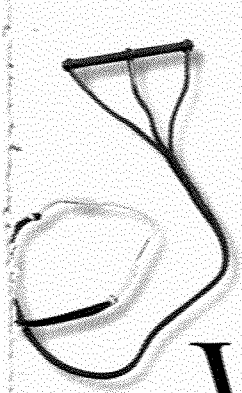
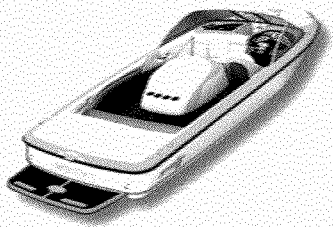
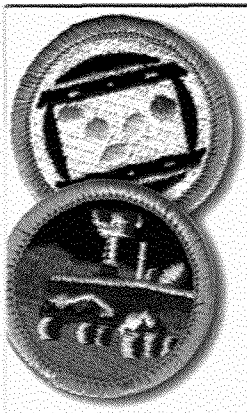
MERIT BADGE SERIES





WATER SPORTS

BOY SCOUTS OF AMERICA®

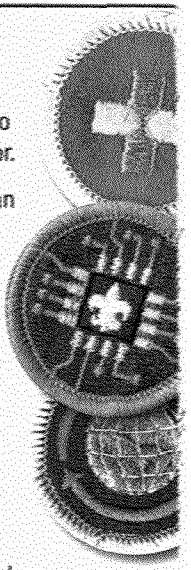


How to Use This Pamphlet

The secret to successfully earning a merit badge is for you to use both the pamphlet and the suggestions of your counselor.

Your counselor can be as important to you as a coach is to an athlete. Use all of the resources your counselor can make available to you. This may be the best chance you will have to learn about this particular subject. Make it count.

If you or your counselor feels that any information in this pamphlet is incorrect, please let us know. Please state your source of information.



Merit badge pamphlets are reprinted annually and requirements updated regularly. Your suggestions for improvement are welcome.

Who Pays for This Pamphlet?

This merit badge pamphlet is one in a series of more than 100 covering all kinds of hobby and career subjects. It is made available for you to buy as a service of the national and local councils, Boy Scouts of America. The costs of the development, writing, and editing of the merit badge pamphlets are paid for by the Boy Scouts of America in order to bring you the best book at a reasonable price.

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If you prefer, you may send your comments to merit.badge@Scouting.org.

BOY SCOUTS OF AMERICA
MERIT BADGE SERIES

WATER SPORTS

"Enhancing our youths' competitive edge through merit badges"

BOY SCOUTS OF AMERICA®

Note to the Counselor

Merit badge counselors are responsible for following the requirements, procedures, and techniques presented in this pamphlet and for ensuring that each Scout earning the merit badge is able to demonstrate knowledge and skills at a level consistent with the requirements. In addition, it is the merit badge counselor's responsibility to ensure that all applicable BSA safety policies, including Safe Swim Defense and all the points of Safety Afloat, are followed during training, practice, and review.

Like many other outdoor activities, water sports have risks. Those risks can be minimized by following the Water Sports Safety Code and safety guidelines for boat drivers found in this pamphlet. To ensure the safety of all involved, the merit badge counselor must ensure:

- All participants wear a properly fitted life jacket at all times.
- The equipment is safe, functions well, fits the participants, and is being used properly.
- The skis and wakeboard are in good shape, free from sharp or protruding edges.
- There is competent and responsible instruction.
- The towboat operator is efficient and careful, driving solely for the benefit, satisfaction, and safety of the skiers.
- The boat and skier stay away from docks and other objects, and away from swimmers, boaters, and people who are fishing.
- The designated observer is responsible and conscientious.

Before setting out, the merit badge counselor should review the Safety Afloat guidelines with the participants.

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Be sure all involved are familiar with and follow these guidelines while afloat. Used together, the Water Sports Safety Code and the Safety Afloat guidelines will help ensure the safety and well-being of those Scouts under your supervision.

Counselors for the Water Sports merit badge must be registered members of the Boy Scouts of America, have current training in Safe Swim Defense and Safety Afloat, and be approved by the local council Advancement Committee. Councils with an Aquatics Committee should utilize that committee to coordinate with the Advancement Committee for approval of qualified counselors.

All counselors should have formal training in the knowledge and skills indicated by the requirements, experience in teaching such skills to youth, and experience in identifying and managing risks associated with the activities involved. For the Water Sports merit badge, appropriate credentials include current or previous certification by an organization that meets the voluntary National On-Water Standards for powerboating or the National Association of State Boating Law Administrators (NASBLA) boating education standards for powerboating. Organizations that can provide this certification include the Boat Owners Association of the United States (BoatU.S.), the National Safe Boating Council, the United States Coast Guard Auxiliary, the United States Power Squadrons, or the powerboating component of the United States Sailing Association (U.S. Sailing). The council Advancement Committee may approve counselors with similar experience and training in knowledge, skill, safety, and instruction.

Requirements

1. Do the following:
   a. Explain to your counselor the most likely hazards you may encounter while participating in water sports activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
   b. Review prevention, symptoms, and first-aid treatment for the following injuries or illnesses that could occur while participating in water sports: blisters, cold-water shock and hypothermia, dehydration, heat-related illnesses, sunburn, sprains, strains, minor cuts and bruises, spinal injury, and concussions and head trauma.
   c. Review the BSA Safety Afloat policy. Tell how it applies to water sports.
2. Do the following:
   a. Discuss with your counselor the characteristics of life jackets most appropriate for water sports, and tell why one must always be worn while waterskiing or wakeboarding. Then demonstrate how to select and fit a life jacket for water sports activities.
   b. Review and discuss the Water Sports Safety Code with your counselor. Promise that you will live up to it and follow it in all water work for this merit badge. Review the safety precautions that must be used by the boat operator in pulling waterskiers and wakeboarders.
3. Before doing requirements 4 through 6, successfully complete the BSA swimmer test: Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must

be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.

4. Show the following skier signals to the safety observer in the boat: skier safe, faster, slower, turns, back to dock, cut motor, skier in water.
5. Showing reasonable control while using two skis, one ski, or a wakeboard, do EACH of the following:
   a. Show how to enter the water from a boat and make a deepwater start without help.
   b. Starting from outside the wakes, show you can cross both wakes four times and return to the center of the wake each time without falling.
   c. Show you can fall properly to avoid an obstacle. Also show that you can drop handle and coast to a stop without losing your balance.
6. While on shore, show that you know how to properly adjust the bindings of your ski(s) or wakeboard to fit yourself. Then, in deep water, show you can adjust bindings to fit. Recover and put on your ski(s) or wakeboard that has come off during a fall.

Contents

Introduction

Water sports are a fun and exhilarating way to enjoy being outdoors while developing strength, coordination, and fitness. By using your experience with water sports and practicing good judgment, you will develop skills that will serve you well for a lifetime and have extreme fun while you do.

A Brief History of Water Sports

Water sports have come a long way since 1922, when Ralph Samuelson made the first attempts to glide across water using wooden slats from a barrel. It was an ingenious effort, but the slats worked poorly. Samuelson tried using snow skis next, but the results were still disappointing. Finally he decided to create the skis himself, shaping wooden boards and attaching them to his feet with leather straps.

This method was much more successful, and interest in Samuelson's invention caught on quickly. Exhibitions of the new sport were soon being held in both the United States and Europe.

The first official waterskiing organization—then called the American Water Ski Association—was founded in 1939.

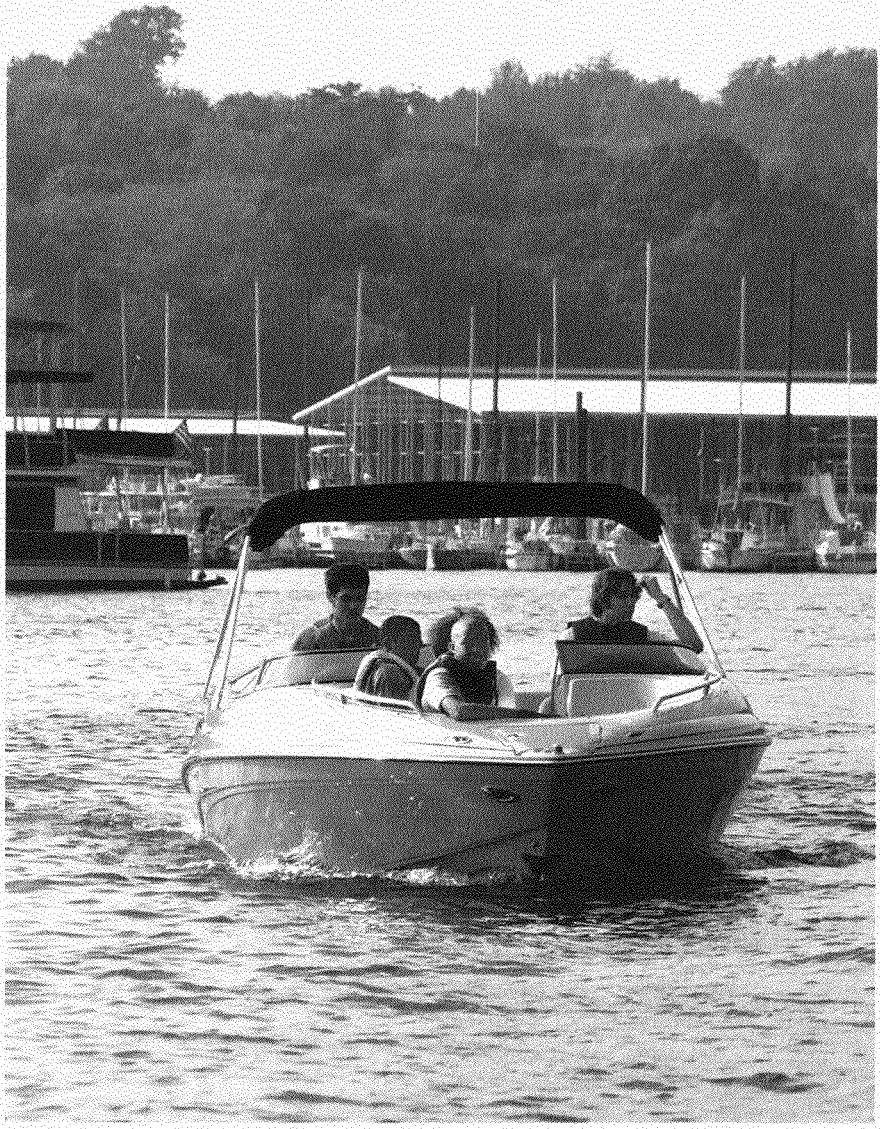
Wakeboarding—which has been described as snowboarding on water—is a much more recent development in water sports. The first wakeboard designs were created in 1985 by two surfers, Jimmy Redmon of Texas and Tony Finn of California. These wakeboarding innovators fashioned small surfboards that could be towed behind a boat. They called this invention a "skurfboard."

But their designs had one drawback: Like surfboards, skurfboards were buoyant, and many waterskiing tricks depend on being able to make a deepwater start. Only the strongest and most experienced skiers were able to accomplish a deepwater start.

Modern wakeboards are designed for neutral buoyancy—they will stay in position when held under water, making deepwater starts easier.

Herb O'Brien resolved that problem in 1990. This wakeboarding visionary created a neutral-buoyancy board. Shortly afterward, Jimmy Redmon added a further refinement by designing a twin-tipped version. This twin-tipped model, by now called a "wakeboard," has since become the standard for the sport.

Wakeboarding guru Jimmy Redmon founded the sport's first official organization, the World Wakeboard Association, in 1989.



Safety and First Aid

Following the guidelines in this chapter will help you enjoy the thrill of water sports while staying safe and accident-free.

The BSA Swimmer Test

The BSA swimmer test evaluates the skills needed for the minimum level of swimming ability required for safe deep-water swimming, a safety factor necessary for waterskiing and wakeboarding.

Taking the Test

Jump feetfirst into water over your head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl. Then swim 25 yards using an easy resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating. This qualification test should be renewed annually.

Entry

First, the swimmer must be able to make an abrupt entry into deep water and begin swimming without any aids. Walking in from shallow water, easing in from the edge or down a ladder, pushing off from the side or bottom, or gaining forward momentum by diving do not satisfy this requirement.

Distance and Stamina

After entering the water and beginning to swim, the swimmer must demonstrate an ability to cover distance by swimming 75 yards with a strong, confident stroke. The 75 yards should not be the outer limit of the swimmer's ability or stamina. Dog-paddling and strokes that are repeatedly interrupted and restarted are not sufficient, and underwater swimming is not acceptable. One stroke or a combination of strokes may be used to complete the 75 yards. Any strong overarm stroke (including the back crawl) is acceptable.

Resting

The swimmer must be able to do a restful, free-breathing backstroke that can be used to help avoid exhaustion while in the water. After completing the distance requirement, the swimmer must show, for 25 yards, that he can use the backstroke for resting. The change of stroke must be accomplished in deep water without any push-off or other assistance. Any variation of the elementary backstroke is acceptable if it is restful. An overarm back crawl may be acceptable if it clearly provides an opportunity for the swimmer to rest and regain his wind.

Sharp Turn

A sharp turn is included in the requirements to show the swimmer can reverse direction in deep water without assistance and without pushing off from the side or bottom.

Floating

The floating part of the swimmer test demonstrates the swimmer's ability to maintain himself in the water indefinitely, though he might be exhausted or otherwise unable to swim. Treading water or swimming in place will further tire the swimmer and is, therefore, unacceptable. The duration of the float test is not significant, except that it must be long enough to demonstrate that the swimmer is in fact resting and could likely continue to do so for a prolonged period. Survival floating, or drownproofing, may be sufficient if it is clearly restful, but floating face-up is preferred.

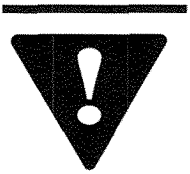
Safety Afloat

The BSA Safety Afloat guidelines were developed to promote boating and boating safety and to set standards for safe activity afloat. Be sure to keep these guidelines in mind during all water sports activities.

1. Qualified Supervision

All water sports activities must be supervised by a mature and conscientious adult, age 21 or older. That person must understand and knowingly accept responsibility for the well-being and safety of those in his or her care. Further, that person must be experienced and qualified in the particular watercraft skills and equipment involved in the activity and be committed to compliance with the nine points of the BSA Safety Afloat guidelines. Supervision for towed activities must include both a skilled boat driver currently trained in Safety Afloat and a separate observer.

All supervisors must complete BSA Safety Afloat and Safe Swim Defense training, and at least one must be trained in CPR. It is strongly recommended that all units have at least one adult or older youth member currently trained in BSA Swimming and Water Rescue to assist in the planning and conducting of all water sports activities.



The complete text of Safety Afloat can be found in the BSA publication *Guide to Safe Scouting,* or online at www.scouting.org/health-and-safety/aquatics.

2. Personal Health Review

A complete health history is required of all participants as evidence of fitness for water sports activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. It is particularly important that the supervisors know about each participant's medical conditions such as diabetes, severe allergies, epilepsy, asthma, or heart conditions so that they can take the necessary precautions to make water sports activities safe. In the event of any significant health condition, the adult leader should require that the participant be checked by a doctor.

3. Swimming Ability

All waterskiers and wakeboarders must have passed the BSA swimmer test. Anyone not classified as a swimmer may ride as a passenger in the boat when the operator is a skilled adult.

4. Life Jackets

Properly fitted U.S. Coast Guard–approved life jackets must be worn by all persons engaged in boating activity. Type III life jackets are recommended for general recreational use. All participants in towed activity afloat (waterskiing, wakeboarding, kneeboarding, tubing, etc.) must wear a life jacket marked for waterskiing.

5. Buddy System

All participants in water sports activities must use the buddy system. Every individual must have a buddy, and every craft should have a buddy boat when on the water.

6. Skill Proficiency

All participants in a water sports activity must be trained and experienced in watercraft handling skills, safety, and emergency procedures. Anyone operating a powerboat must be able to meet requirements for the Motorboating merit badge or equivalent.

7. Planning

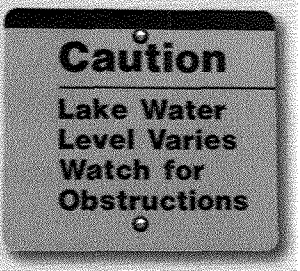
Float Plan. A summary of the water sports activity should be recorded in a float plan that documents exactly where the unit will put in and pull out, and what course will be followed. Review the plan beforehand with others who have made the trip recently. Be sure to use accurate and current maps of the waterways to be traveled, and estimate travel time generously to allow for unexpected weather conditions and to avoid traveling under time pressure.

Notification. Provide the float plan to parents of the participants and to a member of the unit committee. Appropriate authorities such as the Coast Guard, state police, or park personnel also should be notified of the activity. Check in with all those who should be notified when you return.

Local Rules. All water sports activities must comply with state and local laws and regulations. Get written permission to use or cross private property.

Rules and Regulations

Everyone involved in the activity—the boat driver, safety observer, and water sports buddies—needs to be familiar with rules for safety on the water, including state laws and regulations governing boating and water sports. Each of the 50 states has its own rules, which can be obtained online (with your parent's permission), or through a licensing center, a marine dealer, or the appropriate government office.



Weather. Be familiar with the seasonal weather pattern for the area. Check the weather forecast just before setting out, and keep an alert eye on the weather. Bring all craft ashore if rough weather appears to be developing. Wait at least 30 minutes before resuming activities after the last incidence of thunder or lightning.

Contingencies. When planning water sports activities, anticipate possible emergencies and identify any other circumstances that could force a change in plans. Be prepared with an emergency plan before you set out.

8. Equipment

All equipment, including boats, rescue equipment, and skis or wakeboards, must be in good repair and must satisfy all state and Coast Guard requirements. Carry spare equipment and appropriate repair materials, and be sure that rescue equipment is available for immediate use.

Carry a Coast Guard–approved fire extinguisher when required, and know how to use and maintain it. See the *Fire Safety* merit badge pamphlet for more information.

9. Discipline

All participants should know, understand, and respect the rules and procedures for safe activity afloat. The rules should be learned before beginning any water sport activity and reviewed just before setting off. Safety rules, plus common sense and good judgment, keep the fun from being spoiled by accidents or injury.

A life jacket is as much a part of your equipment as the boat and the skis or board. Always make sure your life jacket is in good condition. Before entering the water, adjust your life jacket correctly for safety, comfort, and freedom of movement.

Water Sports Safety Code

Make sure that your water sports activities stay fun by understanding and living up to the Water Sports Safety Code.

Always:

- Learn to water-ski or wakeboard by taking instructions from a good instructor or a person with advanced ability in the sport.
- Wear a life jacket when taking part in water sports.
- Look ahead and know where you are going at all times.
- Stay away from solid objects such as docks, boats, and stumps.
- Be courteous and stay a reasonable distance from other skiers, boats, and swimmers.
- Run parallel to shore and come in slowly when landing.
- Learn new maneuvers in a step-by-step progression.
- Have an extra person in the boat to watch the skier.
- Signal that you are all right after a fall by clasping your hands over your head or waving to notify the driver and observer.
- Hold up a ski while waiting in the water in a well-traveled boating area.
- Check your equipment for dangerous, sharp, or protruding objects (including wing nuts, loose runners, and slivers).
- Always use a stern platform or ladder when climbing into the boat.

But:

- Never ski or wakeboard in shallow water or in an area where you do not know the depth. Minimum safe depth is 5 feet or your height, whichever is greater.
- Never put any part of your body through the towrope handle or wrap the rope around any part of your body.
- Never yell "Hit it!" until the rope is tight and your board or skis are in proper starting position.
- Never water-ski or wakeboard to the point of exhaustion.
- Never water-ski or wakeboard at night.
- Never water-ski or wakeboard directly ahead of another boat.
- Never water-ski double with different lengths of rope.
- Never attempt fast landing directly toward the shore.
- Never jump from the boat while it is moving.
- Never climb into the boat or approach the stern of the boat while the motor is running.

Before taking part in any water sports, be sure that both you and the boat driver have become familiar with the water where you plan to ski or wakeboard.

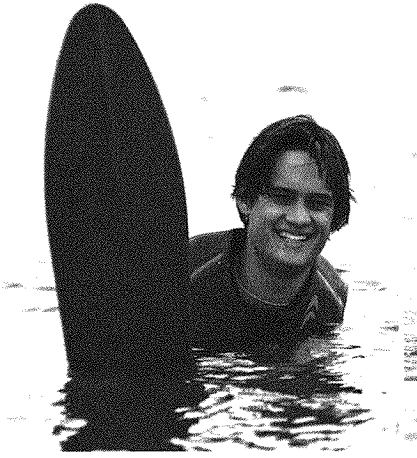
Be particularly wary of shallow water. The water may look deep enough, but if your skis or board hit bottom, your feet will stop suddenly and the rest of you will continue forward at high speed. These severe forward falls can cause injuries ranging from painful sand burns to seriously broken bones.

Prevention goes hand in hand with mitigation, which means "to lessen in force or intensity" and "to make less severe." By taking precautions to manage risk and the possibility of injury, you can be prepared to anticipate, help prevent, mitigate, and respond to just about any incident that might happen while waterskiing or wakeboarding.

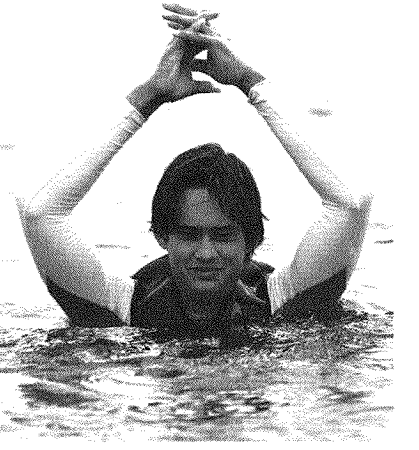
Skier Signals

Every ski boat should include a designated observer who communicates the skier's signals to the boat driver.

The use of standard waterskiing signals has made a great contribution to the safety of water sports. These signals, originally developed by the American Water Ski Association, have been written into law in many states.



For the "skier in the water" signal, hold one ski upright above your head.

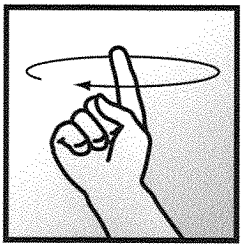


To make the "skier safe" signal, clasp your hands high over your head so that the observer can see you.

Skier in the Water. This signal makes the skier more visible to nearby boats while waiting to be picked up.

Skier Safe. Skiers use this signal after a fall to indicate to the boat that they are all right. If the skier does not make this signal after a fall, the boat driver and the observer can assume that emergency or rescue procedures are necessary.

Other Signals. At the start of a ride, instructions to the boat can be given verbally. With the skier in starting position, the observer tells the driver to idle the boat forward slowly. When the line becomes taut and the skier is moving slowly forward in a takeoff position, the skier lets the boat driver know to accelerate by yelling "Hit it!" The driver then steadily increases the boat speed until the skier is up.



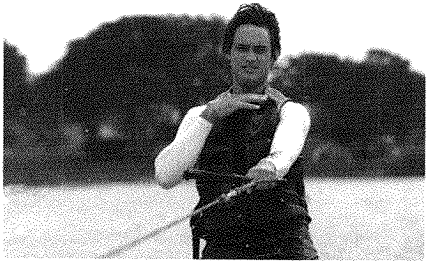
The driver may use this signal to alert the skier that the boat is about to turn. If the skier wants the driver to turn, the skier uses the same signal followed by pointing in the direction he wants the driver to go.

TURN RIGHT

TURN LEFT

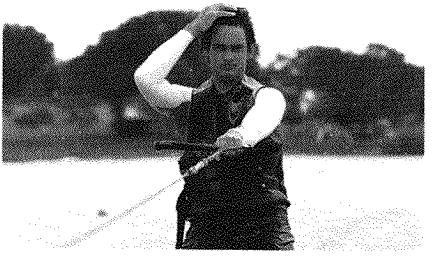
FASTER

CUT MOTOR OR STOP

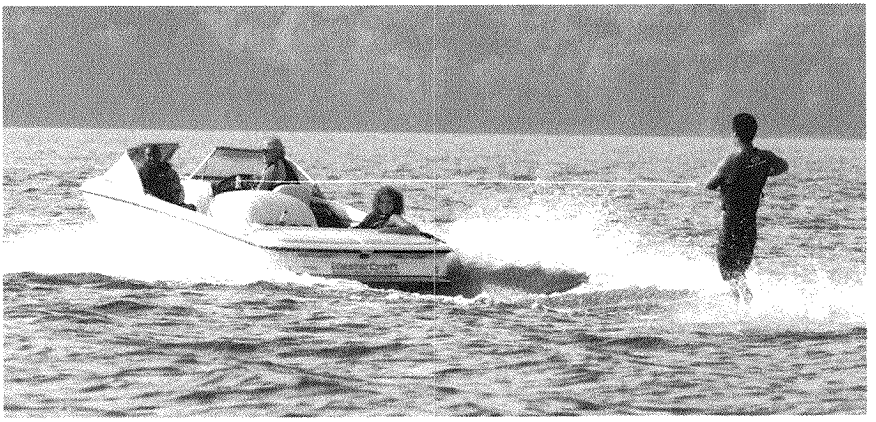


SLOWER

BACK TO DOCK



Once a skier is underway, the noise from the boat makes hearing instructions difficult. The skier must learn to give directions by using the hand signals shown here.



The observer serves as the eyes and the ears for the driver and skier. Note that "skier" refers to both water-skiers and wakeboarders.

The Observer

The observer must communicate the skier's signals to the boat driver quickly and accurately. To do this, the observer must watch the skier closely, tell the boat driver if the skier falls, and keep the driver alert to other boat traffic and potential hazards.

The observer and skier should review signals before the skier enters the water. Although signals are fairly standard, they vary slightly in some regions. For example, some people indicate turns by using the straight and bent-arm signals used in bicycling. Agree on signals for skier in water, OK, stop, faster, slower, right turn, left turn, cut motor, and back to dock, and make sure the skier knows to quickly use the skier safe signal after a fall.

The observer also is in charge of the towrope. The observer coils the rope into the boat when the skier is ready to board the boat and plays it out when necessary for deepwater starts. The observer should be ready and able to enter the water quickly to aid the skier when needed.

A designated observer must always be on the boat. However, the number of additional passengers should be kept to a minimum because they can be distracting to the driver. The extra weight can also lessen the boat's power and affect the skier's ride.

Safe Boat Operation

Driving a skiboat is fun, but it also demands a lot of responsibility. In water sports, the boat driver must remember that the safety of the water-skier or wakeboarder is always the top priority.

Boat Driver's Safety Guidelines

Here are some guidelines to help drivers maintain a safe and enjoyable outing.

Always:

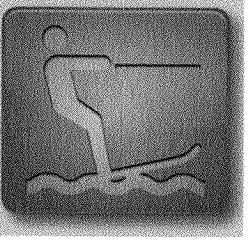
- Have an observer onboard to watch the water-skier while you watch forward.
- Return quickly to protect a fallen skier, who is helpless in the water against oncoming boat traffic. The skier is your primary responsibility.
- Drive according to the skier's ability, and avoid sharp turns.
- Put the motor in neutral when passing a fallen skier.
- Turn off the motor when picking up a skier.
- Use common sense and courtesy when driving for a skier.
- Take a skier into the boat using a ladder or lower rear deck, helping the skier to avoid any contact with the motor or rudder.

But:

- Never ride the gunwale or the back of the seat while driving for skiing, and do not allow passengers to ride this way.
- Never increase speed when bringing in a skier.
- Never tow skiers in congested areas, particularly swimming areas.

The Basics of Safe Boat Driving

- Keep the boat speed even.
- Take off smoothly.
- Steer a straight course.
- Round curves to make the skiing easier.



A driver should never start the boat's motor when anyone is in the water near the boat's stern. The motor's propellers can cut a person even when in neutral or at idling speeds.

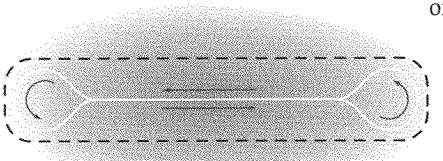
In addition to providing a safe ride, the boat driver should also try to find the best possible water conditions. When working with beginners, knowing how to find and maintain good water conditions can be critical to the success of your skiers and wakeboarders.

For more information on safely operating a ski boat, see the *Motorboating* merit badge pamphlet.

Finding the Best Water Conditions

Smooth water is usually found relatively close to shore. Rough water caused by wind can be avoided by seeking the shore protected from wind. To find that shore, you can drive into the wind until you reach it. Remember to stay a safe distance from the shoreline and to pull skiers only in water of sufficient depth. Also be courteous to fishermen and campers, and stay well clear of swimming areas, docks, and other boaters. In most states, you are required to stay 150 feet away from shore, docks, other boats, and all objects or people in the water unless moving at a wakeless speed. The distance of 150 feet is equal to the length of two standard ski ropes.

Inexperienced boat operators often find themselves pulling their skiers through their own boat wakes. Unnecessary boat wakes can be minimized by noticing where your wakes, and those of other boaters, are going. When you follow a path relatively close to shore, one wake travels out toward the middle of the lake while the other wake travels toward the shoreline to die out. When you are ready to make a turn, you can avoid excess wakes by reversing course and retracing the path you just followed. By making a steady turn in a "dog bone" pattern, the wake on the inside of the turn cancels itself out. Retracing your path keeps you and your skier out of your own boat wakes.



Using a "dog bone" turn when reversing direction helps reduce the effect of the boat wake on the skier.

Be aware that on some crowded lakes, the path you follow may be regulated. You may be required to drive one direction, in an oval or circular pattern, around the lake. In this situation, on a round

lake, wakes will be nearly impossible to avoid. Long, narrow lakes usually afford the best conditions for skiing and wakeboarding, even when somewhat crowded.

If your skier has fallen and given you the "skier OK" signal, you can minimize wakes by slowing to a wakeless speed before turning. When you make a fast, wide turn back to your skier, you send a large wake off into the lake, and you'll likely drag your skier over it before long.

Pulling Up a Skier

While taking slack out of the line, make certain that the steering and the boat are aligned with the towrope so that the skier or boarder is pulled up in a straight path. When a skier or boarder requests to be pulled up, the boat driver should respond only when there is clear water ahead for a considerable distance.

Take a close look at the starting position of the skier or boarder before hitting the throttle. (See the sections on proper starting positions later in this pamphlet.) If the skier shouts "Hit it!" but the rope is not tight or the skier has his or her arms pulled in, straightened legs, or the skis or wakeboard in bad position, stop to do some basic coaching. Coach beginners to start with knees bent to the chest and arms out straight and around the outside of the knees. Often the skis or wakeboard will move into the correct starting position once the skier or boarder bends his or her knees fully. Remind the participant to stand up slowly and smoothly as the boat pulls him or her up.

A slow start gives the skier or boarder time to react and adjust to the movement of the water. Keep the boat speed slow until the skier or boarder starts to look stable and comfortable. Then ease the throttle forward to gradually reach a better speed for steering and controlling the skis or wakeboard.

Troubleshooting Falls

If the skier or boarder falls forward when trying to get up, he or she might have started with the knees not sufficiently bent or tried to stand up too quickly, sinking the tips of the skis or the leading edge of the wakeboard. Coach the beginner to start in the correct position and stand up more slowly. Standing up late is not a problem; standing up before there is enough speed for the water to support a skier's or boarder's weight will result in a fall.

If the skier or boarder falls backward when trying to get up, he or she might have pulled in on the rope. For some beginners, pulling in with the arms is an almost uncontrollable reflex. Pulling in on the rope causes the tow line to go slack and the skis or wakeboard to slide out from under the skier or boarder. Coach the beginner to keep arms out straight and stand up slowly and smoothly, about two-thirds of the way, keeping the knees bent and flexible once up.

To help a beginner learn to not pull in on the rope, pull him or her up as slowly as possible and maintain a very slow speed. Once the skier or boarder is up, slowly increase the speed as the beginner shows more stability.

When the skier or boarder has managed to get up several times and clearly has the feel of the process, you can begin to make faster starts.

The exception to the rule of starting slowly is when the skier or boarder is large or heavy, and the skis or wakeboard are not large enough to match his or her weight. In this case, a hard pull might be the only path to success. If the boat lacks power, you might need to drop off passengers and carry only the observer.

Crossing the Wake

When beginners are ready to try crossing wakes, adjust the boat speed accordingly. At slow speeds, the boat wakes will be larger and more challenging. As boat speed increases, wakes will begin to shrink and be easier to cross.

Although wakes get smaller as boat speed increases, always wait before speeding up until the skier or boarder is comfortable with increasing the speed. Never pull skiers or boarders faster than their comfort level (or good judgment) allows.

Making a gradual turn toward the wake also will reduce wake size. The wake on the inside of a turn will be smaller and smoother. Beginners might benefit by making their first attempt at wake crossings on an inside wake during a slow turn.

Experienced skiers and wakeboarders will appreciate drivers who can hold a steady speed and follow a straight path. Even a slow, gradual turn by the boat or minor variations in speed can be serious distractions.

Picking Up a Downed Skier

When the skier falls, it is important that the driver knows quickly whether the skier is all right. The observer is responsible for keeping the driver informed.

If the skier fails to wave or give the clasped hands overhead signal, the observer must let the driver know right away. The driver must then return to the downed skier as quickly as safety permits to give any help needed.

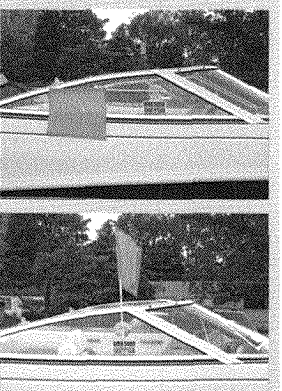
Approaching a downed skier

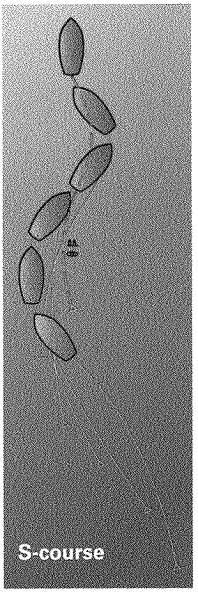
If a skier indicates he is all right, the driver should idle back to the skier, allowing time for the skier to put his skis back on. The skier should be approached with the driver's side closest to him, so that the driver has the best possible view. When maneuvering a boat near someone in the water, be aware that unlike automobiles, boats steer from the back. The back end of the boat goes directly where the drive (or rudder) is pointed. Never aim the back of the boat at your skier while in gear and under power.

As the boat approaches the skier, the observer asks if the skier wants to go again. If the answer is no, the driver kills the engine and coasts abreast of the person, staying far enough away that the boat does not glide or blow into the person. If boarding is from the stern, caution the skier to avoid sharp edges on any exposed drive mechanism. Turning an outdrive away from the boarding ladder might help. If the skier wants to continue the run, the driver pulls abreast of the skier at a safe distance of 10 to

Skier Down Flags

Some states require the towboat to display a 12-by-12-inch orange flag whenever a skier or wakeboarder falls, or is down in the water, to alert other boats to be aware that someone is in the water. Because regulations differ from state to state, each leader supervising a towing activity must check and comply with local requirements. The website of the National Association of State Boating Law Administrators, www.nasbla.org, contains links to the appropriate regulatory agency in each state.



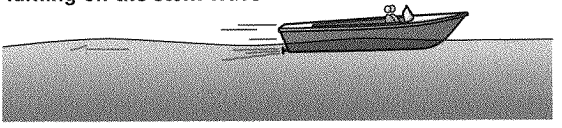


12 feet. Then the driver turns sharply at idle speed to the side the skier is on, putting the motor in neutral when passing the skier. If the driver wants to pull the skier in the direction the boat was going when the skier fell, the driver comes around in a half circle.

In many cases, an experienced driver will pick up a skier by turning sharply to the side the skier is on (once safely abreast of and past the skier) and then turning sharply in the opposite direction so that the boat is nearly on the same course as when it came up on the skier. This S-course causes the stern of the boat to swing in a broad arc, bringing the trailing line close to the skier.

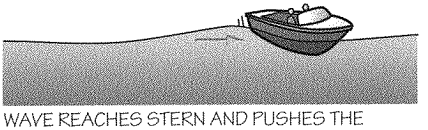
On small or congested lakes, a driver can reduce the boat turning area when retrieving a fallen skier by cutting the throttle and turning the wheel just as the following wake hits the stern. This stern wave pushes the boat around in a tight, space-saving turn.

Turning on the stern wave



AT SKIING SPEED, WAKE IS CREATED.

CUT THROTTLE, TURN WHEEL. WAKE BECOMES A WAVE.



WAVE REACHES STERN AND PUSHES THE BOAT AROUND.

First Aid

Following the nine points of Safety Afloat will help prevent many incidents in your water sports activities, but some minor injuries could still occur. Take appropriate precautions and become familiar with the steps to follow if health concerns arise while you are out on the water.

Cardiopulmonary resuscitation (CPR) is the important first response in the event of a cardiac emergency. Such emergencies can result from strenuous activity or drowning accidents where submersion has caused respiratory and cardiac arrest. Persons trained in CPR should be included in every water sports outing. The *Boy Scout Handbook* and the *First Aid* merit badge pamphlet explain these skills and when they should be used.

Hyperventilation is the result of overbreathing—either deliberately or because of panic. The likely result is dizziness and fainting. Such a condition is unlikely in water sports if the participants are properly prepared for each new skill level. If a skier shows signs of panic at any time, calmly bring that person back into the boat or onto shore. Before resuming any activity, determine and resolve the cause of the panic.

Cold-Water–Related Illnesses

There are two primary dangers from falling or jumping into cold water. As quickly as the first minute, a person can experience *cold-water shock*. This can happen in water as warm as 69 to 77 degrees Fahrenheit. The second danger is *hypothermia*, a gradual lowering of the body's core temperature over minutes to hours in water colder than 80 degrees. Wearing a properly fitted wetsuit or dry suit can reduce, but not eliminate, the risk of these hazards.

Cold-water shock occurs when a person falls or jumps into very cold water, especially less than 60 degrees. The effects of cold-water shock can lead to death in just a few minutes. The colder the water, the more severe and the more rapid the effects will be. The body's response to cold water will be completely out of the victim's control.

The first response will be the reflex to take a deep, gasping breath. Wearing a life jacket could save the victim's life by keeping the head above water when he or she instinctively tries to inhale. Next, the victim will start taking many quick, short breaths as if panting for air. This can make the victim lightheaded and dizzy, unable to hold his or her breath. The victim likely will lose any sense of up and down.

During this time, the victim should concentrate on controlling breathing and avoiding panic. The victim's heart rate and blood pressure will rise quickly. If the blood gets cold enough, the heart could stop. All of these effects can occur in about 60 seconds.

The only treatment for cold-water shock is to get the victim out of the water as soon as possible. He or she will likely need to be treated for hypothermia. Take care when engaging in activities in cold waters. The best prevention for cold-water shock and related injuries is to plan appropriately for the weather and water temperature. Stay out of the water if the risks seem significant. Keep a blanket, towels, and warm, dry clothing in the boat when possible.

As wakeboarders or waterskiers enter the water, it is essential to watch for symptoms of cold-water shock and respond immediately by removing the victim from the water if these symptoms occur.

For all activity afloat on cold water or in cold weather, appropriate clothing should be worn for warmth, with the life jacket worn at all times. A dry change of clothes should be available in case of a spill. Activity afloat should include procedures and equipment for warming anyone showing symptoms of chill.

If alone in cold water and more than a short distance from safety, you can reduce heat loss by avoiding movement, using clothing and the life jacket for insulation, keeping your head above water, and maintaining a tuck position. This is called the heat escape lessening posture (HELP).

During cold-water immersion, it is important to concentrate on self-rescue initially. If that isn't possible, minimize your exposure to the water by using the HELP position and waiting for help.

Hypothermia occurs when the body's core temperature falls below the normal range. Exposure to cold, or even cool, water can lower your core temperature dangerously, especially when combined with wind, exhaustion, or hunger. Early signals of heat loss include shivering and bluish lips. Further cooling may result in loss of muscle strength and coordination, and may upset the ability to think clearly or do simple tasks. In severe stages, shivering will stop and unconsciousness will follow. At this stage, death is possible unless treatment is received.

Treatment for hypothermia involves carefully removing the person from the water, removing wet clothing, and drying off. Warm the person by wrapping him or her in blankets and changing into dry clothing. Pay special attention to covering the head, as most heat loss occurs from the head. Warm the person's trunk first, not the hands and feet. Warming arms and legs first can cause shock. If using hot-water bottles or chemical hot packs, wrap them in cloth; don't apply them directly to the skin. Place the heating sources on the chest, neck, and groin.

Avoid rough handling or jerking of the person, especially if he or she is lethargic or unconscious. This may cause the heart to develop life-threatening irregular rhythms. If the person is conscious, give him or her a warm drink to sip. Avoid caffeine and alcohol. Once the body temperature begins to rise, keep the person dry and wrapped in a warm blanket. Cover the person's head and neck as well. Avoid rapid rewarming as it, too, can induce fatal heart rhythms.

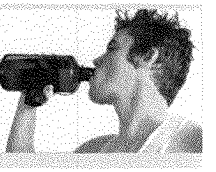
Heat-Related Illnesses

The human body is 70 percent water, which is essential to maintain our body temperature. Vital organs like the brain and the kidneys will not function well without enough water. We lose water mostly through breathing, sweating, digestion, and urination. When we lose more water than we take in, we become dehydrated. Signals of mild **dehydration** include fatigue, increased thirst, dry lips, and dark yellow urine. Signals of moderate to severe dehydration include severe thirst, dry mouth with little saliva, dry skin, weakness, dizziness, confusion, nausea, fainting, muscle cramps, loss of appetite, decreased sweating (even with exertion), decreased urine production, and less frequent and dark brown urine.

To treat mild dehydration, drink plenty of water to replace fluids and minerals. Drink one to two quarts (or liters) of liquids over two to four hours. See a physician for moderate or severe dehydration. Severe dehydration requires emergency care; the victim will need intravenous fluids. Rest for 24 hours and continue drinking fluids. Avoid tiring physical activity. Although most people begin to feel better within a few hours, it takes about 36 hours to completely restore the fluids lost in dehydration.

The importance of drinking plenty of fluids cannot be overemphasized. Do not wait until you feel thirsty—thirst is an indication you are already becoming dehydrated.

Avoid dehydration by drinking plenty of fluids and eating enough throughout the day to keep your body well-balanced. If you become weary or develop a headache or body aches, or if you become confused, rest in the shade and sip water until the symptoms subside.



Heat exhaustion can be brought on by a combination of dehydration and a warm environment. Heat exhaustion is not uncommon during outdoor activities conducted in hot weather, especially if participants are not fully acclimated to the conditions. Signals of heat exhaustion include severe lack of energy, general weakness, headache, nausea, faintness, and sweating; cool, pale, moist skin; and a rapid pulse.

Get the person in the shade (or an air-conditioned vehicle or building). Encourage him or her to drink fluids, such as cool water or a sports drink. Apply cool, wet towels or cloths to the skin, wet the person's clothing with cool water, and fan the person to help the cooling process. Raising the legs might help prevent a feeling of faintness when the person stands. Usually after two or three hours of rest and fluids, the victim will feel better but should rest for the remainder of the day and be extra careful about staying hydrated.

Heatstroke is an extreme stage of heat exhaustion, caused by overheating, dehydration, overexercising, or a combination of any of these.

Because heat index values are calculated for shady conditions with a light wind, exposure to direct sunlight can increase heat index values by as much as 15 degrees. Strong winds, especially with very hot, dry air, can also be extremely hazardous

Heatstroke—much more serious than heat exhaustion—can lead to death if not treated immediately. Left untreated, heat exhaustion can develop into heatstroke. In heatstroke, the body's cooling system begins to fail and the person's core temperature rises to life-threatening levels (above 105 degrees). Heatstroke develops from dehydration and overexertion in hot weather, especially in high humidity. Signals of exercise-related heatstroke can include any signals of heat exhaustion as well as hot, sweaty, red skin; confusion or disorientation; a rapid pulse; shallow breathing; vomiting; and seizures.

First Aid for Shock

1. Eliminate the cause of shock by restoring breathing and heartbeat, controlling bleeding, relieving severe pain, and treating wounds.
2. Make sure the airway stays open for breathing.
3. Have the injured person lie down. Raise the feet 10 to 12 inches to move blood from the legs to the vital organs.
4. Keep the person warm by placing plenty of blankets under and over him.
5. Call or send someone for emergency medical care.

A body temperature of 105 degrees or greater is a life-threatening medical condition and requires immediate medical treatment by health-care professionals. Heatstroke is a life-threatening condition; call for medical assistance immediately. While waiting for medical personnel to arrive, work to lower the victim's temperature. Move the person to an air-conditioned or shady area. Loosen tight clothing and further cool the victim by fanning and applying wet towels. If possible, immerse or spray the person with cold water. If you have ice packs, wrap them in a thin barrier (such as a thin towel) and place them under the armpits and against the neck and groin. If the person is able to drink, give small amounts of cool water.

Sunburn is a familiar condition commonly associated with water activities. Remember that sunlight reflected from the water surface can be as damaging as direct exposure. Cover up and use a waterproof sunscreen with a sun protection factor (SPF) of at least 15. Apply every two hours, and limit your exposure time. If your skin begins to redden, or if you feel discomfort, get out of the sun or cover the area with clothing that will block the sun's rays.

You can get a sunburn even on cloudy days. The best prevention for sunburn is to apply sunscreen with an SPF of at least 15, and reapply as needed.

Head, Neck, and Spinal Injuries

Head, neck, and spinal injuries can occur in both waterskiing and wakeboarding. In both activities, the most common head injuries are minor cuts that usually result from contact with a ski, wakeboard, or tow handle during a fall. Mild concussions can occur as a result of hard falls, but they are more common in wakeboarding than in waterskiing.

The best way to prevent injuries in water sports is to learn new skills and maneuvers progressively (step by step) at the lowest boat speed that can be used for the skill. Always learn from a qualified coach and experienced boat driver. In wakeboarding, concentrate on keeping your weight back, away from your direction of travel. This can usually be accomplished by leaning away from the boat, which helps you avoid catching the leading edge of the board and falling facefirst.

The backbone (spinal column) is made up of small bones called *vertebrae* that surround and protect the spinal cord. If a vertebra is broken or dislocated, the spinal cord may be injured. Fractures of the head, neck, and back are extremely dangerous, because movement might further damage the spinal cord and cause permanent paralysis or even death.

Whenever someone has fallen, been involved in an accident, or suffered a blow to the head, assume there is an injury to the head, neck, or spine. Such injuries are often not easy to detect. The victim may or may not be suffering from pain, paralysis, cuts and bruises, or swelling. He or she might have tingling or weakness in the fingers or toes. The injured area might be deformed or abnormally shaped, or there might be no symptoms at all. Someone with a head injury might be disoriented, irritable, confused, or combative—symptoms that can be present right away or might develop over time. Always proceed with great caution when you are aiding a person whom you suspect has head, neck, or back injuries.

When you suspect an injury to the head, neck, or spine, follow these steps.

Step 1—Stabilize the head and neck of the victim until it can be determined whether the spinal column has been injured. A first-aider or a bystander can hold the victim's head and neck steady. If the person is wearing a helmet, do not remove it unless it is necessary to access the person's airway.

Step 2—Provide urgent treatment if necessary.

Step 3—Do not move the person or let him or her move unless threatened by immediate danger such as fire, potential avalanche, or highway traffic.

Step 4—if the victim is having trouble breathing, gently adjust the position of the head and neck just enough to maintain an open airway. Do not put a pillow under the head.

Step 5—Treat for shock, but do not unnecessarily change the victim's position.

Whenever you suspect head, neck, or back injuries and the victim must be moved (to open the airway, for example, or to get the victim out of the path of danger), ask other Scouts or bystanders to help so that the victim's body can be turned or lifted all at once without causing any twists or turns.

Concussion

A concussion is a traumatic brain injury, usually caused by a blow to the head, that alters the way the brain functions. Proper healing requires lots of rest and time, but most people who experience concussion recover fully.

The symptoms of concussion are usually temporary but can include headache and problems with concentration, memory, judgment, and coordination. Other symptoms of the injury include amnesia about the event, dizziness, ringing in the ears, nausea, slurred speech, and fatigue. Some symptoms of concussion might be immediate or might not be noticed until hours or days after injury, including

- Problems with concentration and memory
- Irritability and other personality changes
- Sensitivity to light and noise
- Sleep disturbances
- Unusual senses of taste and smell

If you have *any* symptoms of concussion, do not continue wakeboarding, waterskiing, or any other physical activity. Research has shown that a second concussion on the same day, even if mild, can cause serious and possibly permanent damage.

Anyone who has experienced a head injury and has any symptoms mentioned above could benefit from seeing a doctor. Seek immediate emergency care for anyone who shows such symptoms as

- Repeated vomiting
- Loss of consciousness lasting longer than 30 seconds
- A headache that gets worse over time
- Changes in behavior, such as irritability
- Changes in physical coordination, such as stumbling or clumsiness
- Confusion or disorientation, such as difficulty recognizing people or places
- Slurred speech or other changes in speech

Sprains and Strains

A **sprain** usually indicates that a ligament was overstretched or possibly torn, such as when the joint is put in an unnatural position and force is suddenly applied to the joint. For waterskiers, sprains are more likely to affect the ankle, knee, and hip joints. Wakeboarders might be more likely to experience sprains of the neck, arm, and shoulder joints.

A **strain** can happen when muscles are made to work extra hard or are overused. Muscles and tendons used strenuously or repeatedly in waterskiing or wakeboarding can become strained.

Sprains and strains have three common symptoms: pain, swelling, and spasms. The pain from a joint sprain is immediate. Muscle strains might not be painful until the day after using a muscle over and over again. The muscle/tendon or ligament will then begin to swell. Once pain and swelling occur, the muscles surrounding the injured area often will begin to contract and tighten (spasm).

The treatment of sprains and strains involves rest, immobilization, cold therapy, and elevation, or RICE therapy.

R = Rest. Avoid any movements or activities that cause pain.

I = Immobilize. Stabilize the injured area in the position that it was found or that is most comfortable. If the person must be moved, a splint and/or sling might be needed.

C = Cold. Use a cold pack or crushed ice wrapped in a thin towel to reduce pain and swelling. Apply to the injured area for no more than 20 minutes to avoid ice burn or frostbite. Remove the pack for 40 to 60 minutes before repeating.

E = Elevate. If possible, hold the injured area above the level of the heart to reduce swelling.

Marine Stings and Scrapes

Wakeboarding or waterskiing in the ocean can be exhilarating but may expose you to unique hazards such as jellyfish, sea anemone larvae, or other underwater hazards like coral. Most marine stings and scrapes can be treated with common first-aid techniques. Clean the wound with fresh water, apply an antiseptic and, if there is no risk of allergy, an antibiotic, and cover with a clean bandage. If the victim experiences severe bleeding or any of the following symptoms, seek emergency medical treatment.

- Difficulty breathing
- Unconsciousness
- Chest pain
- Swelling around the sting site
- Vomiting
- Spasms
- Shock

Other Minor Injuries

Most **bruises**—also called contusions—are not serious and are easy to recognize and treat. The black-and-blue discoloration is caused by blood leaking into damaged skin tissue, usually caused by a blow from a blunt object.

Covering the site of the bruise with a cold compress or towel for 30 minutes will help reduce discoloration, pain, and swelling. The flow of blood to the damaged tissues can also be slowed by resting the injured area. Bruises to the head or abdomen coupled with sharp or persistent pain, or those that include possible bone injury, should be seen by a medical professional.

Lacerations, incisions, and abrasions—commonly called cuts and scrapes—may result from falls during water sports, or more likely when climbing in and out of the boat or loading gear on a rough dock. As in other situations, the wound should be cleaned, disinfected, and covered. The boat first-aid kit should provide supplies for minor wound treatment. For severe bleeding injuries, control bleeding with direct pressure or at pressure points until emergency medical help is available.

A **blister** is a small pocket of fluid that forms when the skin is irritated. In water sports, blisters are most likely to occur on the hands

Treating a Jellyfish Sting

The sting of a jellyfish can be painful, but immediate action can help lessen the symptoms. Follow these guidelines when someone has been stung.

- Do not rub the tentacles with your hands, a towel, sand, or clothing.
- Pour very warm water (not hot enough to burn the victim!) or salt water on the area to help remove the stinging part of the tentacle. Wearing a protective glove or using a towel to cover your hand, pick off the tentacles, being careful not to rub or press them into the skin.
- Apply an ice pack to the area to help relieve the pain.
- Clean any open sores, apply an antiseptic, and cover with a light bandage.

Clean and cover minor scrapes.

If a blister develops, try to keep from breaking it open. Treat a broken blister as you would a minor cut or abrasion. Diabetics who develop blisters should seek medical attention.

from the towrope handle, and on the feet and ankles where the ski bindings rub. Tenderness or sensitive areas called hot spots may indicate the start of a blister. Be attentive for these and try adjusting your grip on the handle, or loosening or repositioning your bindings to avoid the sensitive areas.

If these efforts don't help, be smart: Listen to your body and quit for the day. If you have no choice but to continue the activity, it might help to protect the area with gloves, socks, or booties. Moleskin generally is not effective in wet conditions.

Common Hazards in Water Sports

Safe participation in wakeboarding and waterskiing includes being aware of potential weather and water-related hazards. Always be prepared for unexpected weather and water conditions.

Storms and Lightning

Depending on the area and the time of year, storms can be predicted with some accuracy. However, storms can develop at any time and with a speed that surprises even the National Weather Service. Once you notice an approaching storm, get off the water as quickly as possible. If caught in a storm, travel as quickly as possible to shore.

If you see lightning or hear thunder, keep a low profile in the boat until you reach shore. During a thunderstorm, no place in the outdoors is safe from lightning. The vast majority of lightning injuries and deaths on boats occur on small boats such as canoes, kayaks, or motorboats with no cabin.

If possible, get off and stay off the water before the storm arrives. If caught in a sudden storm, stay away from open or exposed shorelines. On shore, the safest place is a building wired to proper electrical code. If no building is available, any fully enclosed, metal-topped vehicle such as a hard-topped car, minivan, bus, or truck can provide shelter.

In the outdoors, stay away from high ground and tall geographical features such as trees. Remove your life jacket, place it on the ground, and kneel on it. Stay away from metal fences, telephone and power lines, and towers. Stay away from isolated or tall trees; seek large groups of trees about the same height. Seek dry ditches, trenches, or the low ground. Stay out of caves.

Do not huddle as a group. Spread out so you are at least 20 feet—or even 100 feet—from the next closest person. As a last resort when there is no safe shelter and you are caught out in the open, you might be able to reduce the risk of being struck by lightning by assuming a low, crouching position with feet together, a bent-over position, kneeling or sitting cross-legged, or sitting with your arms around your legs. Put your hands over your ears to help minimize acoustic shock from thunder. These positions will help reduce the chances of being injured by lightning, but they are no substitute for getting to safer terrain or a structure if it is immediately available.

Wind and Waves

Wind and the waves it creates have the potential to give you a thrilling ride or to swamp your boat. Knowing about wind and waves and their hazards is important for your safety and can also improve your chances of finding the best water conditions available.

All float plans should include a contingency plan for thunderstorms.

Wind is created when air moves from a high-pressure area to a low-pressure area. Usually absent in the early morning, wind increases as the rising sun heats the ground and air throughout the late morning and early afternoon. Winds often reach maximum strength by midafternoon. By sundown, they usually subside to an occasional breeze.

Waves result when wind collides with the water. A keen eye will see the ripple effect on the water surface as a gentle wind moves across it. As the wind increases, so will the size of the waves until they become frothy whitecaps. Waves can become so big that they create a hazard, particularly on large lakes or the ocean, where the wind can interact with the water over long distances. On lakes, calmer water can often be found by traveling toward the upwind shoreline, especially if that shore is protected from the wind by trees, hills, or cliffs. Always anticipate wind as part of any boating activity.

Water Sports Equipment

Water sports do not require a lot of equipment, but each item is essential. At the top of the list, of course, is a life jacket. After that, you will need a motorboat, a towrope, and water skis or a wakeboard.

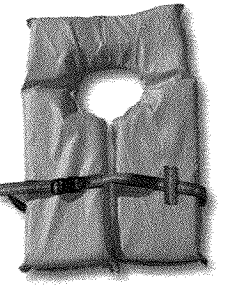
Life Jackets

A properly fitted life jacket should be worn during any activity on open water, including waterskiing and wakeboarding. Before you even fit a ski, first learn about the five types of U.S. Coast Guard–approved life jackets and how to use them properly. In general, Type III life jackets are worn for waterskiing and wakeboarding.

TYPE I

Type I: Offshore Life Jacket. Designed to turn most unconscious victims face-up in rough, open water. Type I life jackets have a lot of flotation in the chest, shoulders, and upper back areas. They are not designed for recreational boating but for passengers on cruising vessels, such as ferries on large bodies of water.

TYPE II



Type II: Near-Shore Buoyant Vest. Designed to turn an unconscious victim face-up in calmer, inland waters. Type II life jackets are shaped like a horse collar and are not as bulky as Type I life jackets. They come in four sizes ranging from infant to adult and are generally inexpensive. Most of the flotation is placed in the front and around the neck, making them uncomfortable for water sports but useful for most types of recreational boating and instruction.

TYPE III

Type III: Flotation Aid. Designed to keep a conscious person floating in a vertical position, but may not prevent an unconscious person from floating face-down. Type III life jackets are most often used for water sports such as waterskiing and wakeboarding. They come in many styles, are comfortable to wear, and have the same buoyancy as Type II life jackets. Most have a zipper or buckle closure and adjustable side straps.

TYPE IV

Type IV: Throwable Device. Designed to be tossed to a person nearby in the water. Type IV throwables include ring buoys and seat cushions with straps. They should never be used in place of a life jacket.

Type V: Special Use. Designed to have internal buoyancy and to inflate for additional flotation. These flotation aids have special characteristics and limitations, and should not be used without specific training.

Using a Life Jacket Properly

Most Type III ski vests are well-suited for water sports because they are comfortable and do not restrict movement. All of the water sports techniques discussed in this pamphlet must be done while wearing a life jacket. Life belts or ski belts are not acceptable.

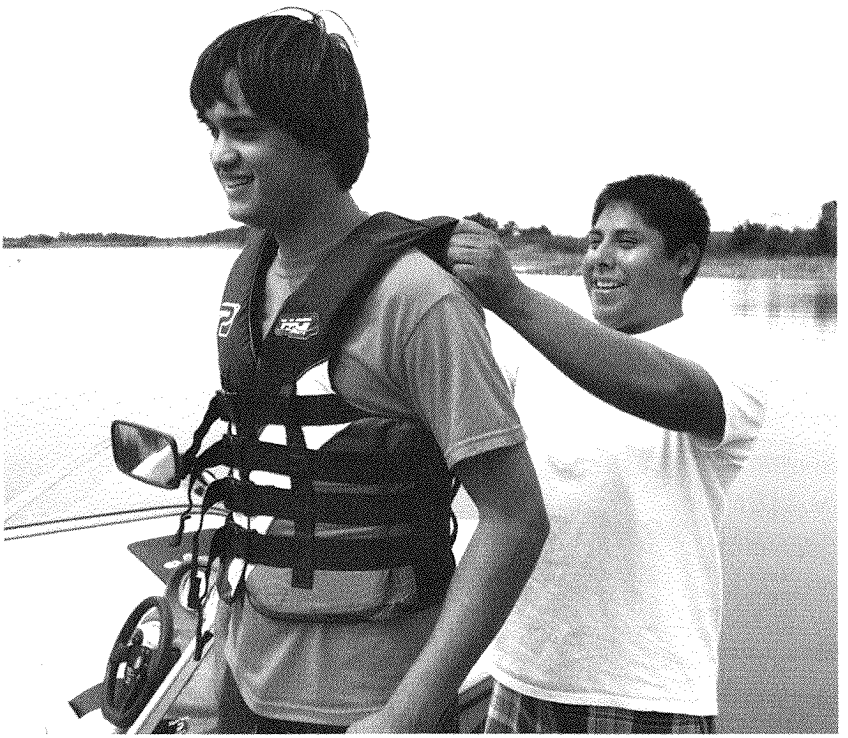
Most Type III life jackets will be worn with the label on the inside. The belt straps should be adjusted to fit snugly at or just above the waist. The front of the life jacket must be firmly secured at the top by a buckle, strap, or strong zipper. All side straps, ties, or zippers should be secure.

Life Jacket Care and Maintenance

Proper care and storage of life jackets is essential. Allow life jackets to drip dry, and store them in a well-ventilated place away from direct sunlight. Sunlight causes the fabric to fade and the flotation material to weaken. Never use a life jacket as a kneeling pad or seat cushion, and never cut or alter it. This includes gluing or sewing patches on the fabric that covers the flotation material. Do not repair tears or holes in the material. If the fabric is ripped or if buckles are missing, replace the life jacket.

Checking the Fit of a Life Jacket

On land, have a buddy stand behind you and firmly pull up both shoulder straps. If the straps pull up to ear level, the life jacket doesn't fit snugly enough. Readjust it or try a smaller size or different style.



Never set out on a watercraft unless you are wearing a life jacket that fits well.

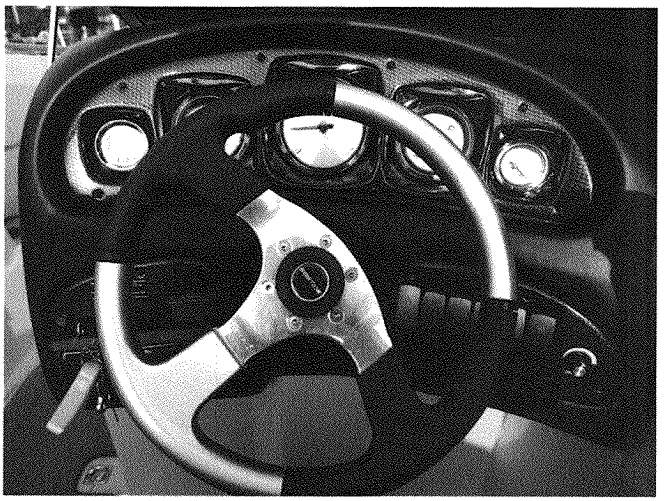
In calm, shallow water, test the fit of a life jacket by relaxing your body and tilting your head back. The life jacket should keep your chin well above water. If it doesn't, readjust for a snugger fit or try a life jacket with a higher buoyancy rating. Check the label to find the rating.

The Ski Boat

The ski boat must meet all BSA and state safety requirements. It can have either an inboard or an outboard motor, as long as it is able to reach speeds of 25 miles an hour while pulling a skier. This is adequate power for all the skills and maneuvers required for the Water Sports merit badge.

Never use a boat for waterskiing or wakeboarding unless it has safe positive steering. The boat must be equipped with a steering wheel. Check the cables frequently to be certain they are in good condition. The boat should be equipped with a clean and clear wide-angle rearview mirror.

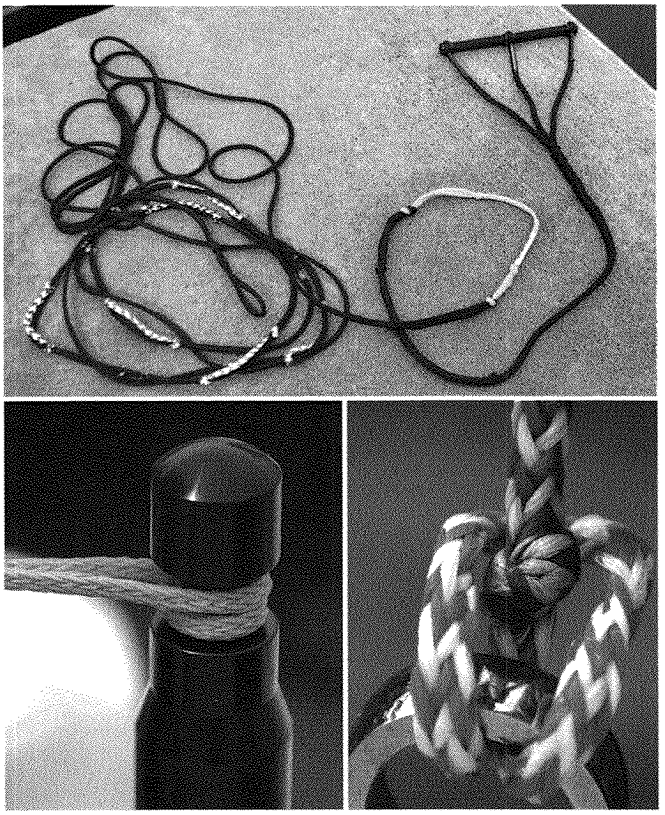
For more information on BSA safety requirements for boating, see the *Motorboating* merit badge pamphlet and the *Guide to Safe Scouting.*



Positive steering **refers to steering that matches the direction of travel. For example, the steering wheel of a car uses positive steering—when the wheel is turned to the left, the car goes to the left. In contrast, when the tiller in most sailboats is moved to the left, the boat turns to the right.**

Never pull or hang onto the motor or any other mechanical part of the boat when climbing out of the water.

If the ski boat does not have a stern platform just above the water for skier use, then a ladder device must be available. A ladder or platform is essential, because few skiers can climb over the side of the boat after an exhausting ski run without injuring themselves or requiring substantial assistance.



Towropes

Polyethylene and polypropylene towropes are popular because they float and are brightly colored for good visibility. Standard towropes have a single handle and are 75 feet long. Before each outing, check that the towrope is in good condition. If a towrope is frayed, throw it away; do not try to mend it.

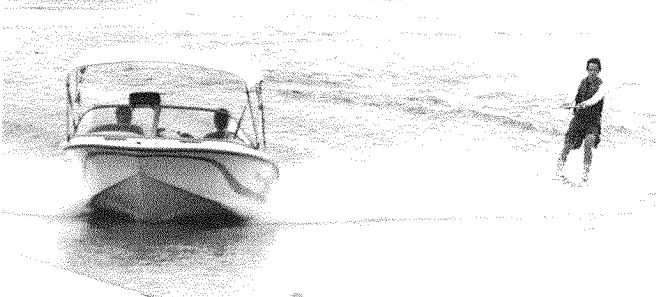
The towrope can be fastened to the boat in a number of ways. A simple eyebolt can be used through the transom. Place it as near the center as possible. Also, a harness equipped with a swivel may be bolted to the outside of the transom and the towrope attached to it. Do not attach the rope to cleats that are not specifically intended for this purpose. A center post with a ball and quick release is ideal and is usually included on boats specifically designed for waterskiing.

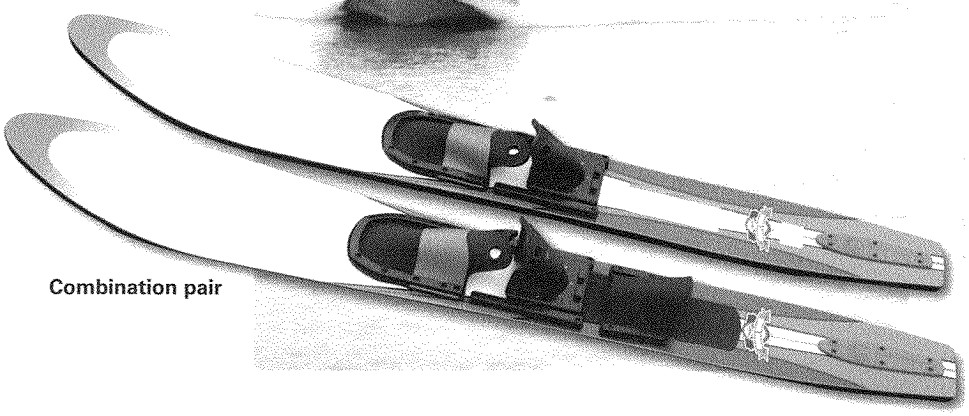
Water Skis

Larger skis will plane faster at low speed than narrower skis, but their greater buoyancy might make them difficult to handle in starting positions.

As a beginning water-skier, you will be using basic skis, called a *combination pair.* Choosing the correct size skis to use depends mostly on the skier's weight. Small, lightweight skiers should not attempt to ski on oversized skis, and heavy skiers should not use undersized skis.

Using skis designed for jumps, tricks, or slalom riding is unnecessary until your skills are more advanced. Freestyling can make learning the basic skills more difficult.



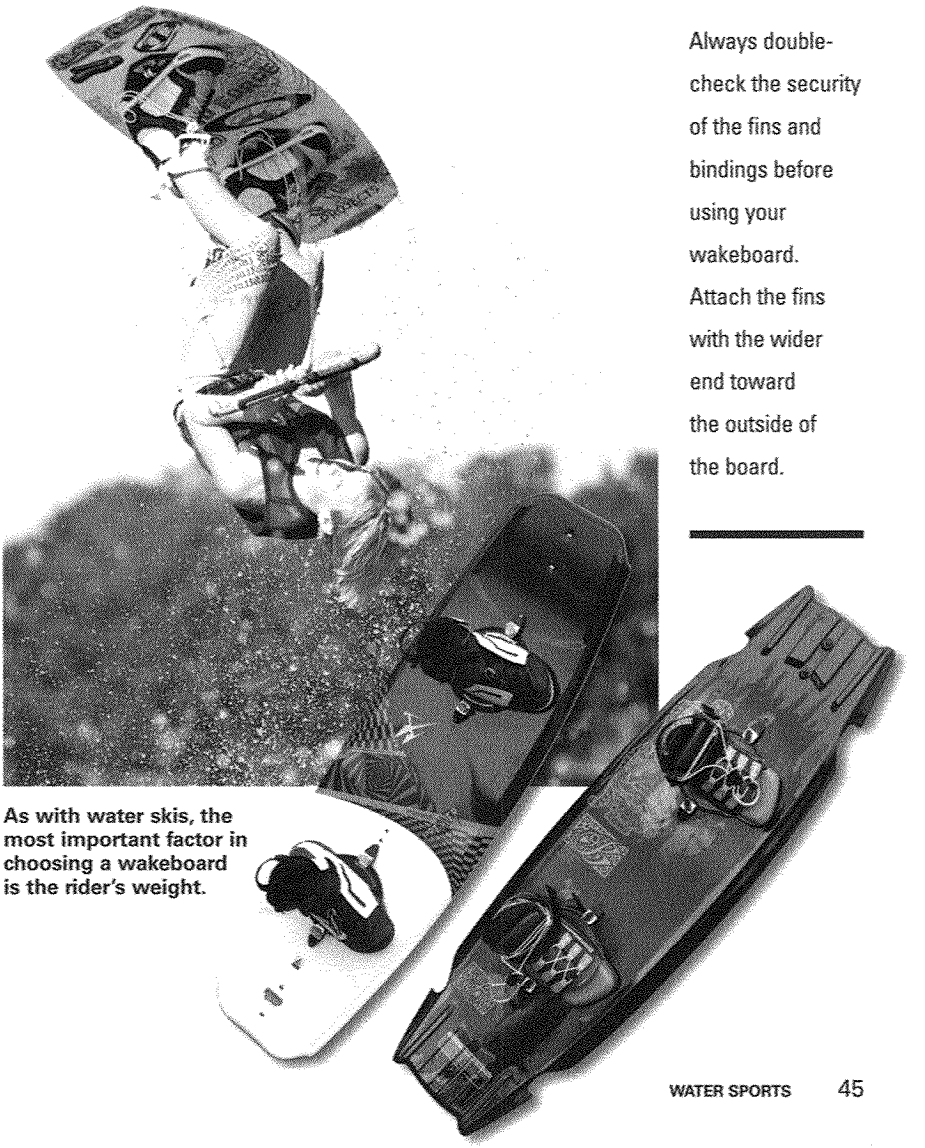


Combination pair

Wakeboards

Wakeboards come in different lengths and widths, and have one to three fins on the bottom that help stabilize the board and increase maneuverability. Most wakeboards are twin-tipped, which means that they slope upward at both ends.

Always double-check the security of the fins and bindings before using your wakeboard. Attach the fins with the wider end toward the outside of the board.



As with water skis, the most important factor in choosing a wakeboard is the rider's weight.

Choosing the Correct Size

Use these general guidelines when selecting skis or a wakeboard. If your weight is on the borderline between two sizes, choose the larger size.

If you weigh:	Try skis that are:
Up to 150 pounds	66 to 67 inches long
150 to 200 pounds	68 inches long
More than 200 pounds	69 to 72 inches long

If you weigh:	Try a wakeboard that is:
Up to 160 pounds	125 to 135 centimeters (49 to 53 inches) long
160 to 180 pounds	135 to 140 centimeters (53 to 55 inches) long
More than 180 pounds	140 centimeters (55 inches) long or longer

Note that standard sizes for water skis are measured in inches; for wakeboards, in centimeters

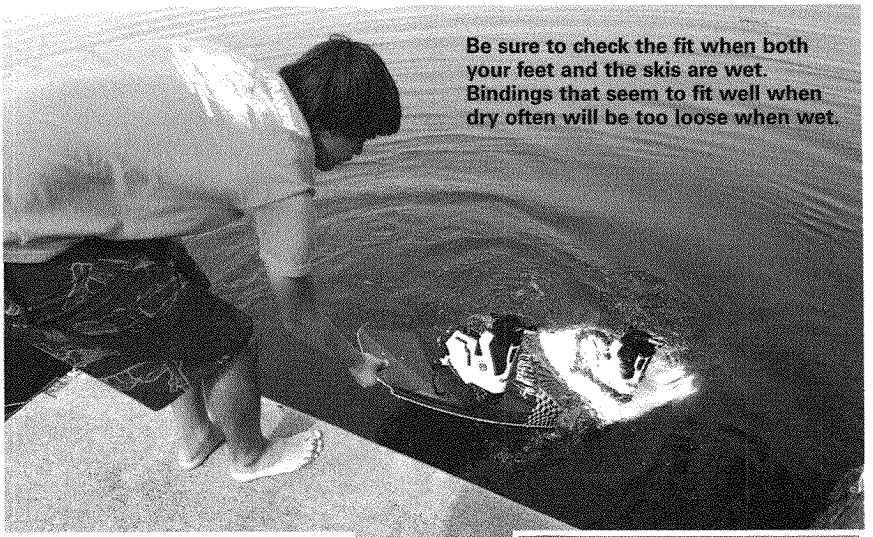
Bindings

Bindings come in a wide variety of styles. Some are designed to fit a range of sizes, while others offer a more specific fit. Most wakeboards, for example, have bindings in specific sizes from small to extra-large. Many of the current styles of bindings are designed to stay on the foot during a fall.

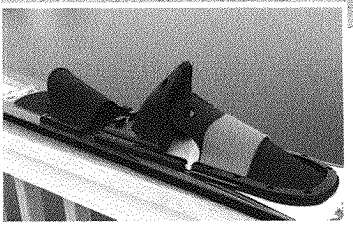
Many wakeboards are designed to stay on during a fall, with good reason. If one foot came loose while the other was still in its binding, there would be a greater chance of injury to the skier.

The snugness of the fit is also adjusted in a variety of ways, including laces, straps, or clamps. No matter what style of fastener is used, correctly fitted bindings should feel comfortable and snug, like a tennis shoe that is firmly laced up.

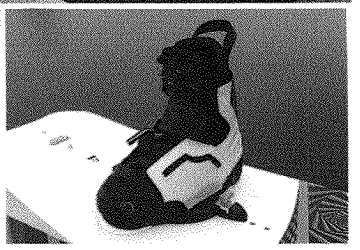
Be sure that your heel is firmly in place and that the binding supports your feet well. If the bindings are slightly too large for your feet, try wearing a pair of heavy socks or liners to provide friction and a snugger fit. However, do not try to make the binding fit by wearing more than one pair of socks.



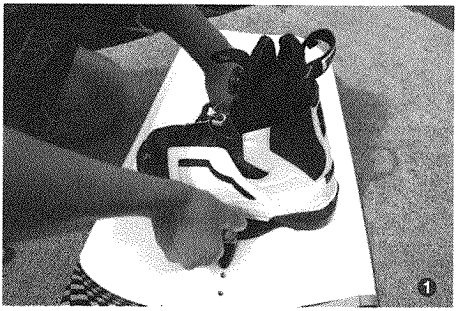
Be sure to check the fit when both your feet and the skis are wet. Bindings that seem to fit well when dry often will be too loose when wet.

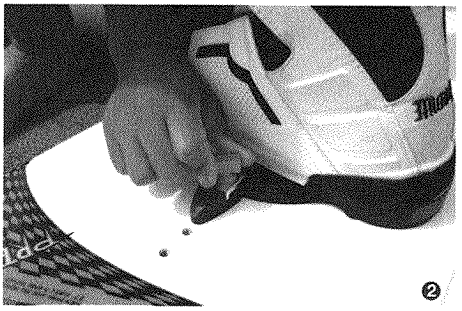


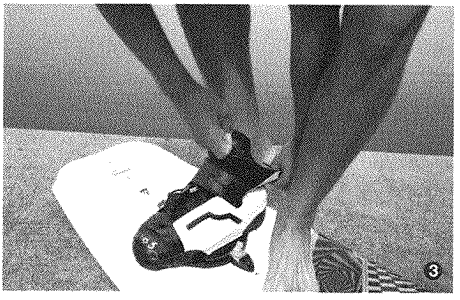
Water-ski bindings



Wakeboard bindings







Adjusting Wakeboard Bindings

With wakeboards, the angle of your feet on the board can be adjusted depending on your skill level. As a beginner, you'll want to follow the steps below, fine-tuning the adjustments to find a stance that feels most comfortable to you.

Step 1—Adjust the distance between the bindings to about shoulder-width apart, with your back foot slightly more toward the rear of the board for better stability.

Step 2—Adjust the angle of the back foot so that it is straight across the board or turned out slightly toward the back (at zero to 9 degrees on the baseplate). Tighten the binding lock.

Step 3—Adjust the angle of the front foot so that it is slightly turned out toward the front (9 to 27 degrees). Try the board on for size before you hit the water.

Regular or Goofy?

When riding a wakeboard, one foot is in front of the other. Having the left foot forward is called "regular-footed," and having the right foot forward is called "goofy-footed," but there is no right or wrong choice.

To find out whether you are regular-footed or goofy-footed, stand with your feet shoulder-width apart and have a friend gently push you from behind. The foot you naturally step forward with is probably the one to have in front when you wakeboard.

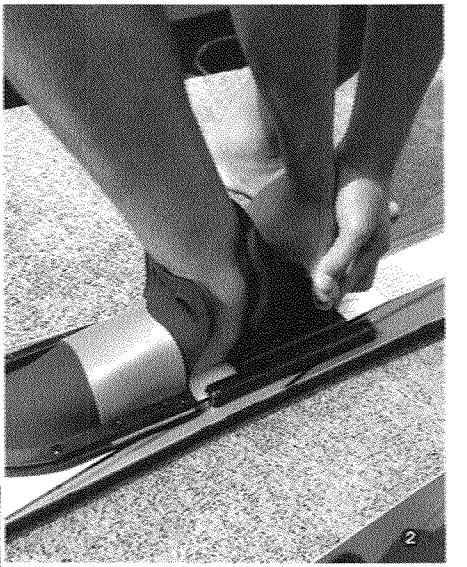
Adjusting Water-Ski Bindings

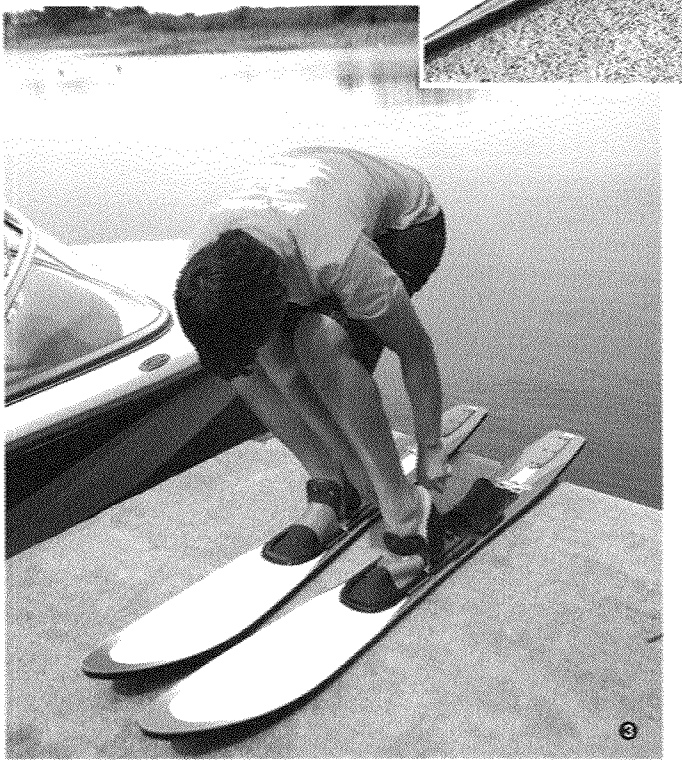
Many skis come in specific sizes and do not need to be adjusted. If you have adjustable skis, most will be adjusted in the following way:

Step 1—Slip your foot into the bindings of one ski, pressing the front of your foot snugly against the front binding.

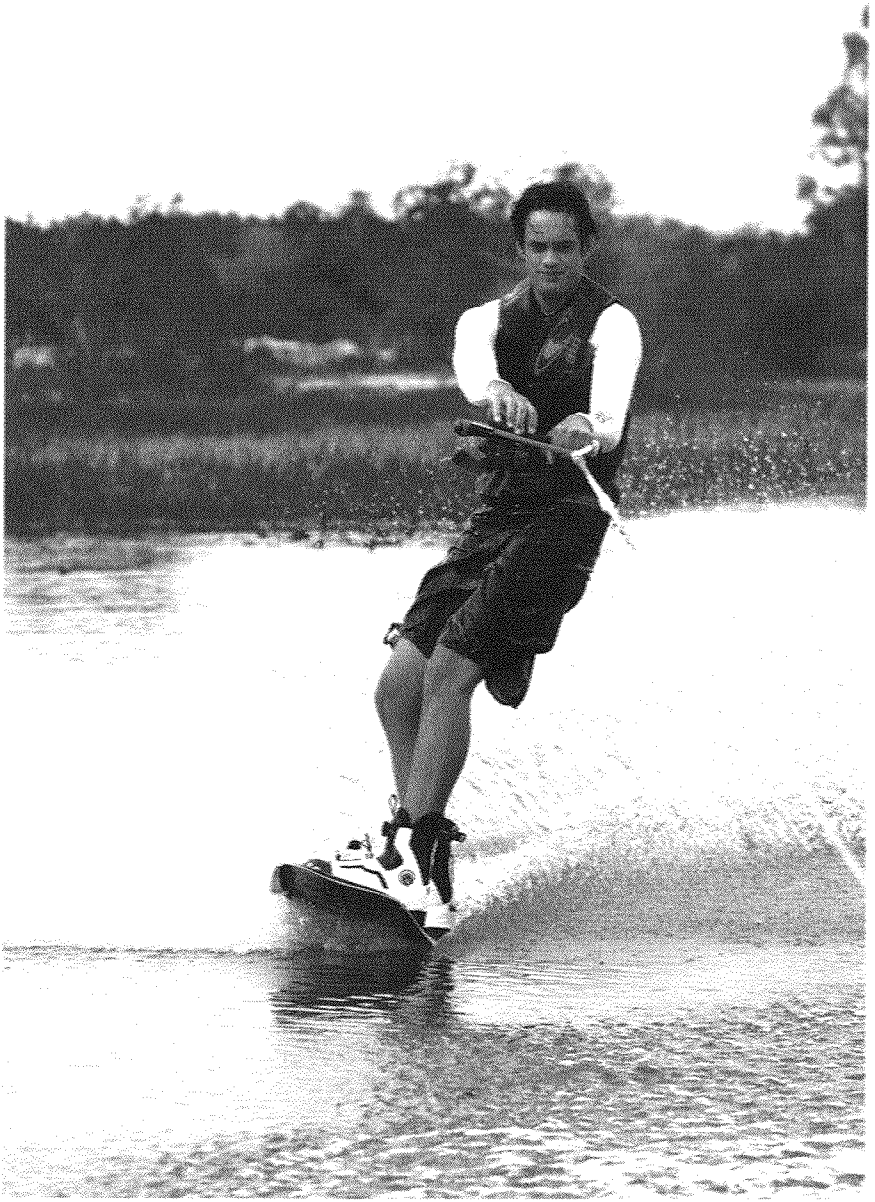
Step 2—Press the release button on the back binding and slide the binding forward until it is snug but comfortable against your foot.

Step 3—Repeat these steps with the bindings of the second ski.





To correctly size and fit your bindings, seek assistance from someone knowledgeable about the equipment.



Basic Skills for Water Sports

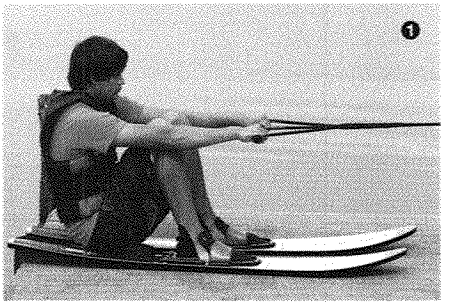
You are almost ready to hit the water! First, get a feel for standing up on skis or a wakeboard by practicing the basic techniques on dry land. Then, be prepared to get wet. It may take a few tries and several falls before you master the basic skills in this section, but the effort will be well worth the result. In no time, you will be hooked.

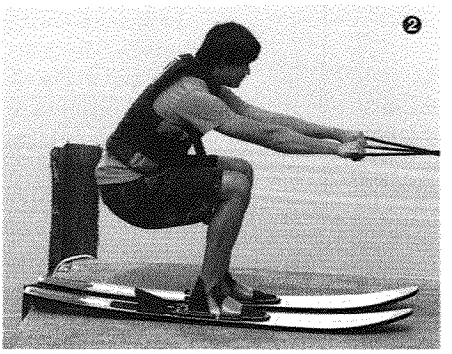
Beach Practice

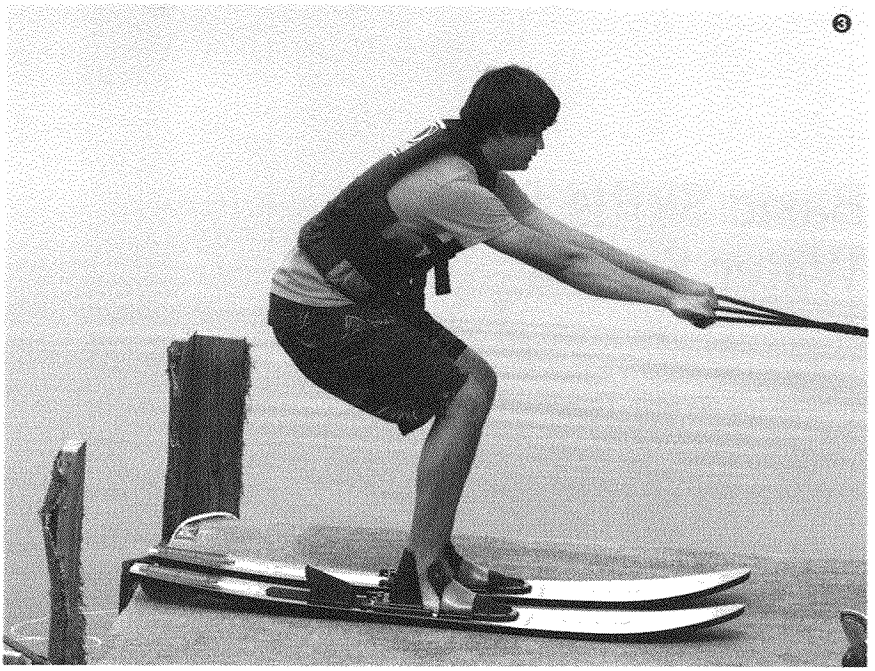
Beach practice allows you to perform the basic moves of standing up without having to worry about falling. By getting a feel for the proper techniques on dry land, you will be able to correct your form much more easily once you are out on the water.

Step 1—With your skis or board flat on the ground beneath you, sit with your knees up against your chest and arms straight out in front of you, holding onto the towrope handle. Your instructor should hold the line and pull gradually but firmly to help you stand.

Step 2—As the line begins to pull you forward, use your legs to lift up slowly. Keep your feet flat in the bindings, your arms and back straight, and your weight back against the pull of the tow grip.







Step 3—Lift up almost to standing position. Be sure that you push yourself up with your legs, not pull yourself up with your arms. Keep your knees bent slightly to provide better balance and so that your legs act as shock absorbers when you are on the water. Practice this several times while focusing on the legs doing the work, so it will come naturally to you when you are on the water.

Another essential point is to keep your arms straight when standing up. The arms are the connection that transmits the boat's power to the skis or board—if the arms are bent, the connection breaks and you will start to founder.

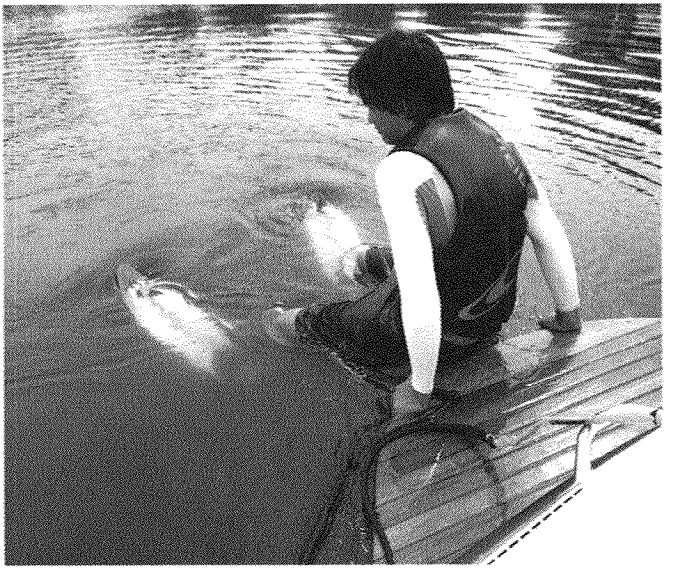
Once you are standing, a good way to check your position is to drop the handle or have your instructor suddenly ease up the line. If you start to topple backward, you are leaning back too far. Find the proper position by letting go of the handle and taking your stance with knees bent slightly and arms out straight. Now you are balanced, and when the instructor places the handle back in your hands, you will be in proper position.

Once these steps come easily, you are ready for the water.

Entering the Water

The boat's motor should always be turned off before a skier enters or exits the water.

Some ski boats will have a platform at the back of the boat so that skiers can enter the water more easily. If no platform is available, the boat must have a ladder device. The skier would then use the ladder to lower himself into the water. Once the skier is safely in the water, the equipment is handed to him by a helper in the boat.



When entering the water from a boat equipped with a platform, the skier can sit down and ease himself into the water.

Putting On Your Skis or Board

Because the equipment floats, putting on skis or a wakeboard might be the biggest challenge of the deepwater start. All too often, new skiers find themselves flat out on the water with their legs bobbing on the surface behind them.

Begin by practicing in neck-deep water so you can stand on the bottom and rest between tries. In deep water, it may help to take a deep breath of air and duck your head underwater. This gives you better control and easier movement.

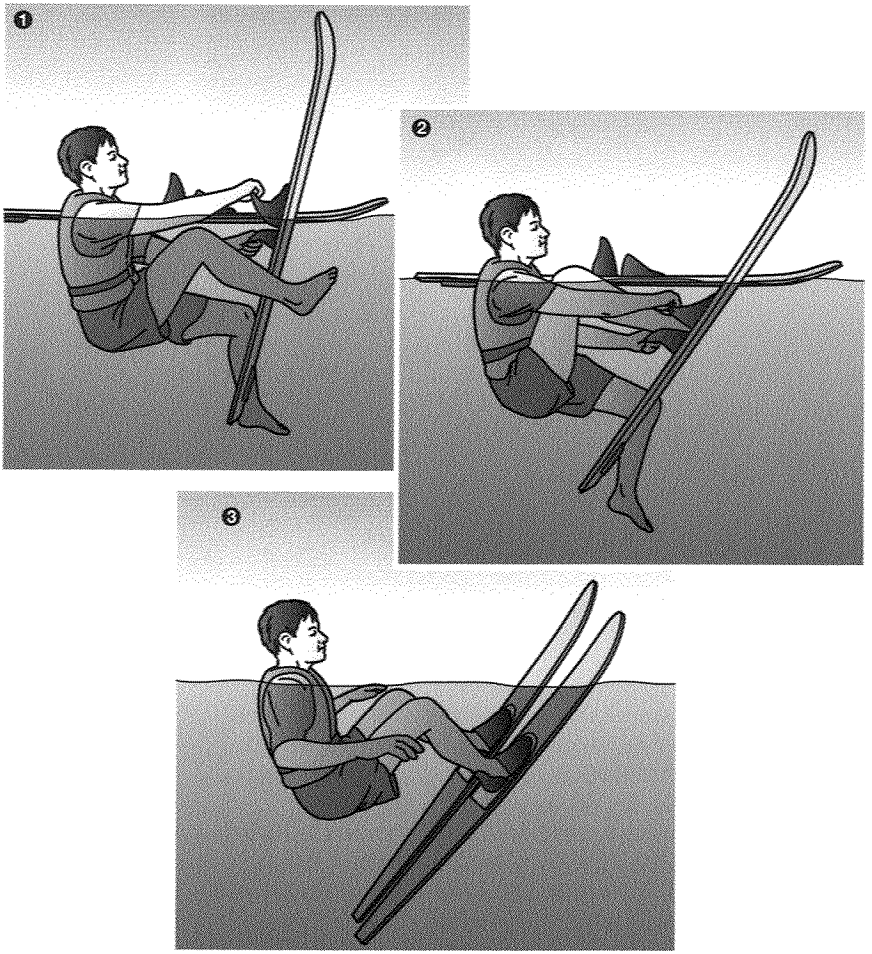
First get your skis or board on, then have the boat bring the tow line to you.

To put on water skis, follow these steps.

Step 1—Push the first ski underwater as you bring your foot up to it. Use both hands to open the bindings, pulling the front tongue away from the heel. Let the second ski float on the surface beside you.

Step 2—Slip your foot into the binding and secure it for a snug fit.

Step 3—Follow the same steps with the second ski.

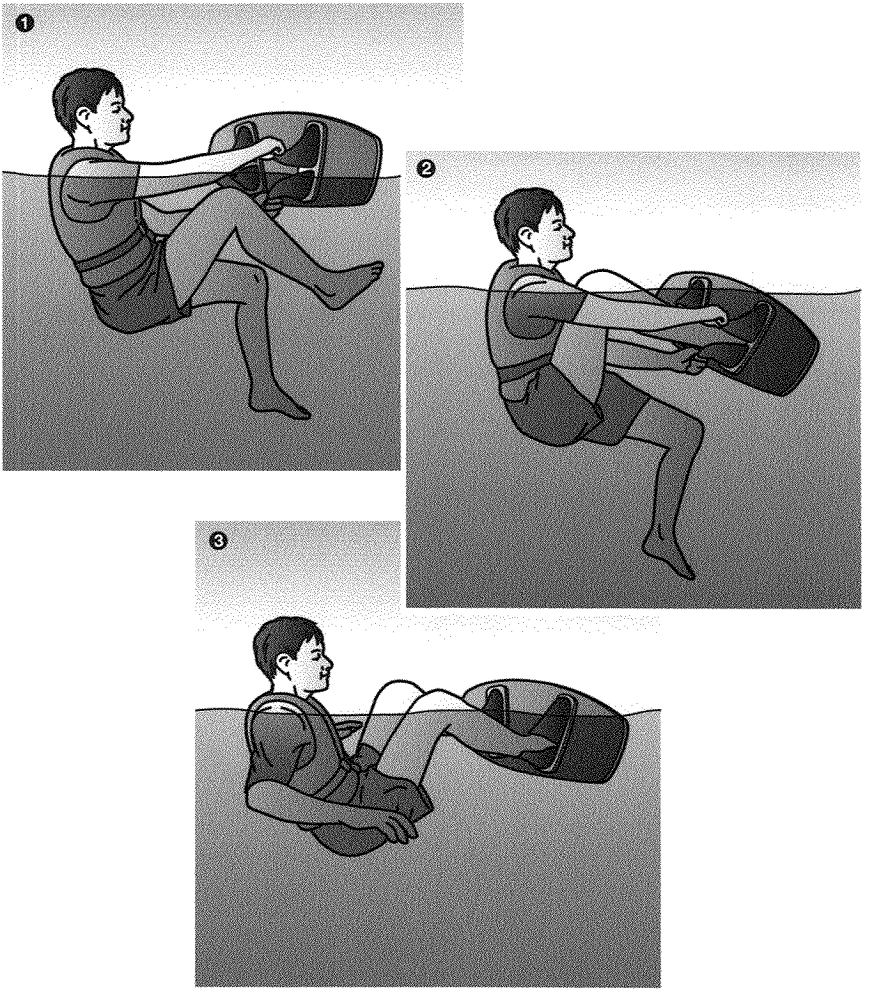


To put on a wakeboard, follow these steps.

Step 1—Hold the board in front of you and use both hands to open one of the bindings, pulling the front tongue away from the heel.

Step 2—Slip your foot into the binding and secure it for a snug fit.

Step 3—Follow the same steps with the other binding.



Standing Up

Holding the towrope handle close to your chest or letting it drop toward your knees will throw you off balance. Remember to drop the handle if you fall.

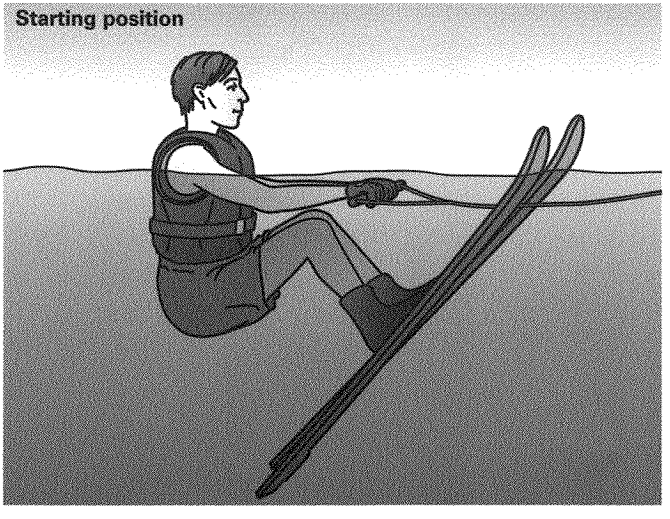
After you have put on your board or skis and are waiting to start, keep your balance in the water by bending your knees into your chest and treading water with your hands and arms.

The rope should be trailed to you, with the boat idling slowly past and the rope out behind it. As the line moves past you, hold it loosely and let it slip through your hands. If you are not facing the direction that the boat will be pulling you, tighten your hold on the line and let the boat's pull on the rope swing you into position.

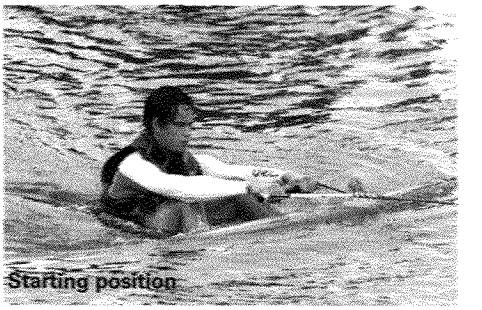
To bring the tips of the skis or edge of the board up, tighten pressure on the rope and lean back against the pull of the boat. When the handle comes to you, you should be in starting position.

The boat should be taken out of gear momentarily while you adjust your starting position. Keep your knees bent and your arms to the outside of your knees.

Deepwater Starts on Water Skis. Standing up on water skis starts with proper positioning. The skis should be about shoulder-width apart, with at least 6 to 12 inches of ski above the water. Keep your knees bent into your chest and close together, and the skis parallel. Hold the rope handle with your arms straight. When you are ready, shout out "Hit it!" to let the boat driver know to accelerate.



Stay in a sitting position, leaning back slightly against the pull of the boat. Keep your knees bent and between your arms, and stay in a crouch until the skis are planing on top of the water. Then slowly stand up, keeping your arms and back straight and knees slightly bent. Look up toward the boat, not down at the water. Be sure to keep the skis about shoulder-width apart.

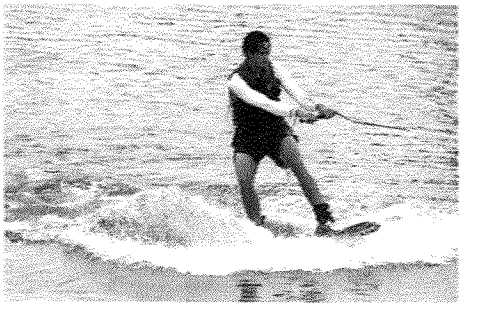

Starting position

Deepwater Starts on a Wakeboard. Begin with the wakeboard out in front of you and parallel to water's surface. Come up to a standing position as described for skiers, then twist at the hips to bring the front of the board forward. Keep your knees bent and arms straight, and hold the handle down in front of the lead hip. When you are in position and ready, shout out "Hit it!" to let the driver know to accelerate.

As the boat picks up speed, your wakeboard will begin to plow against the water. Bring your knees in close to your chest and your hands just in front of your knees.

Stay in the squatting position and use your feet to keep the bottom of the board planing against the water. This helps bring the board up onto the water surface, lifting you up with it.

As the board begins to ride on the surface of the water, stand up slowly, keeping your knees bent slightly and arms out straight in front of you. Turn the board forward by twisting at the hips, keeping the handle down, your head up, and your lead hip pushed close to the handle.

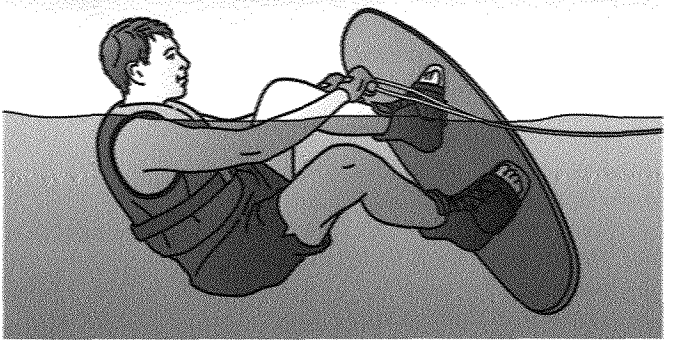


To keep the board from wobbling, put slightly more weight on your front foot than on your back foot as the boat begins to pull you out of the water.

Alternate Method for Deepwater Wakeboard Starts. You may prefer to start out with the wakeboard partially rotated up toward the front foot. Begin with the wakeboard out in front of you and parallel to the water's surface, as before. Keep your knees bent and hold the rope handle with your arms straight. When you are in position and ready, shout out "Hit it!" to let the driver know to accelerate.

As soon as the boat starts to pull, twist at the hips to turn the front of the board up and toward the boat. Keeping your knees bent, transfer more weight to your back foot as the boat pulls you up.

Alternate starting position



In the alternate method, just as the boat starts to pull, twist your hips to bring the front of the board up and forward *before* coming up to the standing position.

"Planing" means that the skis or board are gliding across the top of the water. "Resistance" happens when the skis or board are still somewhat below the surface and pushing against the water, as at the beginning of a deepwater start.

Avoiding Common Errors

Most falls during deepwater starts are caused either by standing up too soon or by pulling the towrope handle into the chest. In both cases, you will lose your balance. By standing up too soon, you will fall forward; by pulling the handle into your chest, you will fall backward.

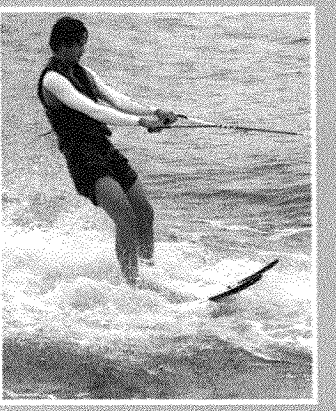
Another common error when waterskiing is keeping the skis too close together, which will cause you to roll to one side.

Basic Stance for Waterskiing and Wakeboarding

- Shoulders back and head up
- Knees slightly bent
- Shoulders square to the boat

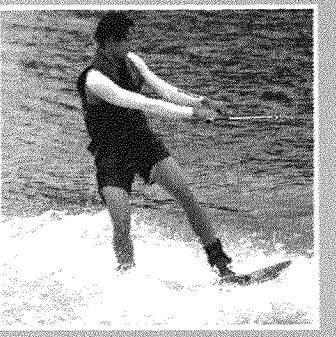
When waterskiing, also keep:

- Feet straight ahead, with the tips of the skis pointed directly at the boat
- Towrope handle near the waist
- Weight centered between skis, with the skis shoulder-width apart



When wakeboarding, also keep:

- Feet sideways to the boat, with the tip of the board pointed directly at the boat
- The towrope handle near the lead hip
- Weight centered over your feet, with slightly more weight on the back foot



The following guidelines will help you to avoid or correct common errors.

Take Your Time

As the boat starts to pull you out of the water, you can more easily handle the resistance against the skis or wakeboard by staying in a crouched position and taking your time before trying to stand. Once the skis or board begins to plane, the resistance will be less and it will be easier to assume a balanced position.

Use Your Legs

You must raise your body weight through leg power. If you pull in on the handle in an attempt to stand up, the board or skis will slide forward and you will probably fall backward. If you find it difficult to stand up with leg power, you may be leaning back too far.

Keep your stance straight to maintain better control.

Straighten Your Body

Another common error is leaning forward when you are on top of the water. When you straighten your legs, it may seem as if you have straightened your whole body, when in fact you are still leaning over from the waist. To avoid losing your balance and falling forward, stay aware of your stance and straighten your whole upper body, keeping your knees slightly bent.

Keep Your Arms Out

Beginners frequently pull in their arms to maintain balance or to take up imagined slack in the line. Inexperienced skiers often think that the line is slack when it is not.

The trouble with pulling in your arms is that it pulls your body up to the handle with your elbows bent, and when you straighten your arms again, the line actually does slacken. Then, as the boat moves forward and the line snaps taut, your balance is completely thrown off. Remember to keep your arms out straight.

Hold the towrope handle so that it is near your center of gravity, about waist high. To compensate for a momentary loss of balance, give the towrope a short jerk rather than a long pull.

Bend Your Knees

You will stay better balanced by keeping your knees slightly bent, so they can act as shock absorbers. When waterskiing, it also helps to keep your weight evenly distributed over both skis—especially when crossing the wake in rough water and making turns.

Falling

Falls are an inevitable part of learning water sports, and learning to fall properly is a skill you can develop.

The first thing to do is make certain that you are actually falling. Amazing recoveries are often made by simply hanging on to the tow handle and regaining balance. If a fall can't be avoided, let go of the towrope, tuck your chin, and keep your arms and legs close to your body. Avoid falling forward. Instead, fall backward or to the side.

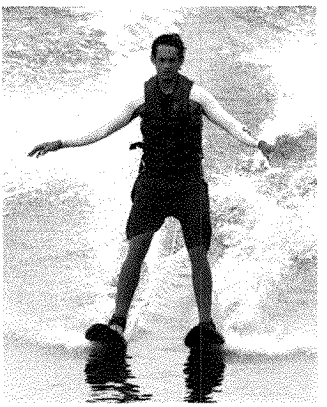
When you are in the water after a fall, clasp your hands high over your head to signal that you are OK.

Keep Trying

Don't worry if it takes several tries before you stand up. The average beginner tries five or six times before succeeding. If you find that you are falling an unusual number of times, fear of falling may be the real problem. Remember that falls are a natural part of learning water sports and that they are just part of the fun.

Stopping

When you have gained skill and find that you are sometimes still standing at the end of a ride, it is time to learn how to coast to a stop. The steps are simple.



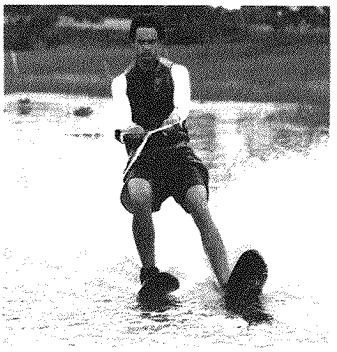
Step 1—Let go of the towrope and slowly crouch down.

Step 2—Spread your arms out to your sides for extra balance as you begin to sink into the water.

Step 3—Give the "skier safe" signal as soon as you are down, and then the "skier in the water" signal if there is any other boat traffic.

Never ski directly toward shore when landing or at any other time. If you misjudge and suddenly hit bottom, you will be thrown into a bruising fall. Ski parallel to the land. Never attempt to land close to a dock, a float, or any other solid object.

If you want to slow yourself down while landing, squat and drag your hands in the water.



Moving From Side to Side

Before attempting to cross the wake, take plenty of time to get comfortable with your balance and the sensation of skimming along the surface. Practice moving back and forth several times on the smooth water between the wakes. Avoid drifting too far to either side, because hitting the wake broadside with the skis or board can easily cause you to catch an edge and topple over.

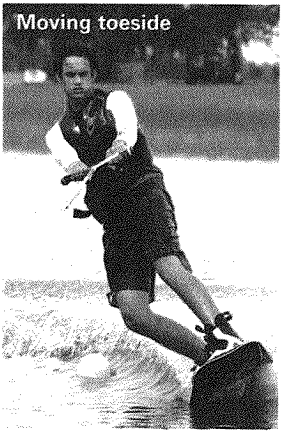
Banking your skis will allow you to move to the right or left.

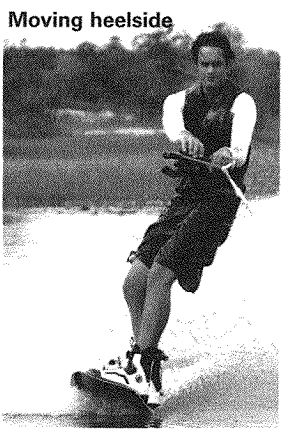
Waterskiing

Remember that your skis will naturally head in the direction the tips are pointing. To move from side to side, you will need to "bank" the skis. So, if you want to go to the left side of the wake, shift a little more weight to the left ski. This slight shift in weight causes more resistance against the left side of the skis, turning them to the left.

Wakeboarding

In wakeboarding, the side of the board that your toes point toward is called *toeside;* the side the heels point toward is *heelside*. To change direction, shift your weight to the side that you want to move toward and lean slightly into the turn. When moving toeside, lean slightly to the front; when moving heelside, lean slightly backward.





Balancing will become easier as you develop a feel for moving back and forth. Just like when riding a bike, you will feel less steady at slower speeds. As you become more confident, you will wobble much less. As in other sports, the proper reflexes develop with practice.

Avoiding Obstacles

If you are going too fast or are too close to steer away from an obstacle, release the towrope and crouch down. If you are still going too fast, you can slow yourself rapidly by sitting back on your skis or board and dragging your hands in the water. Be prepared to topple to one side if needed.

Crossing the Wake

Once you have the feel of moving from side to side, you are ready to try crossing the wake. Wakeboarders might find it easier to move toeside when riding regular-footed and heelside when goofy-footed. Approach and cross the wake at an angle with knees bent to help absorb the lift of the wake.

Remember to avoid hitting the wake broadside. Just as boats avoid capsizing by pointing into rough waves, you will avoid catching an edge if you cross the wake at an angle.

Maintain your momentum as you cut across the wake. Once you are outside the wake, keep moving to a distance of 10 to 15 feet and turn the skis or board toward the boat wake, again at an angle.

As you go back and forth and become accustomed to the lift of the wake, you will be able to turn sharper and pull harder, increasing your speed across the wake each time you try it.

When crossing the wake, stay aware of your body position and where you are holding the rope handle. Keep your knees bent, the towrope taut, and your eyes on the horizon in the direction you are moving.

Building Your Skills

Learning to cross the wake opens the door to a new level of skill in water sports. Take each new skill step by step. Remember that patience will still be required. As you apply yourself and increase your abilities, water sports will become even more enjoyable.

Waterskiing

Once you are comfortably crossing both sides of the wake, you are ready to advance by learning to ride on one ski.

On One Ski

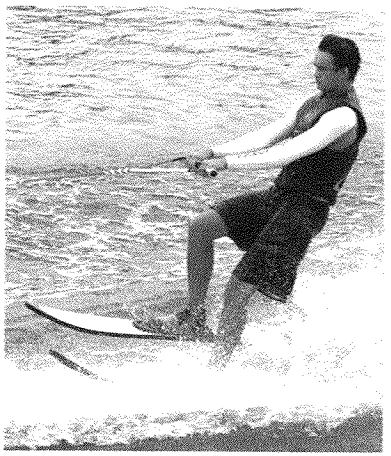
Learning to ski on a single ski does not require any special equipment. Use your regular pair of skis, a regular 75-foot towrope, and your regular life jacket. Later you can use a ski with rear bindings if you want.

Begin by getting a feel for the stance while still on land. Shift about 80 percent of your weight to one ski. Then lift the other ski, bringing the knee up and toward your chest as you lean back slightly. Bend your ankle to keep the ski tip up. Keep your arms straight, and keep your skiing leg only slightly bent.

Using this stance on the water, try lifting one ski and then the other. You will probably feel more stable on one leg than the other and will want to drop the ski from the less stable leg.

Make your first attempt to ride on one ski in the smooth water directly behind the boat and between the wakes. Shift your weight to the ski you intend to use. Then gently lift your heel out of the binding of the ski you are going to drop off. Let that foot and the ski drift toward the back. Keep your heel up, and the force of the water on the ski will pull the front binding from your foot.

If you have difficulty lifting the skis, you probably have not transferred enough weight to the other foot. You cannot lift a foot you are standing on.



When lifting your ski, the tip of the ski must leave the water first and come back down to the water last to prevent it from digging in and pitching you forward.

In the starting position, the rope should be to the inside of your ski—to the left if you ski goofy, and to the right if you ski regular (left foot forward).

Do not attempt to kick the ski off or you will lose your balance. Keep the toes of your free foot in the water as you gain stability, then slowly move your free foot into position behind the heel binding of the remaining ski. Place your toes on the ski first, and gradually set your foot down.

When your free foot is in place, experiment with shifting your weight back and forth slightly to find the most stable skiing position. Then keep your weight back, knees slightly bent, and arms straight. To turn, lean in the direction you want to go. The harder you lean, the faster you will turn.

One-Ski Start

Many slalom skiers prefer to start with both feet in the ski bindings. This technique works well for relatively small, light, and compact beginning slalom skiers.

Start with your knees bent tightly to your chest, pulling the ski as close to you as you can get it. After you shout "hit it," stay in the tuck position, and patiently wait for the ski to start rising beneath you and leveling off. You will get more water in the face than you did when starting on two skis, and you will feel much more drag. Take a deep breath before starting, and hold on tight.

Don't push out on the ski with your legs. Instead, stay tucked, be patient, and let the boat pull you up. Concentrate on keeping the tip of your ski above the water's surface by about 6 to 12 inches. If the ski tip starts to drop, stay tucked, and wait to stand up.

As the ski starts to rise underneath you and level off, stand up smoothly and lean back away from the boat, keeping your knees well bent and putting plenty of weight on your back foot. Once you are up and steady, keep your shoulders back, your head up, and your knees slightly bent. Steer by leaning in the direction you want to go.

Alternate Method for Starting on One Ski

Tall, large, or heavy beginners usually find success more quickly by starting with the back foot out of the binding.

If you can start on one ski, you and your companions will not have to chase after a loose ski every time you switch from two skis to one. You can use one ski of a combination pair, or use a slalom ski if one is available.

Sit on the heel of your ski with your knee bent well into your chest. Your free leg should be stretched out behind you, down into the water as far as possible. The free leg acts as a rudder for steering and partly substitutes for stability that ordinarily comes from a second ski. Do not be in a hurry to pull up the free foot. Drag it deep in the water as long as possible, and wait for the boat to pull you out of the water.

With only one ski to support your weight, waiting for sufficient speed is essential. As you come out of the water, lean backward slightly until you are in the normal single-ski position.

You can compensate for a tendency to fall toward the side of the free leg by twisting your body slightly to that side. The rope will then pull you away from the falling side. If necessary, also ease up slightly in dragging your free leg.

To keep your ski headed in the right direction, watch the ski tip throughout the start. Make sure the ski rope is to the left if you are skiing right foot forward (goofy) or to the right if you are skiing left foot forward (regular). Use your free leg as a rudder to keep the ski lined up with the path of the boat.

If the ski tip raises more than about a foot above the surface, you are leaning back too far and/or pushing out on the ski, fighting the boat instead of letting it pull you up.

The correct boat speed for switching from two skis to one ski is the speed that allows the skier to ski without undue strain from a bogging ski. Keep in mind that the speed on one ski will normally be slightly higher because of the bogging ski.

Wakeboarding

When you are crossing the wake with confidence, you can step up your wakeboarding skills by learning a simple jump called the bunny hop, and by riding switchstance (or fakie), where the back of the board is turned around to the front. Slowly but surely, you will be hooked on this extreme sport.

Bunny Hop

Start the bunny hop by cutting to the outside of the wake in either a heelside or toeside direction. As you cut across the wake, be sure to keep the towrope taut by pulling on the rope and pressing back on the board at the same time. This creates the tension and force needed to help you gain speed. Adequate momentum is the key to mastering the bunny hop.

Step 1—After cutting to the outside of the wake, ease up on the rope and straighten out by centering your weight.

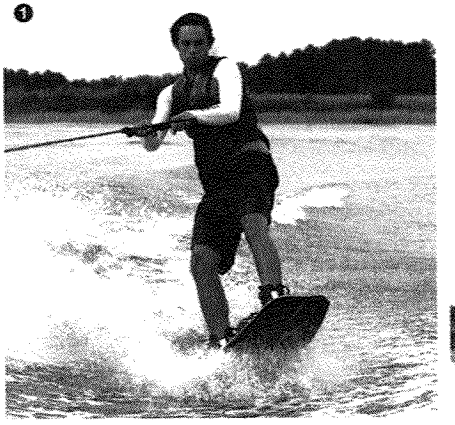
Step 2—If you are riding heelside, push the board into the water with your heels and push away from the water with your toes. If you are riding toeside, push into the water with your toes and away from the water with your heels. This will pop your board up and out of the water.

Step 3—Land with your knees slightly bent, eyes toward the boat, and the towrope handle at your front hip.

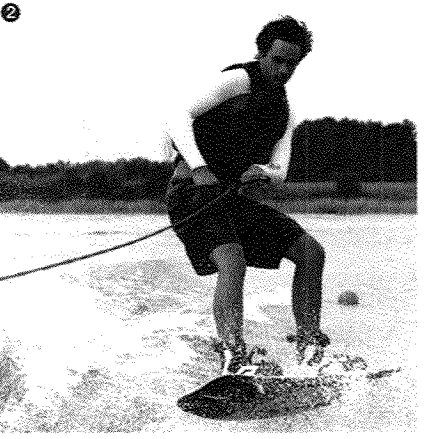
Switchstance

The first step in the switchstance is to signal for the boat to slow its speed so that the water will be a little softer under the board.

Step 1—Keeping the handle near your back hip, move to the top of the wake.

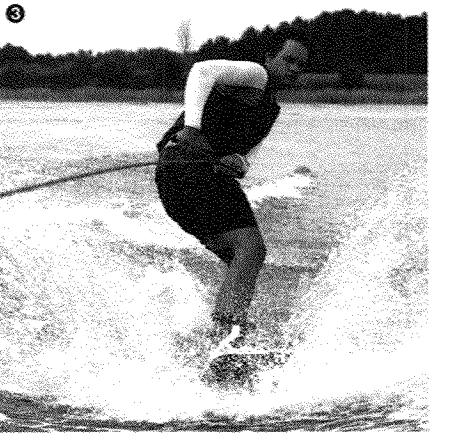


Step 2—Tip the forward edge of the board up slightly so that it will not catch, then pivot the board until both feet are pointing forward toward the boat.



Step 3—Continue pivoting the board until it is 180 degrees from the starting position, with the foot that was in front now at the back.

Step 4—Signal for the boat to increase speed.



Water Sports Resources

Scouting Literature

Boy Scout Handbook; Fieldbook; Deck of First Aid; Basic Illustrated Wilderness First Aid; Emergency First Aid pocket guide; *Be Prepared First Aid Book; Athletics, First Aid, Kayaking, Lifesaving, Motorboating, Personal Fitness, Small-Boat Sailing, Snow Sports,* and *Swimming* merit badge pamphlets

With your parent's permission, visit the Boy Scouts of America's official retail website, www.scoutshop.org, for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

Books

Blomquist, Christopher. *Wakeboarding in the X Games.* PowerKids Press, 2003.

Cooperman, Stephanie. *Wakeboarding: Techniques and Tricks.* The Rosen Publishing Group Inc., 2003.

Duvall, Camille. *Camille Duvall's Instructional Guide to Water Skiing.* Simon & Schuster, 1992.

Favret, Ben. *Water Skiing and Wakeboarding.* Human Kinetics Publishers, 2010.

Firestone, Mary. *Extreme Waterskiing Moves.* Capstone Press, 2004.

Hayhurst, Chris. *Wakeboarding! Throw a Tantrum.* Saddleback Educational Publishing Inc., 2000.

Kalman, Bobbie. *Extreme Wakeboarding.* Crabtree Publishing Company, 2006.

Maurer, Tracy M. *Wakeboarding.* Rourke Publishing, 2002.

Thompson, Luke. *Essential Waterskiing for Teens.* Children's Press, 2006.

Weber, Jason. *Wakeboarding . . . On the Edge.* Sports on the Edge LLC, 2000.

Videos

Higher Education. Bump Films, http://www.bumpfilms.com

Boating Regulations

Boating regulations vary from state to state. To find out what your state requires, get your parent's permission to use the Internet and check the website for the U.S. Coast Guard's Boating Safety Division. You will find a Reference Guide to State Boating Laws at www.uscgboating.org/regulations/state-boating-laws.php.

Organizations and Websites

International Waterski and Wakeboard Federation
Website: www.iwwfed.com

USA Water Ski
Telephone: 863-324-4341
Website: www.usawaterski.org

U.S. Coast Guard Boating Safety Division
Website: www.uscgboating.org

World Wakeboard Association
Website: www.thewwa.com

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John McDearmon—all illustrations on pages 19, 22, 25, 26, 54-56, 58, and 66

Brian Payne—pages 39 *(type II)* and 40 *(cushion)*

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Jonathan Travers

MERIT BADGE LIBRARY

Though intended as an aid to Boy Scouts, and qualified Venturers and Sea Scouts in meeting merit badge requirements, these pamphlets are of general interest and are made available by many schools and public libraries. The latest revision date of each pamphlet might not correspond with the copyright date shown below, because this list is corrected only once a year, in January. Any number of merit badge pamphlets may be revised throughout the year; others are simply reprinted until a revision becomes necessary.

If a Scout has already started working on a merit badge when a new edition for that pamphlet is introduced, *they may continue to use the same merit badge pamphlet to earn the badge and fulfill the requirements therein.* In other words, the Scout need not start over again with the new pamphlet and possibly revised requirements.

Merit Badge Pamphlet	Year
American Business	2013
American Cultures	2013
American Heritage	2013
American Labor	2018
Animal Science	2014
Animation	2015
Archaeology	2017
Archery	2015
Architecture and Landscape Architecture	2014
Art	2013
Astronomy	2016
Athletics	2016
Automotive Maintenance	2017
Aviation	2014
Backpacking	2016
Basketry	2017
Bird Study	2017
Bugling (see Music)	
Camping	2018
Canoeing	2014
Chemistry	2018
Chess	2016
Citizenship in the Community	2015
Citizenship in the Nation	2014
Citizenship in the World	2015
Climbing	2011
Coin Collecting	2017
Collections	2013
Communication	2013
Composite Materials	2012
Cooking	2014
Crime Prevention	2012
Cycling	2017
Dentistry	2016
Digital Technology	2014
Disabilities Awareness	2016
Dog Care	2016
Drafting	2013
Electricity	2013
Electronics	2014
Emergency Preparedness	2015
Energy	2014
Engineering	2016
Entrepreneurship	2013
Environmental Science	2015
Exploration	2016
Family Life	2016
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Fingerprinting	2014
Fire Safety	2016
First Aid	2015
Fish and Wildlife Management	2014
Fishing	2013
Fly-Fishing	2014
Forestry	2015
Game Design	2013
Gardening	2013
Genealogy	2013
Geocaching	2016
Geology	2016
Golf	2012
Graphic Arts	2013
Hiking	2016
Home Repairs	2012
Horsemanship	2013
Indian Lore	2008
Insect Study	2018
Inventing	2016
Journalism	2017
Kayaking	2016
Landscape Architecture (see Architecture)	
Law	2011
Leatherwork	2017
Lifesaving	2017
Mammal Study	2014
Medicine	2012
Metalwork	2012
Mining in Society	2014
Model Design and Building	2010
Motorboating	2015
Moviemaking	2013
Music and Bugling	2013
Nature	2014
Nuclear Science	2017
Oceanography	2012
Orienteering	2016
Painting	2016
Personal Fitness	2016
Personal Management	2015
Pets	2013
Photography	2016
Pioneering	2017
Plant Science	2018
Plumbing	2012
Pottery	2008
Programming	2013
Public Health	2017
Public Speaking	2013
Pulp and Paper	2013
Radio	2017
Railroading	2015
Reading	2013
Reptile and Amphibian Study	2018
Rifle Shooting	2012
Robotics	2016
Rowing	2014
Safety	2016
Salesmanship	2013
Scholarship	2014
Scouting Heritage	2017
Scuba Diving	2009
Sculpture	2014
Search and Rescue	2018
Shotgun Shooting	2013
Signs, Signals, and Codes	2015
Skating	2015
Small-Boat Sailing	2016
Snow Sports	2017
Soil and Water Conservation	2016
Space Exploration	2016
Sports	2012
Stamp Collecting	2013
Surveying	2004
Sustainability	2013
Swimming	2014
Textile	2014
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Traffic Safety	2016
Truck Transportation	2013
Veterinary Medicine	2015
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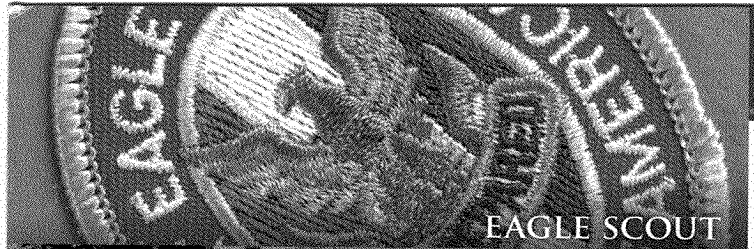

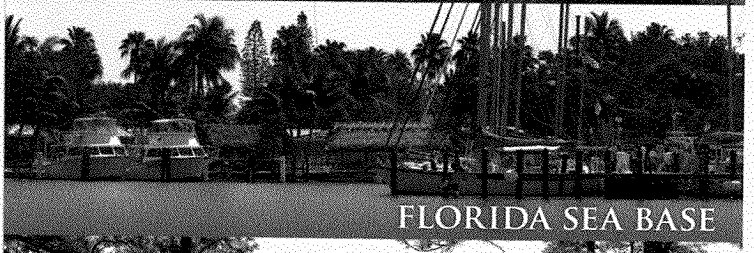

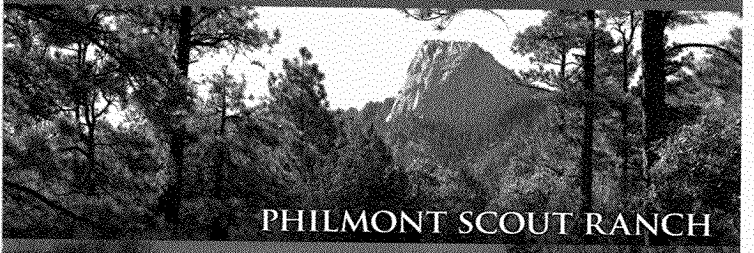

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