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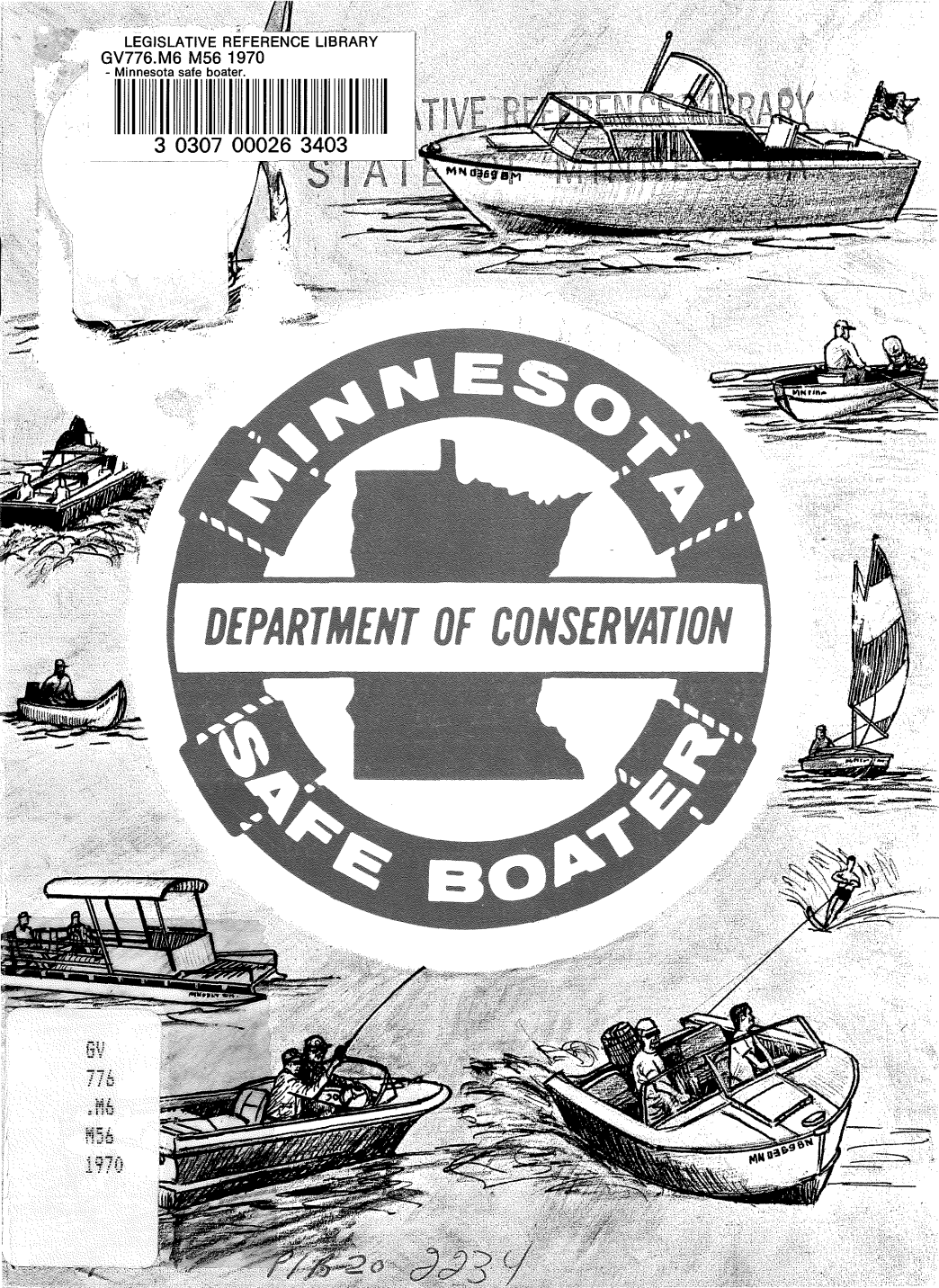

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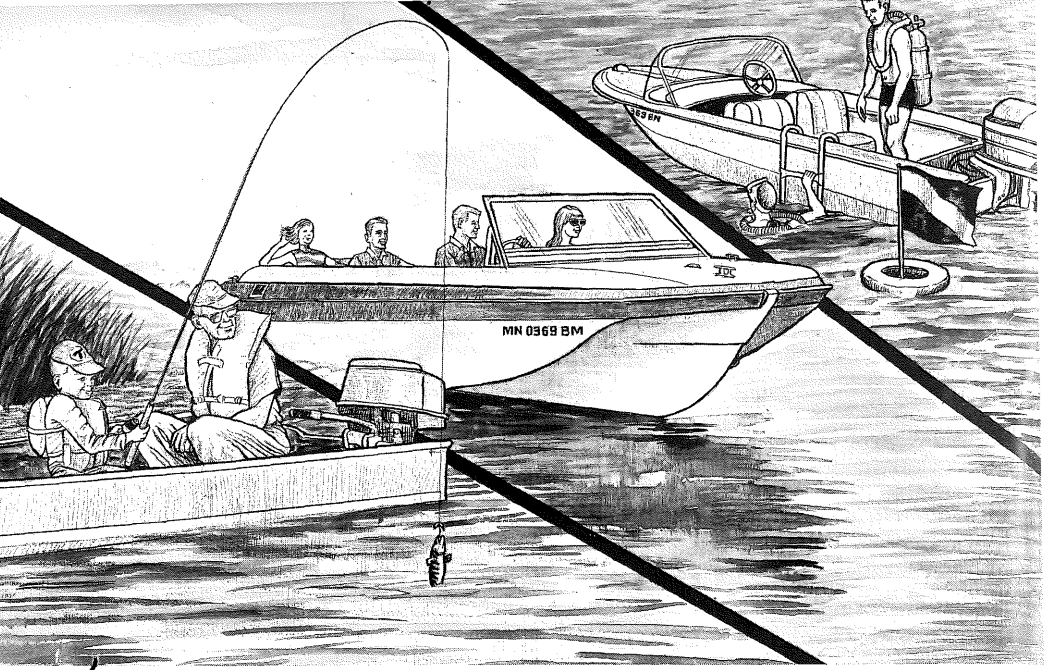

Safety Afloat is Your Business

Let's look at boat and water safety as a business. Nearly every Minnesotan will be involved in some form of outdoor water recreation at one time or another. It may well be their most important "business" association.

Proper safety management will assure a long, pleasant and profitable association. Poor safety management will mean a quick, certain death. The end of a business is always a sad occasion. But the unnecessary and premature end of a human life is a tragedy!

Management of this business of water safety is neither difficult nor complicated. Procedures are simple, but they do require constant attention and application.

Now let's take a look at some of the basics that will make us successful in this business of boat and water safety. The safety procedures presented here are meant to augment all laws and regulations where they exist. Where no state or federal laws exist, they should become your UNWRITTEN LAW for safe boating.

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(Funding for document digitization was provided, in part, by a grant from the Minnesota Historical & Cultural Heritage Program.)

Your Equipment

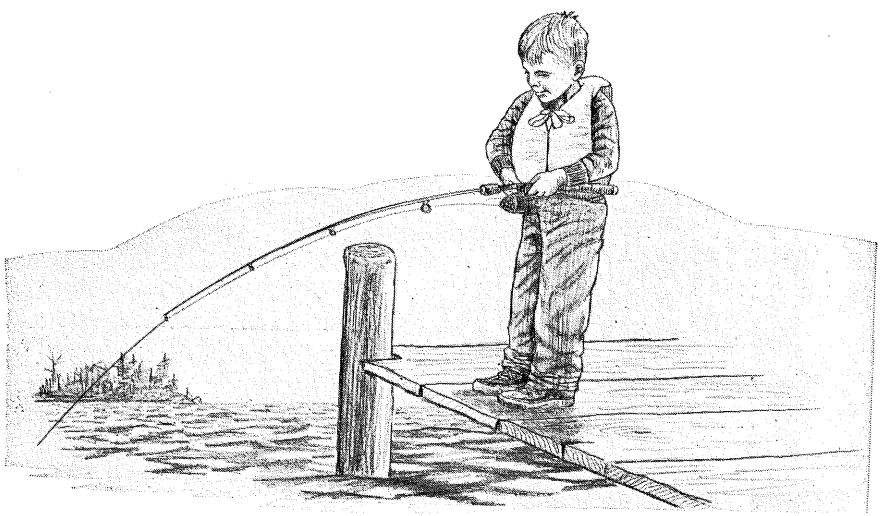
Specific state and federal laws relative to watercraft equipment may be obtained by writing to officials in charge of the administration and enforcement of these laws. (Addresses of these officials are listed on page 36.)

No boat should ever leave shore without an anchor, whistle, light for emergency signaling, and an adequate number of life preservers on board.

A LIFE SAVING DEVICE for every person on board is a *MUST*! It may be a jacket, vest, ring buoy or cushion and should be Coast Guard approved. Such preservers are required on waters under Coast Guard jurisdiction.

Small children playing in and around water should wear a Coast Guard approved life jacket at all times as should non-swimmers. A C. G. approved jacket is stressed because it holds the wearer's face out of the water.

When a preserver is in poor condition, do not throw it away where it may be found and used by some unknowing person. Instead, cut it into pieces and burn it! Remember, a life preserver is one of your most important pieces of safety equipment. Treat it as such.



Children Playing In Or Near Water Should Wear Life Preservers.

All equipment requires care and the life preserver is no exception.

* *Never stow a wet life preserver.*
* *Never sit on a wet life preserver.*
* *Never use a preserver as a swimming aid for sport.*
* *Always store preservers in locations where they are available for immediate use.*

An *ANCHOR* is also a must for every boat. Type of anchor will depend on the size and weight of your boat and the waters you will cruise.

Be sure the anchor line is strong enough and long enough to anchor your boat. A good rule of thumb is for the line to be at least six times as long as the maximum depth over which you will anchor (strong winds and rough water necessitate a much longer length-to-depth ratio). Additionally, check the knots on your anchor line. They must hold fast at all times.

Don't throw or heave the anchor into the water. First check to see if your line is coiled and will flow smoothly; that your feet and tools are out of the way. Then lower it slowly and evenly.

Coil the line as you raise the anchor and place it into the boat carefully. Your boat will last much longer when you follow these suggestions.

Occasionally anchors take too firm a bite on the bottom or become wedged between rocks or other obstructions. To free an anchor under these circumstances, circle it with your boat under power. When the anchor breaks free, stop your boat. Never run at any speed with a dragging anchor!

A *FIRE EXTINGUISHER* is a necessary item for all motor-powered watercraft. Fire can and does occur on motor boats. The fire extinguisher must be one that will put out all types of blazes, including gas and oil fires. Coast Guard approved fire extinguishers were designed specifically with the boater's needs in mind and are recommended. Be sure to check state and federal laws for fire extinguisher requirements.

A *WHISTLE OR HORN* capable of sounding a two-second blast that can be heard for at least one-half mile should be mounted or carried on all watercraft. (It is unlawful to use a *SIREN* as a signaling device.)

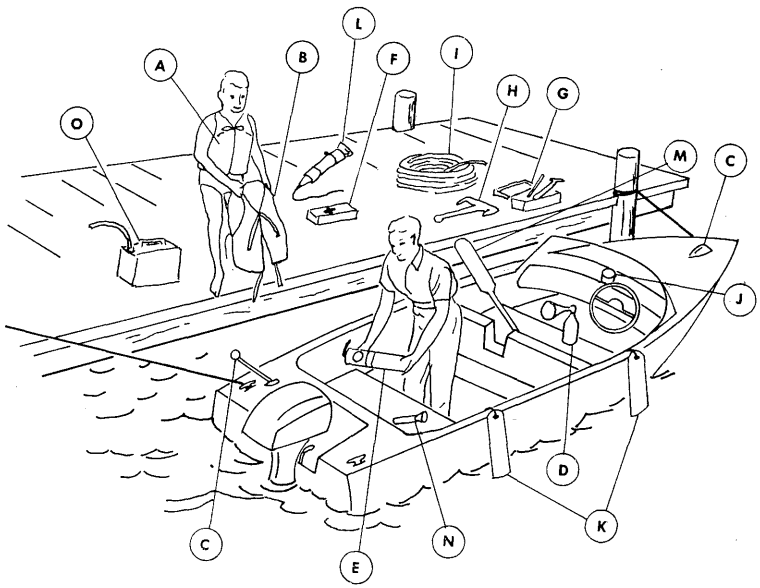
Recognized signals will be discussed later in the section, "Rules of the Road."

LIGHTS are one of the most important items of equipment for the recreational boater. No boat should ever leave shore without having at least one portable "white" light. Trouble may develop making it impossible to get to shore before dark. You may need the light to signal other boats and to be seen.

Both state and federal laws and regulations contain LIGHT requirements. *BE SURE YOU COMPLY.*

State and federal laws also dictate the minimum amount of equipment you must have on your boat. Common sense goes further. Use the check list provided as your guide for safe boating.

Your Checklist For Boating Safety



Thousands of Minnesotans have discovered a new world of fun on the state's waterways. However, many trips afloat become experiences in anger and frustration after boaters discover they are sorely lacking equipment. This checklist of boating equipment is recommended by marine safety experts. How does your boat check out?

- ☐ (A) and (B) life preserving device for each passenger
- ☐ (C) proper lighting
- ☐ (D) horn or whistle
- ☐ (E) fire extinguisher
- ☐ (F) first aid kit
- ☐ (G) tool kit
- ☐ (H) anchor
- ☐ (I) line
- ☐ (J) compass
- ☐ (K) fenders
- ☐ (L) bilge pump
- ☐ (M) paddle
- ☐ (N) flashlight
- ☐ (O) gas can

Your Boat

SELECTING A BOAT to suit your needs can be a difficult problem, especially for a new boater. A boat that might be perfectly safe on a Minnesota lake of 60 acres could be completely unsafe on a body of water the size of Mille Lacs Lake. Boats are made for many jobs. Each has the characteristics necessary to do that job well. Decide what function you want your boat to serve and then shop carefully until you find one that fits your needs.

Never sacrifice your standards to save a few dollars. You will probably end up as a disillusioned boater who quits a wonderful sport. Even worse, you may end up with unsafe equipment. The advice of an experienced boater or reliable boat dealer can save you from some of these pitfalls.

SPECIAL WARNING

Salmon fishing will bring increasing numbers of small boats into use on Lake Superior. Some of the hazards that exist for a small boat on any of the Great Lakes are listed below.

* *Drifting out of sight of shore — caused by undertow, currents, or winds.*
* *Becoming lost in fog.*
* *Inability to ride out heavy weather.*
* *Inadequate equipment for extended periods away from shore.*
* *Lack of communication.*
* *Lack of sea worthiness (too little freeboard, open construction, etc.)*
* *Insufficient power.*
* *Special hazards (commercial boat traffic, wing dams, etc.) also exist on the lower St. Croix and the Mississippi. Boaters using these and other navigable or larger waters of the state would do well to enroll in a U.S. Coast Guard Auxiliary or U.S. Power Squadron boating safety course.*

SAFE BOATING not only requires a boat of adequate design, but one in *GOOD CONDITION*. Continued checks before, during and after the boating season will save a boat owner many dollars and may also save lives.

Types of Boats . . .

WOODEN boats should be checked visually for breaks, cracks, loosened timbers and fittings. Probe along the joints, seams, bow and stern with a

Never Overload Your Boat — With Gear Or Passengers.

sharp knife for signs of rot. The top of a knife blade can be pushed easily into rotted wood. (Persons buying a used wooden hull should keep this tip in mind.) All damage, including rot, should be repaired before the boat is launched.

Most of the damage boaters encounter on a sound boat can be repaired. Localized rot can be cut away and the wood replaced. On the other hand, when rot has spread throughout a boat, it should be junked. Rough water can smash a rotted or poorly maintained boat.

STEEL boats can become extensively damaged by rust. Badly rusted and cracked plates should be replaced. Always investigate areas where paint has been raised from beneath. Scrape it away. Inspect to make sure the steel surface has not been seriously damaged by rust. Prime the cleaned area, and repaint.

ALUMINUM boats can become cracked and rivets loosened. Check for these hazards. If any are found, have repairs made immediately.

FIBERGLAS boats can also become damaged. Look carefully for places where impact might have damaged the hull. This kind of damage can be located by looking for areas where the finish is meshed with a pattern of small cracks radiating outward from a central point. The central point is usually the point of impact. Check carefully. If the hull is soft or cracked at that point, it needs repair.

Any water in the boat should be drained, bailed or pumped out before you go afloat. Water will shift when making a turn which could cause the boat to capsize. Also, you don't want to start out and then discover a serious leak. Your boat takes a beating when under full power and a small crack can grow into a large split over just a short distance. Before you know it, the water may be coming in faster than you can bail or pump it out. It makes sense to do your pumping and inspecting while at the dock. *SAVE YOUR LIFE BY NOT PUTTING IT IN DANGER.*

Boat Stability . . .

The stability of your boat is determined by its shape, length, width, depth and distribution of the load.

A *FLAT BOTTOM* boat is good for fishing because it rides flat on the water and will not tip excessively when passengers move about. On the other hand, it is not stable in rough water.

A ROUND BOTTOM boat will tip more easily if passengers move about but will tend to ride out rougher water without capsizing, if weight is kept low in the boat.

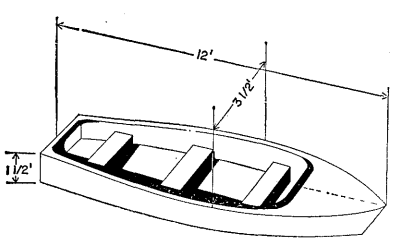
These same qualities also influence the handling of boats under power. A round bottom boat is more maneuverable because the shape helps the boat turn. A flat bottom boat, however, tends to dig into the water as it turns.

A *V-BOTTOM* or *SEMI-V-BOTTOM* is an attempt to combine the better qualities of the flat and round bottom boats.

Many new boat designs are being developed, each in an effort to provide some unique riding quality.

Every boater should become thoroughly familiar with his boat so he knows how it will respond under various load and water conditions. Do not take unnecessary chances with your life or the lives of your passengers.

Know Your Boat's Carrying Capacity It May Save Your Life



This Boat Has A Safe Capacity of 473 Pounds

$$\left(\frac{12 \times 3.5 \times 1.5 \times 0.6}{12} \right) 150$$

REMEMBER — Make adequate allowance for the weight of your motor and equipment.

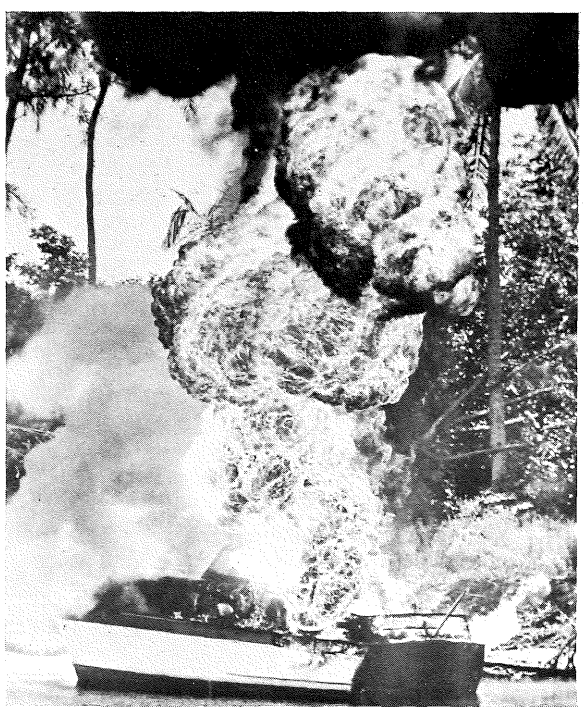
Here's How To Compute It . . .

Length times maximum width, times maximum depth, times 0.6 divided by 12, multiplied by 150, except where the beam measurements are 48", use 19" as maximum depth; 49" to 52", use 20" as maximum depth; 53" to 56", use 21" as maximum depth; 57" or over use 22" as maximum depth.

Your Motor

The motor you select for your boat must provide adequate power. To help the purchaser decide the motor size he can safely use, many boat manufacturers are attaching a small plate on the transom of their boats designating maximum safe horsepower. These recommendations have been developed as the result of an extensive program of experimentation and study in an effort to insure proper matching of boat and motor.

The motor selected must have sufficient power to control a boat under wind and water conditions where it will be used. If it is not powerful

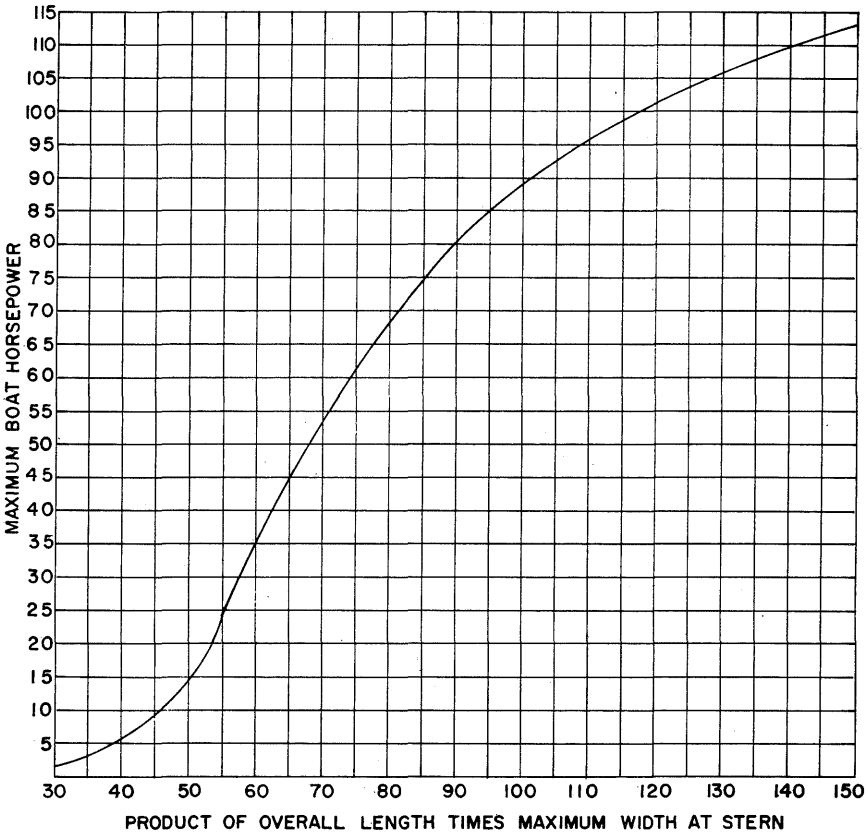


Fire Afloat Can Be Sudden . . .Deadly.

enough to push the boat in any direction in heavy wind and waves, then it is dangerously underpowered.

A motor with more power than you need can cause the bow to rise out of the water and the stern to dip. Under these conditions, stability, maneuverability and visibility are reduced. Your boat could swamp by taking water over the stern.

Boat and motor team up to add to your boating enjoyment. Whether you fish, water ski, cruise or race, having the right boat with the right motor will add greatly to your pleasure afloat.



USE THIS horsepower curve to determine proper amount of horsepower for your boat. Pounds and power recommendations are MAXIMUM figures.

Fueling . . .

Care must be taken when fueling. Whenever possible, it should be done in the day time. If a boat must be fueled at night, only electric lights should be used — never open flames. And no one should ever smoke on or near the boat while gasoline is being handled.

All ports, windows, doors and hatches on the boat must be closed before adding fuel to the tanks. Any motors, engines or fans on board must also be shut off before fueling begins.

The spout from a gas can must touch the fuel pipe or tank before the gasoline is poured and should be kept in contact all through the time that fuel is being poured. If not done, static electricity could cause a spark and subsequent explosion.

Vapors from a small amount of accidentally spilled gasoline can result in a tremendous explosion. Because gasoline vapor is heavier than air, it will not rise from low pockets in the bilge of a boat. Therefore, vapors must be drawn or forced out before the engine is started.

The entire *FUEL SYSTEM* must be free of leaks. All *CONNECTIONS* must be tight at all times. Check them frequently since boat shaking caused by the engine, or rough weather, can sometimes loosen connections.

Any gasoline taken on board must be in a separate, safety-approved tank and stored in a place away from the engine where there is a good, fresh air supply.

To prepare an outboard motor mixture of gasoline and oil, the two components should be poured into another can, shaken well, and then poured into the tank. A strainer-funnel should always be used. Grit, water and dirt in gasoline may ruin an engine or motor.

Never fill a tank to the brim. Leave some room in the tanks for gasoline to expand. After the fueling is finished, put the fill cap on as tight as possible. Immediately wipe up any spilled gasoline. Destroy the rag you use on shore — *DON'T EVER THROW IT INTO THE BOAT OR WATER.*

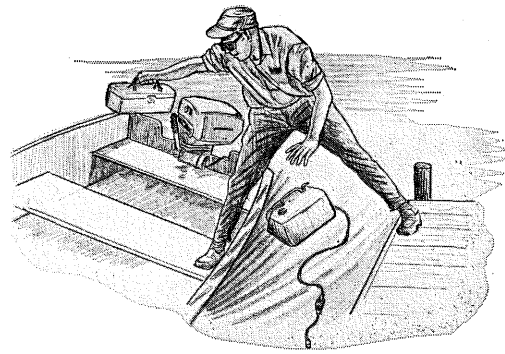
After you have finished wiping the spilled gasoline, open all doors, hatches, and windows. Force the air to circulate for five minutes. Check again for leaks and make sure all connections are tight. Sniff for gasoline vapor. When you are sure all vapor is gone, the engines can be safely started.

FIRE AFLOAT is always a possibility. Every boater should plan what he would do if fire started in various areas of his boat. Prompt action with a fully charged extinguisher is the best way to successfully combat a fire.

* * *

Minnesota water recreationists will have their ranks reduced by another 122 persons by the end of the current year. This is the average death toll over the last ten years. Each year, death by drowning follows the old familiar pattern of carelessness and gross disregard for the simple rules of water safety.

Boarding and Loading



Wrong Way . . .

Good *BOARDING SAFETY* is a blend of "know how" and common sense.

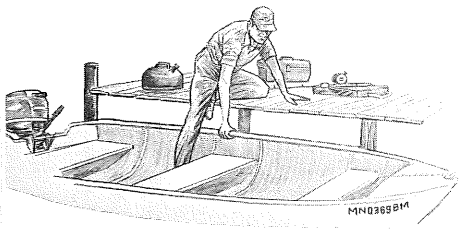
Be sure equipment is placed in such a manner that all possible hazards are eliminated. Explain to passengers the areas of your boat they can use, as well as places they must avoid. Assist non-swimmers in putting on life preservers. Check to be sure mooring lines are secure before boarding. These lines keep the boat from slipping away when a person steps aboard.

When boarding from a dock or low pier, step aboard as far amidship as you can. Keep low and steady yourself by holding the gunwales.

NEVER JUMP into a boat. The craft may roll or skid away and equipment may get a dunking along with you. If you have someone with you, have him steady the boat from the pier while you board. Once in, steady the boat for others.

Never carry objects in your hands while boarding. Board first and then have them passed to you or load them from the pier. Free hands free your mind for safe boarding.

If your boat is moored bow first into a slip or even if beached, step aboard over the bow. This helps to keep the boat stable. Again, always crouch low and use your hands to steady yourself. Any moving about should be done as close to the keel (center) line as possible.



Right Way . . .

Loading . . .

Never *OVERLOAD* your boat! Once aboard, passengers should be seated with the total weight distributed evenly. Combined weight of passengers, motor, and gear should not be more than the capacity for which the boat was designed. In many cases this weight capacity is stamped into a plate on the boat. *DON'T FORGET!* As your load increases, the boat's freeboard decreases to a point where even small wakes or waves can wash aboard, possibly swamping your craft.

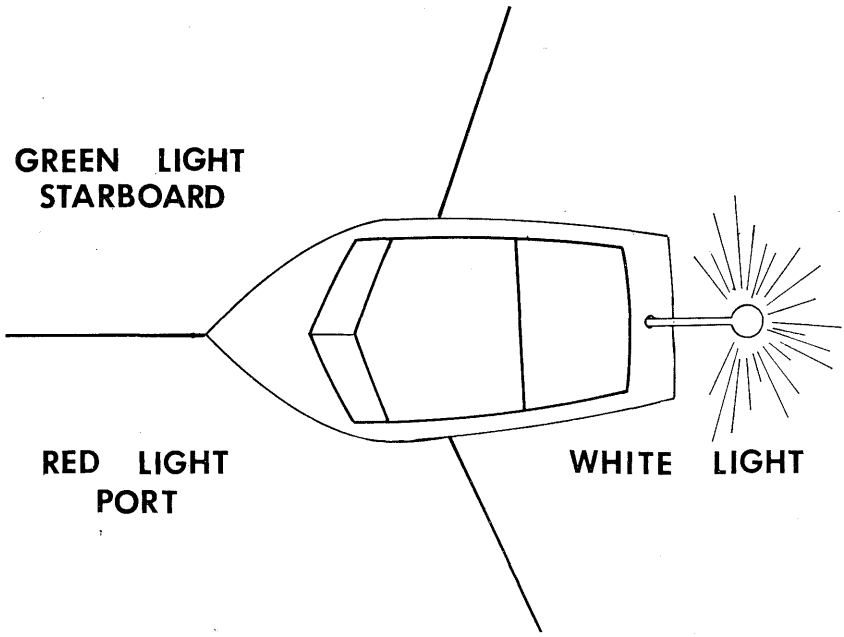
Rules of the Road

"Rules of the road" are as important on water as on a concrete highway. They are particularly important because they provide uniform patterns of passing and direction that otherwise would not exist.

The boat which has the right-of-way is the "privileged" boat; the boat that must yield to the other is the "burdened" boat. In the illustrations, the P and B indicate which boat must give way to the other.

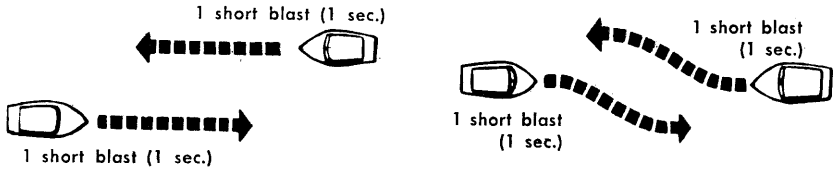
It is in connection with these rules that running lights become so important at night. By observing these lights on another boat, you can determine the approximate size, course, speed and direction it is turning, though you may be unable to see the boat itself.

Remember, the red light is on the port (left) side of a boat and the green one on the starboard (right) side. Location of the white stern light will also help you to know what the other boat is doing. As you study the following rules, figure out how the lights would look in each situation.

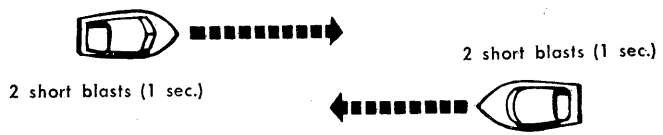


You must learn and obey the rules of the road in order to avoid accidents. The following explanations and illustrations apply to motorboats on inland waters. Although rules in the different areas are similar, the boater should obtain and study those applying to his specific area of operation.

Meeting Head And Head

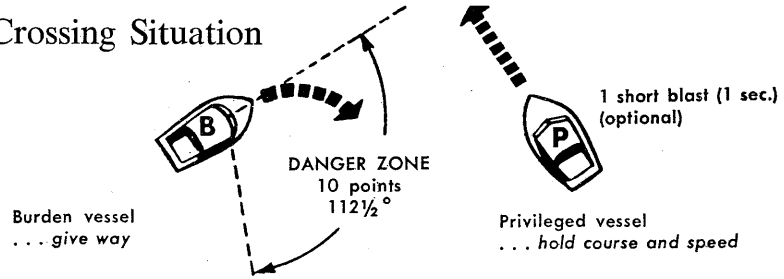


IT IS THE DUTY of each watercraft to pass on the port side of the other when meeting head and head or nearly so.



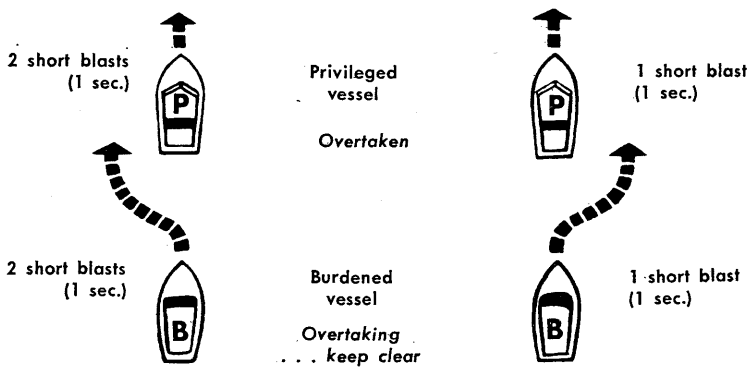
WHEN COURSES of two boats are so far on the starboard of each other as not to be considered a head and head meeting, either boat should immediately give two short and distinct whistle blasts, which the other should answer promptly by two similar blasts. Then, they can pass on the starboard side of each other.

Crossing Situation

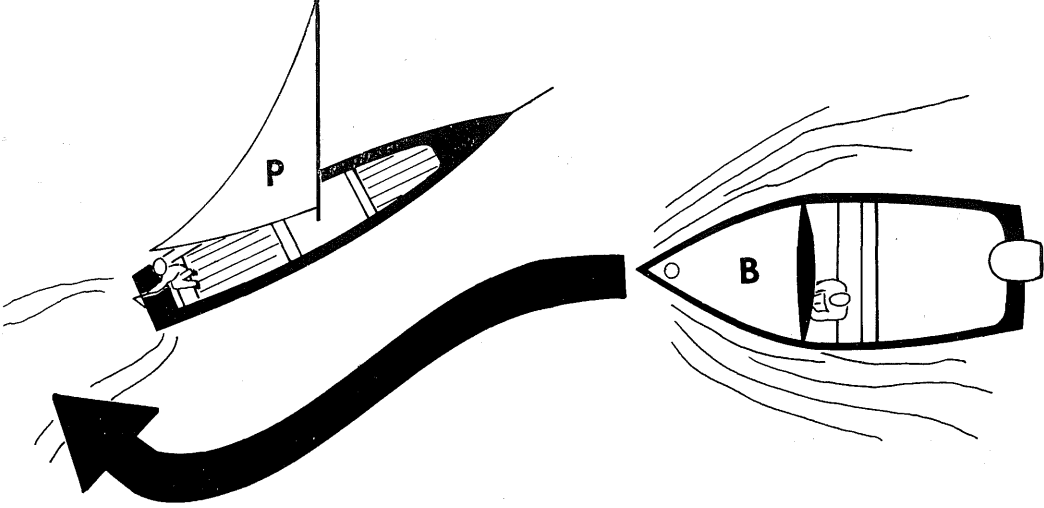


WHEN TWO BOATS are approaching each other at right angles or obliquely so as to involve risk of collision (bearings remain constant, or nearly so), other than when one boat is overtaking another, the boat which has the other on its port side must hold course and speed. The boat which has the other on its starboard side, must direct its course to starboard so as to cross the stern of the other boat, or, if necessary, slacken its speed, stop or reverse. The privileged boat may give one short blast of its whistle to signify intention to hold course and speed. It is important that both boats, whether burdened or privileged, do exactly what the rules of the road designate.

Overtaking Situations



IN AN OVERTAKING situation, the boat being overtaken has right of way and must hold course and speed. To overtake and pass, signal well in advance by one short whistle blast for passing to starboard, two short blasts for passing to port. A boat should not pass until it receives a similar signal in answer from the boat being overtaken. If the overtaken boat sees it is unsafe for the other to pass, he should sound the danger signal of four or more short blasts. Both boats must then wait until it is safe for passing, at which time the lead boat will give a passing signal. The overtaking boat will then answer the signal and pass as directed.



SAIL BOAT has right of way over motor boat except when it is overtaking boat. Boats propelled by oars or paddles should also be given consideration by motor-powered watercraft. Motor boats should always keep clear and pass astern of such boats.

The following provisions, though not known as "rules of the road," will aid boaters in developing orderly and safe boating patterns.

1. On open waters, operate your motorboat in a counter clock-wise direction if possible.
2. Operate your motorboat at a "slow, no-wake" speed when you are within 100 feet of: swimming areas, anchored boats, docks, rafts and moored boats.
3. Boats must not enter areas lawfully marked by buoys or beacons as being prohibited to boats.

MINDFUL BOATING PROCEDURES

* *Keep to the right in narrow channels.*
* *Signal with one long blast on the whistle when rounding sharp bends, moving from slips, docks, berths or just before entering traffic or channels.*
* *Less maneuverable boats often require deeper water and thus should be given consideration.*

Navigation

Minnesota boatmen will seldom use navigational skills as complicated as "celestial navigation" but those using navigable waters under Coast Guard control will need a thorough knowledge of marker buoys and lights. The boatman's safe operation on these waters is dependent on this knowledge.

Complete information on lights, buoys and rules concerning navigation on these waters can be obtained from the U.S. Coast Guard Detachment. (Address is listed on page 36.)

A *COMPASS* is a valuable piece of equipment in many activities and boating is no exception.

No boat should ever leave shore on Lake Superior without an accurate compass aboard. Red Lake, Lake of the Woods, Mille Lacs Lake and Leech Lake are just a few examples of other large bodies of water where fog, darkness or a change in weather might make a compass invaluable.

Have a compass on board and learn to use it. Be sure to mount it away

STORMS of this intensity can spell disaster to the small boat user. Keep an eye on the weather. Move toward shore at first sign of turbulence

from iron, magnets or electrical wiring and equipment. Hand-held compasses on a boat are difficult to read and easily lost. And you can't know the effect of the boat's iron work and electrical system when the compass does not have a definite location.

Gain experience in steering by compass in good weather before you rely on it in darkness or fog. Then you can have confidence in your compass (and yourself) and enjoy your new boating skill.

CHARTS or *MAPS* of waters new to you are available from several sources. Charts of navigable waters can be obtained from the U.S. Coast and Geodetic Survey Office and also from the U.S. Lake Survey Office. Survey maps of most of Minnesota's major inland lakes are available from the State Documents Division. Complete addresses of these offices are printed on page 36.

These charts contain information on channels, sand bars, rocks and vegetation. Water depth marks or contour lines on these maps are of great value to the boater whether he is pleasure boating, fishing or pursuing some other form of water recreation. This information can also make you a safer boatman.

WEATHER is a major concern of all boaters. No one should put out in a storm. Weather can change suddenly. Some of the worst storms seem to strike when least expected. There are a number of good sources of weather information. Before you set out, check your television and radio stations, read the forecast in the newspaper or, if possible, call the Weather Bureau or Coast Guard.

A *PORTABLE RADIO* tuned to a local station is a valuable source of weather information. Most stations broadcast routine weather forecasts and in addition, notify listeners of serious, unexpected storms.

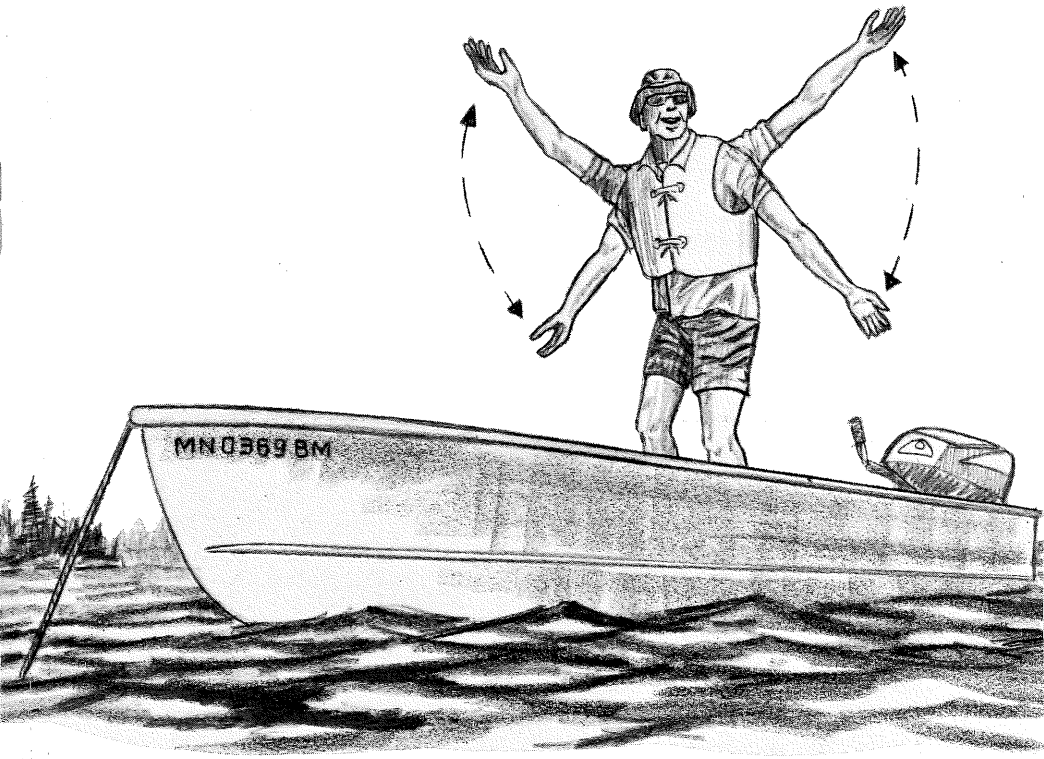
Above all, be alert to the weather that you CAN see! There are no hard, fast rules regarding weather. But there are signs that should always be taken as warnings.

Distant lightning is a sign that conditions are right for a storm. Bad weather may or may not develop in your immediate area but you should be ready. Keep your eyes open and do not take chances. Always get off the water during a lightning storm. Your boat will be the *TALLEST POINT* in the immediate area and could be hit.

If a really bad blow hits and you are unable to reach shore, some emergency procedures you might follow include:

1. *Drop anchor and ride out the storm.*
2. *Head into the waves at an angle.*
3. *Reduce your speed but keep just enough power to maintain headway.*
4. *Seat your passengers on the bottom of the boat and keep them as close to the centerline as possible.*

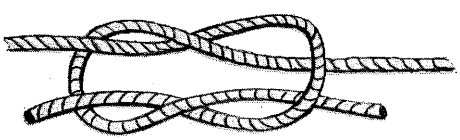
Should your motor fail, or if the sea is so strong you cannot make headway, trail a sea anchor from the bow to keep you headed into the waves. A bucket or a shirt with the neck and sleeves knotted together will do the job in an emergency. Remain calm — panic spreads easily.



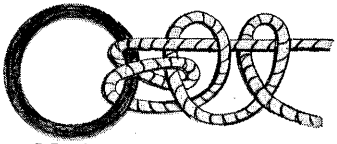
A RECOGNIZED distress signal will improve your chances of receiving help. Latest signal for small boat operators is slowly and repeatedly raising and lowering outstretched arms. NEVER use a distress signal unless a real emergency exists.

Any action or object that will attract attention and bring help is a satisfactory distress signal. However, if it is a known or recognized distress signal, your chances of obtaining assistance are greatly improved.

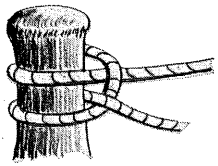
Other distress signals possible for the recreational boatman on Minnesota's lakes and rivers are: sound your horn, bell or whistle rapidly and repeatedly; blink your white range light, spotlight, or flashlight to signal SOS — 3 dots, 3 dashes, 3 dots. Send up emergency rocket flares. Special kits are available for small boats.



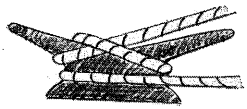
SQUARE KNOT



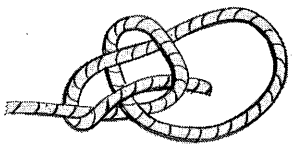
ANCHOR BEND



CLOVE HITCH



CLEAT



BOWLINE

KNOW THESE KNOTS! Square Knot — used to fasten two lines together; Bowline — makes a temporary loop in a line; Cleat Knot — used to secure line to a cleat (pay particular attention to end position of line); Anchor Bend — a non-slip way to attach line to anchor; Clove Hitch — used to fasten to a spar, piling, etc.

Boating Lines

Anchor and mooring *LINES* are important parts of your boating equipment. If properly selected and cared for, they will last many years. And the proper line kept in good condition will safely do the job it was designed to do.

To care for lines, keep them dry, coiled and free of kinks. Kinks put lines under strain and fibers weaken, causing them to wear faster.

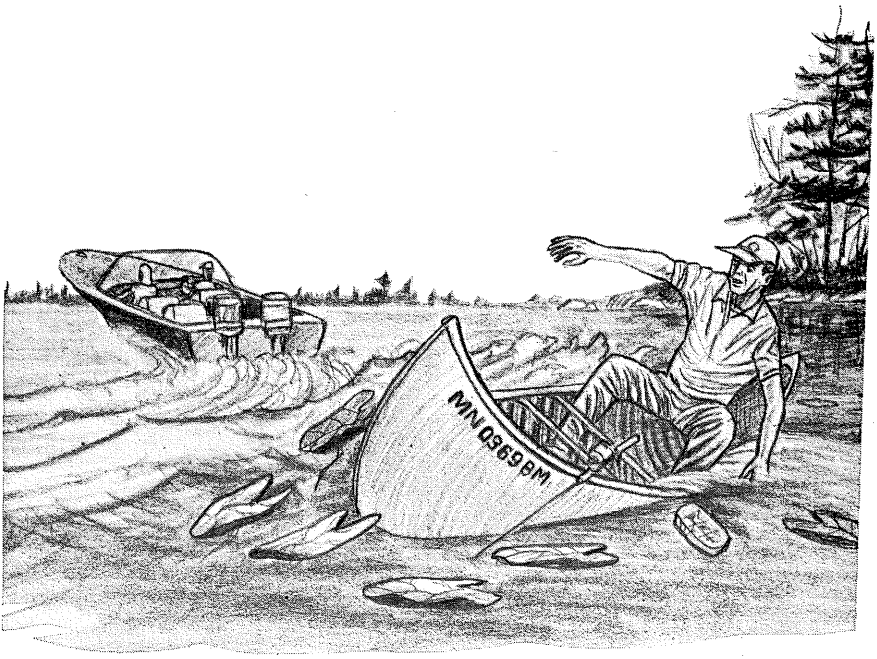
Here are some basic rules for keeping lines strong and safe:

1. *Keep them free from mud, dirt and grease.*
2. *Keep them coiled and stowed in a dry place. This helps prevent kinks and rot.*
3. *Stow them in a place where the air circulation is good. This prevents mildew and rot.*
4. *Keep them free from knots. Knots and kinks weaken lines. If you wish to make a permanent loop or connection between two lines, make a splice rather than a knot.*
5. *Don't drag or allow them to rub against rough surfaces.*
6. *Dry them with air, never near fires or in ovens. Too much heat in drying makes lines brittle.*
7. *Reverse your lines, end for end, each season.*

Boating Safety

Your *SOLO CRUISE* should not be attempted until you have been properly instructed by an experienced boater. Many first-time boaters have done extensive damage to their boat and even worse, to someone else's watercraft, before they were even out of the harbor.

SPEED gets many new boatmen into trouble. The slower your speed, the less room you need to turn or stop. People who claim they had an "accident" after running into a dock, reef, rock, log, or another boat, are usually misled. What really happened? They were going too fast to recognize and avoid the object. A boat doesn't have



WATCH YOUR WAKE! Increased use of our waterways can make a breach of boating etiquette deadly to a fellow boater.

brakes. It coasts to a stop. Leave plenty of coasting room and "coax" it the few extra feet you need. If there doesn't seem to be enough room, put your engine into reverse. This will stop the boat's forward movement quickly.

Don't be a *WATER COWBOY!* This doesn't mean you have to poke along. It simply means you must always be in complete control of your boat. Never allow your passengers to stand or sit on the bow, gunwales or other places where they might be cast from the boat. You, as a boat driver, should occupy the seat provided so you can always maintain proper control. The price you pay for lack of control may be your life!

COURTESY is a prime factor in boating safety.

Watch your *WAKE!* You can swamp small boats and canoes or cause a great deal of damage to boats temporarily pulled up to a beach. Run at a speed that will keep your wake down. Always maintain a reasonable distance from other watercraft.

If you have any doubts as to the right-of-way in a tight situation, yield to the other boater. *YOU* may be the person to receive the greatest benefit from this act of courtesy.

Minnesota boaters have great freedom in their use of public waters. Few restrictions exist but the increase in numbers of boat owners and the upsurge of all recreational water activities means that boaters must emphasize courtesy and common sense if they wish to keep their sport free of burdensome regulations.

BE CAREFUL

Swimmers don't belong out in the middle of a lake or river but they are sometimes there. They are difficult to see, so be alert and on the lookout at all times.

- *If possible, help other boaters in trouble.*
- *Help save lives but never risk your life to save equipment. Equipment can be replaced.*
- *Never take unnecessary chances. Equipment can usually be used to save lives.*
- *Above all — DON'T PANIC!*

Accidents will happen. If, in spite of your safety precautions, you find yourself in a boating accident, here are some emergency suggestions:

If your boat starts to sink or capsize, grab a life saving device before you are thrust into the water. There are many things a boater has on board which can act as an emergency flotation aid — paddles, coffee jug, foam bucket, etc. If at all possible, find a life preserver and put it on. If the boat floats, *STAY WITH YOUR BOAT.*

Docking . . .

Proper docking and mooring are important to safe boating. Enter the boat harbor or launch area in the same manner in which you left. Use a slow, "no wake" speed. Have your boat bumpers and mooring lines ready.

Make allowances for wind and current.

Be sure to tie your craft securely with allowances for changes in water level or wave action. Use the knots discussed earlier and your boat will remain in good condition for your next trip afloat.

Trash and litter of all kinds are ruining America's recreational waters. Boaters must do more than their share to reverse this trend. After a day or week afloat, whether a vacation cruise, fishing trip or just a boat ride, the average boatman will have accumulated his share of bottles, cardboard containers, cans, food left-overs and numerous other waste materials. Do not throw them over the side. It shouldn't take a dozen stitches in your foot to remind you there are trash receptacles back at the launch area. *CARRY IT BACK IF YOU CARRIED IT OUT.*

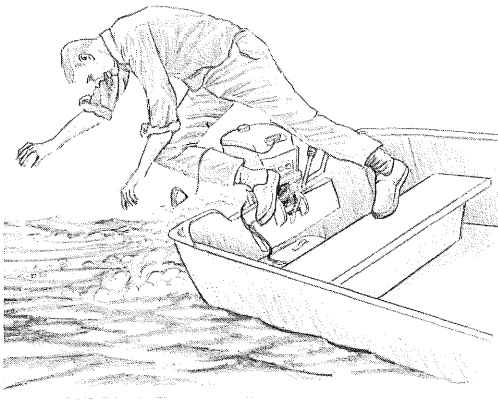
Fishing . . .

Fishermen spend many enjoyable hours on Minnesota lakes and rivers. This heavy exposure to the varied conditions of wind and water means they will encounter potentially dangerous situations. The common mistakes of overloading, venturing out in stormy weather, etc., have been repeated year after year. If you are a fisherman, here is a list of don'ts.

DON'T overload your boat.

DON'T allow a non-swimmer aboard unless he wears his life preserver.

DON'T move around in the boat unnecessarily.



STANDING in a boat while fishing or starting your outboard can only lead to disaster.

DON'T stand up to start your motor, or for any other reason.

DON'T fish at night without displaying a light.

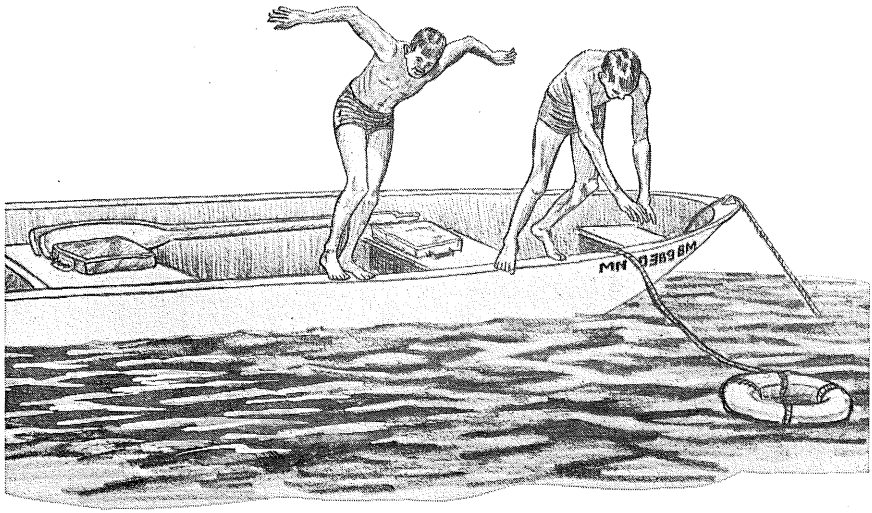
DON'T be a fatality — be a fisherman.

Swimming . . .

People should swim only at a supervised beach. But in a state boasting more than 12,000 lakes, 250,000 registered boats and many thousands of unregistered watercraft such as canoes and sailboats, it is obvious there will be swimming at other places.

Swimming from a boat is a dangerous practice and certain precautions should be taken.

NEVER SWIM ALONE. This bit of advice holds true at all times but is even more important when swimming from a boat. If you must swim from a boat, stay near shore and away from boat channels.



A Life Saving Device Should Be Nearby When Swimming From A Boat.

Be sure to anchor your boat before you enter the water. Many swimmers have found themselves in serious trouble when a sudden wind has blown their boat away faster than they could swim.

A life saving device should be in the boat so it can be thrown to a swimmer without delay. A device (such as a ring buoy) tied to a rope and in the water near the swimmer is ideal for this purpose.

Just as swimmers must exercise good judgement as to where they carry out their activities, boatmen must respect the rights of fellow water recreationists by giving a wide berth to marked beaches and to swimmers who may stray away from designated areas.

Water Skiing . . .

Water skiing is increasing in popularity each year. It has always been classified as a "safe sport," but with more participants and heavier boat traffic, skiers should be more safety conscious than ever.

SAFE water skiing starts with *SAFE* equipment, a thorough knowledge of techniques, competent instruction and an efficient, careful tow boat operator. Let's discuss these subjects in detail.

A Coast Guard approved *LIFE JACKET* is a must for water skiers. A beginner will find that he floats easier with an approved jacket and has an easier time retrieving and putting on his skis after a fall. An ex-

perienced skier learning new tricks or stunts receives the same benefits. In addition he has "cheap life insurance" if he suffers an injury in a fall.

A good *BOAT* is usually relatively light, highly maneuverable and has adequate horsepower to attain the range of speeds necessary for effective, comfortable and safe skiing.

Other items of equipment that can add to the skier's comfort and safety are a light-weight boarding ladder, accurate speedometer and wide angle, curved, rear view mirror. (A curved rear view mirror is required by law in most states, including Minnesota, if a boat driver does not have another person in the boat to act as an observer.)

Water skis should be in good shape. Hardware should be simple and free from sharp or protruding surfaces. Loose runners or binders can make skiing difficult and dangerous.

Your *SKI HITCH* can be attached to the transom or installed inside the boat, forward of the motor. Its main purpose is to hold the tow rope out of the propeller.

TOW ROPE and *HANDLES* should be free of complicated hooks, eyes and other devices, as well as unnecessary loops that might entangle or cut the skier. Ordinarily, lines are made of ¼-inch polypropylene, polyethylene, No. 1 manila or linen, braided or twisted.

The *BOAT DRIVER* is not driving

for his own pleasure but solely for the benefit, satisfaction and safety of the skier. The driver should never start the motor while anyone is near the stern. Even in neutral and at idling speed, the propeller is turning fast enough to inflict a serious wound.

The driver should not accelerate the boat until he receives a visual and/or audible go-ahead from the skier. The signal to start should never be given until the skier has the tow handle in his hands. All parts of his body and skis should be free of the rope, and his ski tips up.

The boat's take-off should always be in a straight line. Once the skier is up, it is important for the boat driver to remember that excessive speed and wildly varying course with sharp turns can cause dangerous falls. Each turn should be large, with the skier staying well within the wake.

A towing speed between 12 and 16 m.p.h. is sufficient for most beginning skiers, depending upon their weight. Single skiing can be learned at about 18 m.p.h. It is very rare that a novice or amateur skier will need a speed of more than 25 m.p.h.

It is desirable to have a passenger-observer in the tow boat. His function is to watch the skier and assist the driver in staying clear of other boats and obstacles. The observer should never distract the driver.

A good driver is constantly checking his skier, and the immediate surrounding water, even if he has an observer (or mirror) on board.

The skier should never put any portion of the tow rope around his body or limbs. A rope or handle placed behind the neck, head, arm or legs or other parts of the body can lead to a broken limb, neck or even a drowning.

The skier should stay at least 150 feet from all docks, swimmers, boaters, fishermen and other fixed objects. Show-boating on water skies can only lead to serious injury.

When a skier finds himself confronted with an unexpected object or approaching the beach at a speed faster than expected, a good procedure is to sit toward the back of his skis, and drag his hands to slow momentum. Avoid falling forward even under normal conditions.

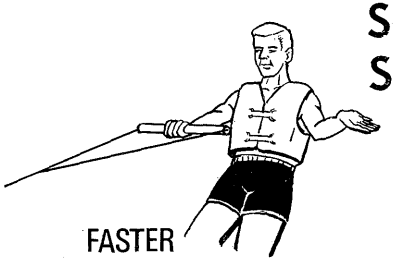
A fallen skier should be picked up as quickly as possible. This allows those aboard to assist the skier if he is injured or in distress, to protect him from any nearby boat traffic, and to return the ski rope so he may resume skiing instead of wasting his energy treading water.

Turning or curving around the skier when returning his rope can wrap it around his body, possibly causing a burn or entangling him. It is better to pass by him in a fairly straight line, trailing the rope so he can clasp it and allow the rope to slide through his cupped fingers until the handle comes near enough to grasp.

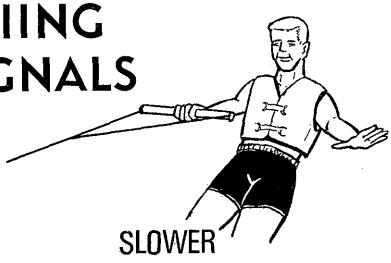
If you bring your skier aboard over the stern, be sure the motor is off. It is more desirable to use a boarding ladder over the side, or to bring the skier over the bow. Whatever is safest for skier and boat should be the deciding factor.

A novice skier should receive preliminary instructions from an experi-

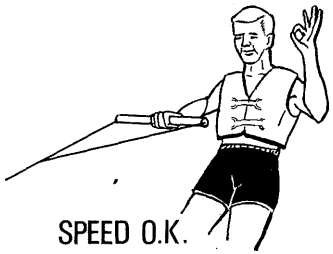
SKIING SIGNALS



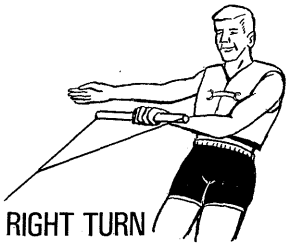
FASTER



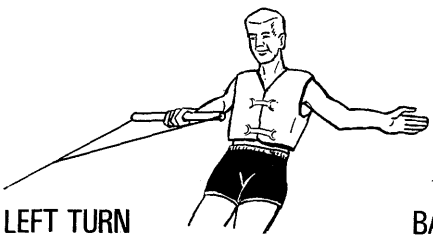
SLOWER



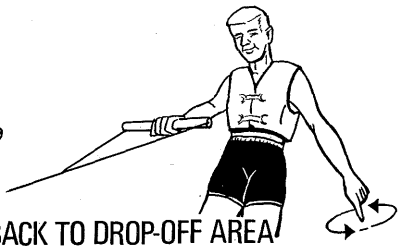
SPEED O.K.



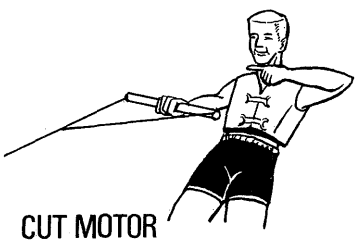
RIGHT TURN



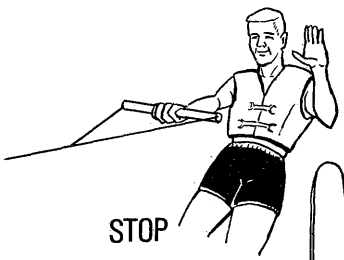
LEFT TURN



BACK TO DROP-OFF AREA

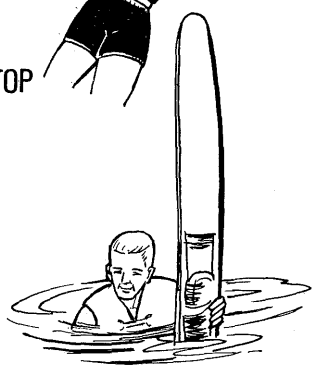


CUT MOTOR



STOP

SKIER O.K. AFTER FALL



PICK ME UP OR
FALLEN SKIER—WATCH OUT!

enced skier or ski school before trying the sport. He or she should also be familiar with standard water ski signals.

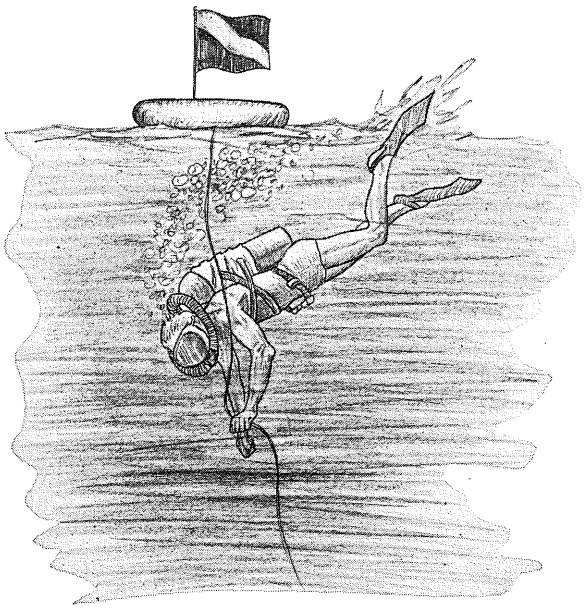
MULTIPLE SKIING with ropes of varying lengths is *not* recommended. Many skiers enjoy this because it allows them to cross back and forth, over and under one another's ropes. However, if the skier on the long rope falls, his rope can easily entangle the other skier. Always give fellow skiers plenty of room. Don't ski close beside or directly in front of another boat or skier.

It is important to *KNOW THE AREA* you are skiing. Sand bars, rock piles, wing dams, shallow water and numerous other hazards can cause falls that can result in serious injuries.

Night skiing may seem glamorous and exciting. But only the foolhardy, exercising extremely poor judgment, would attempt anything so dangerous.

COURTESY can play a major role in the future of water skiing. This sport requires plenty of elbow room. Competition for this space among water recreationists is growing each year. A safe, sane and courteous attitude by those engaged in water skiing will guarantee its rightful place among our water sports.

Running Lights Prevent Night-Time Collisions — Use Them . . .



A RED FLAG with a white strip indicates a diver operating anywhere within 50 feet of marker. Boaters should stay clear.

Diving . . .

Skill and endurance are needed by those who pursue the exciting sport of skin diving. And because divers are almost impossible to see from above, they must have the utmost cooperation of boaters.

Minnesota law requires every person wearing or carrying apparatus permitting him to breathe under water to tow a diver's flag, displayed above the surface of the water, which must be attached to a device (usually a buoy) capable of supporting the swimmer and his equipment. The diver must remain within 50 feet of his flag, the distance being measured on the water surface. A diver's flag cannot be towed by more than one person.

The diver's flag is red with a white stripe running diagonally from corner to corner. It is used only when diving is in progress. No person can operate a watercraft within 150 feet of a diver's warning flag.

A diver is usually swimming face down below the surface of the water. His vision is limited. He may be 100 feet down or merely one foot below the surface. He is usually concentrating on things under the water and may be unaware of what is going on at the surface. He may have to surface quickly at any time.

A boat operating in his diving area can create three serious hazards for him:

1. *A moving boat could run him down.*
2. *He could hit his head on the bottom of the boat or its motor.*
3. *In an emergency, he might hesitate too long before surfacing because of a moving boat in his diving area.*

If the diver is exploring or looking for something, he may drag this flagged buoy from place to place. Once you have spotted it, you should realize that it might be in a different place the next time you are in the area. You should also:

* *Learn to recognize a skin diver's flag.*
* *If you see one, respect it and stay out of the area.*
* *Do not let curiosity result in running over a diver.*
* *If you see bubbles, stop — do not pass over them.*

Canoeing . . .

The canoe has been a popular recreational watercraft in Minnesota for many years and is currently enjoying a tremendous upswing in popularity.

There are dangers in canoeing, however, that can only be minimized with knowledge, preparation and practice.

Primary dangers encountered in canoeing come from capsizing, swamping or just falling out of the canoe. Obviously, canoeists should be strong swimmers. They and all other small boat users should be able to swim while fully clothed for at least ten minutes. Even then, life preservers should be located conveniently for emergency situations.

Non-swimmers can enjoy this great sport but they *MUST* wear a life preserver of the approved type.

Safety procedures that apply to small boats are even more important in canoeing. Avoid unnecessary movement, keep the center of gravity low and keep the canoe trim. Don't panic if you find yourself in the water. Stay with the canoe and if possible, use it as a life raft. A moderate breeze can blow the canoe away faster than you can swim. Under these conditions, don't exhaust yourself in a futile attempt to catch it. Remove unnecessary clothing and conserve your strength. (A pair of trousers or slacks can be turned into an effective life preserver by knotting the ends of the legs and filling with air.)

In cold water, keep your clothing on, provided you have the canoe to cling to. Your clothing can act as a wet suit and reduce the hazards of cold shock.

Begin swimming slowly toward shore, resting frequently with your preserver, or by floating on your back or treading water.

Whitewater canoeing is increasing in popularity each year. It is not a sport for beginning or novice canoeists, however. It should never be attempted without a life preserver and in many cases a crash helmet. Even with this equipment, there are some waters you should not attempt to run. Early spring with its cold, wild water has spelled tragedy for an increasing number of adventurous outdoor enthusiasts.

If you wish to become a competent canoeist, contact members of such organizations as the Minnesota Canoe Association or enroll in a certified canoe safety course.

Sailing . . .

Sailing is considered a relatively safe sport, perhaps because it has generally been taught in organized classes or knowledge has been handed down from experienced sailor to novice. Another reason is that being a strong swimmer has always been a prerequisite to becoming a recreational sailor.

Power boat operators who have never sailed should know something about the problems of sailing. This will help them to understand why a sailboat needs the right-of-way.

As you know, a sailboat depends on wind for power. Thus, the wind dictates certain things the sailor must and must not do to operate his craft safely.

Sailboats, in most cases, are the privileged boat and as such, have the right-of-way. An exception to this rule is when the sailboat is the overtaking boat. Sailboaters must use common sense and not demand the right-of-way when approaching large commercial craft. However, collision possibilities can be reduced if the power boat operator will always give sailboats a wide berth.

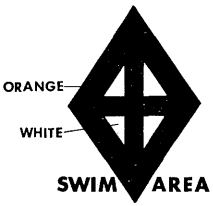
The sailboater must remember he needs plenty of elbow room to maneuver. Who had the right-of-way will be immaterial when you are stowed away in Davy Jones' locker.

CAPSIZING is not an uncommon experience in sailing. Most sailors are prepared for an occasional dunking. This is the reason most sailing courses require participants to be strong swimmers. It is also why non-swimmers must wear a life preserver while participating in this sport.

FALLING OVERBOARD is also common to sailing. Always have an extra life preserver handy to throw to anyone who might have fallen into the water. To get the victim back on board, stop the boat, enabling him to swim back. If this is not possible, sail your boat back to the person as quickly as possible. Time is extremely important in most rescue operations. Be sure to set up procedures for emergency situations and practice until you can perform them efficiently.

RESCUE of a fellow boater or water recreationist from a dangerous situation is a highly commendable act, but in too many instances the rescuer became the victim because he didn't follow basic rescue techniques. KEEP COOL! Make every move one that

INLAND WATERWAY MARKERS

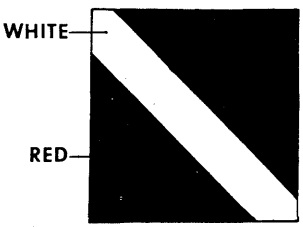


DIAMOND SHAPE with cross means BOATS KEEP OUT.

Explanatory reasons may be indicated outside the crossed diamond shape, DAM, WATER-FALL, RAPIDS, DOMESTIC WATER, SWIM AREA, etc.

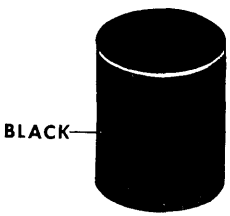
DIAMOND SHAPE warns of DANGER.

Suggested wording for danger includes ROCK, DAM, SNAG, DREDGE, WING-DAM, FERRY CABLE, MARINE CONSTRUC-TION, etc.



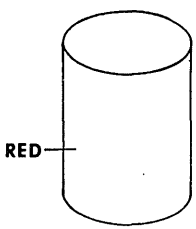
DIVER'S FLAG indicates presence of a diver.

Boaters are warned to keep at least 150 feet away from flag area to avoid submerged divers.



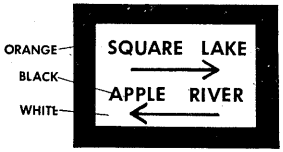
ALL-BLACK BUOY, indicates boat should pass between it and its companion all-red buoy.

For use together with all-red buoy to mark a well-defined channel. If buoy is numbered, use odd numbers colored white. Numbers may be reflectorized.



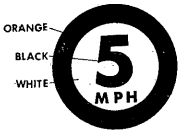
ALL-RED BUOY, indicates boat should pass between it and its companion all-black buoy.

For use together with all-black buoy to mark a well-defined channel. If buoy is numbered, use even numbers colored white. Numbers may be reflectorized.



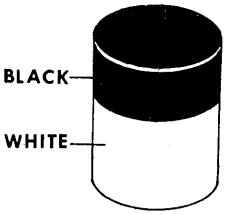
SQUARE OR RECTANGLE gives information, names, distances permitted, activities.

Place names, distances, arrows indicating directions, availability of gas, groceries, marine repairs, etc.



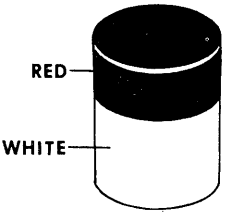
CIRCLE Marks CONTROLLED AREA "as indicated."

Suggested wording for controlled or prohibited boating activity includes 5 MPH, NO FISHING, NO SKI, NO SWIM, NO SCUBA, etc.



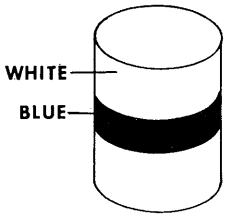
BLACK-TOPPED WHITE BUOY, indicates boat should pass to north or east (cardinal system).

For use in instances where there is no well-defined channel. If buoy is reflectorized or lighted, the color white is prescribed. Light shall be flashing.



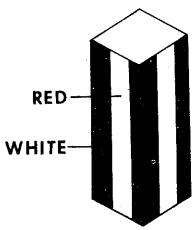
RED-TOPPED WHITE BUOY, indicates boat should pass to south or west (cardinal system).

For use in instances where there is no well-defined channel. If buoy is reflectorized or lighted, white is prescribed. Light shall be flashing.



ANCHOR BUOY.

Prescribed buoy for permanent placing in any waters for use in anchoring or mooring watercraft.



RED-STRIPED WHITE BUOY, indicates boat should not pass between buoy and nearest shore (cardinal system).

For use where obstruction is of such a nature that boats should go outside, that is, away from the shore around the end of a reef. White stripes are to be twice the width of the red stripes.

will benefit the victim and be safe for you.

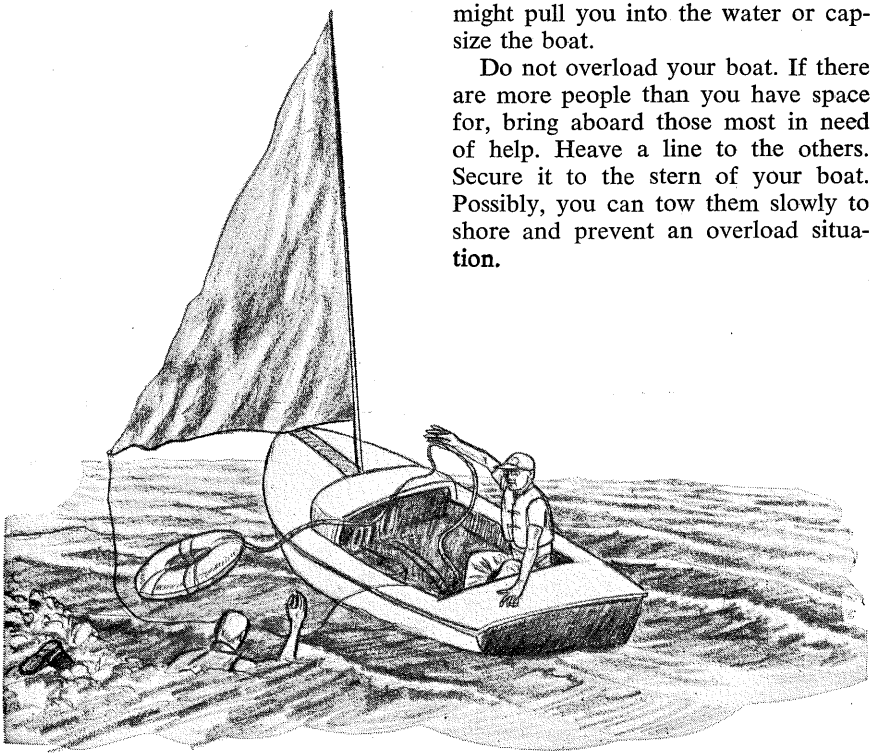
Enroute to the accident, ready all available life saving devices. Approach the accident scene with caution. Watch carefully for victims in the water and size up the situation. Throw life saving devices to anyone who seems to be in serious trouble, then aid others. If you do not have enough life saving devices on board, some of the items mentioned previously may be used. Anything that will float might save a life.

Talk to the people in the water, they can usually tell you who should be rescued first.

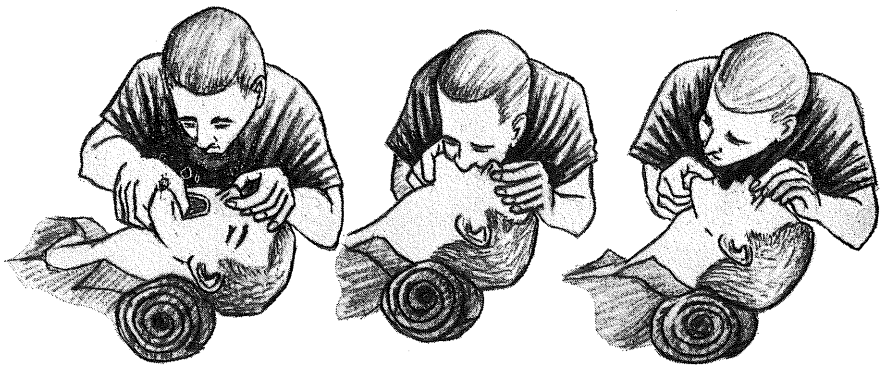
If your boat is of adequate size and you can safely bring passengers aboard, it is generally safest to bring them over the bow or the stern. If you decide to bring someone over the side, be sure to provide the proper counter balance.

If you reach out to help someone aboard, remember that a victim in the water, needing to be rescued, may be on the verge of panic. Do not put yourself in a position where the victim might pull you into the water or capsize the boat.

Do not overload your boat. If there are more people than you have space for, bring aboard those most in need of help. Heave a line to the others. Secure it to the stern of your boat. Possibly, you can tow them slowly to shore and prevent an overload situation.



Give Immediate Help To Man Overboard.



First Aid

Artificial respiration is a first aid skill that should be mastered by all boaters. *MOUTH TO MOUTH RESUSCITATION* is very effective if it can be applied within two minutes. Your chances are poor if you wait ten minutes. Don't waste time moving the victim to shore or going for help. Start breathing for the victim as soon as possible. Follow these steps:

1. *Place victim on back.*
2. *Clear the mouth of foreign matter or any obstruction.*
3. *Tilt the head back so the chin is pointed upward opening the air passage. (Sometimes it is necessary to insert your thumb in the victim's mouth and move his jaw forward, thus clearing the tongue from the back of the throat.)*
4. *Pinch nostrils to prevent leakage of air.*
5. *Place your mouth over the mouth of the victim and blow.*
6. *The first blowing effort should determine whether or not obstruction exists.*
7. *Listen for the return rush of air that indicates air exchange.*
8. *If you are not getting air exchange, recheck the head and jaw position and clear the victim's mouth.*
9. *You should be able to see the victim's chest rise.*
10. *Normal rate: 12 per minute for adults, 20 shallow breaths per minute for children.*

Other First Aid Information . . .

BURNS — 1st Degree, skin is red; 2nd Degree, skin is blistered; 3rd Degree, skin is charred; Treatment — immerse the burned skin in comfortably cold fresh water immediately (under 70°). Add ice to keep the water cold. Burned areas that cannot be immersed may be treated by applying cold packs. Continue treatment until pain subsides. Avoid ointments, greases, baking soda, etc. Treat for shock if necessary.

SHOCK — The symptoms are pale and clammy skin, sweat around lips and forehead, droopy eyelids, pulse may be fast and weak, victim may be unconscious or the eyes may be dull with enlarged pupils. Treatment — keep victim lying down; warm but not hot; if conscious, give a mild stimulant; rub limbs toward heart.

BROKEN BONES — The symptoms are pain, swelling, tenderness, deformity or break in skin with bone protruding. Treatment — keep injured part quiet to prevent further damage and to lessen pain. Stop the bleeding, treat for shock.

IF a person in the water is suspected of having a broken back or neck, *DO NOT REMOVE HIM FROM THE WATER!*

GET COMPETENT MEDICAL ATTENTION AS QUICKLY AS POSSIBLE!

Acknowledgements

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FOR ADDITIONAL INFORMATION on safe boating and state and federal regulations, contact:

Bill Severson, Outdoor Safety Specialist, Department of Conservation, Bureau of Information and Education, 350 Centennial Building, St. Paul, Minnesota 55101.

The United States Coast Guard, Boating Safety Detachment, 1304 Vermillion St., Hastings, Minnesota 55033.

The United States Coast and Geodetic Survey, Washington, D.C.

Minnesota Documents Section, 140 Centennial Building, St. Paul, Minnesota 55101.

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