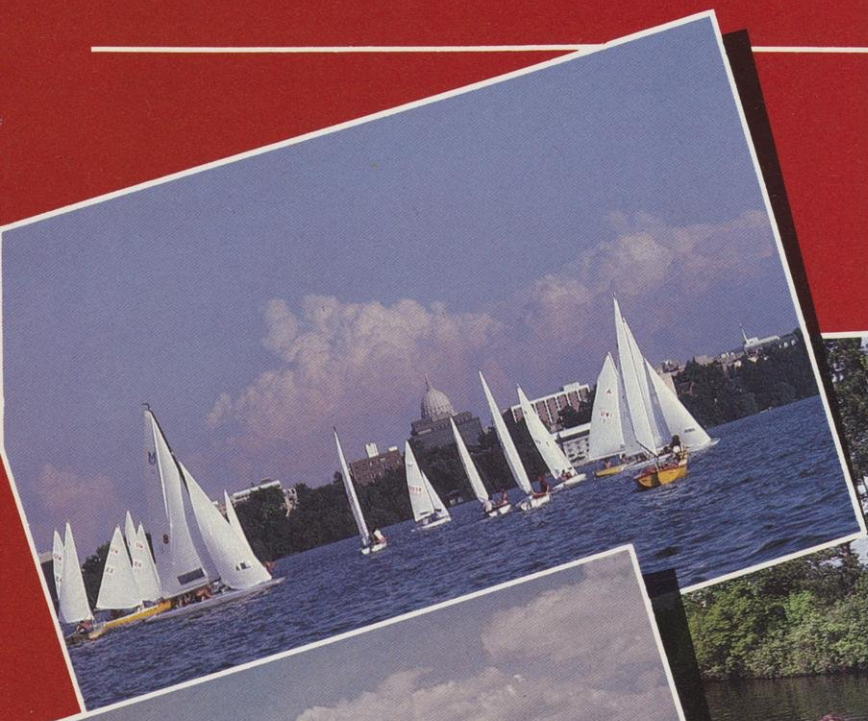
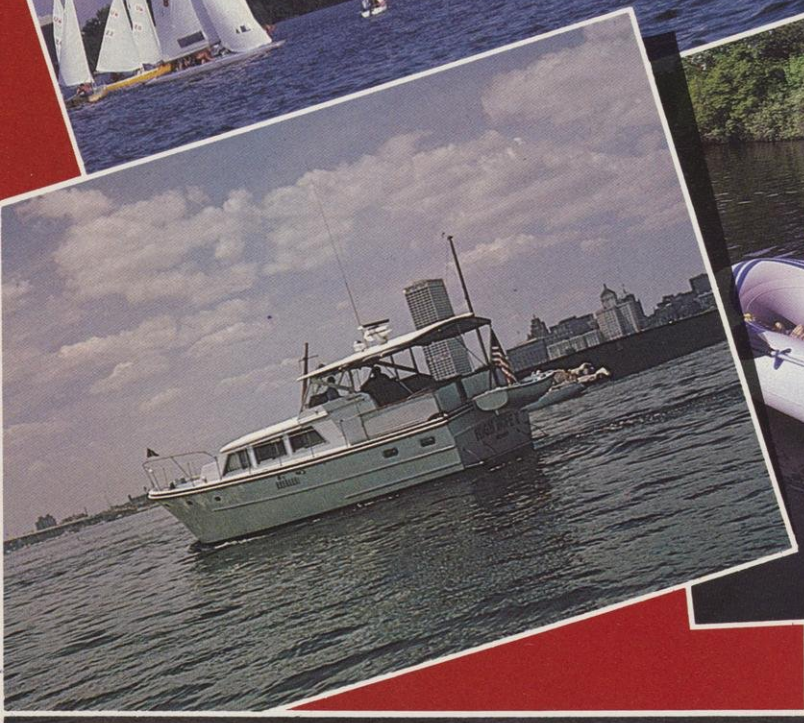
Steady as you go: boating safety on Wisconsin waters. [Supplement, Vol. 8, No. 4] [July-August 1984]

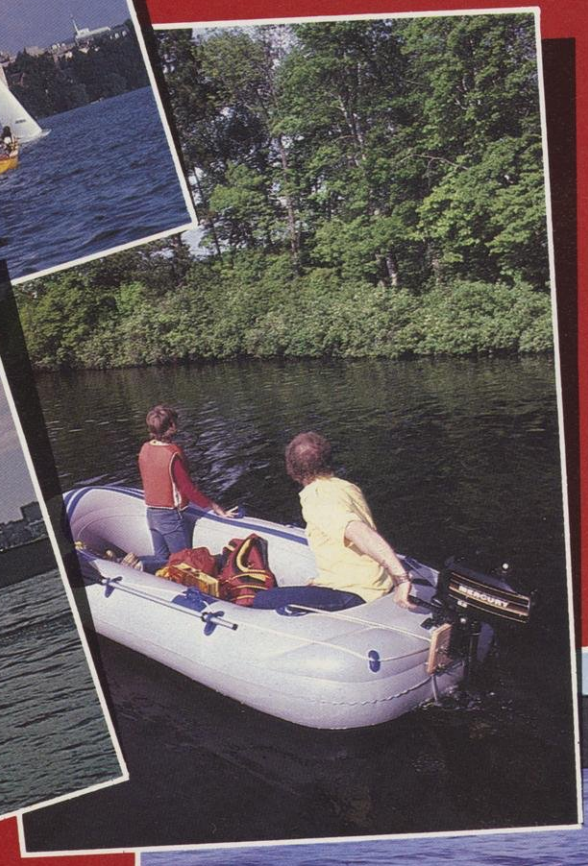
[Madison, Wisconsin]: [Wisconsin Department of Natural Resources], [July-August 1984]

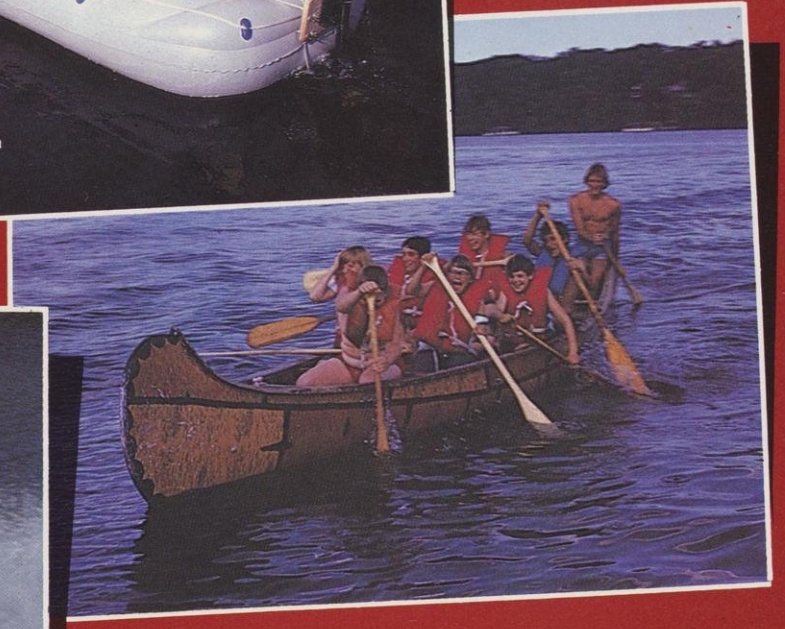
Steady as you go

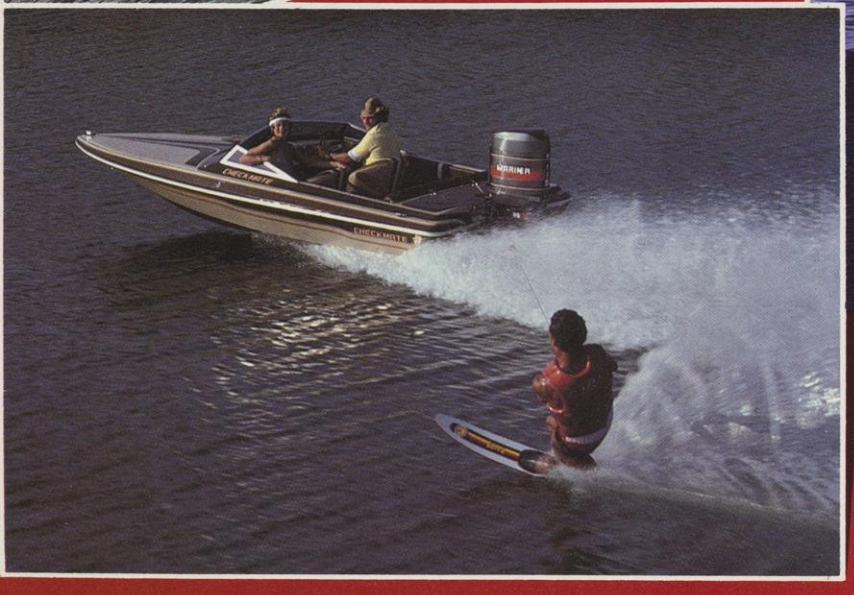
Boating safety on Wisconsin waters



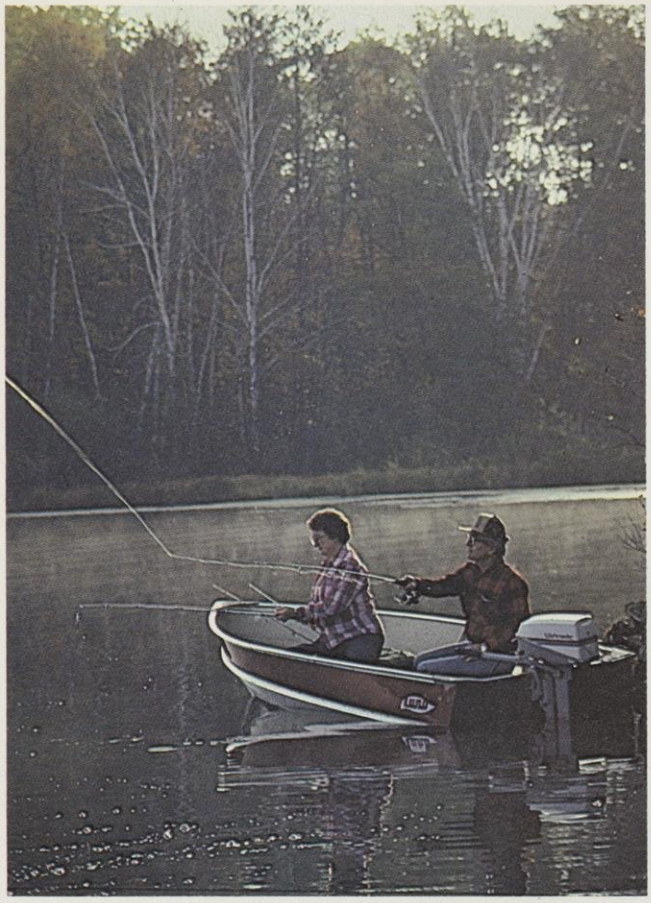


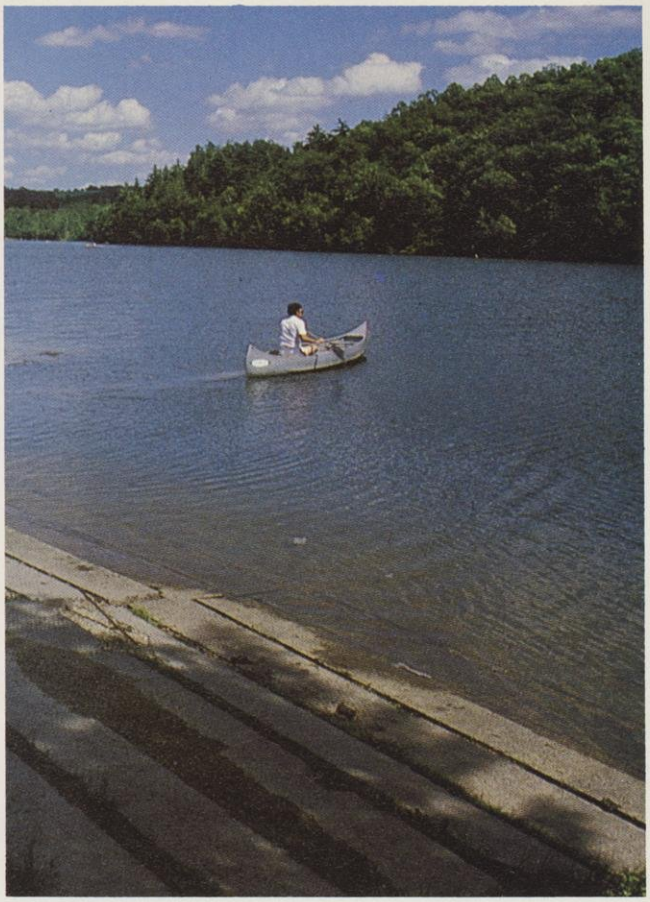






Wisconsin
NATURAL RESOURCES





Of motors and boaters

Brian Kamnetz, Cumberland

Motors have done the same thing for boating as they have for land and air travel. They enable people to go where they could not go otherwise because of time or physical constraints.

Forms of motorized water travel are many. One of the more unusual on my hometown Wisconsin lake several years ago was a swamp boat, a flat-bottomed, square-prowed monster with an airplane motor and propeller. It was unpopular among the people at the lake because of its deafening roar.

It looked exhilarating to fly along on the airboat, but I never was able to find out personally. I have, however, experienced the long, lazy pontoon boat ride, a favorite on the lake where I grew up.

During long summer days, pontoons would putter along the shoreline. Passengers on board exchanged greetings with friends and strangers alike ashore and in other craft. Inspecting the shoreline for changes and talking happily among themselves, they seemed especially interested when graceful waterskiers swept past back and forth behind fast boats. The most skilled of the performers left towering walls of water as they skimmed nearly parallel to the water's surface.

I remember mornings at 4:30 a.m., when the five horses of our 40-year-old outboard were as reluctant to get started as I had been a short time earlier. We'd sputter away from the dock together. But even that motor had me casting at several locations before I could ever have rowed to the first spot.

Of all people using motorboats, anglers are the pickiest. They don't mind buzzing out to the fishing hole and disturbing the local serenity, but once they're there, they don't want any other engines going by. Usually everybody gets along because fishing is usually best in the early morning and late evening when nobody else is out.

Wisconsin — where they row

Gordy Sussman, Madison

Abundant waters and varied landforms make Wisconsin lakes, rivers and backwaters so diverse that rowers and paddlers of all inclinations can find water to suit their needs.

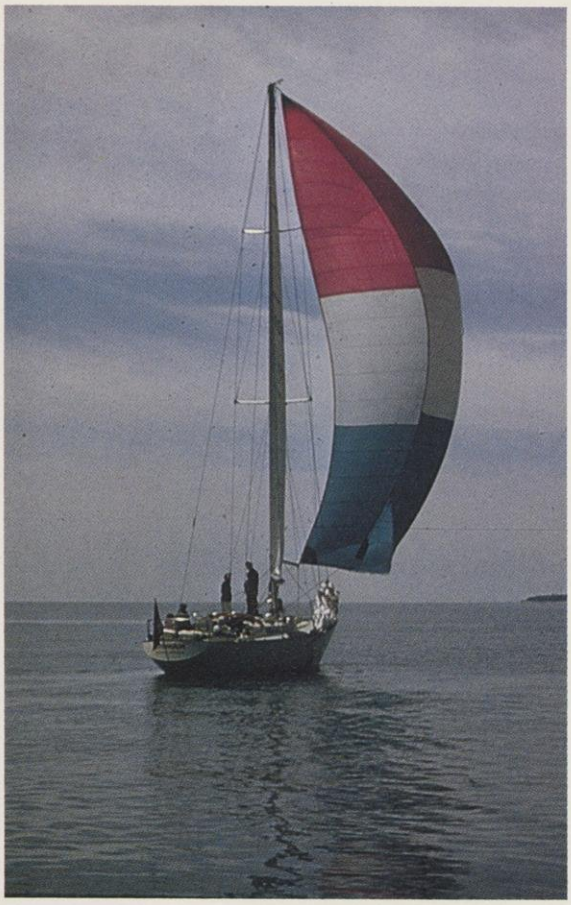
Whitewater enthusiasts can keep busy in the northeast quarter of the state where several rivers that drain into Green Bay offer some of the best wildwater in the midwest. Further north, the Montreal and Bad rivers flowing into Lake Superior offer even more challenges.

The St. Croix River on the northwestern border of the state is part of the National Scenic and Wild Rivers system. From its mouth near Stillwater, Minnesota, the St. Croix offers muscle-bound boaters the opportunity to stroke for days on end. Further east, the Flambeau is good for longer trips.

But the best known and most travelled of all is the Wisconsin River.

Every urban area in Wisconsin is located near relatively clean, rowable, paddleable water. Madisonians have surrounding lakes and the Yahara River. In Milwaukee there's the upper Milwaukee River. In Racine the Root, in La Crosse the La Crosse and so on. Most every state resident can come home from work and get a workout on water in before dinner.

Cover:
Photos by Mary Hamel, Roland Lee and Mercury Marine.



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Sail on

Robert Wright, Madison

To an ever-growing number of people who live in Wisconsin or visit here, summer on the water means sailing .

On a quiet lake surrounded only by sky, water and a distant shore, sailing gives a sense of freedom—constrained only by the whims of weather. On occasion, a fickle wind can leave even the most experienced sailor temporarily stranded (in which case, a paddle can come in very handy). But in a good wind, the sailboat responds to your directions and takes you wherever you wish. There is unmatched exhilaration when the wind, the boat and the sailor work together to travel over water.

One of the truly magical aspects of sailing is how it presents old and familiar things in new ways. And should sailing ever lose this magic on the lakes you know then you need only explore one of many hundreds of others. From the water, you can sometimes silently survey shorelines that have remained unchanged since people first came to Wisconsin. There are unique and wondrous rock formations which have been sculpted by the wind and water, and which could never be seen from shore.

In sailing you will discover a sport which has existed for thousands of years and yet is as modern as fiberglass. You will find peace and excitement and the freedom to go with the wind.

Boating Safety issue prepared and edited by Kendra Nelson

Ahoy!

Dale Morey,
Boating law administrator

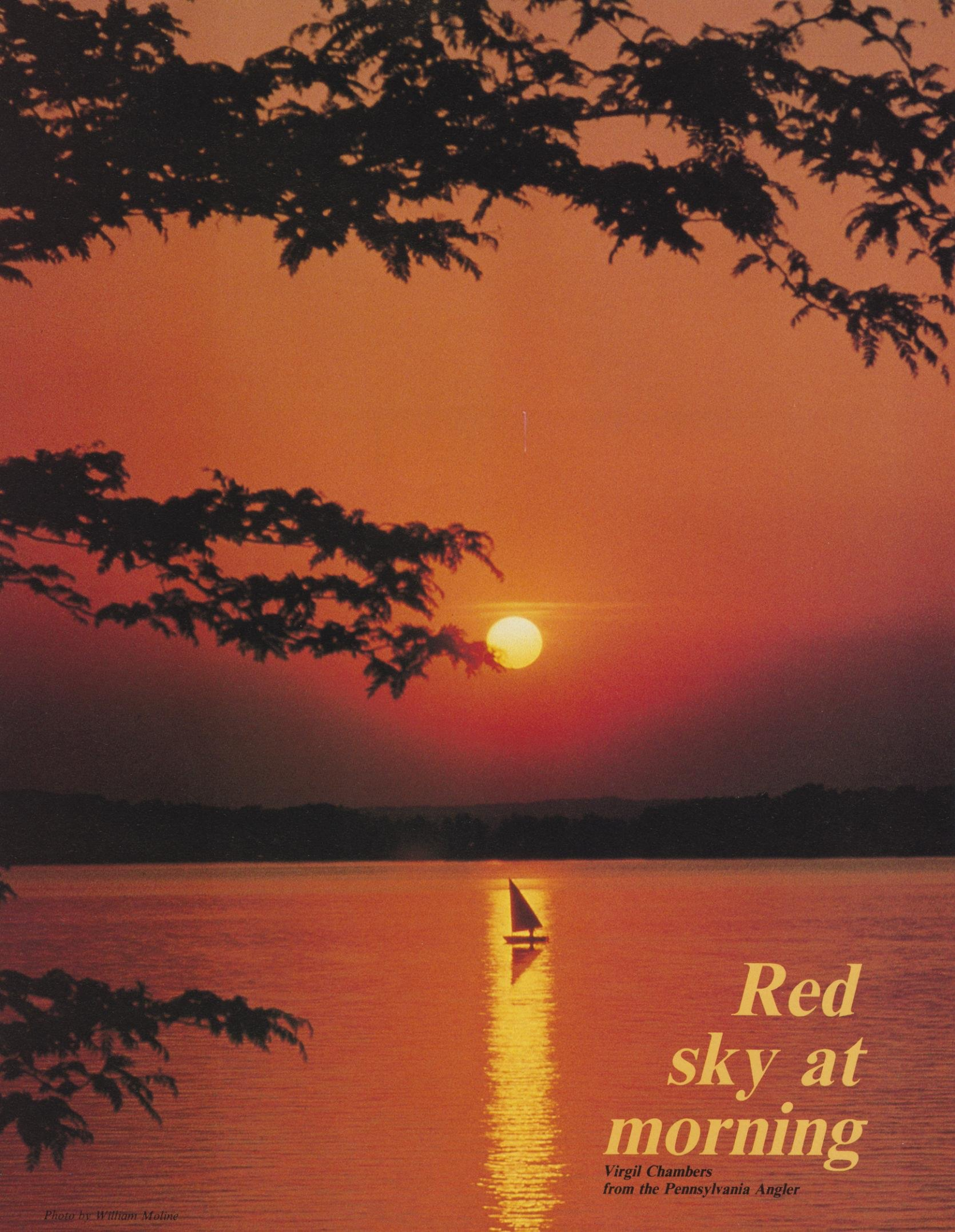
We have been using Wisconsin's beautiful lakes, streams, ponds and rivers for recreation for hundreds of years. People have developed diverse devices for enjoying them—all the way from innertubes to large sailing vessels. Millions of hours are spent on the water by residents and nonresidents alike in a variety of recreational pursuits.

All this is coordinated through a boating law administrator in DNR's Bureau of Law Enforcement, six district safety specialists, conservation wardens, local municipal water patrols and approximately 1,000 volunteer boating safety instructors.

The goal is safe, enjoyable use of waterways and protection of resources through a variety of programs: public information and education, law enforcement, accident investigation, boat numbering and registration, search and rescue, uniform waterway marking and regulations.

Success relies heavily on responsible boaters' voluntary compliance with laws, and cooperative efforts to limit conflict between users. Together we have reduced the number of accidents per number of boaters each year for the past 10 years, and I feel we have preserved the enjoyment and freedom of boating even with a growing demand.

DNR will continue to vigorously pursue these ideals for the future. It is a joy and a privilege to serve you.



Red sky at morning

Virgil Chambers
from the Pennsylvania Angler

Photo by William Moline

Knowledge about weather prediction can be invaluable to the boater and its forecasting can be both scientific and simple. For example consider folklore. You all know the verse:

"Red sky at morning,
sailors take warning;
red sky at night,
sailors delight."

This ancient proverb is quite reliable. The sun's apparent color is due to the amount of particulate matter in the atmosphere. The more particles in the air, the deeper red the sky. It is these particles which are the nuclei necessary for formation of rain drops. This, coupled with the fact that weather generally tends to move in a west-to-east direction indicates that the red sky in the morning is caused by the rising sun lighting up the advance guard of high cirrus and cirrostratus clouds. These are normally followed later on by the lowering frontal clouds. Red sky at night, however, often comes with clouds likely to pass before the night is done.

Another boating expression worth remembering and almost infallibly true:

"Rainbow to windward,
foul falls the day;
rainbow to leeward,
rain runs away."

This one is almost self-explanatory. If a rainbow is behind the direction of the prevailing wind, then you can expect its curtain of moisture to reach you. But if the rainbow appears to the lee of the wind, then the rain has already passed and the showers are moving away from you.

Another boating weather verse is:

"Sound traveling far and wide,
a stormy day does like betide."

This suggests that you can actually hear bad weather approaching. The reason sound may carry farther is that with a lowering of the cloud ceiling, sound becomes "trapped" and thus extends beyond normal distance.

Along with remembering rhymes, there are a number of other practical tricks to help foretell weather. One not commonly recognized is the formation of jet vapor trails. High altitude air frequently is criss-crossed with trails left by planes. Some days the trails are invisible. On other days they last for only a few minutes, then vanish. But there are times when the trails linger for hours — some seem to spread slowly and change into clouds. It is the lingering vapor trail that's noteworthy, for when the trail remains in the sky this usually indicates a soon-upcoming change in the weather.

An interesting method of forecasting is cloud "reading." Each type of cloud carries a weather message. From such cloud clues you can get a fairly good idea of what kind of weather to expect in the next few hours to the next two days.

The simplest message is the one that comes from a perfectly clear sky. As long as the sky remains clear, you can be sure that very little condensation is going on up above. This means, of course, that there is no chance of rain or snow.

On a partly sunny/cloudy day, when the sky is filled with loose, fuzzy cumulus clouds, it is always a good idea to watch for any firming of the clouds. Clouds are usually quite harmless as long as they are loose and cottony. There are times however, when one may see firm edges appearing. Clouds that become more shaped and defined are a sign that showers may develop. Generally speaking the faster the clouds develop the greater the chance of rain.

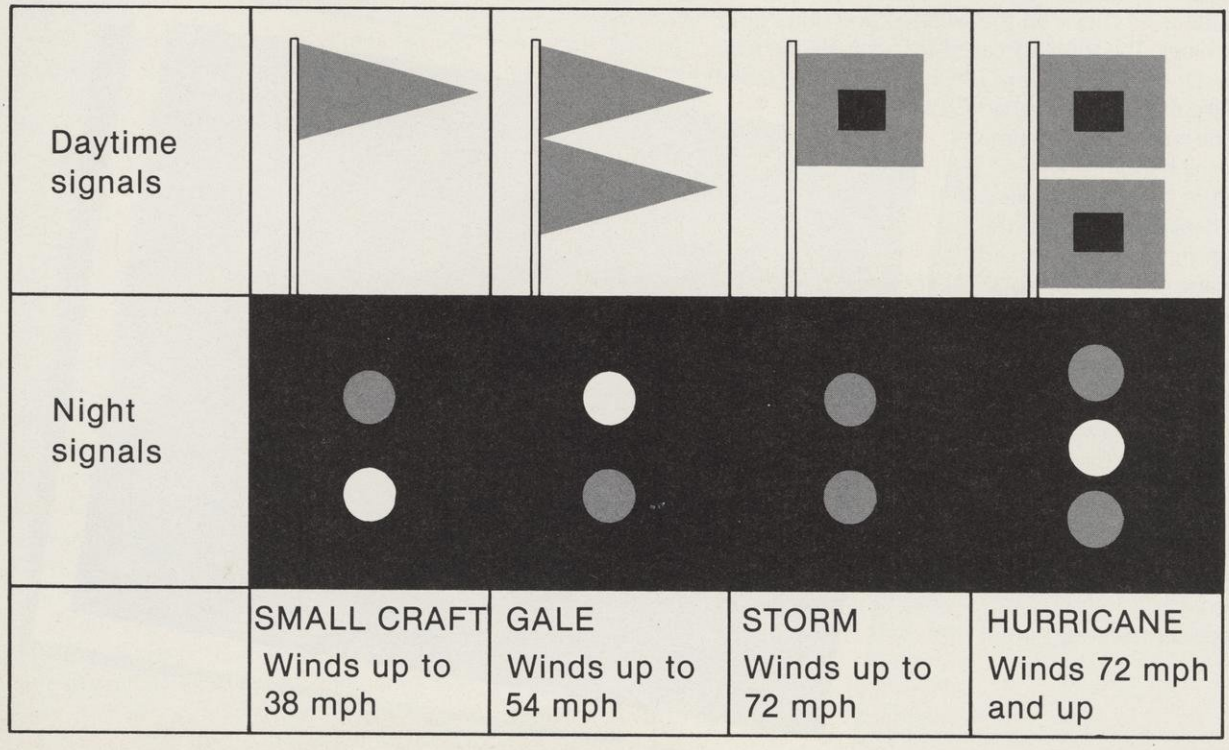
In brief, the weather will generally take a turn for the worse when small clouds gather and change into larger clouds. Another indication of worsening weather is if the clouds are moving in different directions at different heights. This wind-shifting can be a relatively good indication that rain will follow.

There are many ways in which weather forecasting can be accomplished and with practice one can become reasonably proficient in weather prediction. However, legendary proverbs and practical gimmicks aren't always the most reliable methods. If you are planning an outing on the water, it's best to check the local forecast from professionals.

Remember, too, you can get into bad weather conditions even with a fair forecast. Line squalls, thunderstorms and the like are unpredictable and can change an enjoyable outing into a dangerous situation. As the operator of the craft you are responsible for your boat and its passengers. Keep a weather watch and make the right decision to go ashore when judgement tells you to.

Graphic by Georgine Price

Storm Signals



A warden's report

Harland Steinhorst
Law Enforcement
Safety Specialist

As a Conservation Warden for the State of Wisconsin, with Door County as my patrol area, I've had the opportunity to observe the boating habits of many small craft operators. One of their bad habits is failure to heed the weather. Following is a typical occurrence during the boating season:

At 9:15 p.m. my home phone rings: the duty officer at the local US Coast Guard Station reports that a 16-foot motorboat with two men on board is overdue from a fishing trip on Lake Michigan. A summer rain squall had passed through the area at approximately 5:15 p.m. The Coast Guard has instituted a search of the lake. While aircraft drop illuminating flares, three Coast Guard patrol boats run predetermined search patterns. At 7:30 a.m. the next morning, the over-turned boat is located, but both men are missing. Days later their bodies are found floating in the lake — a sad ending for a summer fishing trip.

Whenever a boating accident causes property damage in excess of $200, personal injury or loss of life, a written report must be filed with DNR. An investigation begins to determine why the accident happened and how similar accidents may be prevented in the future.

In this case both men had worked at the local shipyard until 3:30 p.m. They went home, changed clothes, picked up their boat and launched it at the municipal dock. They apparently violated a prime rule of safe boating — check on the weather and don't go out if it looks threatening! The forecast called for a squall line to move through the Door County area between 5:00 and 6:00 p.m. Dark clouds had started to appear in the west about the time they launched the small boat.

Quite a while before that, at 3:00 p.m., the Coast Guard had already hoisted the small craft warning pennant — a red triangular flag. This warns of winds up to 33 knots (38 mph), too dangerous for small motorboats, yachts, tugs, barges, sailboats or other boats with little freeboard. The operator of the ill-fated 16-footer passed two such warning pennants, one at the local yacht club and the other at the Coast Guard lighthouse.

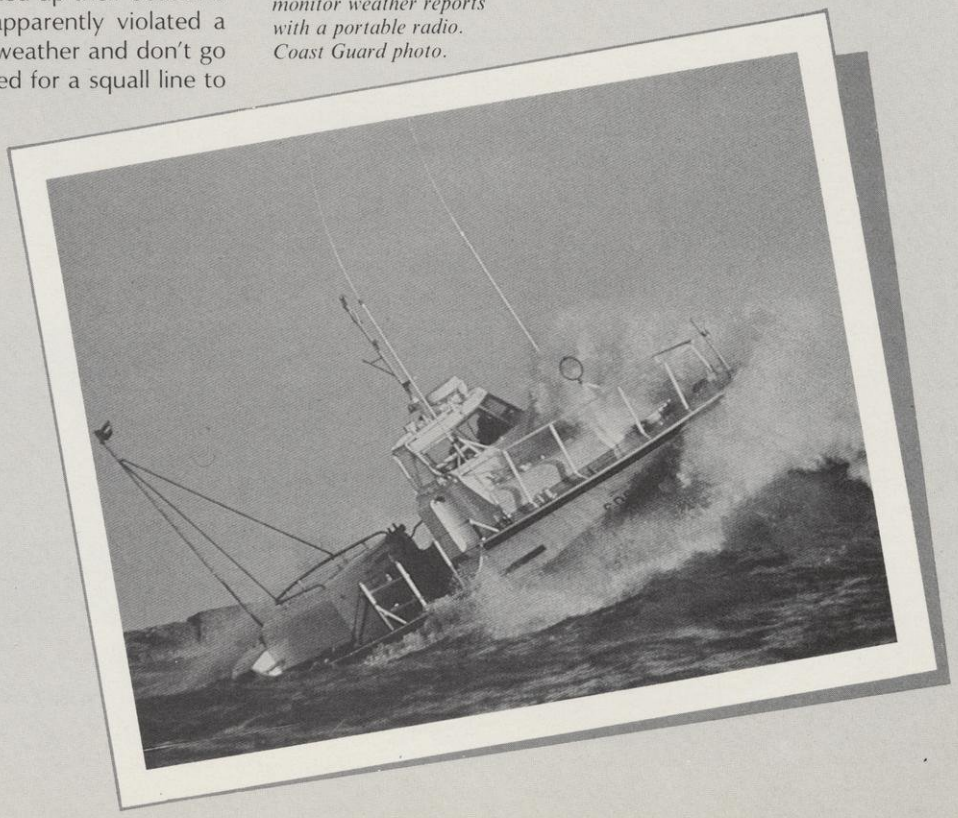
A portable radio tuned to a local station might also have given the operator warning of the approaching storm, but there was no radio system on board.

On the boating accident report, I listed the major cause of the deaths of the two fishermen as the boat operator's disregard of weather. This is a common cause of boating accident fatalities in Wisconsin.

If you do get caught out in a storm with high winds and waves, here are some emergency procedures to follow: Slow down immediately. Have all passengers don personal flotation devices and sit in the lowest, most protected part of the boat. Tie down all loose equipment. Keep your bow headed at a slight angle to the waves and wind.

Remember safe boating really begins before you leave shore. Check the local forecast and take a portable radio along on the water. Watch for threatening weather and seek shelter long before a storm hits.

Check the local forecast before leaving. While out, monitor weather reports with a portable radio. Coast Guard photo.



Enough to give you the shivers

—and then some

What happens to the body suddenly plunged into cold water? Panic and shock severe enough to produce cardiac arrest even if you're in excellent health—that's the first hazard.

Survivors of cold water accidents report that the breath was driven from them on first impact with water. Should your face be in the water during that first involuntary gasp for breath, you may well take in water rather than air. Total disorientation may occur. People recall thrashing helplessly for thirty seconds or more until they were able to get their bearings.

Immersion in cold water can quickly numb the extremeties to the point of uselessness. Cold hands cannot fasten the straps of a lifejacket, grasp a rescue line or hold onto an overturned boat. Within minutes, severe pain clouds rational thought. And finally hypothermia sets in. Then, without rescue and proper first aid treatment, unconsciousness and death will follow.

Cold water robs the body's heat 32 times faster than cold air. When a person is immersed in cold water, the skin and nearby tissues may cool very quickly. However, it may take 10 to 15 minutes before the temperature of the heart and brain start to drop. This critical condition—when the body is losing more heat than it can produce and the body core temperature is subnormal—is hypothermia.

If you fall overboard or capsize, get out of the water as quickly as you can. Most boats will float even when capsized or swamped. Re-enter your boat and if at all possible bail the water out. If the boat has capsized and cannot be made right, climb on top of it.

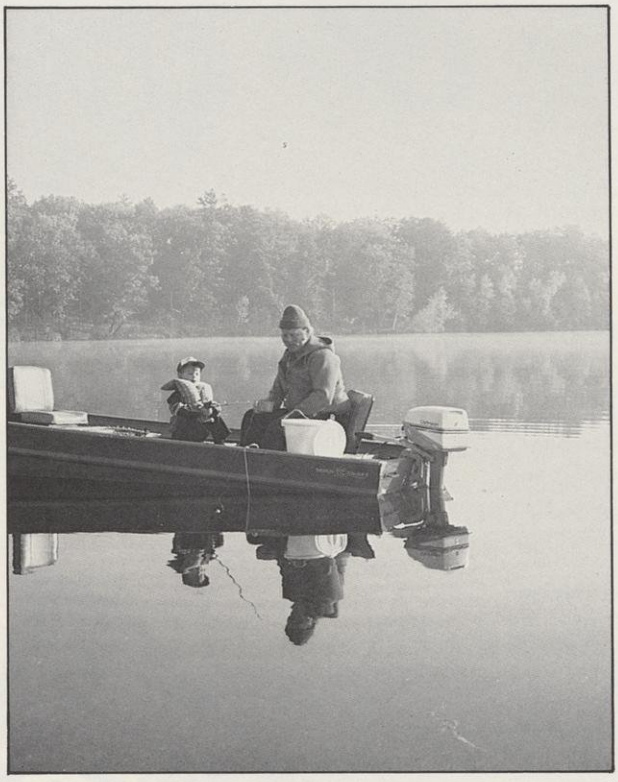
Get as far out of the water as possible. About 50% of body heat is lost from the head. It is therefore important to keep your head out of the water. Other areas of high heat loss are the neck, the sides and the groin.

By swimming or treading water, a person will cool about 35% faster than if remaining still. With exercise, blood is pumped to the extremities and quickly chilled. Should you find yourself in cold water, unable to get out, you will be faced with a critical choice—to adopt a defensive posture in the water to conserve heat and wait for rescue, or attempt to swim for safety. Few people can swim a mile in water at 50 degrees Fahrenheit. So, do not swim unless there is absolutely no chance of rescue and you are absolutely certain you can make it.

Wearing a PFD can help insulate you from the water and keep you afloat even if you're unconscious. By remaining still an average person, wearing light clothing and a PFD may survive 2 1/2 to 3 hours in water at 50 degrees Fahrenheit. Assuming the fetal position (with your head out of the water) will increase survival time. If there are several people in the water, huddling close, side by side in a circle, will also help preserve body heat.

With rescue of hypothermia victims every precaution should be taken to keep cold blood from circulating too rapidly to the body core. Handle them gently. Do not allow them to walk or otherwise exert themselves. First protect victims from further heat loss by moving them to a warm, sheltered place and removing their cold, wet clothes. Then, carefully supply heat. Warm, moist towels can be applied to the head, neck, sides and groin. Hot water bottles and heated blankets can also be used. If nothing else is available, there's always your own body heat. Do not give the victim anything to drink, especially not alcohol. Do not rub frozen body parts, especially not with snow.

And do not give up—you're not dead 'til you're warm and dead.



Cold water robs body heat 32 times faster than cold air. Johnson Outboards photo.

The most dangerous time

During which three months do most boating accident fatalities occur?

June, July and August seem accurate — because the annual boating season is from Memorial Day to Labor Day. But the correct answer is April, May and September.

There are more boating deaths during the off-season because of cold water and fewer rescue boats. Human survival time in water less than 70 degrees Fahrenheit/20 degrees Centigrade is greatly reduced.

In early spring and fall there are usually only a few fishermen on the water, so if a boater falls out of a boat or the boat capsizes there may be no one around to help. Often multiple deaths are involved in these off-season accidents.

How do you spell survival? PFD!

As many as 75% of those who lost their lives in boating accidents might have lived, had they worn personal flotation devices—PFDs!

In the last several years, the Coast Guard and PFD manufacturers have worked to develop and produce new and attractive PFDs that are comfortable, and well-fitting in a variety of styles that meet the unique requirements of specific water sports and activities. Today's PFDs not only provide protection, but are also convenient. There are five basic "Types":

Type I, the life preserver, has the greatest flotation and is designed to turn most unconscious people face up in the water.

Type II, the buoyant vest, is more wearable than Type I but provides less flotation. Its turning action is not as pronounced as that of a Type I, and the device will not turn as many persons over under the same conditions as a Type I.

Type III, the marine buoyant device, is available in a wide variety of designs, colors and sizes. This type enables a wearer to place and keep himself in an upright position. Many PFDs in this category have been designed to meet the specific requirements of such water sports as skiing, sailing and hunting. Because they are so wearable, they are rapidly becoming the choice of many of today's boaters.

Type IV is the throwable device. This category includes buoyant cushions, ring buoys and horseshoe buoys, all of which are designed to be thrown to a person, then grasped and held until rescue.

Type V PFDs are special-purpose devices designed to meet specific needs. Some, with hooks, are used for sailboarding and "hiking out" (leaning off the side of a sailboat to act as a counterbalance). Another style, designed for whitewater paddling, has a slit-and-hinged bottom so the wearer can get into a kayak. It also has a padded hood to protect the head. Type V PFDs are acceptable only when used in the sport for which they were designed.

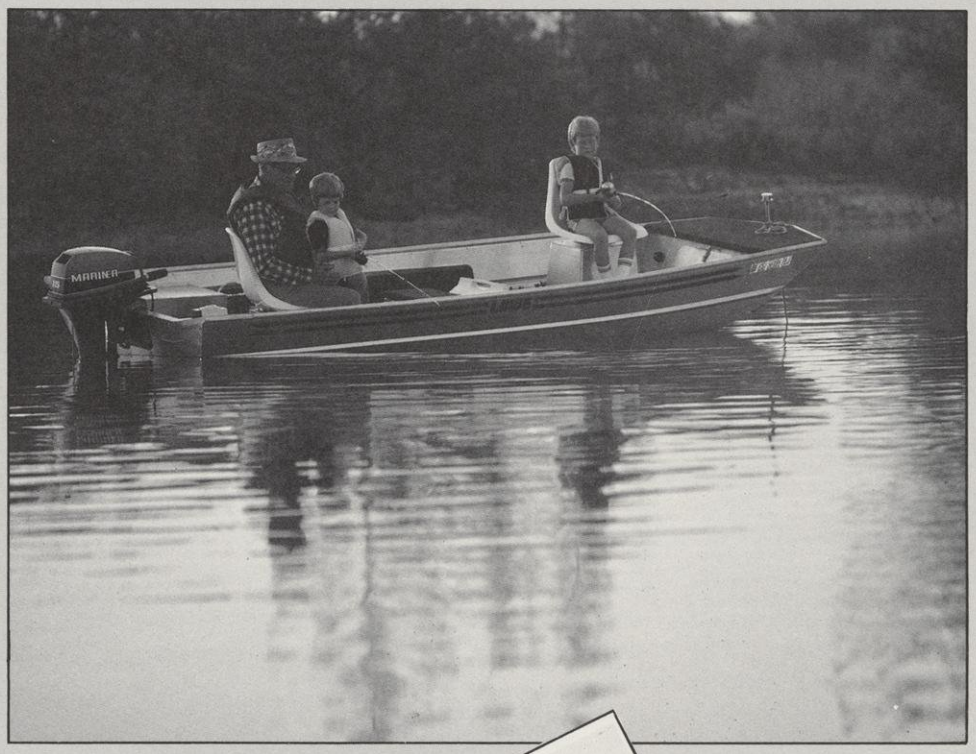
All watercraft (not just motorboats) are required by law to have a Coast Guard approved PFD for each person on board. Since people, like PFDs, come in many sizes, be sure to select PFDs that meet your personal flotation requirements.

Boats less than 16 feet long and canoes and kayaks of any length can satisfy legal requirements by carrying one approved wearable device (Type I, II, III) or a throwable (Type IV) device for each person on board.

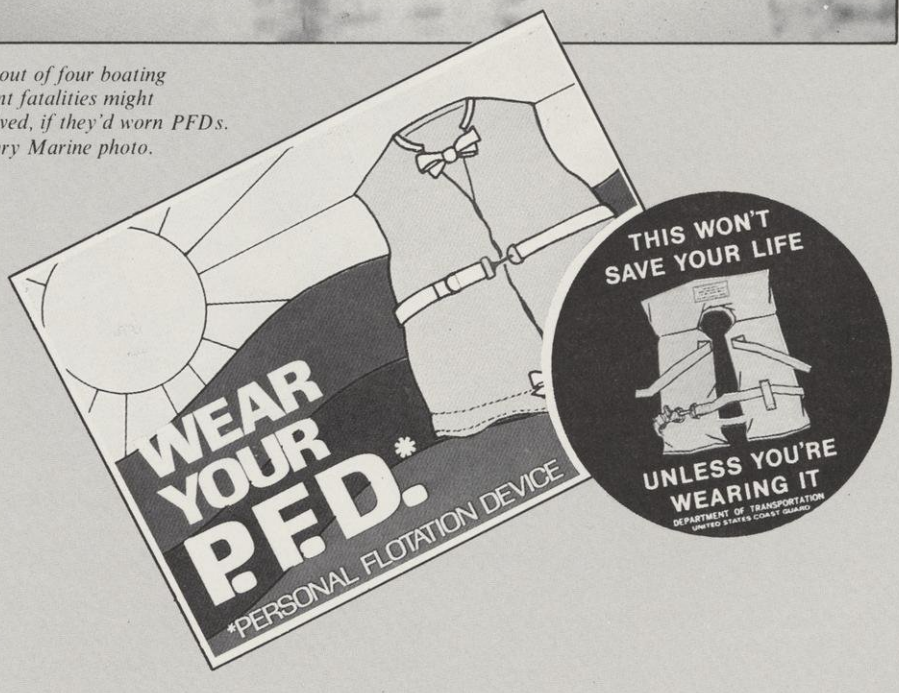
Boats 16 feet and larger must have one approved wearable device (Type I, II, III) on board for each person—and in addition, one throwable device (Type IV) must be on board.

Select your PFD carefully. Be sure that fabric, straps, and buckles are kept dry, functional and free of rust. A PFD that has rips and tears in the fabric or plastic liner must be replaced. If you should ever need your PFD, you want it in useable condition.

PFDs are life saving devices and must be readily available at all times to boaters on Wisconsin waters. Better yet, wear them.



Three out of four boating accident fatalities might have lived, if they'd worn PFDs. Mercury Marine photo.



Coast Guard photo

The drunken sailor

Dale Morey,
Boating Law Administrator

What shall we do with the drunken sailer,
what shall we do with the drunken sailor . . .

Put him in the long boat till he's sober . . .
Pull out the plug and wet him all over . . .
Put him in the scuppers with a hose-pipe on him . . .
Heave him by the leg in a running bow-lin' . . .
Hoo-ray and up she rises . . .
Earlye in the morning.

A sea shantey

Alcohol appears to be a major contributor to boating accidents and fatalities. The National Safe Boating Council agrees this is the key problem in boating today. As Chairman of National Safe Boating Week, 1984 my primary goal is to do something about this alcohol problem.

Let's take a look at boat accident statistics and use a little imagination. Accident reports are broken down into the following categories: grounding, capsizing, swamping, flooding, sinking, fire & explosion, collision with another vessel, collision with a fixed or floating object, falls overboard or within a boat, and being struck by a propeller. The major cause of accidents is collision of vessels. The two major causes of fatalities are capsizing and falling overboard. Most fatalities occur in cruising situations.

Looking at boating violations, we find that most are for equipment problems or improper operation. Add to this the fact that most boating is recreational and most of the recreating public use some type of alcohol. What do you think? Is alcohol a major contributing factor to boating accidents?

The concern is for responsible alcohol use by boaters—not interfering in the personal lives of recreating people, but to gain public support for doing what is necessary and logical to get the drinking boater out from behind the wheel.

Average boaters, of course, are not drunk every time they step into a boat. But a few are alcohol-dependent and can only be helped by detection and professional treatment. They should be off the water or at least not at the helm.

Another group of offenders are the alcohol abusers. They are the major problem group. How do we deal with them? Stringent law enforcement can provide a strong deterrent to the would-be abuser. Education and awareness of the problems that happen when alcohol is mixed with boat operation can be a positive tool in preventing drunk driving accidents.

The third group is the occasional user or abuser. They may be a very large percentage of boaters and a high risk group. Alcohol may put false daring into their activities. Their judgement is blurred. And a "one time fling" may be their last.

The Office of Boating Safety of the US Coast Guard has put together the following information:

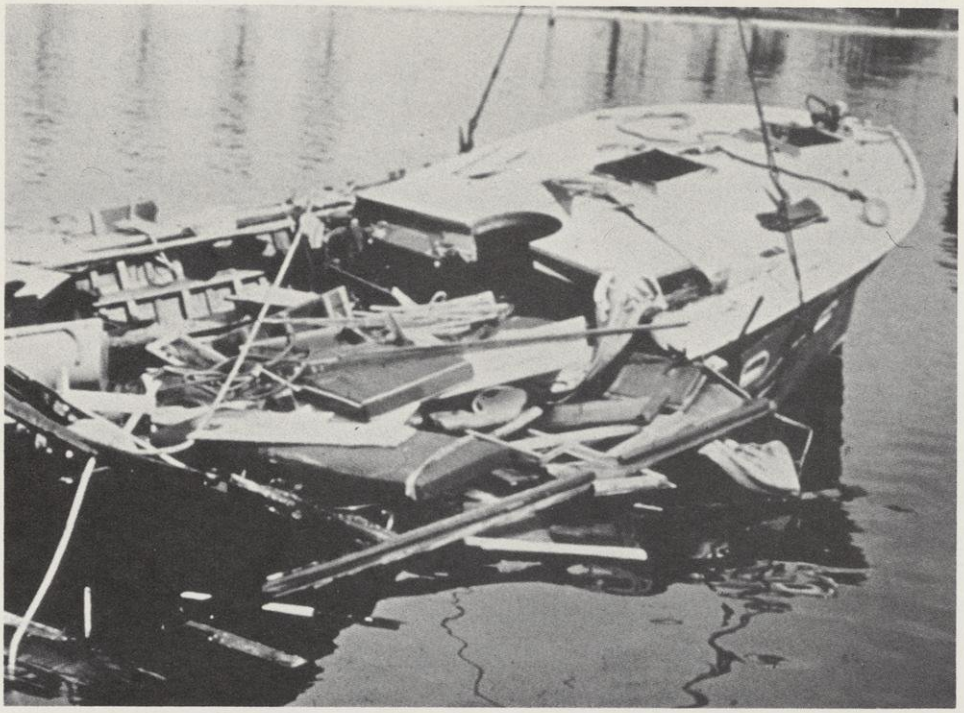
Alcohol permeates all social levels and functions. Properly used and in its place, "the cup that cheers" may be important as a social lubricant, a means to relax or something to just enjoy. But the proper time and place is definitely not in a boat when out on the water.

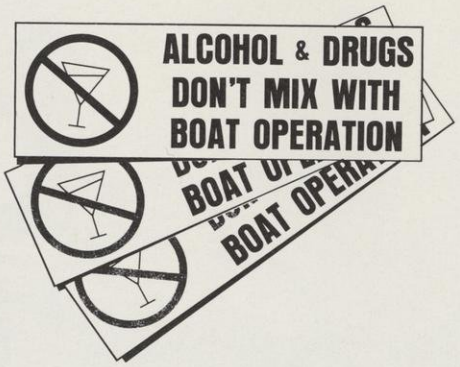
People were built to specifications that included an operational environment of firm and solid ground under their feet and a steady horizon for his eyes to look at. They therefore have a number of sensors attuned to these external references. Among these are the inner ear and the motion analyzer in the brain stem. When the horizon is no longer steady and level, the pounding and vibration of the boat confuse sensors in joints and tendons; yaw, pitch and roll upset the balance mechanism of the inner ear; and the motion analyzer has trouble integrating different signals. Add glare and noise and you have a situation which causes considerable strain and fatigue. So much in fact, that after a few hours exposure the ability of a boat operator to perceive and react to outside stimuli is reduced nearly as much as if he or she were legally drunk.

Comparing the reaction times of operators who are rested and fresh with operators who are fatigued, shows that a boat traveling 30 mph will continue to travel about 70 feet farther before a tired operator begins to take action. Add a little alcohol, and the reaction time is further slowed.

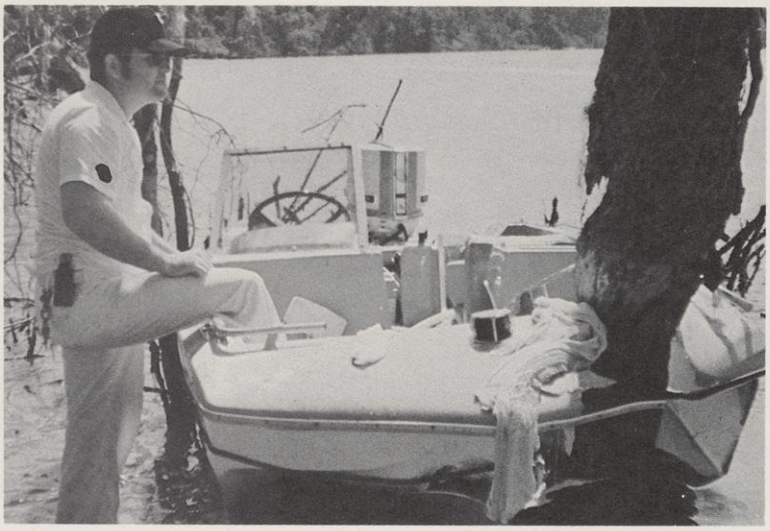
Alcohol is a depressant, both psychological and neurological. Neurologically it reduces the ability to observe and react. Psychologically it reduces socially learned restrictions on behavior and causes unpredictable and irresponsible actions.

Alcohol is often used to enhance the enjoyment and relaxation of boating, but the operator must be aware of the consequences. Think before you drink and be a responsible boat operator.





Afloat, as ashore, drinking and driving don't mix!
Coast Guard photos



Alcohol and fatal boating accidents

Accidents	1981	1982	1983
Total	31	30	38
deaths	38	34	44
Alcohol-related accidents	13 (42%)	4 (13%)	10 (26%)
deaths	19 (50%)	6 (18%)	13 (30%)
Non-alcohol related accidents	18 (58%)	8 (27%)	9 (24%)
deaths	19 (50%)	9 (26%)	11 (25%)
Alcohol use unknown accidents		18 (60%)	19 (50%)
deaths		19 (56%)	20 (45%)

How many drinks?

APPROXIMATE BLOOD ALCOHOL PERCENTAGE

Drinks	Body Weight in Pounds								
	100	120	140	160	180	200	220	240	
1	.04	.03	.03	.02	.02	.02	.02	.02	**BE**
2	.08	.06	.05	.05	.04	.04	.03	.03	**CAREFUL**
3	.11	.09	.08	.07	.06	.06	.05	.05	
4	.15	.12	.11	.09	.08	.08	.07	.06	**OPERATION**
5	.19	.16	.13	.12	.11	.09	.09	.08	**IMPARED**
6	.23	.19	.16	.14	.13	.11	.10	.09	
7	.26	.22	.19	.16	.15	.13	.12	.11	**DO NOT**
8	.30	.25	.21	.19	.17	.15	.14	.13	**OPERATE**
9	.34	.28	.24	.21	.19	.17	.15	.14	
10	.38	.31	.27	.23	.21	.19	.17	.16	

Subtract .01% for each 40 minutes of drinking
One drink is 1¼ oz. of 80 proof liquor, 12 oz. of beer, or 4 oz. of table wine.

Buoys (Boo-ease) not boys

The uniform marking system

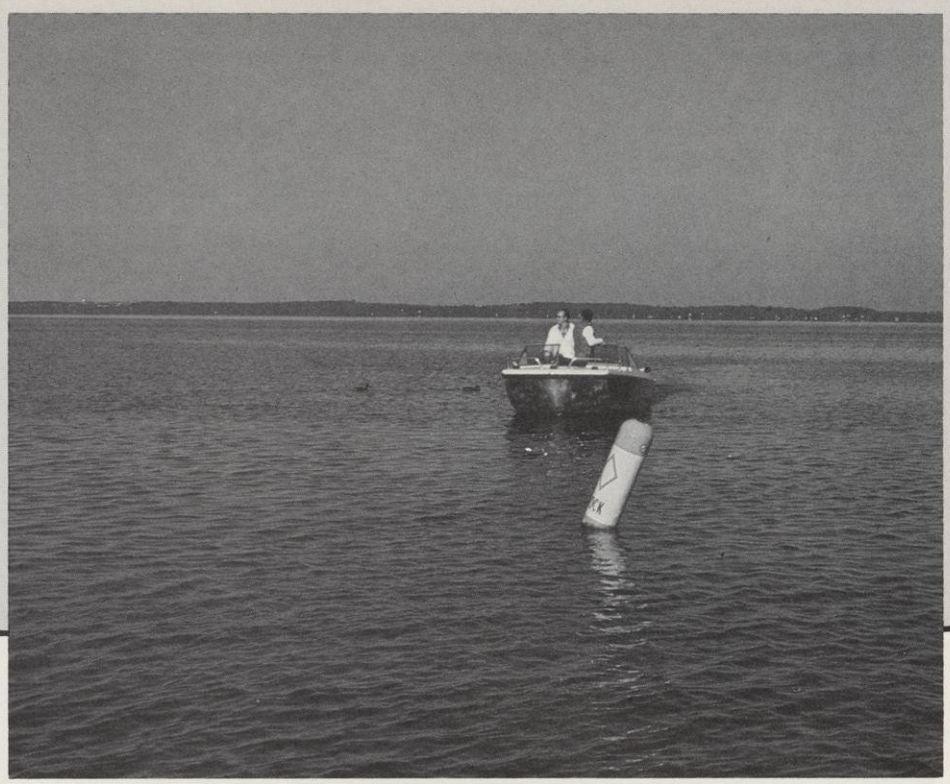
Among the most direct navigational aids to warn boaters of hazards and provide other useful information to those on the water is the uniform state waterways marking system. The system includes buoys and signs of standard colors and with distinctive markings that quickly communicate their message to boaters who know their simple code.

Channel buoys are all black or all green, all red, or white with black vertical stripes. The all black or green and all red ones are used in pairs to indicate that boats should pass between them. White ones with black vertical stripes show the center of the channel and should be passed close on either side to avoid going aground.

Regulatory signs are white with black letters and have a wide international orange border. The buoys are white with two horizontal bands of international orange—one at the top and the other just above the waterline. Geometric shapes, also international orange, are placed on the buoy between the orange bands. A diamond shape warns of danger. A diamond with a cross inside means boats keep out. A circle marks a controlled area. And a square gives directions.

Setline-net marking flags are white, supported by a buoy or float that's white with black horizontal stripes. (These flags are distinctively different from divers' flags.)

Boat mooring buoys are white with one blue horizontal stripe between the top and the waterline.



Uniform waterways marking system buoys are the roadsigns of the water.

Way to go

To help boaters avoid dangers and find their way from one point to another, most Wisconsin waters are mapped.

Nautical charts provide much detailed information about water depth, marker buoys, dangers under the water and over it, as well as an accurate picture of shorelines and waterways. These are available from chart agents throughout the state, usually the local marina.

The following agents provide charts and maps of most Wisconsin waters and the Great Lakes:

Sailing Center of Mequon Ltd., 10406 N. Cedarburg Rd., 51 W, Mequon, WI 53092.

Milwaukee Map Service, Inc., 4519 W. North Ave., Milwaukee, WI 53208.

Clarkson Co., Box 208, Kaukauna, WI 54130.

Upper Mississippi River charts are available from the St. Paul District, US Army Engineers, 1135 US Post Office and Custom House, St. Paul, MN 55101.

Several map guidebooks describe specific waterways for specific users. Some of the information is of general interest—a motorboater may not portage, but will certainly want to know where the dam is.

Maps of wild rivers in Wisconsin, Upper Michigan and Northeast Minnesota are featured, and boating technique for canoeists, kayakers and rafters is discussed in *White Water; Quietwater* available from Evergreen Paddleways, 1416 21st St., Two Rivers, WI 54241.

Wisconsin Tales and Trails, Inc., P.O. Box 5650, Madison, WI 53705, offers two guides, *Best Canoe Trails of Northern Wisconsin* and *Canoe Trails of Southern Wisconsin*, with maps, water descriptions and other information for planning river trips.

Wisconsin Indian Head Country, Box 158, Altoona, WI 54720, has available *Canoeing the Wild Rivers of Northwestern Wisconsin*, A *Canoeing Guide to the Indian Head Rivers of West Central Wisconsin* and *Wisconsin's North Central Canoe Trails.* These books feature waterways maps and mark points of interest en route.

DNR offers a *Wisconsin Lakes Directory* and three anglers' specials: *Wisconsin Walleye Waters, Wisconsin Muskellunge Waters* and *Wisconsin Trout Streams.* You can request these publications through the Bureau of Fish management, Box 7921, Madison, WI 53707.

The better to see

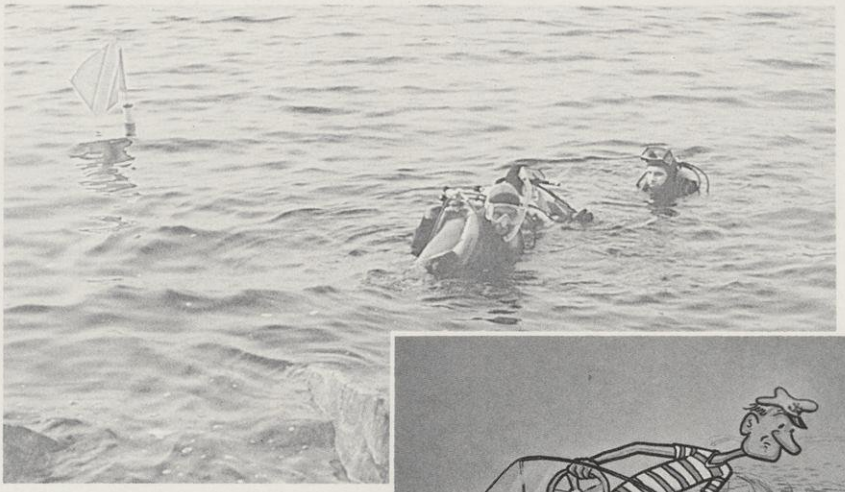
Ancient sailors found their way at sea with stars, pigeons, crude charts and knowledge of prevailing winds. Later came sextant and compass. Dead reckoning—determined by course, speed and time—remains a proven method of navigation.

Today we have very sophisticated electronic gear—radar, loran and Fathometer—that can contribute much to precise navigation. Weather conditions leading to poor visibility need no longer confuse navigators, if they have the technological equipment on board to "see" through fog and squalls. And now these keen instruments are common on big water recreational craft.

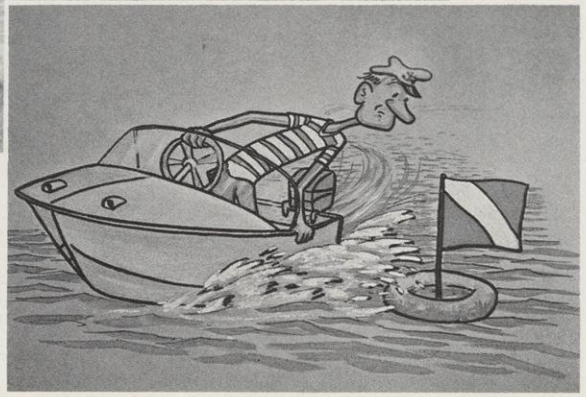
Unfortunately, danger accompanies convenience, if this specialized visibility equipment is used to navigate at higher speeds, greater than conditions allow. Irresponsible speed or failure to maintain an alert watch while on electronic guidance can lead to disaster. Caution and sound judgement remain enduring measures of seaworthiness.

You may know where you are and where you're going—but what about them?
Coast Guard photo

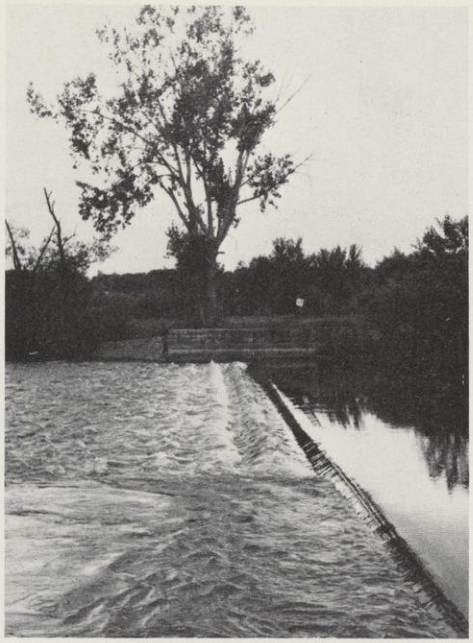
Photo by John Beth



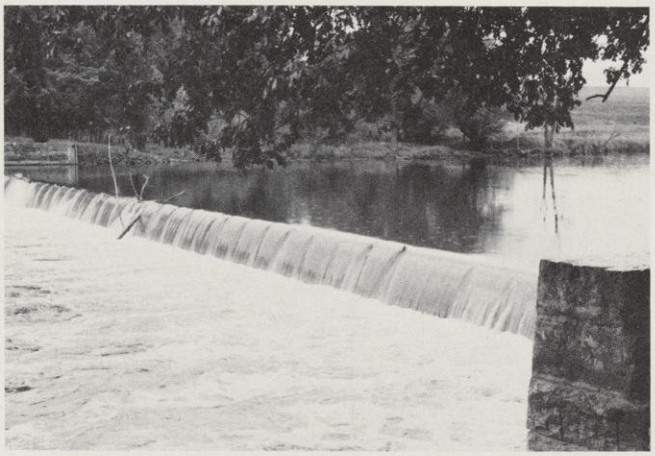
Do not approach a red flag with white diagonal stripes in the water. Scuba divers are below and may surface nearby. The law gives them a 50-foot radius from the marker flag that must be clearly visible from at least 100-yards away. Don't violate divers' safety space.



Give dammed water its due



When the water's high, the deadly backroller is barely visible.



Picturesque treachery, when the water's low.

In 1978, Wisconsin rivers and streams ran high and deadly. Fatalities associated with dams jumped alarmingly, and DNR responded quickly. Dam owners were required to post standard warning signs that would alert boaters of dam locations and provide markers to show safe portage around dams.

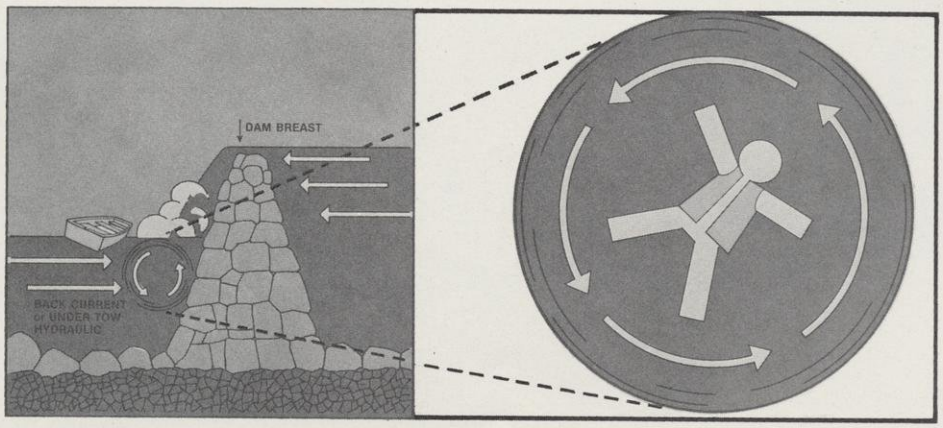
Across many Wisconsin waterways "little" dams impound flow when waters are low, but allow free spillover as waters rise. These dams are noticeable and picturesque when water falls evenly over a smoothly engineered retaining wall, but appear to be little more than a ripple when the water's high.

Victims who have drowned in the shallow few feet of water below these dams give mute testimony to the shrouded treachery beneath the surface—the backroller. As water goes over the dam, it churns back in on itself. Whatever passes over the dam with the water, or is sucked into the rolling turbulence from downstream below the dam can be held indefinitely by this dangerous backrolling action. The force of water in such violent motion is tremendous—whatever it carries goes down, up and back perpetually.

Therefore, even "little" dams, especially when heads are low in the water, are dangerous places—to be avoided—because of backrollers. However, these dams may be difficult for boaters to see from upstream, and from downstream they lure the boater looking for fish.

Anglers know that fish are numerous below dams, because dams obstruct the swim upstream and provide deep waters rich with food and oxygen. This may tempt an angler to move too close to a dam. When an anchor is thrown from the bow and holds fast the power of the water can pull down the bow and fill the boat with water.

So, give dammed water its due. Watch for the standard warning signs that indicate dam sites. Do not attempt to navigate waters between signs where a dam is located, but rather follow marked safe portage routes and remember that the water-wise boater won't be caught dead near a dam.



The horizontal whirlpool below a dam can trap you and hold you even if you're wearing a PFD.

The big river

Larry Keith,
Law Enforcement Safety Specialist

Maybe we saved some lives Memorial Day.

Three of us on river patrol spotted a family runabout, its engine dead, drifting in the water 200 yards downstream from a Mississippi towboat that was pushing four loaded petroleum barges. No way could that barge pilot stop in time or even steer to avoid the family of six who were waving for help.

It took only a moment for us to fasten a line to the stranded boat, and minutes later we had towed them to a Hastings, Minnesota marina — a narrow escape.

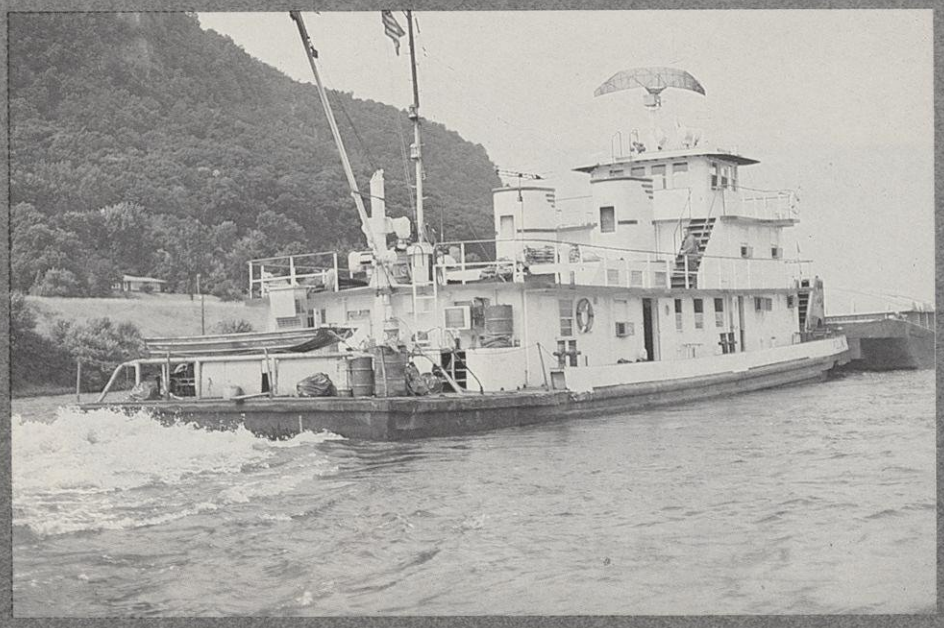
We aren't always that lucky. Sometimes we aren't in time to help. Sometimes we have to look for the bodies of victims of boating accidents.

The great towboats and barges that run the river with loads of coal, grain, petroleum and dangerous chemicals are the biggest, most deadly monsters recreational boaters will ever encounter. Each year boaters are killed who do not respect the deadly force of these river giants. But most often tragedy overtakes an unknowing boater caught in front of the barges and towboats, hit and drowned as hundreds of feet of vessel pass over.

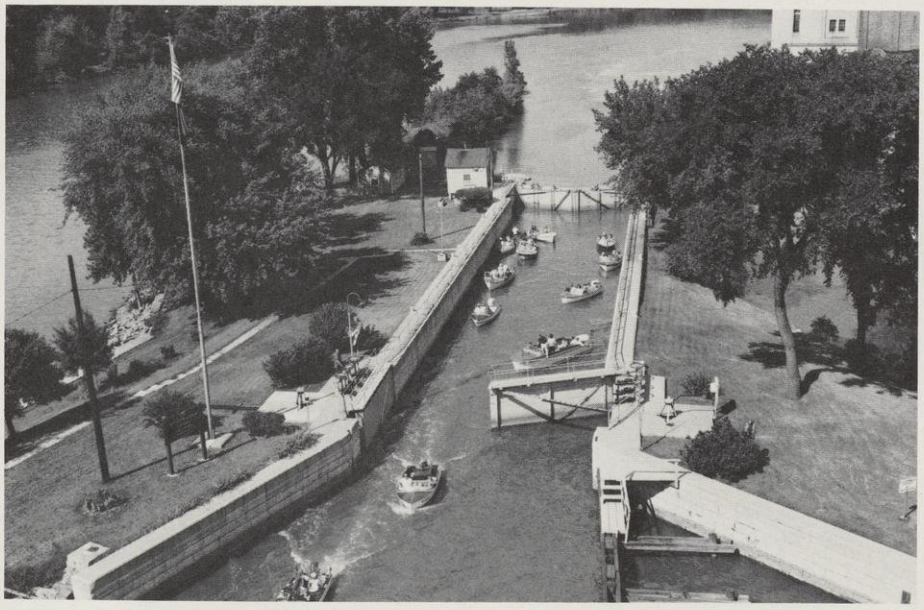
Tow pilots are tough, talented professionals who try their best to operate safely. But a Mississippi River barge is massive and can't be stopped quickly or diverted easily from its course. Loaded barges weigh thousands of tons. To move them requires propellors nearly a man's height in diameter. Unloaded barges float high and can block a pilot's view of the river for more than half a mile ahead. Tons of boat operating at about 15 miles per hour cannot stop in time to avoid running over whatever gets in the way, even if the misplaced object is spotted.

Another danger from towboats is the propwash. Created by huge diesel engines that generate 9000 or more horsepower to turn propellers four to five feet in diameter, the propwash creates waves three to four feet high that travel several miles an hour. The propwash can easily swamp a small recreational boat.

Don't venture too close to the large towboats and barges that operate on the Mississippi. And make sure before going out on the river that all boating equipment is in top-notch working order.



Inertia— it's a universal law—big tow boats take a long time to brake. Don't get in front of one. They also pack a wallop in their wake. Photo by Larry Keith



Fox River Lock # 4 at Appleton.

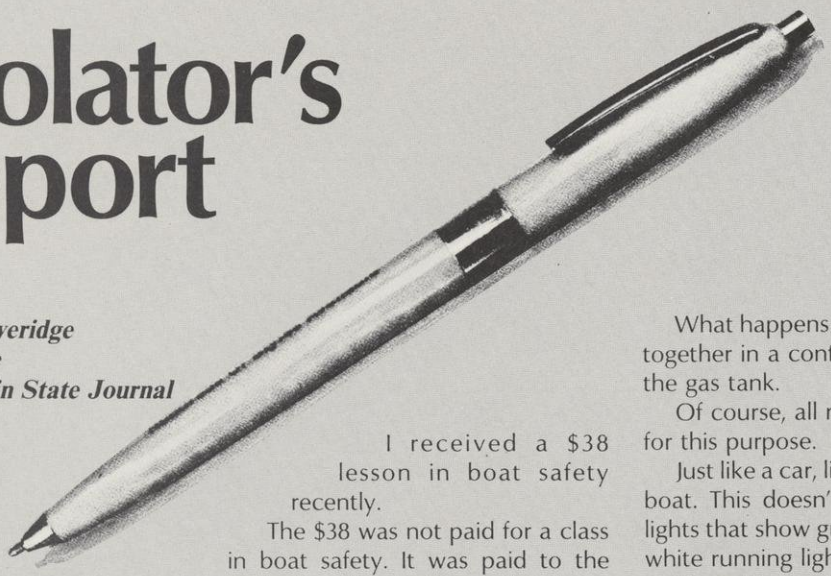
Safely through the locks

Dane County Public Works director Kenneth J. Koscik offers the following safety hints to keep in mind when going through small locks:

1. Shut off motors so that everybody can breathe clean, fresh air.
2. Keep your hands, feet, etc., inside the boat and remain seated. Your boat and others are going to move around inside the locks when the water level changes. If someone loses control, there could be some boat bumping.
3. Hang onto the chains provided on the walls of the lock chambers. This will aid you in controlling the location of your boat when the water level changes.
4. Do not smoke while you are in the lock chambers. Exhaust fumes or gas from unspent fuel could ignite or explode.
5. Do not exit the boat while in the locks. You can use the bathrooms after your boat goes through.

These rules apply to most small locks, but larger ones, such as those on the Mississippi, require different procedures.

A violator's report



Reid Beveridge
from the
Wisconsin State Journal

I received a $38 lesson in boat safety recently.

The $38 was not paid for a class in boat safety. It was paid to the Dane County Circuit Court after I was stopped by the sheriff's boat patrol for doing something that a lot of other people are doing.

For that matter, a short course in the DNR's boat regulations produced other information that might not be so obvious to the average weekend boater who puts his rig in the water for just a couple hours a week.

My violation was a simple and very common one: sitting on top of the seat back.

There may be some dispute about which is more dangerous — sitting on top of the seat or not seeing to the front quite as well. But there is no doubt about the law.

Sec. 30.68(6) of the statutes clearly says that sitting on the seat back (which places the boat driver above the windshield for a better view) is illegal.

The deputy sheriffs took a picture of me in that position.

My experience sent me back to the DNR rule book which contains a summary of Wisconsin's boating laws and which also reveals quite a few rules and laws that are commonly violated.

For example, how many boaters know that you have to have your storage battery (for electric start engines) in a non-flammable case secured firmly to the boat.

We know of lots of boats — like ours was — that have the battery just sitting on the floor.

Deputy Richard Fenske explained this can be very dangerous and said an improperly installed battery in connection with the fuel tank was what caused a boat fire on Lake Kegonsa this summer.

What happens is that the gas tank and the battery are too close together in a confined space and a spark from the battery ignites the gas tank.

Of course, all motorboats should have a small fire extinguisher for this purpose.

Just like a car, lights must also be used at night when operating a boat. This doesn't mean lights like headlights, but rather signal lights that show green on the right front, red on the left front and a white running light on the stern of the boat.

These kinds of lights won't help you see at night, but they will enable other boaters to see you and miss you. There are few things worse than a head-on collision at night in a boat.

There is also a considerable section of the law and DNR regulations about water skiing, one of Wisconsin's more popular summer lake sports.

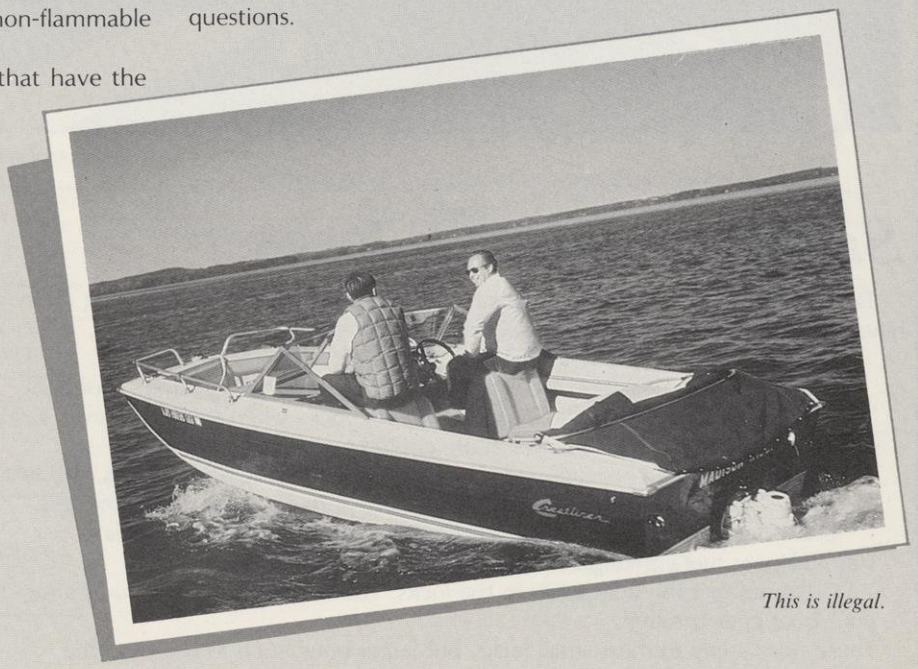
The first and probably most important regulation is that there must be at least one other person in the boat besides the driver to "spot" for the skier and be in a position to communicate with the driver.

This is a sensible regulation that allows the driver to concentrate on operating the boat and the spotter to concentrate on watching the skier for falls, which are very common.

One regulation that is missing, but which sensible skiers also obey is to wear a life vest or belt. This is an obvious safety precaution since there is a chance a skier can be momentarily stunned or even knocked out by a bad spill.

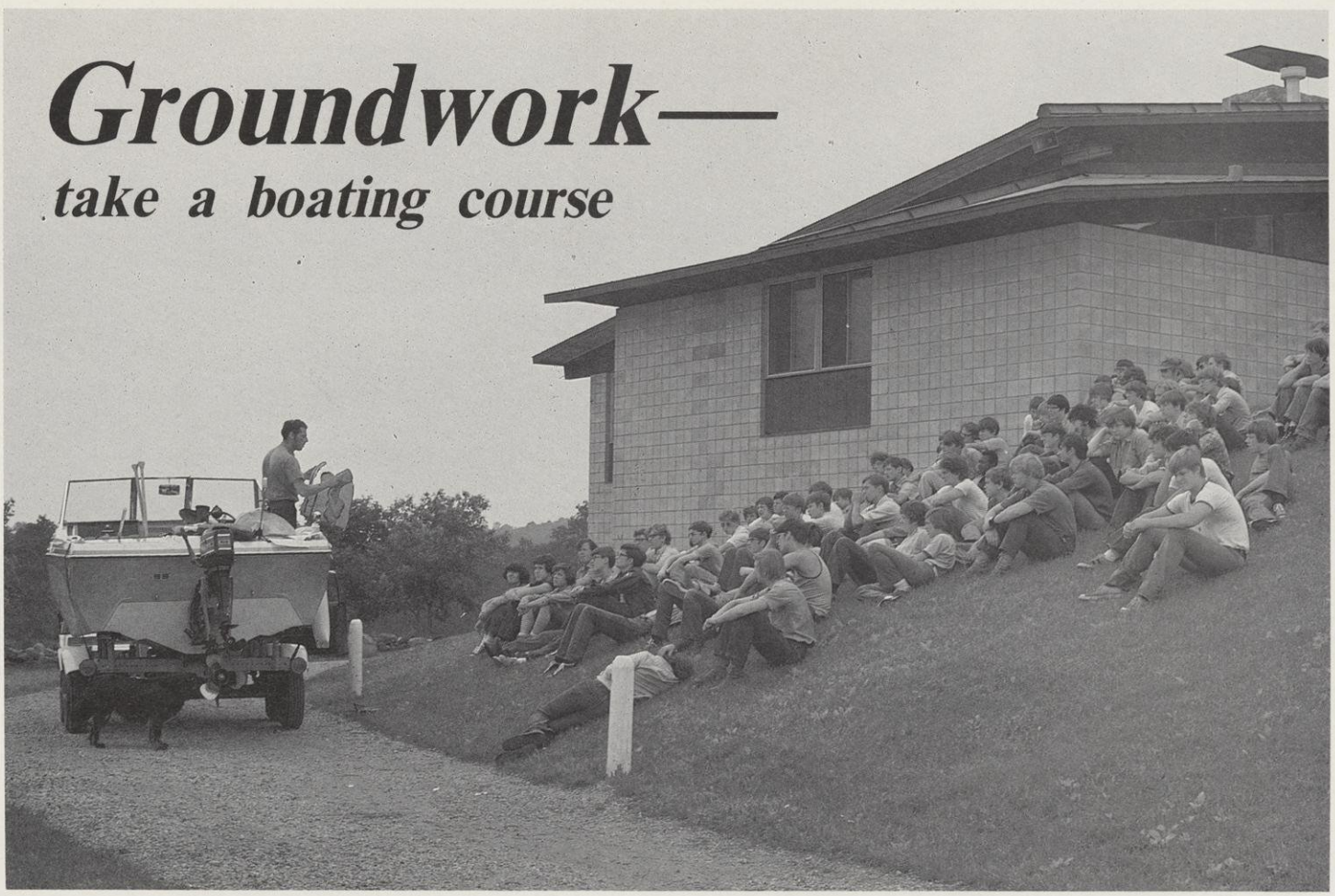
There are other safety regulations like operating your boat too close to another boat, excessive wakes and the like.

The DNR's little boat booklet has the answer to these and other questions.



This is illegal.

Groundwork—
take a boating course



DNR safe boating course is required to operate a motor boat alone if you're 12 to 16 years old.
Photo by Bob Tucker

Although experience can be the best teacher, it's a wise boater who learns a little something before ever going out on the water. Even the old salt might like to pepper up a particular skill. Many boating and safety classes are offered throughout Wisconsin. Here are some:

The American Red Cross teaches swimming, canoeing, sailing and small craft safety. For more information contact your local chapter.

US Power Squadrons give a 10-lesson boating course, which provides information on handling under normal and adverse conditions, rules of the road, compass and chart familiarization, running lights and equipment, boat trailering, inland boating, piloting and more. For more information write US Power Squadrons, Box 30423, Raleigh, NC 27612 or call 608-238-4980.

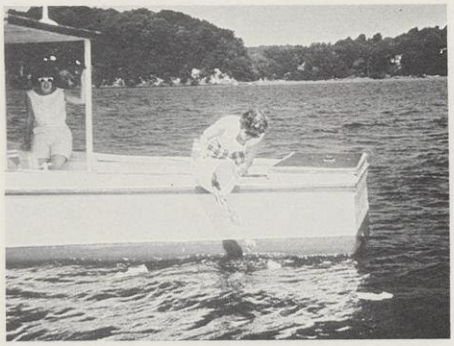
US Coast Guard Auxiliary has three programs. The introductory three-lesson plan is intended for the occasional or novice boater. It covers boating equipment and safety devices, as well as potentially hazardous situations. Two comprehensive, 13-lesson plans, one for sailors and the other for motorboaters, feature aids to navigation, boating laws, marine engines, sailing, seaworthiness, marine radio-telephone, locks and dams, weather and whatever else may be appropriate to local requirements. For more information contact your local flotilla or write US Coast Guard (G-BAE/TP 43), Washington, D.C. 20590. (You may also want to take advantage of the free, courtesy boat examinations and equipment checks by the US Coast Guard Auxiliary and Boating Safety Detachments.)

DNR sponsors an eight-session Wisconsin better boating class. Instruction includes units on operation and handling of all kinds of boats, accident prevention and related laws, and boaters' obligations to respect natural resources. For more information contact your local conservation warden or write Boating Safety, DNR, Box 7201, Madison, WI 53707. (This course is required for all persons 12 to 16 years old who want to operate a motorboat alone.)

Getting to know the canoe. Photo by Larry Keith

Fun is fun. . . but

What's wrong here?



Water means freedom to many boaters. Abusing that freedom prevents shoreline property owners and other boaters from enjoying the peacefulness of open water and waterfront. It also creates a need for more restrictive laws.

The freedom to use waters does not include the right to use private lands. Boaters must have prior permission from the landowner to launch or moor a boat on private property.

Noise carries on water, especially at night. When anchoring off a waterfront home, keep voices down, play music low and leave with a minimum of noise. Be sure to consider winds, waves and tides. Don't anchor where the boat might drift too close to shore or to other boats.

The law prohibits littering on waters, shores, and public or private property. Carry a litter bag.

High speed boating is dangerous in restricted or congested areas. The skipper is responsible for spotting and avoiding swimmers and slow moving vessels. This is also important when picking up or dropping off water skiers.

High speeds produce high wakes. Boaters are responsible for damage caused by their wakes to other vessels or to shorelines. Slow down and watch your wake when approaching congested areas or small boats with low transoms.

Passengers should respect the skipper's wishes when on board. The skipper is responsible for everyone's safety and must be alert at all times. Wear rubber-soled shoes to prevent falls and scratches on the deck. The skipper should make sure at least one passenger knows how to handle the boat. A good skipper knows the rules and courtesies and makes sure no one abuses them. Life on the water is refreshing and relaxing when caution and consideration counterbalance the annoyance of noise and speed. Then everyone using the water can have a good time.

Municipal patrols

Sergeant David Branley
of the Dane County Sheriff's Department

The State of Wisconsin has approximately 85 municipal boat patrols which operate during the boating season and are staffed by a variety of law enforcement officers from counties, cities, villages and townships.

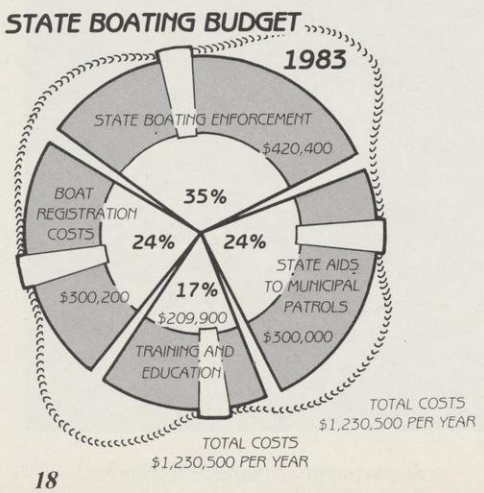
Funds to operate these patrols come from boat registration fees. Because of a $300,000 statutory limit on aids to municipalities, the money has to be prorated. Both expenses and the number of boat patrols vary from year to year. State aid is often less than municipalities plan on—as low as 52% of boat patrol costs. An attempt to add $200,000 to the fund by registering non-motorized craft was defeated in 1983. This additional funding would have assured boat patrols of 75% aid to operating budgets to help cover officers' salaries; patrol boats' fuel, repairs, storage, emergency equipment, radios and other expenses.

Boat patrols enforce state boating laws as well as local ones. They vary to cover peak boating times on the water and usually operate from Memorial Day to Labor Day. Some run year-round while others operate on a daily basis during the summer or only on weekends and holidays. Hopefully, they'll be there if you ever need them.

Photo by Larry Keith

Who pays?

James Goers,
Budget and Reporting Chief



In 1959, the State Legislature enacted a law which required all boats used principally in Wisconsin to be registered with DNR. The resulting fees are the sole source of funding for Wisconsin's boating program. Exempt from registration are sailboats 12 feet and under without a motor, manually propelled watercraft not equipped with a motor or sail, and boats with a valid certificate of number from another state or documented by the federal government if not used in Wisconsin more than 60 consecutive days.

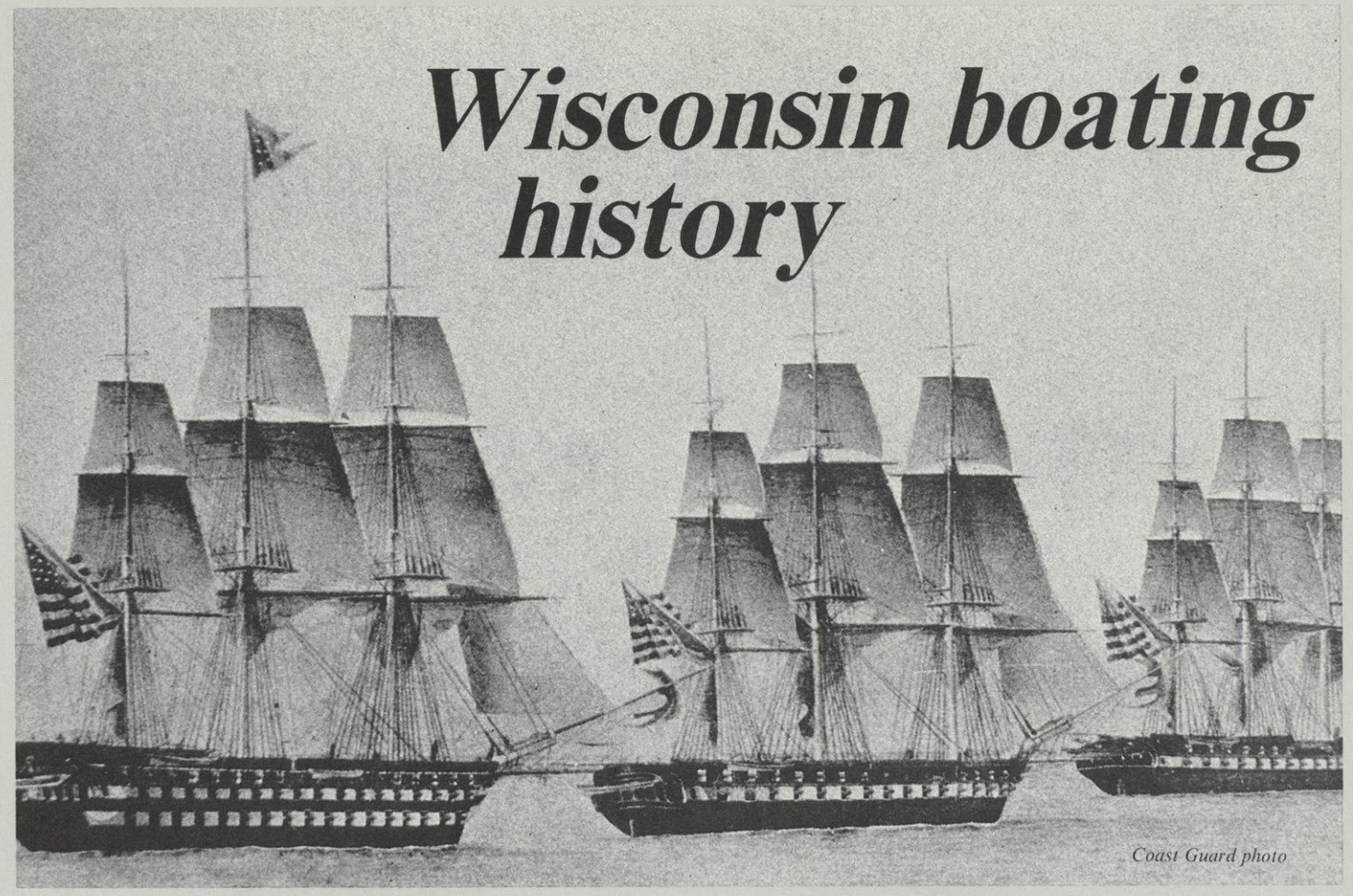
DNR also collects sales and use taxes on any boat for which a certificate of registration is issued. However, the receipts from these taxes are deposited in the state's general fund and not used for the boating program. Neither are receipts from fines or forfeitures imposed upon persons convicted of boating law violations. These are deposited in the Common School Fund.

Taxes paid on purchases of fuel to operate motorboats are refundable. However, if a boat operator makes no claim for refund from the Department of Revenue this money is used for highway development and maintenance. The boating program does not receive any funds from the motor fuel tax.

Many who use Wisconsin's waters benefit from the boating program thanks to funding received entirely from boat registration fees.

Graphic by Eric Weaver

Wisconsin boating history



Coast Guard photo

Watercraft have evolved from dugout, raft and war canoe to our present high performance boats. Many manually powered and slow moving craft are still used, such as the canoe and the raft. Designs and materials have changed. Fiberglas has replaced birch bark, aluminum pontoon the old log raft.

Now boats feature a wide variety of hulls, shapes and designs and are capable of high speeds. When improperly operated, these boats may cause large, hazardous wakes. The more powerful the motor, the smaller the lake becomes as it takes less time to go from one point to another.

Wisconsin has the same or possibly less surface water now than when it became a state in 1848. Each year growing recreational demand requires greater need for courteous, educated and safe boaters.

Wisconsin's first boating laws, State Statutes 30.06, were enacted in 1919. They covered such items as navigation lights, rules of the road and life preservers on boats for hire. One provision allowed for local ordinances to establish reasonable laws for local need. By 1933, muffler regulation and reckless operation laws were added statewide.

Major changes in boating laws came with the Federal "Bonner Act" of 1958. It required all states to adopt numbering systems and to establish regulations to meet growing boating safety problems. This act allowed local units of government to adopt laws based on local need for public health and safety.

Wisconsin's Legislature has adopted boating laws (State Statutes 30.50 to 30.80) based on the federal framework which now cover definitions, registration, numbering, equipment needs and operational regulations. To promote public health, safety and welfare, the state also provides aids to municipalities for water safety patrols.

In addition to State Statutes, DNR also has administrative codes that cover boating and provide for registration and certificates of number. The codes further establish uniform aids to navigation following the federal act and define buoys by type such as aids to navigation, information and regulatory markers. Administrative Code NR 45.09 regulates boating on lakes in state parks and forests. These are more restrictive than general state boating laws.

The next major change in recreational boating laws came with the Federal Boat Safety Act of 1971. It gave states and local units of government funds for safety programs with emphasis on education, enforcement, and uniformity of state and federal regulations.

New laws may be necessary to meet the growing future demand on Wisconsin's water resources. The laws need not be restrictive. Safety-minded and educated boaters with broad general knowledge of the recreation they enjoy can insure healthy, happy and safe voyages for many years to come with a minimum of regulation.

Don't be a stranger to the water

Becoming familiar with Wisconsin's recreational water resources can be as fun-filled, demanding and rewarding as any challenge you'll ever enjoy. As you get to know the water you'll find that good manners help keep the whole thing friendly. Your personal safety, of course, is basic to enjoyment. In your eagerness to get afloat, don't ignore it. Here are some tips that can keep you out of trouble:

- Leave a float plan with someone ashore. Include a description of your boat, number of passengers, destination, proposed route and other information that could help to find you should an emergency develop.
- Check the weather forecast.
- Have up-to-date maps or charts of the water you plan to boat.
- Maintain, stow and learn to properly use appropriate safety equipment.
- Store a bailer on board.
- Carry sufficient tools for minor repairs.
- Know various distress signals using a mirror, flashlight, smoke, flares, etc. — to insure you can be seen if trouble develops.
- Make sure children and nonswimmers wear personal floatation devices (PFDs).
- Distribute your load evenly and keep it low. Don't stand up in a small boat.
- Don't overload — weather and water conditions should be taken into account here.
- Do not permit persons to ride on parts of the boat not designed for such use. Bow, seatback or gunwale riding can be especially dangerous.
- Know the boating rules of the road and boat defensively.
- Keep an alert lookout.
- Notify whomever you left your float plan with when you have returned.

For motorboaters

Both federal and state laws require that certain safety equipment be aboard. These items vary slightly with type and size of boat and it is your legal responsibility to know the requirements. If you want to be certain that your boat and equipment measure up, you may request a courtesy examination by the US Coast Guard or Coast Guard Auxiliary. Among equipment required by law is the following:

√ Personal flotation devices — PFDs are probably the single most important safety item on your boat. The specific type of PFD required varies with the size of the boat, but all boats must be equipped with a PFD for each person on board. All PFDs must be Coast Guard approved, in good condition and readily accessible.

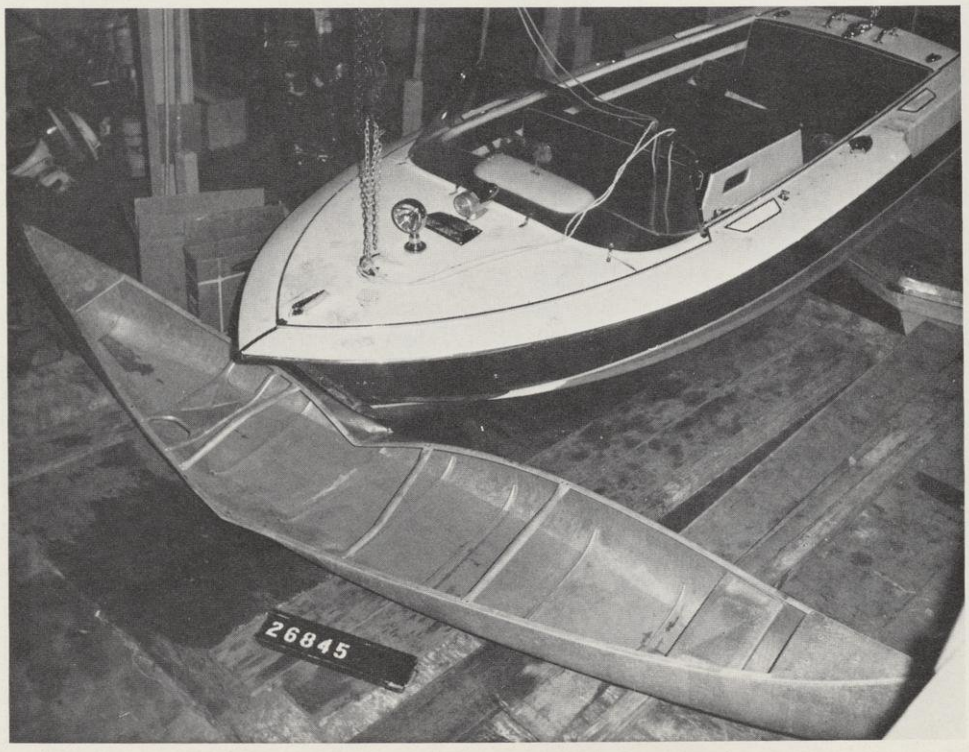
√ Lights. Any boat used between sunset and sunrise must have the correct navigation lights.

√ Fire Extinguishers. Motorboats under 26 feet with enclosed fuel or engine compartments or permanently installed fuel tanks and all motorboats 26 feet and over must be equipped with the proper number of Coast Guard approved fire extinguishers.

√ Horns, Whistles. Every motorboat 16 feet and over must carry a whistle or horn capable of producing a two-second blast audible for one-half mile. (All boats should carry at least a mouth-operated whistle to signal for assistance, if nothing else).

√ Flame Arrestor. All inboard and stern-drive engines must be equipped with a Coast Guard approved, backfire flame arrestor on each carburetor.

√ Ventilation. At least two ventilator ducts are required when engine or fuel compartments are enclosed. Boat type and length determine this.



What is safe and reasonable speed on the water at night? Two canoeists who lost their lives here were warned by an officer on patrol not to launch their boat at night without lights. The motorboat that struck them was marked with red and green lights fore, white light aft. The operator of that boat was sober. The officer who gave the warning had to respond later that evening to the accident call. The setup photo of the two boats was part of the accident investigation.

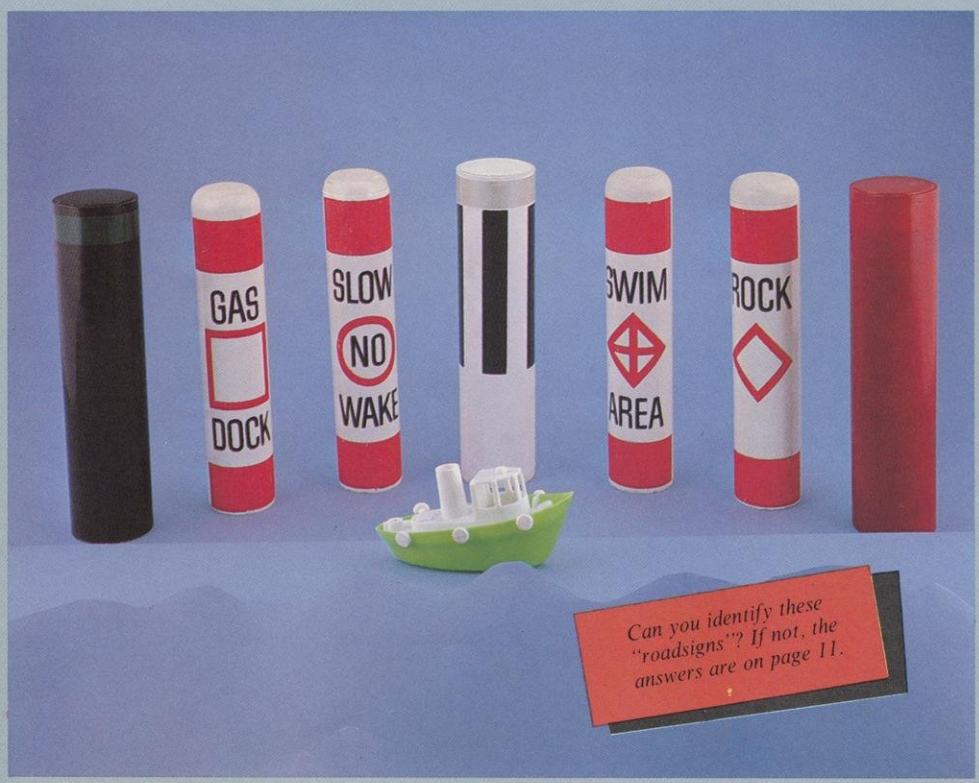
If your boat capsizes, stay with it — you're more visible to rescuers. If possible, reboard and bail.
Coast Guard photos.

This boat had a white light to mark its stern. But the motor blocked the light from view. And another boat rammed in from behind.

Fueling

Incorrect fueling procedures can result in explosions and fires — often before a boat even leaves the dock. Be careful and follow these rules:

1. Shut down engines and all other equipment capable of generating a spark.
2. Close all hatches, ports, and windows, to prevent fumes from entering any part of the vessel. (Gasoline fumes are heavier than air).
3. Exit all passengers to a safe distance on dock.
4. Know the approximate amount of fuel each tank will take to prevent overflow or leakage.
5. Remove filler cap, ground nozzle to filler pipe which should be grounded and slowly fill tank to avoid spillage. When approaching tank capacity use extra care. Replace filler pipe cap.
6. Wipe up any spillage immediately and hose off with water.
7. Ventilate and open ports, windows, etc. for at least five minutes. Don't worry about other boats waiting for fuel. It is better to take a little longer than to cause a catastrophe.
8. Start engines before permitting passengers to board. This is the most likely time for fire or explosion to occur!
9. When you are sure all is safe, permit passengers to board.



Can you identify these "roadsigns"? If not, the answers are on page 11.

Tips for sailboaters

√ Beware of dangerous overhead power lines in the vicinity of launch ramps and on access roads. Each year people are electrocuted when a mast comes in contact with a high-tension line.

√ Rig your boat away from the ramp area to avoid congestion at the launch site. But be sure of adequate clearance with power lines or other overhead obstructions between the rigging area and the launch ramp.

√ Keep a weather watch. Consider wind direction, velocity and water conditions.

√ Practice righting your boat under "controlled" conditions — capsizing is a part of this sport.

√ Always wear a PFD — a "knock down" can occur without warning.

√ Illuminate your boat if you are on the water after sunset by shining a white light on the sail.

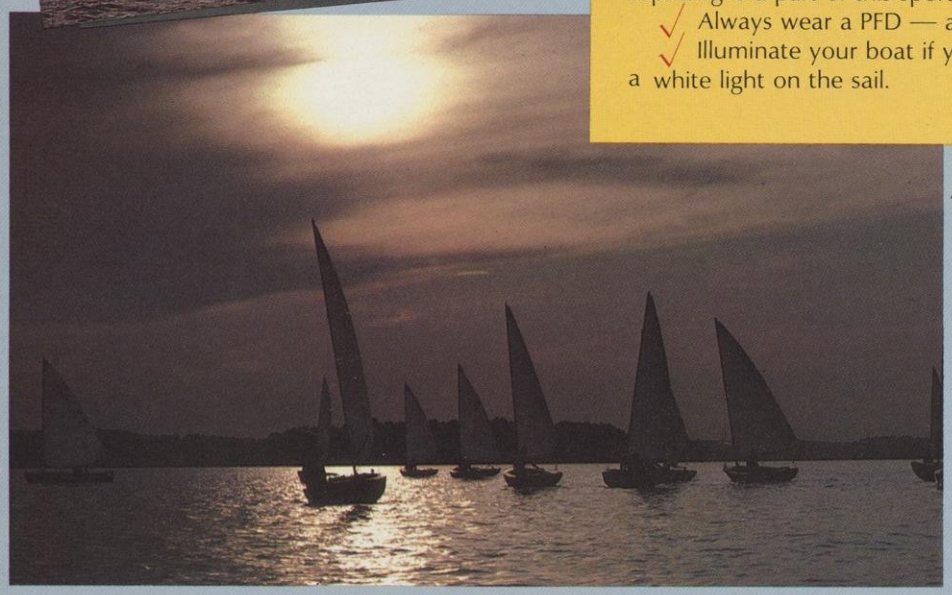


Photo by Mary Hamel

Photo by Staber Reese

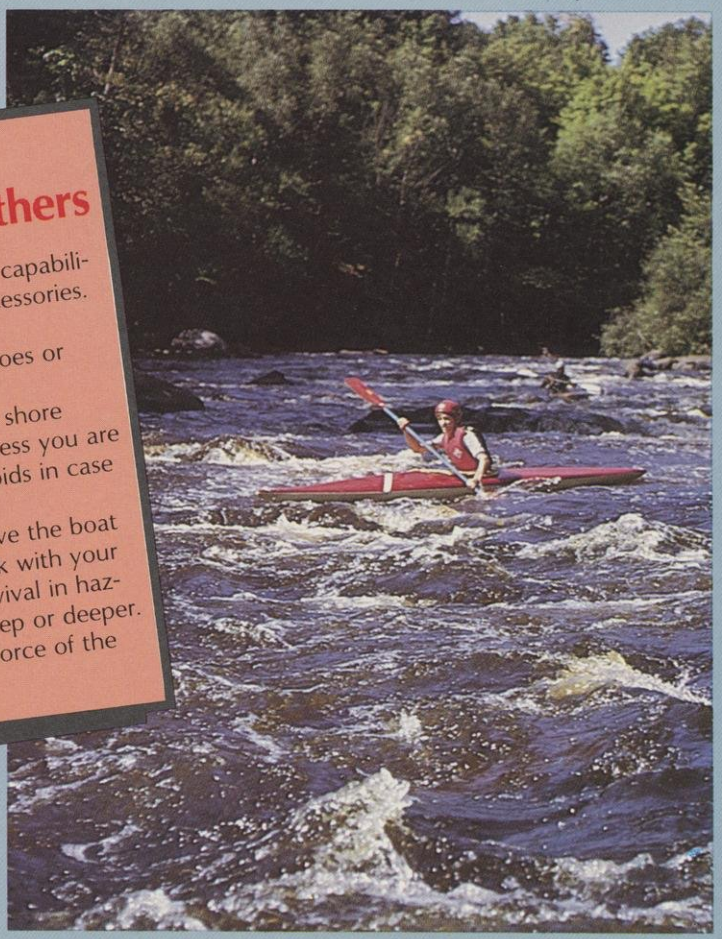
Tips for canoeists, kayakers and others

√ Be suitably equipped for your sport. Know your craft, it's capabilities and limitations. Know required gear and recommended accessories. Know your own level of skill.

√ Do not go it alone — a preferred minimum is three canoes or kayaks.

√ Keep your boat under control. Be able to stop or reach shore before drifting or flowing into danger. Do not enter rapids unless you are sure you can safely navigate them or can swim the entire rapids in case of capsizing.

Remember, if you spill, keep the boat in front of you. Leave the boat only if it will improve your situation. A position on your back with your feet at the surface of the water will increase chances of survival in hazardous current. Don't stand in moving water that's knee-deep or deeper. Your feet can easily get caught in rocks or muck, and the force of the water submerge you.

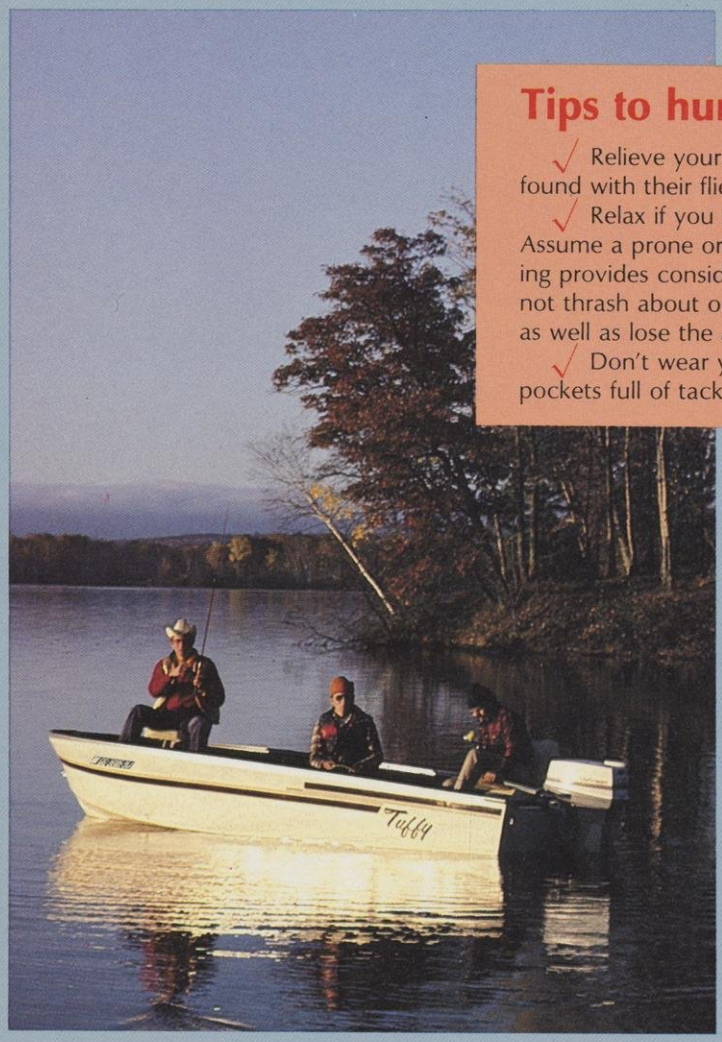


Tips to hunters and anglers

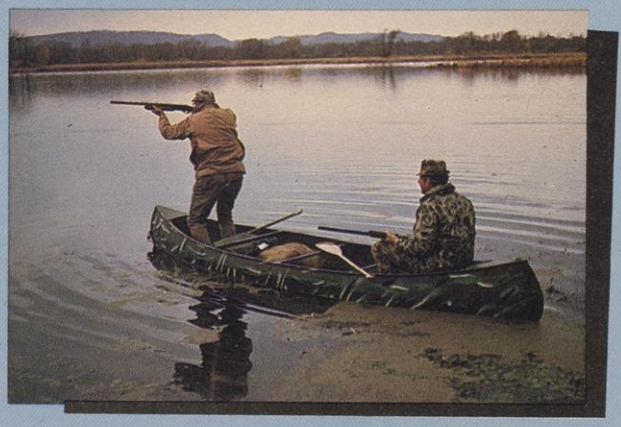
√ Relieve yourself ashore — almost half of Wisconsin's boating fatalities are found with their flies open.

√ Relax if you find yourself in the water wearing heavy clothes or waders. Assume a prone or back float position with knees slightly bent. Air trapped in clothing provides considerable flotation and bending your knees will trap air in waders. Do not thrash about or try to remove clothing or footwear, or you will exhaust yourself as well as lose the air that keeps you afloat.

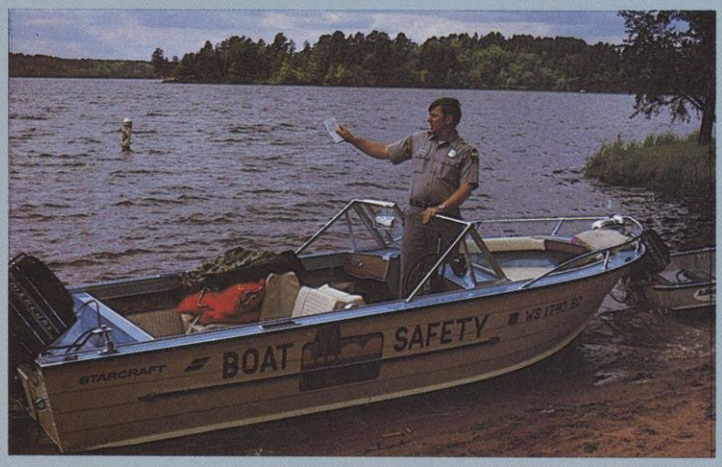
√ Don't wear your gear while on the water. The extra weight of a shell vest or pockets full of tackle can drag you down should you go overboard.



Fishing is more fun if it's safe.



This is dangerous.



Boat safety enforcement saves lives.
Photo by Bill Mitchell

Tips to parents

√ Protect children with properly fitted PFDs. In the case of small children, most of the body weight is in the head. Specialized PFDs are constructed to compensate for this.

√ To operate a boat, children must be at least 10 years old and accompanied by an adult. Those between the ages of 12 and 16 may operate a boat alone if they've passed the DNR Safe Boating Course. However, parents are liable for minor's activities on the water, whether they accompany their children or not.

There's a PFD for every purpose.
Coast Guard photo.

"Preserve precious life"
— a survivor's plea

Safe enjoyment of Wisconsin's diverse water resources requires simple common sense. Boaters must know and respect the water, maintain safe and reliable equipment, watch the weather and what else? Whatever observation, experience and reflection yield. Boating tradition and lore, convention and law develop with reason.

Wisconsin waters accommodate anglers, hunters, water skiers, canoeists, commercial users and many others. All have certain expectations, and almost casually expect that nothing bad will happen to them. Bad things happen to, or are caused by someone else. However, bad things can happen to you, and sometimes lack of foresight becomes bitter hindsight. Boating mistakes result in the kind of sorrow expressed in this letter:

"I am the mother of the young man who drowned so tragically in a boating accident in May. He was a beautiful young man, full of love and laughter, who enjoyed life every minute. He had a lovely wife and a beautiful son.

"In our hearts we mourn the son whose love and laughter are lost to us forever.

"I beg all boaters to remember this tragedy and use caution when boating. Wear life jackets. Please think of your families and friends, all those who love you and want you with them.

"For John and those of us who loved him, it is too late. I am sure that time will heal this ache, but now we are consumed with grief. With our tears, in our sorrow, we ask that it not happen again to you or your loved ones."

This sad letter is only one of many from all around Wisconsin that arrive at DNR after the tragic fact—to enjoy Wisconsin's wonderful water resources is not enough. Water demands responsibility. Know this—and your fish stories, skipper's tales and family float memories can be happier ever after.