

BOAT

Pennsylvania



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Viewpoint



Feeling the Pinch



John Simmons
Director
Bureau of Boating
Pennsylvania Fish Commission

We are all acutely aware of the recent attempt by the Congress to pass a deficit reduction bill. The bill, which passed in late October, has many far-reaching effects. We will all feel the pinch in the coming years as new taxes and user fees kick in. As boaters we are also going to feel the pinch in more ways than one.

Most people are aware that the new Deficit Reduction Act included a surcharge of 10 percent on the value of boats costing more than \$100,000. This levy doesn't affect too many Pennsylvania boaters because there are very few boats of this class used in Pennsylvania. On the other hand, Pennsylvania does have manufacturers and dealers of boats of this class, and the effect on this industry is as yet unknown.

The tax on gasoline is to go up a nickel a gallon. When the increased pump prices that we have been experiencing lately are considered, this may not seem like much. But it could be important to the boater and angler. Many of you know that the federal tax collected on gasoline used in motorboats goes toward the funding of the Aquatic Resources Trust Fund. This is the federal program that funnels federal taxes collected from boaters and anglers back into programs that directly benefit boaters and anglers. Some \$90 million of federal tax on fuel already goes into this fund.

Even though increased prices will lower consumption next year, this increase will still result in increased collections of about \$50 million. We are hopeful that the final budget bill will leave this money in the fund and not divert it for deficit reduction.

The bill also includes another more insidious tax that affects all boaters. Tucked into the bill is a provision imposing a user fee on all recreational boats. This tax will probably apply only on federally navigable waters, but this includes a large portion of Pennsylvania including the Delaware River, the "Three Rivers" in western Pennsylvania, the Susquehanna River, Lake Erie and perhaps even U.S. Army Corps of Engineers impoundments.

The exact form of this tax is not known yet. Nor are the collection and enforcement provisions known. What we do know is that beginning January 1, 1991, boaters will have to cough up the following annual fees:

- boats over 16 feet but less than 20 feet - \$ 25
- boats at least 20 feet but less than 27 feet - \$ 35
- boats at least 27 feet but less than 40 feet - \$ 50
- boats at least 40 feet - \$100

These fees will probably raise some \$130 million for the federal treasury. But what does the boater get for these fees? The legislation specifically states that "collection of these charges or fees does not constitute an express or implied promise by the United States to perform any service or activity in a certain manner or to provide any service at a particular time or place." In other words, boaters will pay but get nothing for their money.

The Fish Commission is gravely concerned over this issue. For years the Commission has provided the law enforcement, the boating safety education and the facilities. To pay for these services boaters have been charged a nominal \$4 or \$6 to register their boats. Registration fees have been kept low for 28 years through sound management. Unfortunately, times have caught up with us and we must request an increase in fees from the Pennsylvania Legislature.

What effect these federal fees will have on our attempts to fund our programs adequately is not known. It certainly cannot have a positive effect and could likely deal a disastrous blow to our state programs.

The number of new boats sold in Pennsylvania last year declined by 20 percent from the year before. This trend continues a slide that started a few years ago.

The increased cost of gasoline and the fuels tax also make boating a more expensive sport. Pennsylvania boaters spent over \$80 million on boats and boating equipment during 1990. They spent over \$3 billion for repairs, food, gasoline, travel, supplies and related needs to enjoy their sport. Not only is boating fun, but it is an important component to the economy.

In all, the proposed new taxes on boating will raise over \$200 million. But boating programs are guaranteed to see only about \$5 million of these funds.

I hope that the Congress recognizes the full effect of its deeds and acts before it is too late to rectify the wrong dealt to the nation's boaters.

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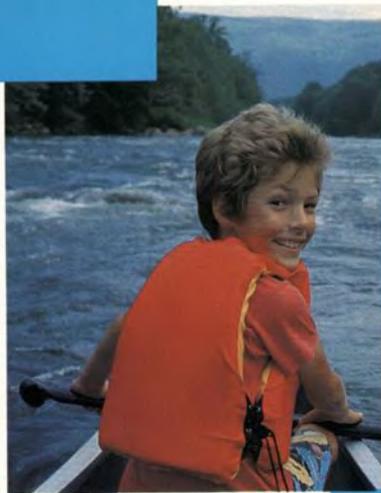
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The covers

This issue's front cover, photographed by Art Michaels, shows Bureau of Boating staffer Cheryl Kimerline Hornung enjoying a ride on a personal watercraft in the Susquehanna River, York County. This winter you can plan to enjoy your boating next season more than ever by reading the stories on pages 4, 14, 20 and 28.

This issue's back cover was photographed by Richard Hamilton Smith.

Canoeing appears to have been the preferred method of transportation by native Americans before the arrival of the white man. It is perhaps the least expensive form of family recreation available today. Yet many of us have no idea how to go about getting a canoe and setting out for an enjoyable day on the water. Furthermore, most of us have accepted a number of canoeing myths and do little more than entertain the thought of paddling a canoe only to reject the idea quickly as soon as we trigger a myth.



For instance, we all know that canoes are “tippy,” right? Wrong. If all were that “tippy,” then they would not be used to run the same whitewater successfully that people go rafting on and they wouldn’t have been so popular with the first explorers of this continent’s interior.

But aren’t rivers dangerous? Statistically you are much more likely to suffer serious injury on the highway leading to and from the river than you are on your canoe trip. You are even more likely to be injured in your own home. Of course, one should never attempt to paddle rivers at flood stage, rivers with difficult rapids that exceed your skill level or equipment, or when the weather is bad or water is too cold. Most importantly, you should always wear your PFD (personal flotation device) while on the water. In other words, use common sense.

Another myth is that rivers are deep. Most rivers suitable for beginning canoeists average just two to three feet in depth. We have all heard the cliché “still waters run deep.” River depths vary continuously and they may be very deep in the calm stretches. The variability of the depth and the current are the two main reasons why even good swimmers should wear their PFDs.

But isn’t renting a canoe too expensive? The cost of renting a canoe varies across the state. On the average you can rent \$600 worth of equipment including the canoe, life jackets, paddles and often seat cushions, be transported to and/or from the river as much as 30 miles or more, have the peace of mind knowing your car is parked safely in an attended parking lot, receive professional instruction, and keep the boat out all day for between \$12.50 to \$17.50 per person—tops.

Family and group rates are available at most outfitters. This reduces the price even more. In most cases, a family of four can be on the water all day for under \$40.

What about snakes? Merely saying the word snake can create the power of suggestion that may be enough to keep people out of a canoe altogether, especially if they envision a snake “jumping” in. Snakes cannot jump. Furthermore, you are much more likely to encounter them in your own yard or at the local park. If you look carefully while you are paddling a river, you might see one sunning on a log or rock. Actually, you are more likely to see deer and other animals.

Fact is, most snakes avoid human contact when they can.

The Lure of



Paddling opportunities

I have heard it said that there is no place to go canoeing. This may be true for some people somewhere on the planet, but it certainly is not true in Pennsylvania. Few states are blessed with so many clean rivers and streams to paddle as is the Keystone State. By mid-April the waters are warm enough to paddle safely.

With mountains to catch and evenly distribute precipitation over vast watersheds, the generous annual rainfall of Pennsylvania allows this state to boast of paddling opportunities for the novice, intermediate and advanced paddler throughout the summer. And as far as scenery goes, fall is perhaps the most spectacular time to enjoy a float trip.

For those of us who have cast off the myths, canoeing is great fun! It must be, otherwise the people listed at the end of this article would not be able to remain in business. So how do you go about taking your first canoe trip?

Canoeing is one of the least expensive forms of family recreation. But many people who'd like to give canoeing a try have no idea how to do it. Check out the facts and get set for an exhilarating new experience!

That First Paddling Experience *by Jim Thaxton*

Look over the list on page 6. Chances are there is a canoe rental business within a one-hour drive of where you live. Give the closest rental a call. Say you have never been canoeing before and would like to try it.

Weekdays

The best time to go is on a weekday. You will have the river practically all to yourself and the outfitter will have more time to teach you the basic paddling strokes. If you have to go on a weekend go very early in the morning or late in the afternoon. Ask for a short trip.

If you are still apprehensive and have children, leave the little ones at home. Children are quick to pick up the fears of their parents and will just as quickly magnify them beyond all proportion. Nevertheless, they are just as likely to sense your confidence and positive expectations and mirror such good feelings. You are the best judge whether or not take your children along.

What should you wear? Put on some old shoes and dress to get wet even if you don't plan to. Most people tend to end up in the water or get wet on purpose splashing one another. Let's face it, the reason you find canoeing appealing and have read this far is that you like water. If you like water, you like getting wet, so dress appropriately. Bring along a change of clothes, if you like. Most outfitters have changing areas and some even have hot showers.

Secure sunglasses and prescription glasses using string or a commercial strap. Leave behind jewelry and things that you cannot afford to lose or get wet. Lock your valuables in your car and then give the outfitter your keys for safekeeping. Most liveries will hold your keys for you.

Pack something to eat wrapped in a watertight container. Bring along something to drink, preferably in a can or reusable plastic bottle. When choosing your beverage remember that abuse of alcohol has been determined to be a frequent contributing cause of injury and death while paddling on rivers and with other kinds of boating.

If you are susceptible to sunburn use appropriate sunblock ointments, preferably one that continues to provide protection after you have gotten wet.

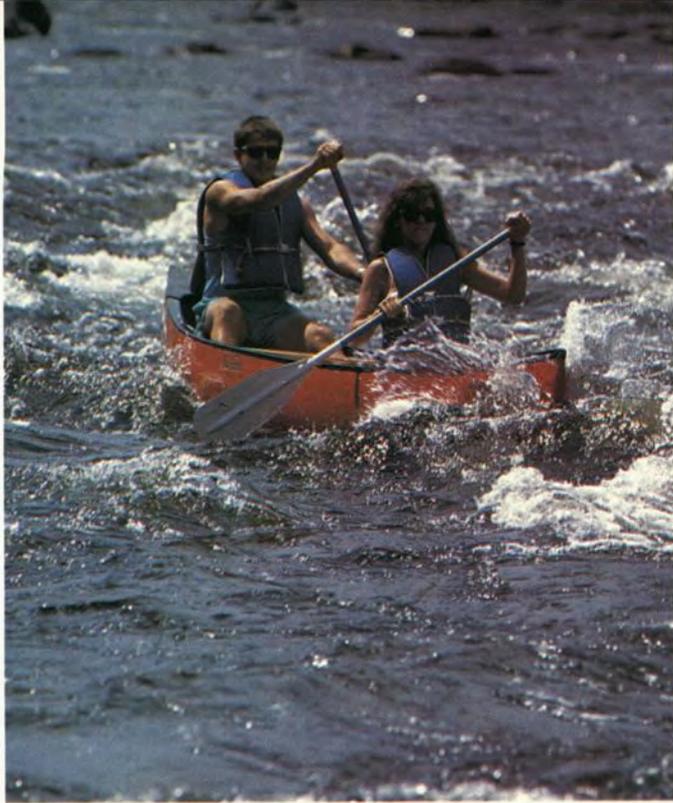
Remember—do not litter. Litter is an eyesore and detracts from the natural beauty of the river.

Canoeing is fun in and of itself. However, nature buffs have been known to bring along sketch pads, binoculars, wildlife and wildflower identification books as well as expensive cameras. Most outfitters sell or rent dry bags and boxes that float. You can use these to store items safely you wouldn't want to lose or get wet. There are many inexpensive and creative ways to protect your equipment from damage should you accidentally (or on purpose) be tipped over.

If you intend to fish from a canoe, make sure your rod and tackle box are secured to



photos by the author



the thwarts (crossbars of the canoe).

Below is a partial list of outfitters and canoe liveries in Pennsylvania. Those marked with a ✓ are members of the National Association of Canoe Liveries and Outfitters (NACLO). NACLO members pride themselves in offering safe, enjoyable river trips for you and your family.

NACLO is more than a trade association. Our members are involved in projects to protect and enhance the beauty of our country's waterways. Some examples are stream bank stabilization projects and anti-litter clean-up days. Members of NACLO stress safety and strive to adhere to strict, high standards.



Jim Thaxton is NACLO's executive director. NACLO's Let's Go Paddling Directory is available free from the Pennsylvania Department of Tourism or by sending \$2 postage and handling to NACLO, RR 2, Box 249, Butler, KY 41006-9674.

Some Pennsylvania Outfitters

- ✓ Adventure Tours Canoe and Raft Trips, John Jacobi, P.O. Box 175, Marshalls Creek, PA 18335. Phone: 717-223-0505.
- ✓ Chamberlain Canoes, Inc., Bob Sweeny, 1527 Spruce Street, Stroudsburg, PA 18360. Phone: 717-421-0180.
- ✓ Cook Forest Canoe Livery, Brent Lipford, Rt. 36, Cook Forest State Park, Cooksburg, PA 16217. Phone: 814-744-8094.
- ✓ Endless Mountain Canoe Outfitters, Inc., Lewis and Marilyn Robinson, R.D. 2, Box 77-A, Mehoopany, PA 18629. Phone: 717-833-5938.
- ✓ Hallstown Marine, Rick and Karen Swendsen, Star Route Box 32, Franklin, PA 16323. Phone: 814-432-3449.
- ✓ Hazelbaker Recreation Service, Callen Hazelbaker, Rt. 2, Box 15 G, Perryopolis, PA 15473. Phone: 412-736-8155.
- ✓ Indian Valley Campground & Canoe Livery, Richard Farrar, Box 36, Wittickory, PA 16370. Phone: 814-755-3576.
- ✓ Pine Creek Outfitters, Inc., Chuck and Susan Dillon, R.D. 4, Box 130B, Wellsboro, PA 16901. Phone: 717-724-3003.
- ✓ Point Pleasant Canoes, Thomas McBrien, P.O. Box 6, Point Pleasant, PA 18950. Phone: 215-297-TUBE.
- ✓ Shawnee Canoe Trips & Ski Area, Box 93, Stroudsburg, PA 18360. Phone: 717-424-1139.
- ✓ Kittatinny Canoes, Inc., Ruth Jones, Silver Lake Road, Dingmans Ferry, PA 18328. Phone: 1-800-FLOAT-KC.
- ✓ Tee Pee Canoe Rental, Terry Kerrick, R.D. 2, Box 138A, Towanda, PA 18848. Phone: 717-265-3309.
- ✓ Cushetunk Campground and Canoe Rental, Box 235, Starr Route, Milanville, PA 18443. Phone: 717-265-3309.
- ✓ Tri State Canoe, Charlie & Judy Shay, Box 400, Shay Lane, Matamoras, PA 18336. Phone: 717-491-4948.
- ✓ Doe Hollow Canoe Rentals, Inc., Paul & Jim Healey, Road #2, Box 77-A, Bangor, PA 18013. Phone: 215-498-5103.
- ✓ Belltown Canoe Rental, James & Gail Francis, R.D. 1, Box 98F, Sigel, PA 15860. Phone: 814-752-2561.
- ✓ Youghioghny Outfitters, Inc., P.O. Box 21, Ohiopyle, PA 15470. Phone: 412-329-4549.
- ✓ Mountain Streams and Trails Outfitters, Inc., Michael S. McCarty, Box 106, Ohiopyle, PA 15470. Phone: 412-329-8810 or 800-245-4090.
- ✓ River Sports School of Paddling, 213 Yough Street, Confluence, PA 15424. Phone: 814-395-5744.
- ✓ River Path Outfitters, Road 1, Box 15 B, Confluence, PA 15424. Phone: 814-395-5744.
- ✓ Laural Highlands River Tours, P.O. Box 107, Ohiopyle, PA 15470. Phone: 412-329-8531.
- ✓ Wilderness Voyageurs, P.O. Box 97, Ohiopyle, PA 15470. Phone: 1-800-272-4141.
- ✓ White Water Adventures, P.O. Box 31, Ohiopyle, PA 15470. Phone: 1-800-WWA-RAFT.
- ✓ Ohiopyle Recreation Rentals, P.O. Box 4, Ohiopyle, PA 15470. Phone: 1-800-245-4090.
- ✓ Lehigh River Rafting, Ltd., P.O. Box 66, White Haven, PA 18661. Phone: 717-443-9777.
- ✓ Whitewater Challengers, Inc., P.O. Box 8, White Haven, PA 18661. Phone: 717-443-9532.
- ✓ Jim Thorpe River Adventures, P.O. Box 4066, Jim Thorpe, PA 18229. Phone: 717-325-2570.
- ✓ Pocono Whitewater Rafting, Rt. 903, PA Highway To Adventure, Jim Thorpe, PA 18229. Phone: 717-325-3656.
- ✓ Whitewater Rafting Adventure, Inc., Box 88, Rt. 534, Albrightsville, PA 18201. Phone: 717-722-0285.—JT

Footwear for Paddlers



by **Cliff Jacobson**

Want to start an argument? Just mention your choice of canoeing shoes to a group of experienced paddlers. Everyone has his own idea of what's best, and the debate will range far into the night. However, when the smoke clears, all will agree that you need two pairs of shoes—one for the river and one for camp. Here the debate resumes because there are three diverse schools of thought on what makes a good river shoe.

Advocates of the "wet foot" philosophy

Art Michaels
maintain that light, porous shoes that let accumulated water out are the only way to go. Cold, wet feet are "part of the game, aye mate!"

The dry foot crowd argues for the comfort of high-topped all-rubber boots or for the wonderful L.L. Bean's, which unless you go over the tops keep feet luxuriously dry.

Not to be overlooked is an avid group in the middle ground that wants the cake, frosting and all. Always looking for a better

way, these folks sport thick-soled skin-diver's booties or combination systems that keep feet dry while wading, yet offer support when portaging. The down side of this versatility is that in warm weather, some outfits are dreadfully hot. Others fail from abrasion.

As the campfire fades to ashen embers and the debate comes full circle, the original premise—that you need two pairs of canoe shoes—surfaces once again.

20 years ago

Two decades ago, choices were simple. You could select 16-inch high rubber boots, L.L. Bean's, or well-worn canvas sneakers. In warm weather, running shoes worn over bare feet were the usual uniform, but unless ankles were well-tanned, a day on the river produced quite a burn. Add pure wool socks and you gained a sun-screen plus some warmth. But except on sun-scorched days, wet sneakers stayed that way for the duration of the trip. Every river rat knows the shock of putting on hard, cold tennis shoes in the brisk chill of morning. Certainly, there had to be a better way!

There was. Wet-suit socks worn inside oversize sneakers replaced wool socks (or no socks) on cold days. Now you could wade all day in icy water and your feet stayed toasty warm. The trade-off was the socks themselves. They were not at all easy to put on and take off when wet. And they often froze solid when hung out to dry on overnight trips. They had to be thawed in a warm sleeping bag or before an open fire before you could slip them on. Handle them roughly and they tore, and suddenly you were back to cold, wet feet again.

Despite these shortcomings, wet-suit socks or hard-soled neoprene booties remain the logical choice for the snowmelt of Pennsylvania rivers. But before you commit to tradition, examine the alternatives.

A recent check of the L.L. Bean and Cabela's catalogs revealed more than a dozen footwear options for canoeists. Here are the pros and cons of each.

River sandals

Developed by hair boaters in the south and west, these consist of a skid-proof, watertight orthopedic footbed that secures to the foot by straps or laces. Some models have a toe thong (a bad idea) that prevents wearing socks beneath.

Velcro straps (instead of buckles or laces) may be good or bad, depending on the sophistication of the closure. Velcro often pulls loose when wading a strong current,



Cliff Jacobson

and the older the Velcro, the more frequent the failure. However, Teva's new "Ladderlock" system eliminates the problem completely, as do the foolproof buckles or traditional laces used on Alp brand sandals.

Sandals are the most versatile footwear for canoeing because you can wear them with bare feet, socks, neoprene wetsuit socks, or wool socks and Gore-Tex gaiters (more on this later).

Finally, the best river sandals are engineered for all day comfort when hiking on dry or wet terrain. You can even side-hill while carrying a heavy load! If you want to go with just one pair of shoes, high-tech river sandals are a reasonable choice.



Reef-runners

Popularized by West Coast surfers, these ultralight, porous nylon sneakers are ideal for wading sandy stream bottoms. Just slip reef-runners over bare feet. They hold firm even in determined currents.

Pebbles and sand often become trapped in the footbed of river sandals, but the tight, elasticized uppers of reef-runners keep out all debris. And they come off in a flash if you get something wedged inside.

Flexible reef-runners are the logical choice for swimming, too, because they protect feet from cuts and bruises but they don't

Above left to right: L. L. Bean Maine Hunting shoe, Gore-Tex gaiter socks, wet-suit (neoprene) socks, and L. L. Bean "canoe shoes." Below are buckle and lace Alp sandals. Remember that one kind of footwear is probably not enough to cover all Pennsylvania canoeing situations.

cramp your style. Combine them with wool socks and they become a comfortable camp shoe. And they pack small—about the same as a pair of heavy socks. Lack of support and minimal resistance to abrasion are their greatest faults.

Gaiter socks

Early Gore-Tex products leaked without provocation and whenever the Gore-Tex became dirty. Only rigorous cleaning—and luck—maintained the watertight integrity of the material.

Now, changes in substrate chemistry have produced highly waterproof garments that can rightly be called "watertight." I've been testing a pair of Gore-Tex socks for two years now, and they earn high marks—that is, if cared for properly. One sharp rock is all it takes to puncture the delicate Gore-Tex liner, so you must wear these socks over one or two pairs of wool socks—and for reliability over the long haul, add a protective sock layer outside.

All these socks add considerable bulk, which means you'll need to wear a full size larger shoe than normal.

If you wade too deep and wet the inside of your Gore-Tex liners, no matter. They will dry quickly in the hot sun. Because Gore-Tex socks are so easily damaged, they probably should be worn with sandals. Tears are sometimes difficult to locate and even harder to fix.

Pathfinder boots

Modernize the styling of U.S. Vietnam boots, add a less aggressive tread and rubber toe bumper, plus a removable hemp inner sole, and you have the popular French-made Pathfinder (TM) boots, distributed by L.L. Bean.

Like its military predecessor, Pathfinder boots offer good ankle support, a fast-drying inner sole, and canvas construction that repels dew yet dries quickly after a dousing. The boots are sturdy enough for tough portages and in fact have been worn by climbers on approach marches in the Himalayas. Wear Pathfinder boots with two pairs of hiking socks.

Wear lightweight polypropylene socks next to the skin and heavyweight wool socks on top. Sock liners are best worn inside out so that the seams are away from the skin. For coldwater wading, team these boots with neoprene wet-suit socks. When frequent wading and tough portages are the rule, wear Gore-Tex gaiter socks inside.

Vietnam boots

Most of the "Nam" boots sold in surplus stores are foreign-made copies of the real thing. Invariably, the quality of materials and construction doesn't compare to the U.S. product. If you can find genuine Vietnam boots, buy them! Otherwise, go with the French-made Pathfinder boot, which is better built.

Traditional solutions

Nothing more than a high-topped canvas sneaker with non-aggressive soles, Bean's traditional "canoe shoe" remains popular with professional guides every-

where. Apparently, the reason is the wondrously soft feel and water-repellency of cotton canvas, and the genuinely low price. Canvas shoes are also cooler and more comfortable than nylon ones, and they wear about as well. Team these shoes with Gore-Tex or neoprene wet-suit socks, or traditional woolens. The soles provide a good bite for wading and are supportive enough for light portaging.

"Bean boots," as they are called, continue to be popular with canoeists, and for good reason. They're light, flexible, reasonably watertight, easy to walk in, and luxuriously comfortable, right out of the box. And their non-aggressive but effective chain tread doesn't track mud into the canoe. Order them a half-size smaller than your dress shoes, and use sheepskin-lined leather insoles inside.

If you step over the tops of your boots while wading, just shuck 'em off, remove the insoles, and wipe out the insides with your handkerchief. Install dry insoles and put on dry socks and continue paddling.

Don't be misled by the flimsy appearance of Maine guide shoes. They are rugged enough for portaging heavy canoes and gear long distances over tough terrain. And when you do wear out your Bean boots, the factory will re-sole them at low cost, something that can't be said for the look-alikes. Despite modern alternatives, Bean boots remain the choice of serious wilderness canoeists everywhere.

If the order of the day is all-day calf-high wading in icy water combined with portages over rugged or mucky terrain, then 16-inch high all-rubber boots are the hands-down favorite. However, not all rubber boots are suitable for canoeing. Some are too stiff for kneeling in the canoe. Others chafe the heel or calf when you walk. Many fit so sloppily at the calf that they readily admit water if you "go over the tops"—a potentially dangerous situation if you need to swim a rapid.

The best boots I've found for serious paddling are Cabela's 16-inch, non-insulated, full-lace all-rubber boots. These boots hug ankles and calves tightly and are nearly as comfortable as hiking shoes when portaging heavy loads. Yet they curl naturally in the canoe, and when packed, take up no more space than high-topped running shoes. They are sized exactly like L.L. Bean boots, so order 'em a half size small. Steel shanks and a non-aggressive tread make this boot ideal for any kind of cold-weather boating, from Pennsylvania to the Arctic.

Larrigans

Larrigans are high-topped moccasin-style boots that have tough, flexible all-leather soles. Luxurious comfort and dead-quiet action in the woods made them very popular with deer and turkey hunters a half-century ago. Until recently, Larrigans had all but disappeared from the outdoor scene.

The same qualities valued by the stalking hunter are also advantageous to the canoeist. Admittedly, these boots are not watertight (though they will withstand short-term immersion) and their soles aren't conducive to carrying heavy loads on rough trails. Nonetheless, Larrigans are the most comfortable footwear in the canoe or camp. If you want to fish or photograph wildlife without making a sound, Larrigans—or "Ultimate Stalkers," as they are called in the Cabela's catalog—are the shoes to get.

Ankle support

Ankle support is over-rated. Only rigid downhill ski boots have enough support to prevent sprained ankles. And no way can you hike in these, let alone kneel in a canoe while wearing them. What you really need for canoeing (and hiking) is a light but sturdy flexible shoe that has a tight heel and generous toe room. The American Indian wore moccasins for all overland travels, and modern Sherpas rely on open-toed sandals for treks in the Himalayas. Old ideas die hard. Today's light, flexible boots are a step in the right direction.

That's the line-up. All you have to do is match your footwear needs to what you can afford to pay, keeping uppermost in mind that one pair of canoe shoes is only half enough.

My recommendation? I own and use all but one of the shoes on this list. So when the arguments begin, I have all bases covered.



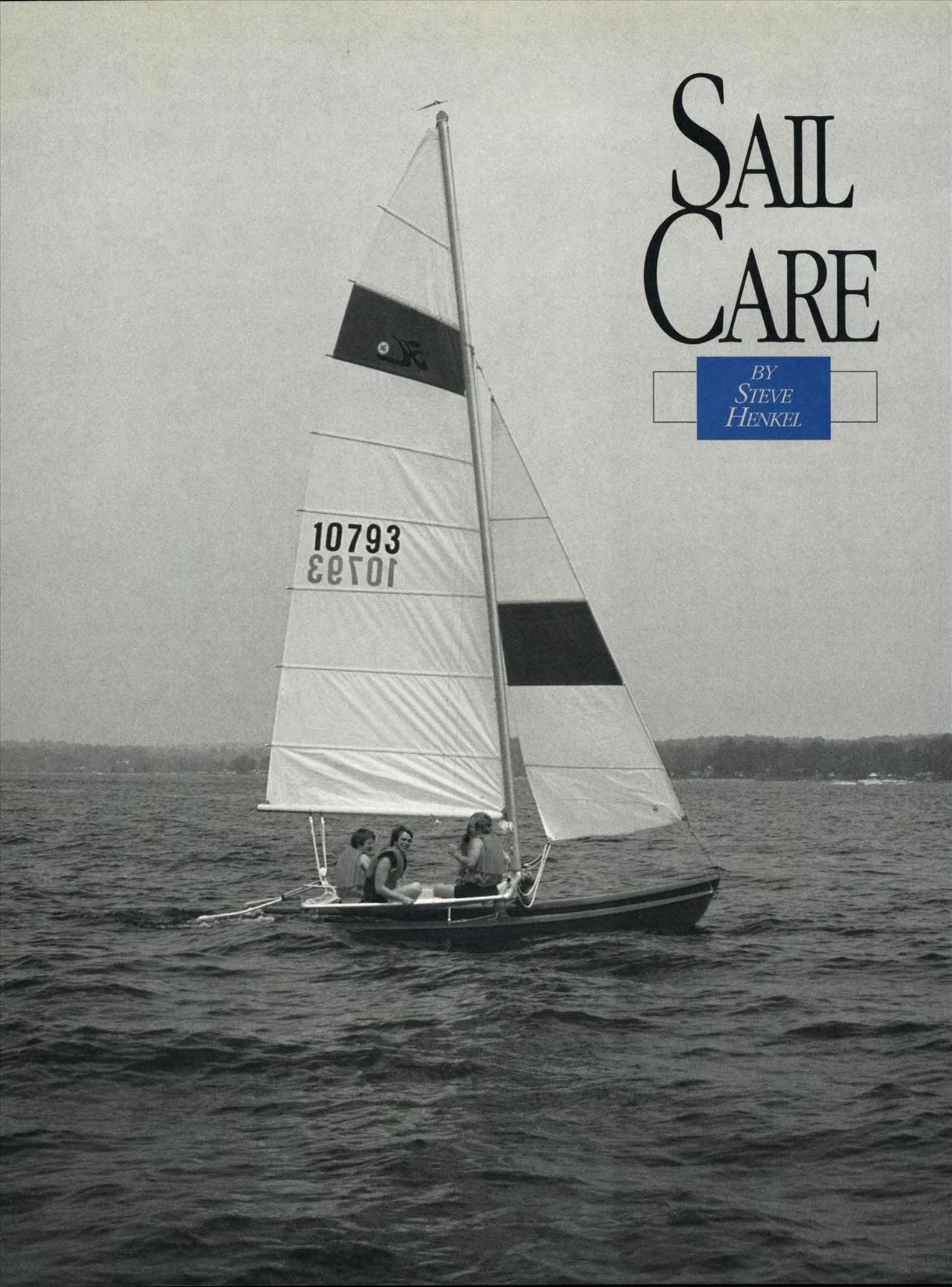
Mail Order Sources for Canoeing Footwear



- Alp Sandals, 244 North Highway 101, Encinitas, CA 92024
- Cabela's, 812-13th Avenue, Sidney, NE 69160
- L.L. Bean, Inc., Freeport, ME 04033

SAIL CARE

BY
STEVE
HENKEL



Your sails may represent 10 to 30 percent or more of your investment in your boat. Treat them with a little respect and loving care and you'll be rewarded with extra years of sail life. You'll also preserve much of the efficiency that was built into them when they were new, and as a bonus, you'll be able to enjoy the benefits of having a boat that looks shipshape. Good-looking sails enhance the beauty of a boat more than any other part of it.

Given proper care, your sails may last longer than you think. When I sold my little yawl Pipit in 1981, it still carried the original 1967 mainsail—maybe not serviceable for grand prix racing, but still well-shaped and attractive.

At that point, the sail had performed faithfully for 14 years—pretty good for an actively used boat, I thought at the time. But the other day I noticed that the new owner of Pipit, a friend of mine, still sails with the same main, which is now approaching 24 years of age. That sail is still well-shaped and still attractive. That's better than pretty good; it's fantastic. And it shows that diligent care pays off.

Keeping your sails in good condition calls for observing four simple rules: (1) at least once a year, and preferably at the end of your sailing season, check out your sails for any special maintenance required; (2) take precautions to protect your sails when "putting them to bed" for the off-season; (3) make needed repairs as soon as possible and catch up with postponed repairs during the off-season; and (4) be faithful performing certain rituals as part of your routine care, both off-season and in-season.

None of these rules requires a major allocation of your time, any heavy labor or a genius-level IQ. In fact, they're so easy to apply, it's a wonder not everybody uses them.

Annual inspection

You have two alternatives when it comes to inspecting your sails for damage, wear and dirt. One is simply to take them off the boat and give them to your favorite sailmaker to deal with. That's the easy way.

The harder way is to do the inspection, and maybe even the cleaning and any needed repairs if they're not too complicated, by yourself. This way is guaranteed to teach you a thing or two about taking care of your main source of power and save you a bundle of money. At around 25 cents a square foot for professional washing plus \$35 or \$45 an hour for repairs, plus possible storage charges, sending the sail of even a small boat to a sailmaker can get you into three figures before you can say "main topping lift."

Here's what to do if you decide to do things the hard but cheap way, which traditionally is the course many sailors choose.

Look for wear from chafe and weather deterioration. With synthetics, thread in the stitched seams stands above the surface of the cloth, rather than being drawn into it as with the cotton sails of yore. Because the thread sticks up, it can be easily chafed and attacked by the sun's ultraviolet rays. Moreover, if saltwater soaks the cloth's surface and is allowed to dry there, salt crystals will stiffen the material, making it harder to handle, and will gradually grind away the warp and woof of the cloth itself, presenting a fuzzier-than-normal surface appearance. Favorite places for chafe-attack on the thread and cloth of mains and jibs are:

- Around batten pockets, where constant flogging during windy-weather tacks can break battens and chafe holes right through the pockets.

- Wherever sails rub against spreaders or shrouds, such as at the leech tabling of genoas.

KEEPING YOUR SAILS IN GOOD CONDITION REQUIRES INSPECTING THEM REGULARLY AND REPAIRING THEM AS SOON AS POSSIBLE. THE WORK IS EASY AND IT DOESN'T REQUIRE MUCH TIME. IT'S A WONDER NOT EVERY SAILOR DOESN'T DO THE JOB.

- At headboards and clews where strain is relatively heavy.

- At jib hanks or bullet slides on the mainsail. Jib hanks can chafe right through the adjacent sailcloth if not protected by sheet vinyl chafing gear.

Roller furling jibs (and some mast-furling and boom-furling mains) usually have a protective "sun strip" a few inches to a foot wide to keep out the UV rays when the sail is housed. This strip may deteriorate at a much faster rate than the rest of the sail if it's not UV-protected. In that case, it is usually designed as a sacrificial sun strip, attached so that it is easily removable and replaced.

To check the condition of thread in stitched seams, hook a pointed object under a thread and try to lift it gently. If it easily breaks, the seam is ready for restitching. You can sew on a new row or two of zig-zag stitches yourself if you have the time, the patience, a heavy duty sewing machine that can penetrate all the layers of cloth in your sail, and if you are familiar with how to keep the right tension on the thread when sewing slippery synthetics (a knack that has to be learned by doing).

Don't forget to use the proper weight of polyester or Dacron thread, not cotton, which quickly rots. And if you don't have the time, the patience, or a good sewing machine, you can be sure that your trusty sailmaker does.

Spinnakers

Spinnakers can collect tiny pinholes from a variety of sources, including chafe and "meathooks" on shrouds or halyards. The pinholes can enlarge and eventually burst into major rips at awkward moments. To check for these, hold each panel of cloth up to the light. You may have to look closely to spot them.

Look for missing or failed attachments. Screw-type shackles can come unscrewed, cringles and grommets can rip out, reefing points can be lost, and headboards can shake off.

Note any dirt, stains or burn holes. Lots of things can stain sailcloth: Blood, grease, oil, tar, rust and mildew, for instance. Moreover, if you smoke or have regular crew that smokes, you're very likely to have pinhole burns in your sails from stray cigarette ashes. These pinholes may eventually enlarge to the point where the cloth is weakened enough to rip.

Check the sail shape. The best way to check sail shape is when you're sailing. But at this time of year, you can get almost as good an idea of shape by finding two friends and a room or open outdoor spot big enough to stretch the sail out taut, with one of you at each corner. If you can find only one helper, tie one corner of the sail to a tree or around a leg of your dining room table. Leave the battens in the sail. With all three sides (luff, leech and foot) stretched straight, you'll see a "pocket" of maximum depth of curvature, or "draft."

If the sail were on the boat in a breeze, the maximum draft for a jib would be somewhere between 33 and 48 percent of the way

aft from luff to leech, or somewhat more—40 to 50 percent—for a mainsail. Hanging limp in your living room, the draft should be a little forward of these positions because wind tends to push the draft aft.

The curvature of the cloth in the sail should be fair and uninterrupted by wrinkles or sags. If the leech droops or sags, it may be “blown out” (permanently overstretched). Check with your sailmaker. He might recommend a different batten configuration (longer or wider battens, or heavier pockets), stiffer battens, taking up the leech (by broadening the seams in the panels near the leech), or some other fix. Don’t be surprised if he says that there’s not much to be done except to replace the sail. It’s a tough problem.

If the leech curls inward, it is said to be “tight,” and may be the result of an over-tightened leech line. If your sail has no leech line (a light line inside the leech tabling or hem, used to help correct a fluttering leech), the tabling may be too tight. Again, see your sailmaker. The analysis of what’s wrong, let alone taking the proper corrective action, is nothing for amateurs to fool around with.

The off-season

Assuming you’ve found that no repairs are required, or you’ve decided to put off until later in the off-season any repairs that are necessary, it’s now time to clean your sails and store them for the rest of the winter. Here are some hints on doing these chores properly.

Cleaning sails is easy. Modern materials help make it so. Today’s sailcloth is woven using polyester threads for mains and jibs, and nylon threads for spinnaker cloth. Polyester is called Dacron in the U.S. and Terylene abroad. Both words are trademarks. Often the cloth is impregnated with melamine resin, coated with urethane resin, or both. These synthetic materials are generally damaged only by chafe, exposure to the ultraviolet rays in sunlight, and application of excessive heat, which may cause shrinkage of the fibers at around 160 degrees.

Sails can be laundered in a bathtub or other large receptacle, but you should use only luke-warm water—cold is OK, too—and any good mild detergent.

A scrub brush helps work out stubborn dirt. If dirt is really stubborn, try soaking the affected area overnight in pure liquid detergent before washing.

If you want to get rid of stains in your sail, you can try various chemicals, most of which are bleaches as well as strong solvents, so be careful. Follow directions on the container and avoid use on colored fabrics. If you must remove stains on a colored spinnaker, try a very small section first to see if you can live with the bleaching or discoloration that may result. Or better still, leave it to your sailmaker.

Use chemical cleaners before washing the sail. Then wash and thoroughly rinse the treated area to remove any residue. Some of the more common stain problems usually can be solved as follows:

- Mineral spirits dissolve oil, grease and sometimes tar.
- A five percent solution of oxalic acid in water takes care of rust stains, and bleaches the cloth at the same time.
- A mild solution of ammonia in water removes bloodstains.
- Diluted chlorine bleach handles mildew.

If the stains have been embedded for a while or are especially heavy, they may be difficult or impossible to remove. If these remedies fail, see your sailmaker for advice.

Drying sails

To dry sails, some people successfully use tumble drying at very low heat settings. But unless you have a very large dryer, very

small sails, and want to risk possible heat damage and the rough treatment a mechanical tumbler gives, use hang-drying instead.

I dry sails by hanging them in my backyard. I hoist one corner (the tack or head) to a heavy screw eye driven into the back wall of my two-story house, just under the gutter. The second corner belays to a nearby tree. The third corner (usually the clew) flies free, unless strong winds require lashing it down to prevent flogging.

If you just want to rinse off saltwater rather than do a full-scale wash job, sails hung in this fashion can be hosed off easily and quickly, and then left to dry.

When you hang sails to dry, be sure to stretch them along the reinforced sides (luff or foot for mains and jibs, any side for spinnakers), rather than along the leech, which could ruin the sail. If it’s windy, wait until the wind calms or tie all three corners well to prevent flogging (be careful not to put tension on the leech). On a nice day, synthetic sails dry in a couple of hours at most.

Folding, bagging

Folding and bagging a main or jib is a well-established routine, generally accomplished quickly by two people. Do so either at off-season “bedtime” or after each use during the regular sailing season (if you decide not to furl your main on the boom and stuff your jib loose in its bag). The right way to do it is as follows.

Spread the sail out on a clean floor, or outside on dry grass or other grit-free, non-abrasive surface. If there is a breeze, position the sail with the foot toward the wind. If not already done, remove any battens that are not permanently sewed in. Place one helper near the tack and the other opposite him, near the clew. Each helper then grasps the sail approximately two feet above his respective corner with one hand, and about four feet above his corner with the other. This forms a panel about two feet wide, intended to be a little shorter than the height of the sailbag in which the sail will be stored.

Working in unison, both helpers lift the upper part of the two-foot-wide panel, keeping tension on the fold between them, and move it up and over the lower part.

This procedure continues, maintaining steady tension on the sailcloth, so that the sail is folded in neat, wrinkle-free, accordion-like panels toward the foot, similar to the way a roadmap is folded.

The sail is arranged in folds parallel to the foot, rather than to the leech or luff. This makes any residual creases horizontal when the sail is hoisted next, thus offering less resistance to a smooth flow of air across the surface.

Any such creases usually disappear after a few days of sailing, at least with soft sails. If creasing persists, reposition the folds slightly next time you do the folding-bagging job, so you’re not reestablishing the same creases over and over again.

If the sail has a clear plastic window, take special care to avoid folding and thus creasing the window. For example, if the window is near the foot, you can fold the foot over the window first, then proceed as above. Take the same precautions to avoid folding and thus creasing the head, clew and tack patches.

When the entire sail is folded (or “flaked”) into a two-foot-wide strip, fold both ends toward the middle of the sail. Then, beginning at one end, roll or fold the sail into a compact rectangular package. Lastly, with the sailbag on its side next to the sail, carefully slide the whole package into the bottom of the bag.

If the bag is very large compared to the rolled sail, you may want to tie the folded sail with gaskets to prevent it from unrolling. Incidentally, big sailbags are preferable to small ones, es-

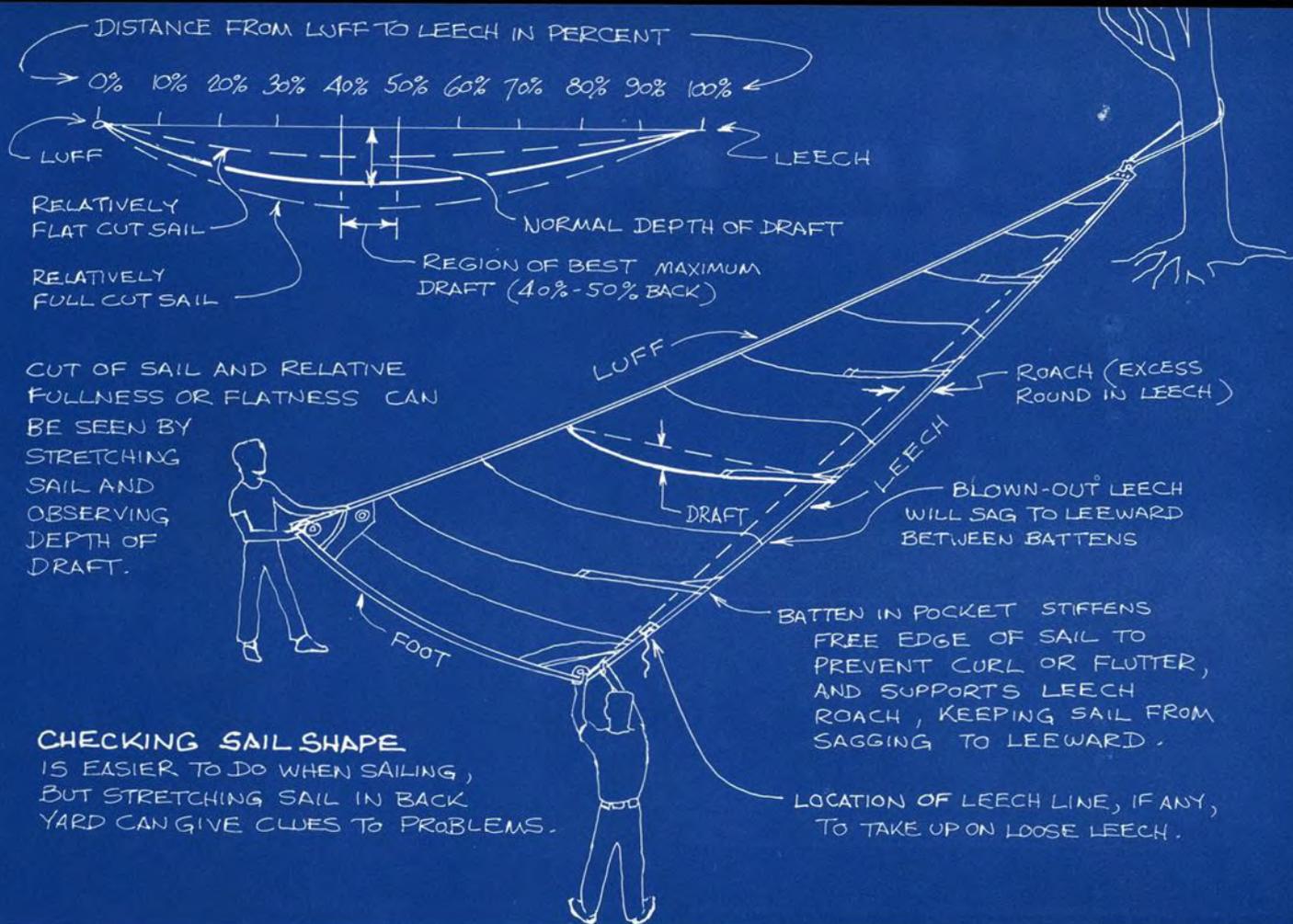


illustration by Steve Henkel

pecially for headsails, where scrunching the sail randomly into the bag during the sailing season is normal practice. The bigger the bag, the easier it is to stuff the sail. This means that less scrunching is required, and it lessens the likelihood of severe wrinkling.

Stow the battens with the sail in the bag. If you don't, you'll probably have to spend perfectly good sailing time hunting for them next time you want to go sailing.

Don't lift the folded sail package and attempt to drop it into the bag vertically. The folds may telescope out by gravity, ruining the neat job you just finished, requiring a redo.

Dacron, especially when wet, sometimes can be stained by stainless steel, salt-encrusted bronze, and certain other materials that may be sewn or clamped to it. You may want to wrap any suspected metals in polyethylene sheeting, dry paper toweling or an equivalent before rolling and storing your sails. These suspect parts include a clamped-on snap shackle at the tack of a jib or an uncoated luff wire extending from the head. And of course, try to dry your sails before storing them.

Folding and bagging a spinnaker for use during the sailing season is specialized business that takes a bit of detailed explanation. Nevertheless, for storage during the off-season, you can flake it and fold it, just like a main or jib.

Rolling sails

The practice of rolling, rather than flaking and folding sails, is usually confined to those made of hard-finished material, which is too stiff to fold without damaging the material. But even if your sails are made of soft cloth, you might consider rolling them for winter storage at the end of the season, if you have space for the long, thin packages they'll make, and if you can cover them

with a tarp or discarded sail to keep out the dust (assuming you don't acquire the sausage bags that hard-finished sails are stored in). Storing sails rolled instead of folded eliminates any possibility of permanent creasing.

Storing your sails for the off-season is a matter of common sense. Avoid burying bagged sails under a load of dinghy rudders, boxes of gear, and other heavy sails. That would tend to "iron in" creases along the folds of even well-folded soft-finished sails.

Steer away from damp or dirty storage spots. For instance, don't leave the sails on board through a cold, damp winter. Even modern miracle fabrics like Dacron are susceptible to the mildew produced under such conditions. And mildew is unsightly and a nuisance to remove.

Summer or winter, don't store sails in potential hot spots, such as against the wall of your engine room or in your uninsulated attic at home. The resin coatings can be ruined by heat.

By the same token, never iron a sail. It causes irreparable damage. If you're planning storage in an area that may be home to rodents or bugs, be aware that animals might chew off bits and pieces of your sail or bag for nest-making purposes. A load of mothballs thrown into the sailbag usually discourages such goings-on.

Keep in mind potential damage by household pets. A used sailboat I once acquired came with a mainsail badly stained with cat urine. Neither I nor my expert local sailmaker was ever able to remove the stains completely, or the accompanying odor.

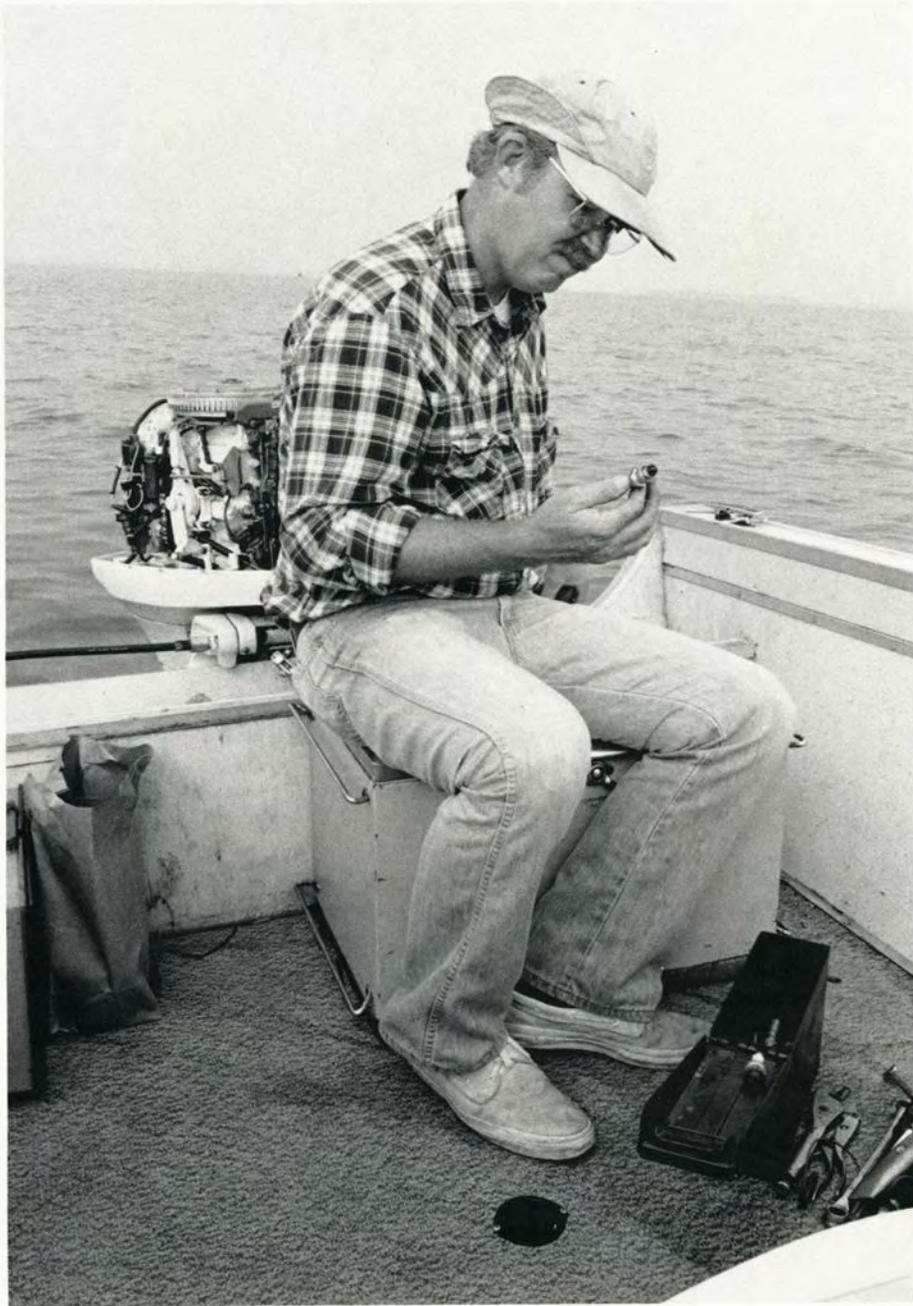
Applying these techniques now can go a long way toward keeping your sails "as good as new."



Steve Henkel's newest book is *Boating for Less*, published by International Marine Publishing Company.

Take a Spare *Everything*

by Gary Diamond



Art Michaels

If you're caught miles from the launch ramp and you have to repair your gear, you'll need the right tools, the right know-how and the right spare items.

Just three decades ago, the only safety devices on a boat were items you thought may get broken or lost—spare oars, Mae West life jackets, and possibly a spare anchor. Because of the nature of boating during that era, you seldom lost sight of land and the only means of propulsion were arm and oar power. You were confident you could handle any situation that might endanger you or your passengers.

Modern technology has changed boating considerably. Boats are faster, engines are more powerful and complex, and traveling several miles over water to your destination is something we take for granted. Although boating laws don't require having spare accessories on board, they should be part of your everyday boating items.

About three years ago, I took a trip to Conowingo Lake and launched my 16-foot runabout at the Fish Commission's Muddy Creek Access. After checking that everything was aboard and ready to go, the boat was launched and I headed out for an afternoon's fishing and cruising. Shortly after launching the boat, I noticed another runabout drifting downriver. One of the occupants was waving his arms frantically.

"Can you give us a tow?" asked the operator of the boat as I eased closer. "Sure," I replied as I tossed him a rope.

"Just tie this to your bow cleat." Ten minutes later we were back at the launch ramp and the hapless boater loaded his runabout on a trailer.

I learned that he had broken a prop by striking a submerged rock in the upper end of the lake. He didn't carry a spare anything on his boat, let alone a prop. In fact, he didn't have an anchor, flares, horn, whistle, tool box, life jacket, or radio. Had the boater gone unseen while in this difficulty, he could have ended up crashing into the spillway at Conowingo Dam, and could possibly have lost his life. Additionally, this guy had never been on Conowingo Lake and didn't have any idea what the water depths were and what hazards were hidden beneath the surface of the swift water.

The old saying, "an ounce of prevention is worth a pound of cure" really strikes home when it comes to boating safety. My brother recently acquired an old 32-foot cruiser. After months of restoration and working on the engines, he decided to take the boat out on the river where it was moored. He had really done an excellent job of restoring the old wooden craft and was anxious to see how fast those twin engines would

When you've been boating long enough, you realize that Murphy's law prevails: When something can go wrong, it will.

push it. Just five minutes from the ramp, both engines began running rough and stopped.

After 15 minutes of futile effort, the engines still refused to start as the boat drifted toward a railroad bridge. He didn't have an anchor, flares, or radio to aid him. Fortunately, the incident occurred on a busy weekend in an area where he could flag down another boater for help. A clogged fuel filter had shut off all fuel flow and could have cost him his boat had it struck the bridge.

Prop, anchor

Nearly every boater carries a spare life jacket, but how about a spare prop? This is one item that should always be on board your boat—it is easily damaged or broken and can be quickly replaced.

Also, you should have the proper tools to change the propeller and practice changing it while in the boat. This job should be done in shallow water just in case you were to drop a tool overboard. Additionally, spare shear pins and cotter pins should also be part of those tools, if your motor is older and uses shear pins.

An anchor is also a necessity. However, no anchor is required by law, and few boaters bother to carry a spare. But if you were to lose your primary anchor while on the water, that second anchor could be a lifesaver in the event of an engine failure. Naturally, the anchor would be absolutely worthless without rope, and this, too, should be carried as a spare.

Spark plugs, fuel filter

The very nature of two-cycle engines, those that mix oil with the fuel to lubricate moving parts, is such that spark plugs will foul. A complete set of spark plugs, properly gapped, should be included in your tool kit. Changing spark plugs on any outboard or I/O is a simple task and should be done routinely. Changing them while bouncing around in a boat is a bit more difficult, but it can be done safely if you have the proper tools, and it may need to be done.

Everyone takes a spare fuel tank just in case you run out of gas, but how about a spare fuel filter? On most outboard motors, the filter consists of a small piece of fine-mesh screen. However, if you don't know where it's located, you can't change it. Check your owner's manual for the exact location of the filter on your motor. Always keep at least one spare in your tool box and a clogged filter will no longer be a problem.



Art Michaels

Dunking the trailer hubs repeatedly is harsh punishment. Inspect the hubs often and service them regularly for peak performance.

Fuel connectors

Fuel connectors are sealed with a small rubber "O" ring, which eventually cracks or wears to the point of leaking. Rarely do these devices leak fuel, but they do allow air to enter the fuel line, which prevents the engine from running.

Carry at least two spare connectors and a spare priming bulb—they also have been known to fail when you least expect. In fact, if at all possible, carry a spare fuel line assembly and you'll have all those components in one unit and won't have to do any assembling that could result in a gasoline spill.

I also highly recommend installing a VHF or CB radio on all boats. It's rare that you can't summon help over the radio, regardless of your location or situation. The radio also allows you to maintain constant communication with rescuers. Check the radio frequently to be sure it's operating and store it in a dry place to prevent damage from moisture.

What spares should you have on your boat? When you've been boating for many years, you soon realize that Murphy's law prevails when you're on the water. Carry a spare everything and you'll be ready for the unexpected.

Courtesy Marine Examination

Next spring, get all your boat's equipment checked out thoroughly by undergoing a Courtesy Marine Examination (CME). CMEs are conducted by the Coast Guard Auxiliary throughout Pennsylvania. They are free inspections of your boat's equipment covering federal and state safety requirements with additional standards recommended by the Auxiliary.

For complete details on CMEs and how to get one, contact your local U.S. Coast Guard Auxiliary flotilla. You'll find the Coast Guard Auxiliary listed in the phone book's U.S. Government listing.

The Coast Guard Auxiliary also publishes an informative pamphlet called *Courtesy Marine Examinations*, which details the requirements for recreational boats.

Anatomy of a Boating Accident

by Lou Elkes

You awaken slowly. Your eyes follow the path of a thin tube that begins above your head on your left. The tube descends from the bottom of a clear plastic bag of intravenous solution, winds past your pillow and left shoulder down your arm, and disappears behind the raised metal rails of your hospital bed. You lift your head a little and see that the tube reappears near your wrist. It vanishes again under a bandage that covers your left hand above the knuckles.

A doctor enters your room, greeting you by name and introducing himself. He glances back and forth between you and the clipboard of papers.

"You had a boating accident and you broke both legs. You're going to be all right, and no one else was injured," he says. "If it weren't for your wearing a life jacket at the time of the collision, you'd likely have drowned," the doctor says. He frowns and raises his eyebrows. "I'll be back later to check your leg casts," he says.

You blink a few times, more awake now, and move your bed so that you're sitting up. Your arm, back and shoulder muscles feel sore. Your legs are plastered and rigid. They resemble two large pipes, and they ache. You reach for the reading material at your bedside. There's a hospital brochure, the latest issue of the *Angler*, some papers from work, and a mimeographed booklet called *Boating Statistics*, which you begin to thumb through.

It's coming back to you now. You and your cruising partner were heading in from a terrific trip around the lake at around six in the evening last Sunday. You bring the booklet closer to your eyes and crease the page intently. The booklet contains the latest information on boating accidents reported to the Coast Guard. You scan the miscellaneous data.

About 52 percent of all boating accidents reported to the Coast Guard occurred between 12:30 pm and 6:30 pm. "That's me," you think. You never dreamed you'd become a statistic, but there you are.



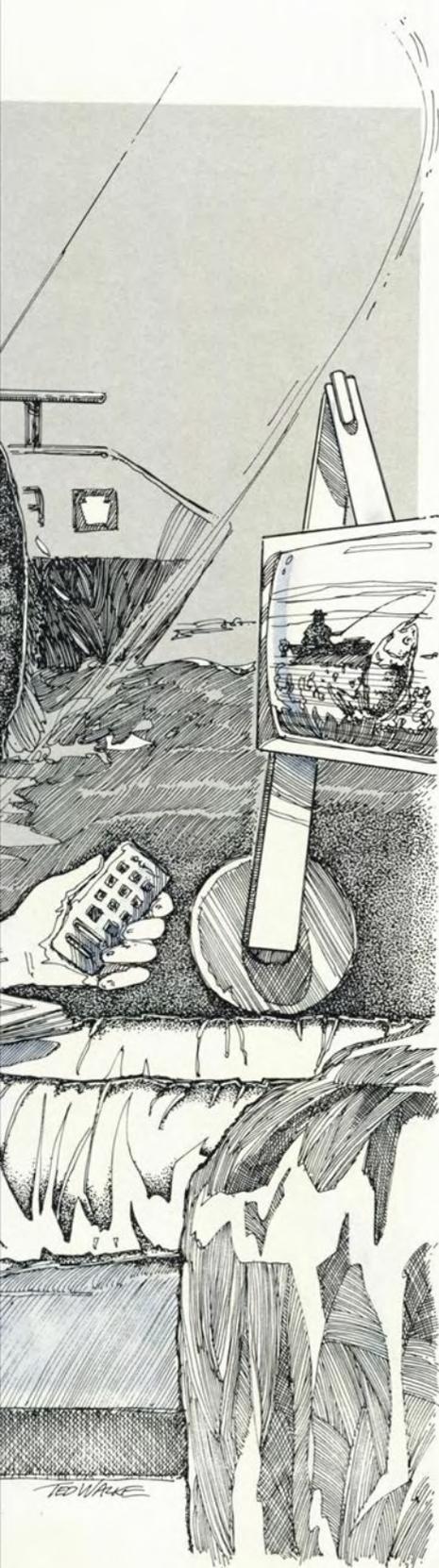


illustration- Ted wake

About 30 percent of all accidents happened on Sunday, with Saturday a close second at 28 percent. You again.

You recall a little more. Reliving the experience hurts, but the irony of learning the boating accident statistics lures you. You continue to read, noting only the largest percentage groups in each category. You look at the facing page of weather and water conditions.

Some 23 percent of all accidents occurred in the ocean, gulfs, bays, inlets, harbors, sounds, and intracoastal waterways. But about 44 percent of all the reported accidents happened on rivers, streams, creeks, and impoundments.

Your eyes widen when you learn that 51 percent of the accidents took place in calm conditions, like your mishap, and that 60 percent happened when the wind was either light or calm. Only two percent of the reported accidents occurred in storms!

You read more of that page. About 82 percent of the accidents happened when visibility was reported as good!

You frown and slap the booklet to the bed on your right side. Your right arm and shoulder muscles twinge again. "Why me? How did this happen?" You wonder, pursing your lips and shaking your head. You want answers more quickly than they can be found.

You turn the page to "operator information."

Some 48 percent of the boat operators involved in reported accidents were aged 26 to 50—that's you—and about 27 percent of the operators in accidents had more than 500 hours of boating experience. That's you, too. You've been operating boats for 20 years.

You note that nearly 50 percent of the operators involved in accidents had at least 100 hours of operation in their boating experience. Very few operators were novice boaters.

You quickly turn the page to "vessel information." About 54 percent of the boats in accidents were open motorboats, like your boat. Some 68 percent were made of fiberglass, and about 40 percent were powered by outboard engines. You again.

You see that 33 percent of the boats in reported accidents were either inboards or I/Os.

Over 47 percent of the outboard engines in accidents were motors of 75

hp or more, and over 50 percent of the boats were 16 feet to less than 26 feet long.

You read on the next page that more than 47 percent of all boat operators involved in reported accidents were cruising at the time of their mishaps. Few accidents occurred while boaters were fishing, sailing or at anchor.

You're becoming angry—a good smoke screen for the truth that the boating accident figures are beginning to reveal. So far, everything about you, your boat, your kind of boating, even the time of day and weather conditions—everything—fits you to a tee. The statistics put you in the largest reported percentage groups of the categories, and yet, in many groupings the percentages and data are not at all what you expected them to be.

More vigorously you search for the reason why you became a statistic, but the numbers and percentages are foreboding. The more you read, the more you shake your head denying the facts.

The five-year accident summary shows that the total number of reported accidents, fatal accidents, and fatalities in boating mishaps is rising in New Jersey, New York, Ohio, Maryland, and Virginia, as it is in some other states.

Yet in Pennsylvania, until last year, that number has decreased even though the number of registered boats has increased. You consider the decline in the number of boating accident fatalities during the late 1980s. Could it partly be the beneficial effect of the Fish Commission's nationally recognized boating safety education programs? Could it partly be the articles and other items in *Pennsylvania Angler* and in *Boat Pennsylvania*? Perhaps the boardings by Commission waterways conservation officers and their deputies contributed to saving lives and preventing accidents. Maybe it was the instruction offered by the American Red Cross, or perhaps the courses offered by the U.S. Coast Guard Auxiliary or the U.S. Power Squadrons.

You look up from the booklet and stare into the sea of billowy white sheets that covers your hospital bed.

You begin to think that all these educational efforts combine to save lives and prevent boating mishaps, and you ponder the mechanics of how they work.

Could it be true that you were plain tired, and that you just simply weren't paying attention to what you were doing? You stare out the window and ask aloud, "Did I cause the accident?"

Someone who-knows-where offered a bit of boating safety information and it contributed to a boat operator's safety. It may have been an article, some advice given by a conservation officer, or an item revealed in a classroom. Whatever the vehicle, it prevented someone's misfortune afloat, and it kept other boaters safe. It may even have saved someone's life.

Suddenly, the publications, educational efforts, the boardings by law enforcement officers, and the courtesy marine examinations take on new meaning. Now they are more vital and valuable than you can describe.

You'd like to change your sitting position so that you're more comfortable, but just as you begin to move, you stay as you are, anticipating the pain all over from trying to sit differently.

Still, you think about the idea that the number of boats registered in Pennsylvania has increased steadily by about three to five percent over the past decade or so. You wonder if the chances are growing for Pennsylvania boaters to have accidents because of the continuous rise in the number of registered boats.

You also consider the amount of damage in dollars incurred in boating accidents in Pennsylvania and in surrounding states. You look at some recent figures. Of all 50 states, Maryland had the fourth highest amount in reported accident damage, more than \$1.1 million. Right behind Maryland in fifth position was New Jersey, with an estimated damage amount just over \$1 million, and New York ranked sixth with some \$925,100 in reported damages.

Pennsylvania ranked much lower with

a reported \$188,800 in damages.

You see that Texas was third with more than \$1.2 million in reported damages, and Florida was second with over \$2.7 million in reported damages. California had the highest amount in reported accident damages—more than \$4.2 million.

You frown and sigh as you vaguely recall your 16-foot boat's mangled hull.

You think about alcohol involvement in boating accidents, even though those figures aren't part of the Coast Guard statistics you're reading. In Pennsylvania, some 50 percent of all boating accidents probably include alcohol involvement. Luckily, that wasn't the case aboard your boat, but you wonder about the operator of the other craft in this light.

You turn the page to the information on the types of accidents. You see that some 50 percent of all reported accidents were collisions with another vessel—just like your accident. Another nine percent were collisions with a fixed object, making some kind of collision account for 59 percent of all reported accidents.

You're still trying to find answers as you scan the smaller numbers of groundings, capsizings, sinkings, falls overboard and fires. You flip the pages quickly and energetically, forcefully enough to tear two consecutive pages.

Why you? Your frustration is growing at your inability to sort out your predicament and the riddle-like boating accident data that has you so well-pegged.

You turn the page to the heading "causes of accidents," and you scan the page, concentrating more and more. You see the numbers for "loading of passengers or gear, free water in boat, equipment, environment, other vessel at fault, and ignition of spilled fuel or vapor," but your eyes stop at the heading "operation of vessel."

Some 34 percent of all reported accidents were caused by improper lookout, or operator inattention or carelessness.

"Damn," you say aloud.

Now you remember it all clearly. You were heading in through the busy, narrow channel. You and your partner were tired, having cruised nearly all day, and the full sunlight didn't help, either.

You ran safely through the inlet into the bustling harbor, and you just glanced

down at the tach to check it out. You looked up, startled by the other boat's horn. Your boat bow crackled and squeaked as it slammed the white fiberglass of the other craft broadside amidships. You'll never forget the sound. Your boat bow rode on top of the other boat's gunwale, and that's when you lost your footing, broke both legs on the gunwale, and fell momentarily overboard.

Wearing that type III PFD saved your life, as the doctor said. You realize now that it kept you up in the water long enough for you to hold on in excruciating pain without the use of your legs. It let you get your bearings after such immediately overwhelming disorientation, and it let you be lugged back aboard by your cruising partner.

Could it be true that you were plain tired, and that you just simply weren't paying close enough attention to what you were doing? Are you that lucky still to be alive?

You stare out the window and ask aloud, "Did I cause the accident?"

Your mind spins in a whirlwind of conflicting feelings. You cannot accept the truth, and your frustration and anger come to a head. You throw the booklet toward your hospital room door.

"Uh, excuse me." A woman appears at the door and picks up the booklet. In her other hand is a brown leather attache case. She is dressed in a gray suit, her short, light-brown hair is neatly trimmed, and she is wearing glasses.

She asks for you by name, and you nod. She places the Coast Guard booklet at the foot of your bed and identifies herself as a county deputy sheriff, momentarily showing you a small gold badge and fogged photograph.

"I have some court papers to serve on you," she says crisply.

Confused and surprised, you begin, "What the—"

"Please sign here," she says routinely, over your words. She offers you a pen and thrusts the papers toward you. You sign and she leaves quickly.

The pain in your legs temporarily lessens your feeling guilty, and the legal action against you prevents your reeling from the remorse that's hiding inside. You begin to wonder what will be the real cost of your boating accident. You fear that the ordeal is just beginning.



Boat Maintenance and Protecting Our Aquatic Environment

by Cheryl Kimerline Hornung



Art Michaels

With a rapidly growing number of boats on our waterways, an even greater pressure has been put on our ecosystem, threatening our water quality and aquatic life. It is essential that we follow the best environmental practices in using and maintaining our boats.

Anti-fouling paints

Keeping your boat's hull clean and free of growth is important. Faster boat speeds and lower fuel costs are two major advantages, but there are other important concerns.

All anti-fouling paints work by releasing toxic chemicals from the hull into the surrounding water. Generally, the more effective the paint, the more toxic its ingredients. Copper-based paints usually keep a hull clear for a year or more and contain less toxic metallic compound.

Newer tin-based paints (such as tributyltin or TBT) should be avoided. TBT is one of the most toxic chemicals introduced into the environment. It has been found to affect aquatic life adversely. Human exposure to TBT may also be related to a variety of health problems.

Decks, topsides

Many products are available for cleaning decks and topsides. Their toxicities vary widely. Careful use of these cleaners is essential to keep them from washing overboard.

All cleaners, bleaches, teak cleaners, paints, varnishes and thinners should be considered toxic and handled accordingly. Try to use a non-phosphate detergent and scrub brush instead of teak, deck and hullside cleaners. Minimize the use of these materials while your boat is in the water to avoid spills.

Engine maintenance

Maintaining your inboard engine can cause special problems because of the materials involved—gasoline, oil and anti-freeze.

This hull scrubber on Lake Wallenpaupack removes dirt from boat hulls. Be careful when you paint and clean your boat's hull. Remember that some products are dangerous to the environment.

A single quart of oil when spilled can cover an area up to two acres.

When changing oil, wipe up spills immediately. Consider placing a bilge "pillow" (an oil-absorbing sponge available at many marine supply stores) in your bilge to remove oil from the bilge water. In this way the oil will not be pumped overboard by your bilge pump.

Keep the use of engine cleaners to a minimum. Drain old antifreeze into a container for on-shore disposal. Use anti-freeze containing propylene rather than ethylene glycol mixtures. Propylene is much less toxic.

Inspect your rubber fuel lines regularly. The alcohol content of unleaded fuels can deteriorate fuel lines in several months. Replace fuel lines if they have deteriorated.

Avoid topping off your gas tank when refueling. This often produces small toxic slicks in the water.

Litter

Make sure every piece of trash goes in your trash container. Tin cans and pull tabs can injure both fish and swimmers. Waterfowl have been caught and drowned in plastic six-pack rings or discarded fishing line. The enjoyment of an aquatic environment can be destroyed by the view of floating trash washed up on shore.

The effect of a single boat may be insignificant, but multiply it by the 230,000 registered boats in Pennsylvania and the effects can be devastating. A commitment from us all is needed to follow the best environmental practices while boating to save our fragile aquatic environment for the future.



Go Boldly Where You've Never Gone Before

by Jonathan Angharad

You'd be surprised how far some sailors, cruisers and water skiers trailer their boats to get to boating in Pennsylvania. During the last six or seven years, I've trailered my 16-foot runabout several times to Lake Erie, the Delaware River, and all kinds of spots in between.

In fact, on a few trips I saw trailered boats with Maryland, New York, Ohio, New Jersey and Virginia registrations. All these out-of-staters were apparently making their way to Pennsylvania waterways.

If you have a yen to trailer your boat to exciting, different boating in Pennsylvania than the kind of action you're used to, read on. There are lots of people who are doing these things. Here are some ideas on how to plan a long-distance trailering trip.

Telling someone to plan a trip might sound too simple, but sailing, cruising and water skiing trips are often scuttled by poor planning. When your entire vacation hinges on getting things right the first time, and when you have a considerable amount of money tied up in a trip, you can't afford to leave out important details.

There's nothing wrong with serendipity and taking off on a moment's notice if you



like doing that. But to get the most for your money, arrange your trips well ahead of the time you intend to go. You need several months to prepare for a trip.

If you have the will to take off but can't decide where to go, thumb through some back issues of *Boat Pennsylvania* and check out the "where-to-go" articles. These stories

were written by contributors who've been there, so you can depend on their steering you in the right direction. My first long-distance trips in Pennsylvania grew from reading about distant places in *Boat Pennsylvania*.

Ask around in marinas and local outdoor stores, too, for advice on which destinations would be worth a trip. You might be surprised how many excellent recommendations you can drum up, and you might be equally amazed at just how many terrific places there are to boat in Pennsylvania that you may have previously written off or that you don't even know about.

Start by making a list of everything you need to bring. Update the list often, and save your lists for different trips. In this way, you won't forget essential items.

I have four or five lists that I update when I plan a trip. One list is a master inventory of everything I bring on all my trips, no matter what the destination or activity.

Art Mic

My other lists are variations on this theme for water skiing, cruising and sailing.

My lists change depending on whether I'm in my boat or a friend's boat, which activity we're pursuing, how many nights I'll be away, whether the waterway is small, large or in between, and the expected weather at the destination.

I'm a member of AAA, the American Automobile Association, and if you plan a long trip or a season of long hauls, you may want to consider the benefits of membership. The towing service is comforting, but I use AAA mainly for planning trips. The maps they provide with the route

outlined in magic marker are most useful, and AAA's directions often steer you away from construction and other delays of which you may not be aware.

You can contact AAA in your area by looking it up in the phone book's white pages.

When you make motel reservations, be sure to ask about accommodating your trailered boat. Some motels can't handle them. Always confirm motel reservations.

Knowing as much as you can about the place you intend to visit pays off. Get to know the waters of the area by getting your hands on the right NOAA/NOS navigation chart, if you're heading to Lake Erie or the Pennsylvania portion of the Delaware River. In this way, you can observe hazards and you can mark likely looking spots for cruising, water skiing or sailing. Use magic marker to highlight the likely places that you recognize and that people tell you about. Go ahead and make other notes you need to remember right on the charts.

It's also a good idea to call marinas in the area so that you can get more lowdown on what to do and what not to do. The marinas can let you know which facilities they have available, such as food, fuel and repairs. They may also be able to recommend motels and other accommodations.

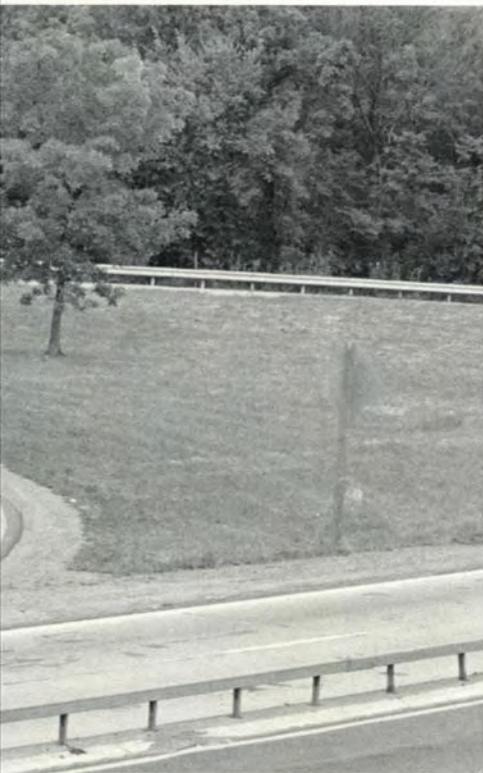
If your destination is half the state away, finding marinas to call might be difficult. The local library may have a collection of phone books that include the yellow pages for the area you plan to visit. So check your library first for phone books. If no phone books are available for the places you plan to visit, call directory assistance for your destination and ask for the yellow pages operator. Ask for listings under "marinas" and "marine supplies."

Long-distance calls can cost a lot, but not half as much as cash wasted and time and effort spent when you arrive.

Banks, real estate offices and tourist promotion agencies can provide you with local maps that can make getting around easier once you arrive.

Don't neglect your boat trailer or your tow vehicle. If you maintain both regularly, you'll likely have no problems on the road. Just in case, take along tools, repair items and spare parts that you can use on the road at least to get you to the nearest dealer.

Finally, boating in new places is a great change of pace. If you plan everything well, you'll return from your trip refreshed and invigorated, and you may even have pocketed a few new boating tricks to try at home. In any case, when the lure of the other side of the state beckons, plan your trip first and then have a ball! 



Bruce Kistler

Plan vacations carefully because your precious vacation time and money are at stake. Prudent planning can let you enjoy the best boating vacation you've ever had.

Useful Publications for Planning Trips

•The Pennsylvania Department of Natural Resources Bureau of State Parks has available its *Pennsylvania Recreational Guide*. This publication includes a map of Pennsylvania on which the locations of all state parks are marked. It also lists every state park in Pennsylvania with a brief description of the facilities and activities each park offers. For a free copy, contact: Bureau of State Parks, P.O. Box 1467, Harrisburg, PA 17120. The phone number is (717) 787-8800.

•*Fishing and Boating Map* is published by the Fish Commission, and it also includes an official PennDOT transportation map of the Commonwealth. This publication lists lakes and accesses. With requests for this publication please include a business-sized self-addressed, stamped envelope. Contact: Publications Section, PA Fish Commission, P.O. Box 1673, Harrisburg, PA 17105-1673.

•The Fish Commission also has available a guidesheet that lists where you can get a variety of other maps for many Pennsylvania waterways. The Commission itself doesn't sell these maps. The guidesheet is a compilation of map sources outside the Commission. When you request this guidesheet, please include a business-sized self-addressed, stamped envelope. Use the address above.—JA

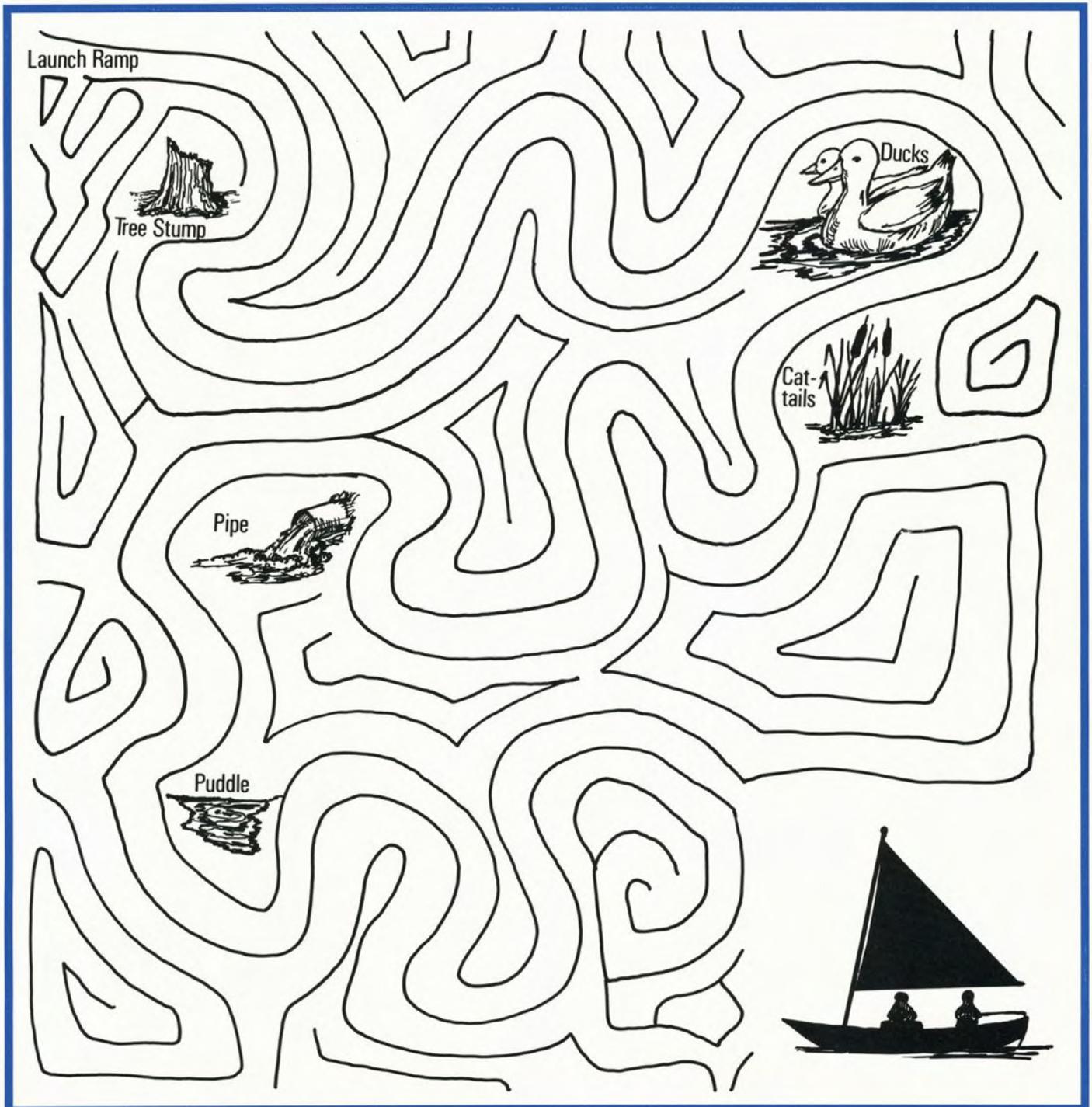
KID PAGE!

by Cheryl Kimerline Hornung

Help the ice sailors below get back to shore safely to avoid dangerous ice. Draw a line from the sailboaters back to safety at the launch ramp. Look at the key to discover which factors cause weak ice.

KEY TO FACTORS INFLUENCING ICE STRENGTH

- Water flow or large schools of fish can prevent ice formation.
- Stumps, logs, rocks, vegetation and other obstructions affect ice strength by generating heat from the sun.
- Water chemistry plays a role in ice strength. Pure water freezes faster and deeper than water containing chemicals or pollutants.
- Water on ice erodes the ice.
- The only absolute to ice safety is to stay off.





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

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Saving Fuel

Prices at gas pumps are going up, so consider a few fuel-saving techniques.

✓ Make sure your boat trailer tires are properly inflated so that you get the best gas mileage while trailering. This means keeping the tires inflated to their maximum capacity. You'll find this information molded into the tire sidewall. Be sure the trailer wheel bearings are lubricated properly. Reduced friction results in a smoother pull.

✓ Watch your boat's weight. The lighter the rig, the better the fuel economy. If you're trailering your boat a long distance, make the trip with empty inboard tanks and fill your gas tank when you arrive at your destination. This lets you tow much less weight over the long haul. Balance the passenger load in the boat to help the boat get on plane quickly and reach the desired speed without plowing.

✓ Slow down. Running the boat at top speed can increase fuel consumption by 50 percent or more. When you get on plane, throttle back by about one-third.

✓ Don't idle excessively. Whenever you stop, shut off the engine. A warm engine restarts easily without choking.

✓ Keep your engine tuned. Proper ignition timing and clean spark plugs give the best fuel economy. Let your dealer inspect your motor's carburetors for proper float level, correct jetting and smooth choke operation.

✓ Keep your propeller in good shape. A damaged prop robs power. Make sure your prop has the right pitch and diameter for your boat and for the boating activities you enjoy.

✓ Keep the boat bottom clean. A slick hull reduces drag. For more details on this idea, see page 19 of this issue.

Commonly Overlooked Boat Registration Issues

✓ If a boat is lost, destroyed, stolen or abandoned, the Fish Commission's Boat Registration Division must be notified.

✓ If you move, a change-of-address form must be filed within 15 days at the Boat Registration Office.

✓ A Pennsylvania use tax is charged for any boat owned by a Pennsylvania resident if that boat is at any time brought into the Commonwealth regardless of where it is registered or used.

✓ A valid Pennsylvania registration permits launching a boat on all state park waters where boating is permitted. Un-registered boats and boats registered in other states must purchase a \$5 launch permit from the state park office.

✓ Your registration certificate must be on board your boat at all times when it is operated.

New Boat Registration System

A multi-year registration system has been implemented this year. All motorboats must be registered and renewed on a one- or two-year cycle for the period April 1 to March 31. This year, 50 percent of the motorboats will be registered for two years. By 1992, all motorboats will be registered in this two-year cycle. The savings brought about by this multi-year registration will be about \$121,000 in the first three years.

Notice to Subscribers

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

If you do NOT want your name and address included on the subscriber mailing list to be made available to the described organizations, you MUST notify the Commission in writing before January 1, 1991. Send a postcard or letter stating, "Please exclude my name and address from *Boat Pennsylvania's* subscriber mailing list." Send these notifications to Art Michaels, Editor, *Boat Pennsylvania*, P.O. Box 1673, Harrisburg, PA 17105-1673.

Water Skiing, *a Moving Experience*

by John M. Cornish II

Water skiing is an activity that can arouse a variety of emotions and feelings. Regardless of the skier's skill level, beginner or trained competitor, individual goals and the accompanying emotions are in place as they trail behind the towboat on a Pennsylvania waterway.

The water skier can be alone with his thoughts, influenced only by the sounds of the spray from the water rushing off the skis and the air flowing past. A relaxed state of mind can be created away from the daily jobs and pressures. Recreational skiers sometimes sing to themselves as they ski along or whistle a tune while looking at the surrounding scenery. This individual solitude can be therapeutic and invigorating. You are alone if you want to be.

Social interaction develops between the water skier, the driver and the required observer or group of spectators in the boat. Even though the skier is towed 75 feet behind the boat, water skiing hand signals combined with improvisation form a language of non-verbal communication. This interaction can be enjoyable and rewarding with an array of emotional states. One's ego, while the spectators look on, may swell or shrink depending on the skiing performance. Friendly rivalries or dares may inspire new moves as the onlookers taunt the skier.

An anxious beginning water skier enters the water with several emotions exploding within: Fear, excitement and anticipation. Fear and anxiety of failing to get out of the water in this new venture and fear of the water itself bubbles inside the skier. Battling the fear is the excitement from the thought of succeeding at this attempt. Also, the thought of having fun builds on the anticipation of the struggle and the unknown. As the skier launches onto the surface of the water and begins to skim along, the skier experiences more excitement and exhilaration from the successful start. This is quickly dampened by confusion and more fear. This first-time skier has now entered a new experiential level, unfamiliar territory. Surprised, he now realizes he's out of control and begins to feel confused and fearful. Additional trials and tribulation permit the skier sooner or later to conquer negative emotions.

In contrast, trained competitive skiers set out with confidence and determination to attack the water. They are focused on a vision of accomplishing a new goal, improving their performance. Just as do beginners, competitors may feel the same exhilaration of success or encounter confusion or fear combined with the anger and frustration that results from failure.

The exhilaration that comes from skimming over the water is developed in each of us at an early age. We are all educated about the properties of water. We are fascinated with its beauty, power and serenity, and we are mystified how objects disappear below its surface. Some people fear it. Most of us must satisfy our curiosity about water by floating and playing in it and investigating it.

Skiers engage in a feeling of freedom as they glide along. Depending on the tow line or the boat to pull them along does not seem to hinder their feelings of independence. The movement on the surface of the water, defying gravity and its properties, promotes the freedom.

A barefoot water skier has an added dimension to this freedom with the feet planted directly on the water without the aid of skis. Barefooters can feel the different temperatures of the water that exist due to springs, streams and currents. Different types of water such as alkaline, acid or sediment-filled water give the skiers different sensations. Saltwater vs. freshwater also has a different feel.

Barefoot skiers, ski jumpers and advanced slalom skiers may also experience some emotions from the speeds they attain in their performances on the water. Barefooters have direct contact with the water at speeds that average in excess of 35 miles per hour. Jumpers who perform the approach to the ramp called a "double wake cut" can attain speeds of 50 miles per hour or more with this whip-like maneuver.

Try to imagine the emotions that these skiers feel as they speed up to the ramp, hear the sound of the skis crashing and scraping on the 12-foot jump surface. Instantly the skier is airborne, sailing in a quiet blue arena. The descent is smooth but abruptly completed when the skis slap the water. The skier is jolted in this knee-buckling landing, and water is splashed in the face, compounding the shock.

Slalom skiers can build speed as they carve turns and dart from side to side across the boat wake. A good slalom skier with technique creates a slingshot effect similar to that of a jumper who can almost double the speed of the skier from that of the tow boat. When the slalom skiers carve a deep turn in the water, they feel the power in the ski and in the pull of the rope. They can feel and see the shadow of the wall of spray that is displaced and hear it splashing down as they head for the next turn on the opposite side.

Trick skiers find different feelings as they spin their way along. Moving at considerably slower speeds, approximately 18 to 20 miles per hour, trickers get to see the surroundings. Skiing backward opens a new world, getting to see the wake that the ski leaves behind, seeing the spray rising and falling along with the scenery from this different perspective. The challenges are just as great. The drive of the individual to accomplish a new trick is just as strong.

There is no doubt that we are all fascinated with water. Water skiers challenge this fascination to perform and defy nature in a one-on-one competition. This competition is comprised of "moving" across the water, tasting a variety of "moving" experiences.



nce



Water Skiing Publication

Water Skiing in Pennsylvania is the title of a Fish Commission pamphlet that includes vital information. Topics include water ski wetsuits, kite skiing and parasailing, regulations, the skier, the boat operator, the observer, equipment and where to water ski. Also included is a meridian map of the Commonwealth with times of sunrises and sunsets, and illustrations of water skiing signals, approved by the American Water Ski Association.

Single copies of this pamphlet are free. With requests please include a business-sized stamped, self-addressed envelope. Contact: Boating Publications, PA Fish Commission, P. O. Box 1673, Harrisburg, PA 17105-1673.

BUI

(Boating Under the Influence)

by Edward W. Manhart

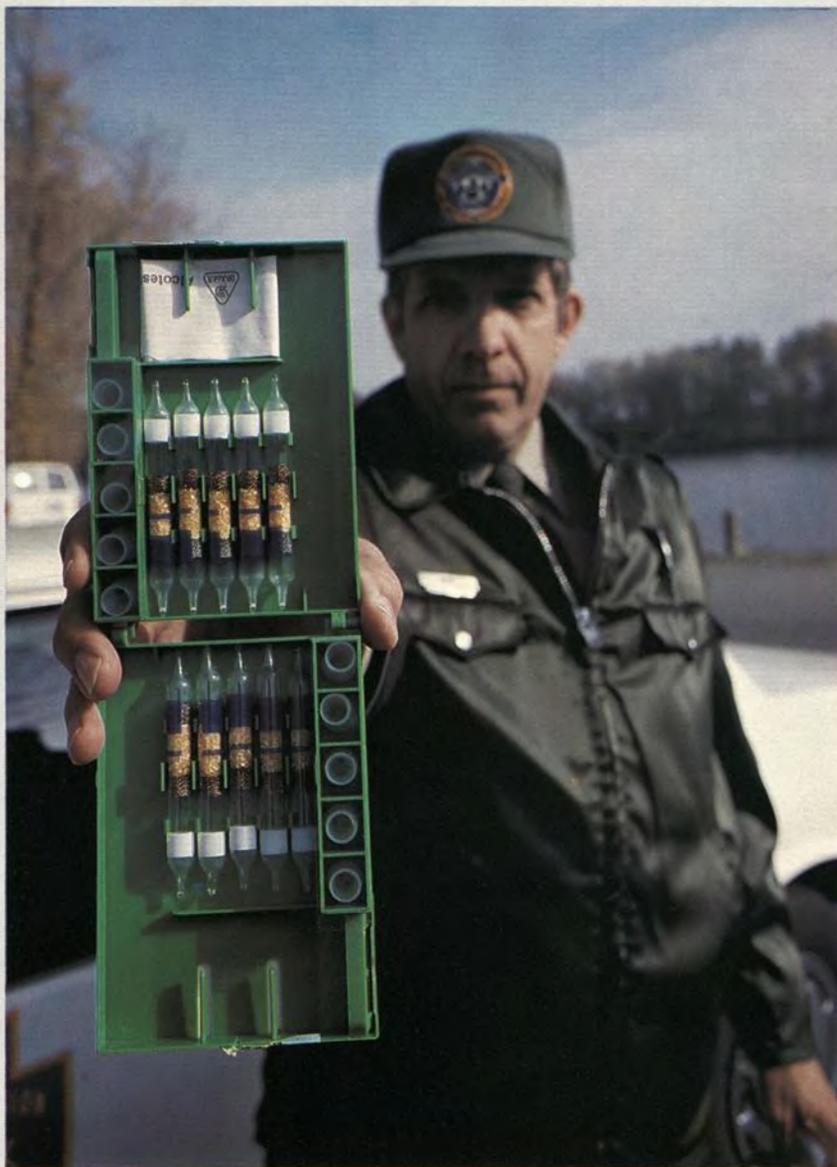
"It is a violation for any person to operate a motorboat while in an intoxicated condition. Violators are subject to prosecution and revocation of their licenses."

This, or similar language, was used from 1942 until 1964 in Pennsylvania to prohibit anyone operating a motorboat from doing so while under the influence of alcohol. In 1964, Pennsylvania's boating laws were revised and the new prohibition regarding boat operation while under the influence of alcohol simply said, "No person shall operate a vessel while intoxicated." This law was in effect until 1981 when minor additions were made.

The language used for all those years was uncomplicated and straightforward, but it was virtually non-enforceable because no intoxication levels or standards (blood-alcohol levels) were established for use by law enforcement personnel as required by our courts today.

In 1984, the Fish and Boat Code was amended and Pennsylvania enacted what we consider to be the model legislation regarding operating a watercraft while under the influence of alcohol or a controlled substance. It also included homicide by watercraft while operating under the influence of alcohol or a controlled substance.

Why did it take until 1984 to establish



a good boating-under-the-influence law? Probably for a variety of reasons, including:

- For many years the consumption of alcoholic beverages and operation of a motorboat was considered a socially accepted practice.
- Our waterways were not very crowded.

Although there were boating accidents with fatalities, they were attributed to causes other than alcohol or drug use because blood-alcohol levels were not checked on victims.

Neither the boating public nor boat law enforcement administrators made any impassioned pleas for alcohol-related controls.

What changed? Several things:

As concern for both the public and organizations grew regarding the tremendous number of deaths occurring on our nation's highways due to "driving while intoxicated," it became apparent to legislators, our courts and law enforcement agencies that something had to be done. New laws were passed, new enforcement programs were established to identify and apprehend "drunk" vehicle operators and the courts did their jobs well by imposing more severe demands on convicted drivers. Members of the boating community started to note these changes.

Suspicion that many boating accidents and resulting deaths were caused by alcohol was confirmed by blood-alcohol tests on operators and victims. In many states, alcohol use was involved in 50 to 75 percent of all accidents.

Our waterways were rapidly becoming congested.

The effects of alcohol and drugs on boat operators were fully recognized and particularly brought to light by a terrible boating accident involving a drunk operator in

northeast Pennsylvania. The accident caused the death of two women and two children.

Amended law

Pennsylvania's amended Fish and Boat Code provides for chemical tests of breath, blood or urine for the purpose of determining the alcoholic content of blood or the presence

of a controlled substance of a boat operator suspected of boating under the influence. It also establishes a presumptive level of intoxication (blood-alcohol content of 0.10 percent or more), provides for pre-arrest breath testing and prohibits operating a watercraft while under the influence of alcohol or drugs. The law establishes penalties for refusing to submit to chemical testing (loss of boating privileges for a period of 12 months.)

For operating a boat under the influence the penalties are fines of \$250 to \$5,000 and/or up to 90 days in jail plus loss of boating privileges for one year, and if convicted of homicide by watercraft while operating under the influence the penalty is a fine of \$2,500 to \$15,000 and imprisonment for not less than three or more than seven years.

The new law required some changes within the Bureau of Law Enforcement, primarily regarding additional training, the establishment of enforcement procedures and the purchase of pre-arrest breath-testing devices. The new statute took effect late in the 1984 boating season, so only part of these changes could be accomplished in time to have any effect during that boating season. However, this important new legislation received excellent coverage by the news media and that alone created new awareness among the boating public regarding the problems associated with BUI.

Later in 1984 and early in 1985, a procedure package, including training, was provided to all waterways conservation officers and deputy waterways conservation officers and our BUI enforcement program began. Along with a number of BUI cases, in 1985 we had our first homicide by watercraft while under the influence case, which occurred on the Susquehanna River just south of Harrisburg. We have been averaging 15 to 18 cases each year with another homicide by watercraft while under the influence incident occurring last year.

Convictions

The disposition of these cases has varied from county to county. However, in most cases the violator has been convicted or pleaded guilty to BUI and other related offenses or entered an ARD (accelerated rehabilitation disposition) program. Fines have been averaging \$250 to \$5,000 and in some cases a jail sentence was imposed. The first homicide by watercraft case resulted in a conviction and the violator was sentenced to a state correctional institution for a term of three to six years.

The enforcement of Pennsylvania's BUI



Art Michaels

statutes has been revealing. We constantly learn something new and this should improve our enforcement effort. Through the news media and the public relations and enforcement work of our waterways conservation officers, we believe a new awareness has been created regarding the effects of combining alcohol or drug use with operating a boat. Many boaters now use the "designated operator" (non-drinker) concept, and the percentage of boats carrying alcohol, although still high, appears to have decreased in the past few years.

Although boating under the influence probably will never be eliminated, we believe that the majority of our boaters will abide by the "rules" and make Pennsylvania's waterways as safe as any in the country.



Edward W. Manhart is director of the Commission Bureau of Law Enforcement.

Drinking, Boating and the Law

Alcoholic beverages are prohibited in Pennsylvania state parks, on Pennsylvania state park waterways, and on many other Commonwealth waterways.

For answers to the most commonly asked questions concerning alcohol and boating, the Fish Commission has available a pamphlet called, *Drinking, Boating and the Law*. For a free copy, send a self-addressed, stamped business-sized envelope to: Boating Publications, Pennsylvania Fish Commission, P.O. Box 1673, Harrisburg, PA 17105-1673.

A Boater's ABCs

by Art Michaels



ACCEPT your own limitations and the limits of your equipment. Know what your boat, motor and fuel capacity can do by design and what they can't do.

BRUSH your boat clean. Wash down during trips and after every excursion. Use a stiff brush to scrub the places where a mechanical washdown or a pail of water won't do the job completely.

CONCENTRATE on piloting your boat. Coast Guard statistics show that most boating accidents are caused by operator inattention, and that collisions are the most common kind of accident. The dangerous times are when you're heading out and when you're coming home. The dangerous places are crowded spots like harbors, inlets and access areas.

In addition, don't think you're invulnerable because you're an old hand. Coast Guard statistics show that boaters who have been at it for a long time are involved more in accidents than are novice boaters.

Polished boat operating skills can help you enjoy your sport more, and knowing how to negotiate a variety of water conditions can help you get to and from places more comfortably. Practice docking, launching and retrieving in tricky currents and winds. Honing this skill helps you protect your equipment investment in addition to increasing your safety.

DEVISE ways to make your tasks easier, make things work more smoothly and save time. You can get good fodder for this task by keeping an eye on other boaters. Look at their setups and see if they're doing things that could make your sailing, paddling, cruising and trailering easier.

Check out how others set up their boats for storing gear. Look at the electronics. Scan consoles, cockpits and trailers for ingenious, time-saving aids.

Train yourself to observe others in this way and you may be surprised to learn how much useful information you can glean just from using your "educated eye."

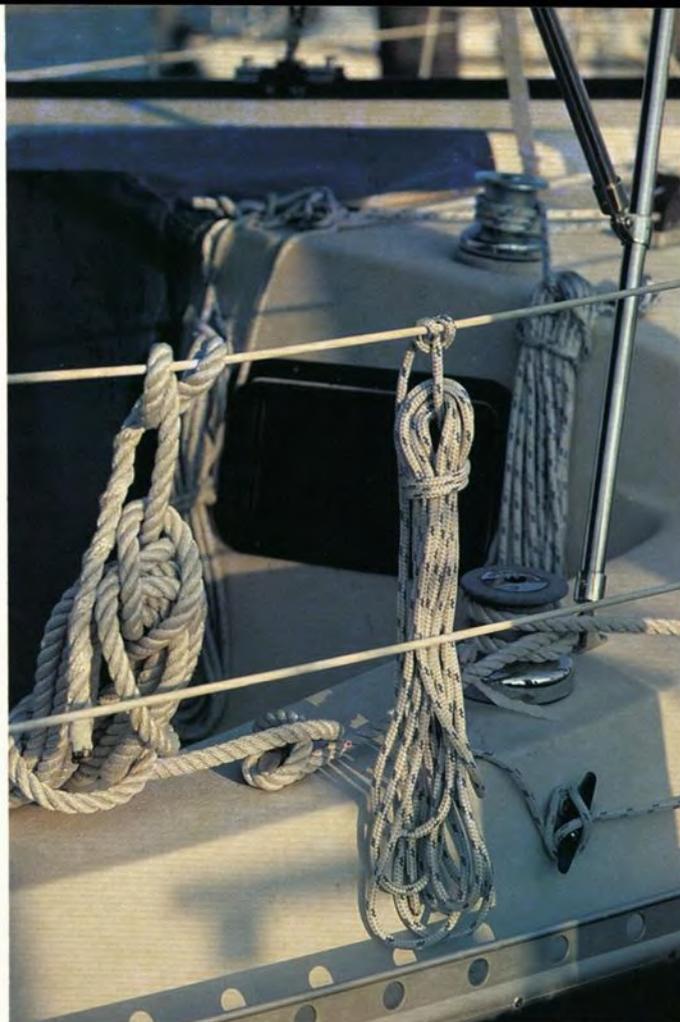
EQUIP your boat correctly and thoroughly. You probably have the equipment you need, but when it's time to replace items, be sure you get what's right. Know the legal equipment requirements for your boat, and know what you should have for safety's sake.

For instance, is your anchor really the right type and size? Do you have enough anchor line? Are your boat fenders adequately sized, and do you use enough of them? Should you use a bent-shaft paddle, and if so, which kind? When did you last have that fire extinguisher checked? What's the condition of your fuel lines and steering cable? Is it time to replace your flares?

If you have a question on boating safety, especially an inquiry about federal requirements, call the U.S. Coast Guard Boating Safety Hotline for answers and information. The number is 1-800-368-5647, and it operates 8 am to 4 pm.

When you renewed your boat registration, or when you initially register a boat, you receive the latest copy of the *Summary of Boating Regulations*. If you need a new copy, contact: Boating Publications, PA Fish Commission, P.O. Box 1673, Harrisburg, PA 17105-1673. Include a business-sized stamped, self-addressed envelope with requests.

FORECAST often. Tap your resources to forecast the weather and water conditions, and act accordingly. Do you own a weather



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radio for your home use? Keep a close eye on weather systems and understand how the wind affects waterways you frequent.

GROW as a boater. Find out from marinas and marine supply stores where you can find good boating in spots you've never tried. Experiment with new methods. Give new gadgets and equipment a fair shake. Share your know-how with others, and learn from them.

HELP other boaters learn new skills, especially the young and other novices. Set an example.

INSPECT your boat and equipment regularly. Torn PFDs or ones in poor condition don't work properly and can't be counted toward the legal requirement. Rusted fittings will likely fail at an inopportune time, and a dead battery is exactly what you don't need six miles from the launch ramp.

JOIN boating groups. These organizations can help you reap benefits as nothing else can. In strength your political voice can be loudest.

In boating clubs you can also find new friends, gain boating know-how and learn the locations of some great boating haunts.

KNOW how to tie a half-dozen or so knots. You don't need a college degree in knot-tying to be a better boater. All it takes is knowing how to tie several knots well for a few different applications.

If you're happy with your knot-tying skills, try learning one or two new ones each season.

LEARN to operate your electronics skillfully. Considering the price and versatility of electronics, it pays to learn to use them proficiently. Boaters who can operate their Ioran units, VHF radios and depthsounders well are better pilots than are those who are less skilled with this gear.

Take time to practice using your electronics. Read and reread the owner's manuals, and learn new functions regularly on each electronic item.

If you don't have an owner's manual for each electronic item you have, write to the manufacturer. For a small price, most often only the cost of postage, you can obtain an owner's manual.

MAINTAIN your boat, motor and trailer. Routine preventive maintenance saves a lot of money in the long run. Neglect your equipment and sooner or later you will pay dearly. Where do trailer boatmen have the most frequent problems? The hubs.

NURTURE the boating skills at which you're weakest. Take time to bone up on these abilities. Do you know how to plot a course on a chart and determine your position? How can you minimize your powerboat's wake for paddlers ahead of you? How well do you back up your trailer and tow vehicle? Do you know how to tow a disabled boat properly back to port? Do you know how to tack?

Taking a boating course is a terrific way to sharpen your boating skills, whether you're a novice or an old hand. The U.S. Power Squadrons, Coast Guard Auxiliary and American Red Cross conduct excellent courses in all kinds of boating.

The Fish Commission also offers a correspondence course through its 84-page study guide, *Pennsylvania Basic Boating*. Copies cost \$2 postpaid. Contact the Commission at the address above.

ORGANIZE everything on your boat. Have you ever found an item on your boat that you forgot you had? Have you ever tried to find something on your boat and couldn't remember where it is?

Place your equipment where you can find it. Every so often go through your boat's storage areas to keep tabs on what's there, what needs to be replaced, what needs to be added, and what needs to be removed from the boat.

PUT ON your PFD (personal flotation device) in a small boat, and insist that everyone aboard your boat does the same. Even though having a life jacket aboard and readily available satisfies the legal requirement in many cases, a PFD is practically worthless unless it's worn. Both Fish Commission and Coast Guard accident statistics suggest that many boating accident victims could have survived had they been wearing their PFDs.

Wearing a PFD is certainly no guarantee that you'd survive an accident. But the fact is, wearing the device when you end up suddenly and unexpectedly in the water would probably keep you up enough in the water long enough so that you can gather your wits and effect your own rescue.

QUESTION what you don't understand about your boat—how it's built, how things work and why things happen as they do. When you understand why things work the way they do, you gain more control over the boat, and you can become a better boater by using the equipment more skillfully. The more you learn and understand, the more successful your trips will be.



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ROUTINIZE as much as you can. Work from a checklist when you boat, as airplane pilots use a checklist to take off and land. Make a list of everything you need to bring on a trip, and make different lists for different kinds of trips. Lists can eliminate your forgetting things.

STUDY navigation charts and learn to identify navigation aids. You ought to be able to identify navigation aids day and night.

TRAVEL to new spots. If you trailer your boat, finding new places can breathe freshness into your boating. Set a goal of finding new spots each season. Talk to marina personnel to help steer you in the right direction.

UNDERSTAND the nautical rules of the road. Learn to "see ahead" and anticipate other boaters' courses and actions. Study the rules of the road to know who has the right of way in various boating situations. Don't assume that other boaters know the rules of the road as well as you.

VEST some knowledge in your cruising and sailing partners on how to operate your boat. If you become incapacitated, someone aboard your boat will have to pilot the craft home, and someone might also have to use the VHF radio to summon help.

WATCH your wake, and watch out for damaging wakes others might cause. In a small boat, come about and quarter into a big overtaking surge. Slow down when you cut through an oncoming wake, again quartering the boat. Then resume your original course.



The danger zones for wakes are usually crowded spots like access areas and narrow inlets bordered by rock walls and bulkheads. Crowded places are dangerous because many boats create many wakes, and rocky inlet walls and bulkheads telegraph wakes without diminishing their intensity.

Observing no-wake, minimum-height-swell rules is vital to everyone's safety. The choice is simple. Either we obey the rules or more stringent regulations will have to be enacted.

X stands for what's unknown. Safe boaters realize that they don't know everything. That's why they approach boating cautiously and defensively. Always pilot your craft as if the other boater out there knows nothing about piloting.

The unknown also holds boating thrills. Breathtaking sunrises and sunsets, remarkably calm weather, exhilarating sails, delightful cruises, great company aboard your boat—these things and other unexpected pleasures keep you coming back for more. Anticipate enjoying them.

YOU are the catalyst to make each trip fun yet safe. You have to juggle all the elements that keep fun and safety balanced.

ZAP your boating with zest. Take on a new challenge. Try an unfamiliar waterway. Learn a new boating skill. Rediscover old know-how you left behind years ago. Putting zing into your cruising and sailing makes it more fun, more challenging and more rewarding.



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No matter which kind of boating you like, you are the catalyst to make each trip fun yet safe. You have to juggle the elements that keep fun and safety balanced.

