

INTER-COLLEGIATE SAILING ASSOCIATION
of NORTH AMERICA

SAFETY PRACTICES

A BASIC GUIDE

Adopted January 2002

Dedicated to Lawrence Conover of Dartmouth College, who conceived and edited the first SAFETY
PAMPHLET for COLLEGE SAILING

and to

Walter C. "Jack" Wood of Massachusetts Institute of Technology
and Peter A. Morrill of U.S. Coast Guard Academy, who edited this publication in 1964.

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Foreword: College sailing requires competitors to be safety conscious. It is our obligation to maintain the positive safety record that inter-collegiate sailing has enjoyed over the past 50 years. This is a BASIC GUIDE for Member Colleges and District Associations to follow in regard to SAFETY PRACTICES during regattas, and instructional and recreational sailing.

George H. Griswold

1. GENERAL SAFETY PRACTICES

You sail because you enjoy it. In order to enhance and guarantee your enjoyment, there are a number of general safety practices you should follow.

1.1. Use Common Sense

Think about your actions. Act decisively and promptly, but without undue haste and not until you are sure of what is involved. If sailing would be unsafe for any reason, then do not go on the water.

When holding a regatta or practice, the primary consideration is for the safety of the sailors. If safety is in question, do not hesitate to call sailors off the water. An event can always be postponed or rescheduled for another time.

1.2. Follow Any Local Safety Rules

Many sailing sites have specific safety rules based on years of experience in the local waters and conditions. Learn and follow them!

1.3. Check the Boat's Air Tanks

Be sure to drain any water from a boat's air tanks and make sure the tank plugs and inspection ports are intact and properly sealed.

1.4. Have Someone Ashore to Help If Needed

Never go sailing without letting someone know when you will be on the water. If possible, have someone watch the sailing area. Always report to that person when you come ashore.

When holding a regatta, make sure that there are enough support powerboats to provide for the safety of everyone on the water. Dedicate at least one powerboat as a safety boat to assist capsized or broken down boats. If needed, powerboats reserved for race management, coaches, or spectators also may assist in rescues. Whenever possible, have wireless communication between all powerboats and shore.

1.5. Beware of Unfavorable Weather Conditions

Consider the dangers of the following unfavorable weather conditions when deciding whether or not to sail.

1.5.1. High Wind Conditions: Consider your previous experience in the prevailing wind conditions. If you feel uncomfortable about your ability to handle the boat safely, then wait until conditions are more suitable.

Also, consider the possibility of equipment failure in prevailing wind conditions. Carefully inspect your boat and make necessary repairs before sailing. If the boat is not designed to be sailed in the prevailing winds, wait to go sailing until the winds have subsided.

1.5.2. Excessive Wave Conditions: Large waves can make a boat difficult to steer and/or increase the possibility of swamping. If you are unsure of your ability to handle a boat in such conditions or if the boat is unsuitable, wait until large waves have subsided.

- 1.5.3. **Actual or Threatening Electrical Storms:** Before sailing, review the local weather forecast using newspapers, radio stations, NOAA weather radio, television weather channels, or Internet weather reports and maps. Determine from these sources probable temperatures, wind speed and direction, and any possibility of storms.

Before and while sailing, watch cloud formations to determine the potential for storms in the area. Generally, darker clouds indicate greater potential for increased winds and storms. Listen for distant thunder indicating an approaching storm. Do not sail until the storm passes.

1.6. **Be Aware of Local Conditions**

- 1.6.1. **Overhead obstructions:** Locate power lines on shore and over sailing waters wherever boats are moved with their masts up. Power lines and sailboat masts are not compatible.

Know the height of your boat and the height of bridges and other structures over sailing waters and on shore. Do not go under these structures before ensuring that there is plenty of vertical clearance.

- 1.6.2. **Underwater obstructions:** Rocks, trees, and manmade objects, such as power or communication cables, may lie partially or completely under water in the sailing area. Contacting these objects may damage your boat. Locate underwater obstructions using maps or local experts. Always stay on the lookout for these hazards.

- 1.6.3. **Currents:** River currents tend to run in one direction and flow faster where the river is deeper. The flow may affect steering and the course made good relative to the shore. Determine the direction and force of the current by watching the relative motion of moving and stationary objects, and plan maneuvers accordingly.

Tidal currents are caused by the gravitational pull of the earth on large bodies of water creating high and low cycles with tidal flows in opposite directions. Tidal information should be reviewed using newspapers, NOAA weather radio, television weather channels, or the Internet. Where tidal fluctuations interact with river flow, currents often exhibit unique patterns. Rely on local experts and your own experience to anticipate such currents.

2. **PERSONAL EQUIPMENT**

2.1. **Personal Flotation Devices**

Life Jackets are designed to provide extra buoyancy to an individual in the water. As required by ICSA Procedural Rules, all competitors must wear a Coast Guard certified Type III or Type V Personal Flotation Device (PFD) at all times while on the water.

2.2. **Clothing**

College sailing is an outdoor sport, and competitors are always exposed to the elements of nature. Wearing the proper clothing can prevent or minimize the following effects that cold weather, hot weather, and sunlight have on the body.

2.3. **Hypothermia**

If general body temperature falls, hypothermia may result: normal body functions will become impaired causing severe safety hazards. When sailing in cold weather, wear proper clothing to retain body heat. Layering clothes and wearing a waterproof outer layer (e.g., a drysuit) is usually effective.

As stated in the ICSA Procedural Rules, host colleges may require special clothing (wetsuits or drysuits) for any regatta, providing advance written notice is given to each competing college.

2.4. **Frostbite**

Even with the proper clothing, it is often hard to keep the extremities, such as hands and feet, warm. Fingers, faces, and toes that are exposed to water may become frozen or frost bitten. To prevent this, wear insulated, waterproof gloves and boots, and limit the time bare extremities are exposed to cold air.

2.5. **Dehydration**

The body needs water to function. Although dehydration (lack of water) commonly occurs on a warm day when water is lost primarily through perspiration and exhaled water vapor, dehydration can also occur on a relatively cold day when layered clothing is being used for warmth. The first signs of dehydration are usually muscle weakness and fatigue. Dehydration can also bring on sunstroke. To avoid dehydration, drink lots of water and wear a hat.

2.6. **Sunburn**

Whenever skin is exposed to sunlight—in any season, on sunny and overcast days—it absorbs the sun's ultraviolet (UV) rays. This process causes sunburn and increases the risk of skin cancer. To protect skin from the sun, apply sunscreen lotion to the face and any other exposed area, and/or wear clothing that covers the skin.

Eyes can also be sunburned and are particularly vulnerable to light reflected off of the water. To protect your eyes from the sun, wear sunglasses that block UV rays. Plastic frames and lenses are best (they will not shatter if broken while sailing), and use a cord or strap to hold them so that they are not lost overboard.

2.7. **Clothing**

2.7.1. **Wetsuits:** Originally made for skin divers, wetsuits are not water tight, but insulate by keeping body-heated water close to the skin. They come in several different styles: tops, bottoms, full suits, boots, gloves, and hoods. Wetsuits allow for more flexibility than other types of insulating gear. They can be repaired easily using special patching material and adhesive.

2.7.2. **Drysuits:** A drysuit is a full body suit made of waterproof material with taped seams. Rubber gaskets at the neck, wrist, and ankle openings prevent water from seeping in. Some styles have attached boots, ensuring that they are initially water tight up to the shoulders. An added benefit to a drysuit is that it insulates by trapping the air around the body. A drysuit's integrity is compromised when a gasket rips or the suit develops a leak elsewhere. When this happens, water can enter the suit, robbing it of the partial buoyancy it normally provides due to the trapped air. A person in a soaked drysuit can be very difficult or impossible to rescue from the water. Therefore, it is critical that drysuit material and gaskets be checked for leaks, and repaired if there is any sign of failure. Replacement gaskets and repair kits are available from many sailing gear dealers.

2.7.3. **Footwear:** Sailors wear many different types of footwear. Common qualities are a non-skid sole, closed toes, and a snug fit. Some types of footwear have additional comfort features to keep the feet dry, insulate them with body-heated water, or provide reinforcement for using hiking straps. Avoid wearing large boots: when filled with water, they add weight that can make it difficult to rescue a person.

2.7.4. **Gloves:** Gloves protect hands from cold air, cold water, and abrasion, but still allow sailors to use their hands and fingers easily and effectively. Sailing gloves may be full fingered, open fingered, or a combination of the two. They often have leather or synthetic palms that aid in gripping. Several manufactures make gloves with thermal properties. Some sailors prefer to wear thin woolen gloves

covered by dishwashing gloves that keep water out. The style and material chosen for gloves varies with the conditions.

- 2.7.5. **Headgear:** Depending on the conditions, sailors wear many different types of headgear. In cold weather, a hat and a hood may be appropriate to reduce the loss of body heat. In sunny weather, a hat with a brim or a long visor may be appropriate for protection from the sun. Choose headgear that does not restrict your vision or interfere with your hearing.

3. PERSONAL TRAINING

3.1. Swimming

Getting wet and capsizing is a normal part of college sailing, so it is essential that every college sailor be able to swim and feel confident in the water. As required by ICSA Procedural Rules, a faculty advisor, coach, or other college official must certify, when a student registers with a District, that the student is able to swim at least 50 yards and tread water for five minutes in fresh water while wearing boots, shoes, or sneakers.

3.2. Experience

Schools may find it helpful to set categories for sailors with differing levels of experience (e.g., Novice, Crew, Skipper) and assign different privileges and responsibilities to each category.

3.3. Physical Fitness

College sailing is a physically demanding sport requiring agility, strength, and stamina. Staying in shape not only enhances performance, but it will help you save yourself and help others in dangerous situations.

4. CAPSIZES

Capsizes are a normal part of college sailing, so it is important to know and practice the methods of righting a capsized boat.

4.1. Righting Techniques

In the event of capsize, first make sure everyone is okay and always stay with the boat. Second, right the boat using one of the following methods.

4.1.1. **The Scoop Method:** One crew member supports the mast at the gooseneck while the second crew member goes to the bottom side of the boat. The first crew member throws a jib sheet over the boat to the second, who climbs onto the centerboard using the jib sheet, and leans out. The first crew member holds on to the centerboard trunk or hiking strap and is pulled into the boat as it rights. The first crew member then helps the second one aboard.

4.1.2. **The Traditional Method:** Rotate the boat so the bow points into the wind or the mast is downwind. One crew member stands on the centerboard while the second crew member holds the boat into the wind. The first crew member boards the boat from the stern and then helps the second one on board.

4.1.3. **The Walkover Method:** Both crew members climb over the high side onto the centerboard as the boat capsizes. As the boat rights, they both climb back into the cockpit.

4.2. Righting a Turtled Boat

If the boat turtles (turns fully upside down), the centerboard may slip back into the trunk. In such case, place a jib sheet over the high side of the boat. Both crew members should stand on the opposite gunwale and lean out using the sheet for support. When the boat has reached horizontal, one of the three above methods can be used to complete the righting.

4.3. Boarding a Boat

4.3.1. **Boarding a Righted Sailboat:** Attempt to board over the windward side of the transom. Kick with your feet and lift yourself with your arms to chest high before attempting to complete the entry. Once you are able to balance on the transom use your arms to pull yourself further into the boat. After your hips are inside the boat move your legs into the boat.

4.3.2. **Boarding a Safety Boat:** Let a person in the safety boat grasp under the armholes of your life jacket. Coordinate your efforts with the person helping. Once your chest is over the side of the safety boat, start bringing one leg over the side. Complete the process by bringing the second leg over the side.

4.4. Capsize Prevention Techniques

4.4.1. Sailing Upwind or Reaching:

1. Move crew weight to windward (hike), feather the sails by pointing higher or depower the mainsail by easing the sheet as necessary to counteract excessive heeling.
2. Always keep the boat moving forward so you have control.
3. In high winds, move crew weight a little aft of amidships and pull the centerboard up lightly to reduce weather helm (the tendency of the boat to turn into the wind)
4. In high winds, carefully choose the proper time to tack. Tack rapidly and be on the other side at the conclusion of the tack so as to avoid getting in irons (head to wind and unable to tack).

4.4.2. Sailing Down Wind or Jibing

1. Place crew weight aft in puffs. Use the boom vang (to keep the boom down).
2. Pick a lull before jibing.
3. During stronger winds the centerboard should be 2/3 of the way up (to prevent the boat from catching). Keep the boat flat through the jibe. Slowly move the tiller away from the boom, trimming the main in as the boat bears away from the wind. As the boom crosses the centerline, center the tiller and let the main out quickly. Then head downwind as the main fills on the new jibe. Crew members should be prepared to balance the boat by moving to the new windward side.
4. In high wind conditions, consider tacking rather than jibing to reduce the risk of capsizing.

5. SAFETY BOATS

5.1. Safety Boat Type, Size, Motor, and Fuel

The type and size of the safety boat should be appropriate for the waters and conditions in which it is to be used. Generally, the smaller the boat, the more easily it is handled. The boat's design should make it easy to assist a sailboat and recover a person in the water. It should be able perform safely in the roughest water conditions found in the area.

The heart of a safety boat is its motor. It doesn't matter whether it is an inboard or an outboard, as long as it works. While outboards are usually more maneuverable, their design may not provide as much protection as is required in open waters. For safety reasons, always use the proper fuel and have more than enough of it to complete a rescue mission.

5.2. Safety Boat Equipment

Have the following equipment available on a safety boat:

1. Anchor with chain, and anchor line
2. Paddle or oar (should the engine fail)
3. Hand pump, bucket, or other bailing device (should a capsized boat need bailing after righting)

4. Throwable flotation device (to support a person in the water or to keep a mast from sinking and a boat from turtling)
5. Tow line, preferably nylon to reduce shock through stretching
6. Other spare lines (to throw to a person in the water)
7. Boat hook. Boarding ladder, or a line with a large bowline (for a foothold)
8. Reflective blanket to warm a person until taken ashore

Other items include the following:

1. Basic first aid kit, including a bee sting kit, and a sugar source for diabetics
2. Wireless communication device. This is useful to direct the safety boat to trouble, and allows the safety boat crew to report progress and get advice if necessary, and to prepare personnel on shore for the arrival of rescued sailors.

6. SAFETY BOAT CREW TRAINING

6.1. Considerations

Individuals operating a safety boat must understand their function and not be diverted to other functions. The first priority of a safety boat is to assist sailors and boats in need. The effectiveness of a safety boat is only as good as its operators. The number of crew in a safety boat should be limited to those needed to operate the boat and perform rescues. A safety boat with too many people aboard does not move as quickly or with as much control. Untrained crew or people interested in another function (e.g., photographers and spectators) may interfere with rescue operations. The best approach to safety boat operation is one of active interest and continued training.

Safety boat crew should wear appropriate clothing to stay warm and dry. This may include a drysuit if a crew member needs to go in the water. It is important that the safety boat crew be able to perform at peak efficiency when called upon to do their task.

When a safety boat must be on the water for an extended time, consider rotating crew. Schedule rotations to meet the needs of the crew, the weather conditions, and the sailors.

At a regatta or practice the safety boat should be underway near the sailing area at all times before, during, and after racing.

6.2. Propulsion

Ensure that operators are thoroughly familiar with the motor starting procedure. If it is an inboard engine, is there a fan to clear the engine compartment of fumes? If an outboard engine, does the gas line need to be primed? Many things need to be checked before turning or pushing the starter motor switch. Have a checklist and follow it closely. Failure to do so may prevent or delay departure.

Most manufacturers suggest an engine warm up time, which is usually relatively short and can prolong the life and reliability of an engine. The short wait is worth the time in the long run. It is best to not operate an engine at full throttle or at idle; prolonged use at either setting can cause long-term problems. Operate the boat at speeds appropriate for the conditions. When just waiting and watching, try not to create a wake close to the sailboats.

Changing gears can be stressful on a motor's transmission. Remember that mechanical parts can fail if abused. Therefore, let the motor and transmission slow down to idle before changing gears. Furthermore, stop in neutral for at least a few seconds when going from forward to reverse. This fully stops the rotating parts of the transmission before they start to turn in the opposite direction. Taking time and going slow can save very expensive repair bills.

Many engines also have a specific shut down procedure. Learn and follow this procedure in order to prolong the motor's life and make it easy to start the next time.

6.3. **Steering**

When moving forward in a powerboat with wheel steering, steer as you would a car. When the powerboat has an outboard engine with a throttle handle, use it like a sailboat tiller. As when driving a car, drive at low speeds when making sharp turns.

When moving in reverse, remember, first, that most boats are not designed to progress rapidly in reverse and do not steer well in that direction. In a powerboat with wheel steering, turn the wheel to the side where you want to put the stern. With an outboard with a throttle handle, point the handle away from the side where you want to put the stern.

Wind and waves complicate the steering of a safety boat. With the propeller at the back of the boat, wind may push the bow. To maintain a steady forward course, it may be necessary to correct by constantly steering to the right or the left, depending on the direction of your course and the wind.

Waves usually, but not always, come in the same direction as the wind. This presents problems when going upwind, as the bow of the boat will react to the energy of the wave. Depending on the height of the waves, study the wave pattern and try to steer an upwind course that encounters smaller waves rather than larger ones. When going across the wave pattern, try to ride along one wave before transferring to another one. Going downwind presents some unique problems in a powerboat. If the waves are large enough and the boat is moving faster than the waves, it will skip from one wave to the next. The boat may fly from one wave, bottom out, and then bury itself in the back of the next wave. This technique is usually fast, but is hard on the crew and the equipment. The best technique is to drive slowly in high waves.

If possible, approach a rescue site going upwind. This has two advantages. First, the propellers of the safety boat are as far away as possible from anything in the water, and objects at the rescue site will blow towards the safety boat rather than away from it. Further, the wind will slow your approach to the site, should it be too fast.

6.4. **Rescue Site Evaluation**

When evaluating a rescue site, determine the urgency for rescue and recovery through visual observation and communication with the sailors. If the sailors appear to be okay and are using one of the common methods of righting a boat, do not interfere with their efforts. Only when they ask for help or are obviously injured or fatigued should the safety boat do more than stand-by.

6.5. **Rescue Sailors First**

When the sailor(s) ask for help or obviously need it, first decide how to rescue the sailor and rescue the boat later. Establish physical contact between the sailor and the safety boat. If possible, bring the safety boat close enough to the sailor so that the safety boat crew can grab the person in the water. If that is not possible, extend a boat hook from the safety boat or throw a line for the sailor to grab.

Before attempting to bring the sailor on board, decide how to coordinate efforts in order to minimize the risk to the safety boat crew and the sailor. Avoid potential collisions between the sailor and the safety boat. If possible, shut off the safety boat motor or put it in neutral until the sailor is out of the water. Use a boarding ladder if it is available. As the sailor is boarding the safety boat, the safety boat crew should balance the boat, especially if rough wave conditions exist.

Assess the rescued sailor's physical condition. The safety boat crew should decide whether or not first aid should be administered before attempting to rescue other sailor(s). The crew should also decide the urgency of taking the rescued sailor(s) ashore where more complete care can be given. A wireless communication to shore should be attempted so necessary preparations ashore can be made.

6.6. **Recover the Sailboat**

The best way of recovering a capsized sailboat is for the sailors to use one of the methods for righting a self-rescuing boat. If they are unable to right the boat either alone or with assistance from the safety boat, they should be rescued and, if advisable or necessary, returned to shore. If the sailboat must be left unattended, if possible, anchor it to keep it from drifting. Also, tie a float under the mast tip to prevent the boat from turtling.

The recovery of an abandoned sailboat should not be attempted until conditions are favorable. If the sailboat is floating on its side, an attempt should be made to grab the mast, shroud, or sail. By pulling up and in on the mast or the shroud the boat can be righted. If the sailboat has turtled, the best way to recover it is to have the safety boat stand by while a well-rested sailor wearing appropriate clothing (usually a dry suit) and a PFD enter the water and right the sailboat using one of the previously described methods. If the jib sheets are not easily reached, provide the sailor with a section of line to attach to a shroud.

If the mast is stuck in the mud, determine its direction. Without putting any more weight on the boat than necessary, attach a line to the exposed side stay at the deck and have the safety boat carefully pull on that line at right angles to the length of the boat. The forestay should not be used as it may cause the mast to bend before it comes free.

Unless the centerboard has been cleated in an up position, pull it out of the trunk. The board can then be used for leverage in righting.

If a sailboat is particularly difficult to right due to wind and wave conditions, it may be helpful to release the halyards and lower the sails before making another attempt at righting the boat. However, be sure that the sails don't become fully detached from the boat.

6.7. **Towing**

If a sailboat has been damaged or if the sailors are not able to sail, it may be necessary to tow it ashore. A safety boat should be prepared with a proper tow line. The safety boat crew should determine where the line will be secured to the safety boat, and the preferred point of attachment to the sailboat (either attach it to a strong fitting on the bow of the sailboat or tie it around the mast at the deck). If possible, rig a bridle to reduce the tendency of the towed boat to pull the safety boat to one side or the other. The length of line to pay out varies with the speed of the towing boat. The bow of the towed boat should ride up on the first or second stern wake of the safety boat, so the tow does not wander from side to side.

The safety boat should begin to tow slowly as a crew member pays out the line, watching to see that it does not fall in the water and become caught in the safety boat's propeller. The safety boat should accelerate gradually so there is no sudden strain on either boat. Then, the length of the towline should be adjusted to make the towed boat ride properly. Once the towed boat is positioned, the safety boat can proceed at a suitable and constant speed.

It is best to tow a boat with the centerboard fully raised and with someone in the boat, sitting aft, to steer it behind the safety boat. If no one is in the towed boat, the rudder should be removed.

6.8. **CPR Training**

At least one member of the crew aboard a safety boat should have CPR and basic first aid training. Such training is available through the American Red Cross and other community organizations.

7. **REFERENCES**

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