomy access near the Route 68 bridge in East Brady. Redbank Creek enters this pool, and like Mahoning, it is navigable for a short way.

Our hypothetical trip encompassed 44 miles, one way. This isn't to suggest that a one-day cruise of this magnitude is practical. Hardly. Locking through can take some time, especially if things are busy. Expect a minimum of 15 minutes, much longer if the lock is moving barges through. You'll probably want to lock through just one or two dams, depending on the nature of your trip.

Boating on the Allegheny provides plenty of space, and an interesting contrast of riverside scenery along a waterway rich in history.

Public Access

- Freeport Borough--Off Water Street in Freeport (Pool 4).
- Rosston Access--PF&BC, located two miles south of Ford City at the mouth of Crooked Creek (Pool 6).
- Kittanning Borough--Off Water Street in Kittanning (Pool 6).
- Cowanshannock Access--PF&BC, located one mile north of Kittanning at the mouth of Cowanshannock Creek (Pool 7).
- Templeton Access--Located eight miles north of Kittanning (Pool 8).
- East Brady Access--Off Route 68 at the west side of the bridge (Pool 9).--JK.

Safety

Boating on the Allegheny has certain inherent hazards. The most prominent one is the dams.

All dams are fixed-crest structures. The water flows over a concrete wall that straddles the river. Dams of this kind are difficult to see from upriver. Pay attention to the warning signs and buoys that are present during the boating season.

In shallow areas buoys indicate the location of the navigable channel or the presence of a shallow hazard such as a gravel bar. These buoys are either green or red.

For green buoys, navigate to the starboard (right) when facing upriver. For red buoys, navigate to the port (left) when facing upriver.--JK.

Private Marinas, Campgrounds

Pool 6

Coleman's Marina--Fuel, ice, snack bar, ship's store and full-service repair shop. Contact: Clyde Coleman, (412) 763-1202.

Pool 7

Kittanning Marina--Fuel, ice, boat rentals, mooring, overnight on-the-water lodging, full-service repair shop, restaurant nearby. Contact: Galen Cruse, (412) 545-9492.

Smith's Boat Dock--Camping, rental of picnic area (table and fire-place), launch ramp. Contact: Dean Smith, (412) 548-2638.

Pool 8

Spot Marina, McAuley's Campground--Marina has fuel, snack bar, ice, docking. Campground, located near marina, has full hook-ups, electric only and tent sites. Contact: Shirley McAuley, (412) 543-5409, or (412) 548-8042.

River's Edge Campground & Marina--General store, docking, launching, full hook-up campground sites and sites with water and electric only. Contact: John Leinerbach, (412) 545-6855.--JK.

More Information

The U.S. Army Corps of Engineers has a wealth of information available that is beneficial to boaters using the Allegheny River. The pamphlet *Locking Through* spells out the procedure of moving through a river lock. Other brochures detail specific locks, as well as safety hazards of the Allegheny River.

The Corps also publishes an excellent set of river charts of the entire navigable section of the Allegheny.

For more information, contact the U.S. Army Corps of Engineers, Federal Building, 1000 Liberty Avenue, Pittsburgh, PA 15222, or phone (412) 644-6972.

More information on activities in Armstrong County can be obtained by contacting the Armstrong County Tourist Bureau, 402 East Market Street, Kittanning, PA 16201, or phone (412) 548-3226.--JK.

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