

Boatsteerer Training Manual

Buzzards Bay Rowing Club

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Purpose

Boatsteerer training prepares individuals to take command of the whaleboats of the Buzzards Bay Rowing Club. The boatsteerers are trained to take the boats out into open water with a competent crew as well as to have working knowledge of safety precautions and procedures.

Introduction

The boatsteerer takes on many roles while in the whaleboat. They must be leaders, decision makers, navigators, and safety monitors. This boatsteerer training manual along with on the water classes will provide those interested in learning these skills with a framework for developing boatsteering skills. The individual must be willing to take on the roles and responsibilities described below.

Leader: The boatsteerer must have some working knowledge of how to row the whaleboats. This is important if the crew has some new rowers. It is the job of the boatsteerer to teach the skills needed for safe and effective rowing.

Decision Maker: By planning ahead, the boatsteerer can often avoid emergency situations. On the open water, though, situations can arise that were not planned for at the dock. The boatsteerer must be able to make quick decisions that will ensure the safety of the crew and the boat.

Navigators: The harbor can be a tricky place to row. Not only is it a working harbor, but there are islands and bridges to navigate around as well. The boatsteerer must know where any hazards may be so that they can plan a safe course for the row.

Safety Monitors: The boatsteerer must familiarize themselves with ways to keep their crew safe while under his/her command. By knowing how to prevent such things as dehydration and hypothermia, as well as how to treat them, the boatsteerer can keep their crew safe and having fun. Safety can also be monitored before even leaving the dock. Checking weather reports or even glimpsing the harbor before a row can help a boatsteerer avoid sudden changes in weather that may put the crew at risk.

1. Boatsteerer Responsibility⁷

The boatsteerer is the person with the most responsibility in the boat as he/she is the only one who can see what is going on around the boat. He/she must maintain a calm and purposeful manner while in the boat with the crew. It is therefore the boatsteerer's

responsibility to receive training, which will ensure that the crew will remain safe while in the boat.

Boatsteerer Checklist⁷

1. Boatsteerer Responsibility
2. Boat Orientation and Oar Commands.
3. Log Book
4. Crew Organization
5. Gear
6. Tide & Weather Assessment
7. Departing the Dock
8. Use of Steering Oar
9. Docking Boat
10. Securing the Boat
11. Safety Procedures
 - a. Man Overboard Drill
 - b. Hypothermia Drill
 - c. Heat Stroke/Dehydration Drill
 - d. Use of Emergency Equipment
 - e. Running Aground
 - f. Right of Way Rules
12. Races/Collisions
13. How to Tell Short-Range Weather without a Weather Report or Instruments

2. Boat Orientation and Oar Commands^{1, 4, 7, 8}

Boat Orientation⁷

Oars and Rowers⁷

There are six oars on the whaleboat: five used by the rowers and one for the boatsteerer. The boatsteerer's oar is referred to as the *sweep oar* and it is the longest oar on board. The rower's oars are numbered 1-5 starting from the bow. The number 5 oar is also known as the *stroke* oar or position. It is the job of the stroke rower to set the pace for the rest of the crew.

Vocabulary^{1, 4, 7, 8}

Blade – the flat part of the blade that is placed in the water

Boatsteerer/Coxswain – the person who steers the boat

Bow – the forward part of the boat, which crosses the finish line first

Button – keeps the oar from slipping through the oarlock

Catch – the first part of the rowing stroke when the oar enters the water

Crab – what happens when the blade gets trapped under water and makes it hard to row

Drive – second part of the rowing stroke, when the rower is pulling on the oar handle

Feather – when the oar is turned parallel to the water to reduce water/wind resistance

Finish – the end of the rowing stroke; rower lifts blade out of the water

Gunwale – top edge of the boats sidewalls

Hull – the boat

Midship – center of the boat between the bow and the stern

Oars – used by the rowers to propel the boat

Oarlock – U-shaped hardware that holds the oars

Port – the left side of the boat

Recovery – when the rower returns to the catch part of the rowing stroke

Skying – what happens when the oar strays too far from the water during the recovery

Starboard – the right side of the boat

Stern – the rear of the boat which the rowers face

Stroke – the rowing cycle (catch, drive, finish, and recovery); the number 5 rower

Oar Commands^{1, 4, 7, 8}

It is important for both the boatsteerer and the crew to understand the commands used in the whaleboat. The safety of the crew depends on clear communication. The boatsteerer is responsible for ensuring that all rowers know and understand the commands listed below.

“Ready All” - Rowers will lean forward with their oar out of the water in position for the catch.

“Pull together” – All the rowers begin rowing.

“Avast” – The rowers will stop rowing holding their oars out of the water.

“Hold Water” – The blades are placed into the water in order to stop or slow the boat.

“Rest Oars” – Rowers pull their oars across the gunwales and rest.

“Trail Oars” – Oars are moved alongside the boat, clear of the water.

“Ship Oars” – Oars are placed into the boat. This follows the “trail oars” command.

“Feather Blades” – Blades are turned parallel to the water.

“Drop Oars” – Blades are placed into the water in a feathered position to slow the boat.

“Square Blades” – Blades are turned perpendicular to the water. Rowers should keep blades square while rowing.

3. Log Book⁷

The boatsteerer is responsible for completing the log before each row. The entire log page must be completed including first and last names of all crewmembers. A sample page is below.

Kanawha Logbook	Crew Members (all must have signed insurance waivers)
Date: _____	1. _____
Departure Time: _____	2. _____
Destination: _____	3. _____
Expected Return Time: _____	4. _____
Boatsteerer/Coach: _____	5. _____
Designated Worrier: _____	6. _____
Phone #: _____	7. _____

4. Crew Organization⁷

The boatsteerer must assign rowing positions and tasks to the crew. The number 5 (stroke) and number 4 positions set the pace for the rest of the rowers and should be assigned to more experienced or confident crewmembers. Since there are only two oars on the port side to counter the three starboard oars, the boatsteerer should position the

rowers so that both sides have an even amount of power. This will make steering the boat easier and keep the boat more balanced.

It is also helpful to assign one of the rowers as second in command in the case of emergency. Check with the crew to ensure that they know which seat they are in and whether they are a port rower or a starboard rower. This needs to be established before leaving the dock so that commands can be easily understood and followed once out on the water.

5. Gear⁷

Before leaving the dock, the boatsteerer must check that all safety equipment is onboard and properly stowed. Be sure that the safety equipment is stowed to ensure its safety as well as the safety of the rowers.

Required during all rows

Life jackets for each person on board (PFD's) – USCG requirement
Throwable device – USCG requirement
Distress signaling device: signal horn, whistle – USCG requirement
First aid kit
Bailing device/pump (installed)

Required during night time rows

Flashlight or flare – USCG requirement
Running lights for dawn, dusk and night rows – USCG requirement

Recommended for rows

Anchor
Knife
Cellular phone or VHF radio
Paddles or spare oar

6. Tide and Weather Assessment⁷

Before leaving the dock, the boatsteerer must assess the tide and weather as to whether it is safe to go out or not. It is important to know the tide, the direction of the

wind, and the wind speed. Use this information to determine if you have enough rowers and if your rowers are experienced enough. Keep in mind that even experienced crews are not always able to row in rough weather.

Check the weather report to determine the tides, wind speed and incoming storms or fog. Whaleboats can make 2 to 5 knots. In open water, whitecaps form in about 12 knots of wind. When there are whitecaps in the harbor, this indicates wind over 18 knots and in this case it is not recommended that the boats be taken out.

In order to assure that the crew will not be too fatigued on the return trip home, head into the wind at the beginning of the row. This will ensure that the wind will be with you on the way back to the dock. When rowing near the islands or under the bridge, be sure to know the tide level. When it is low tide, stay a safe distance from the islands so that the boat does not run aground. Watch the level of the tide when rowing under the bridge. Leave enough clearance so that you can safely pass under the bridge.

7. Departing the Dock⁷

1. The boatsteerer must assign a crewmember to cast the boat off from the dock. It is best that this person be seated near the bow of the boat.
2. Be sure that the crew is ready and at attention.
3. The person assigned to cast off will walk untie the stern and spring lines first followed lastly by the bowline. He/she will use the bowline to gently move the boat away from the dock leaving enough time to step safely into the boat.
4. Once away from the dock and other boats, have the rowers ready their oars.
5. Position the boat and have crew begin rowing.

8. Use of Steering Oar⁷

The steering oar, or sweep oar, is the boatsteerer's way of turning the boat. It is longest oar that rests in an oarlock located on the port side of the boat. The boatsteerer stands in the stern of the boat, facing forward, hands on the steering oar. By pushing the steering oar to the right (starboard), the boat will move to the left (port) and vice versa.

Unlike a rudder and tiller, the combination of the sweep oar and oarlock allows you to maneuver the boat even when you have no forward motion in the water. It's also possible to "scull" with the sweep oar and move the boat forward. This occurs by pushing and pulling the sweep through the water with the blade rotated so that the lower edge is leading and the upper edge following. Reverse the blade when you change from a push to a pull.

The boatsteerer can also use the rowers to turn and steer the boat. Three turns are listed below showing both the port and starboard turns. It is also helpful to use the sweep oar to assist the rowers in the turn.

	Port Turn	Starboard Turn
Wide Turn	Port avasts, starboard pulls	Starboard avasts, port pulls
Medium Turn	Port holds water, starboard pulls	Starboard holds water, port pulls
Tight Turn	Port stern strokes, starboard pulls	Starboard stern strokes, port pulls

In open water you steer the boat by keeping the bow in line with a point on the horizon. When pulling across a current or steady wind you make a straight line (over land) by pointing the bow upstream/upwind of your destination. The boatsteerer must remain very aware of the boat's surroundings. In addition to steering the boat, the boatsteerer must watch the surrounding water for debris, buoys, other boats, wind, and currents.

It doesn't take much movement of the sweep oar to keep on course. It is best to have a course planned out before leaving the dock. If you must turn sharply in an emergency situation, have one side of the boat stop rowing rather than give up control yourself or just have the crew stop rowing.

Important Boatsteerer Maneuvers: Each boatsteerer must be able to maneuver the boat competently in:

1. Narrow confines
2. Open water
3. Leaving the dock
4. Returning to the dock

Possible Oar Problems⁷

The boatsteerer must be able to instruct rowers on what to do if a problem with an oar is encountered. Below is a list of common problems and solutions.

1. "Catching a crab"
 - This occurs when the blade gets trapped under water and cannot be pulled free. The blade usually flies towards the rowers face and can knock them backwards off of their seat.
 - The boatsteerer should stop the boat when a rower catches a crab to make it easier to free the blade from the water and to lessen the chances of injuring another rower in the boat.
 - The rower should feather the blade of the oar when he/she catches a crab or let the oar move towards the bow while they duck away from the handle.
2. An oar breaks
 - The boatsteerer should handle this situation in the same way as a rower "catching a crab."
3. An oar is lost overboard
 - The boatsteerer should guide the boat to recover the oar immediately.
 - If the sweep oar is lost overboard, direct the rowers to maneuver the boat into position to recover the oar.

9. Docking the Boat⁷

1. At a conservative distance from the dock, and with some forward momentum, have the rowers *avast* and *trail oars*.
2. Place the fenders out on the side of the boat that will be side by side with the dock.
3. Get the lines ready and have the crew ready to secure the boat.
4. Once next to the dock, line the bow up with the end of the dock closest to the ladder.
5. The spring line should be tied first, followed by the stern line and lastly the bow line.
6. Make sure that the boat is secure so it will not knock against the pier or other boats.
7. Remove all gear, trash, and personal belongings from the boat.
8. Secure the cover onto the boat.

Keep in mind the wind and currents when docking the boat. The crew should be at full attention in order to receive your commands and to safely dock the boat.

10. Securing the Boat^{6, 7}

In order to secure the boat and equipment, the boatsteerer must have knowledge about basic knots and line handling. The three lines used to secure the boat are the *stern*, *spring*, and *bow* lines. The spring line is found midship and travels diagonally from the boat to the dock and is tied to the same cleat as the stern line. This line prevents the boat from moving forward or back along the dock. The lines should be secured to the *cleats* found on the dock.

Fenders must be used, on the side facing the dock, and in between two boats which are rafted together.

11. Safety Procedures^{5, 7}

The boatsteerer is responsible for the safety of the crew and must be prepared for emergency situations. If someone goes overboard, quick thinking and action can save his/her life. Even on warm day, hypothermia is a threat, so the “man overboard” drill should always be practiced.

The person most likely to go overboard is the boatsteerer. If this happens, the person who you have deemed the second in command should take over immediately. If the crew is unsure of who is second in command, the stroke should take the boatsteerer’s position to complete the man overboard drill.

No one else should go overboard to help unless the person is injured. Position the boat along side the victim. Secure a line under his/her arms and ease the victim gently over the gunwale, face down, torso up and over into the boat. At the point of rescue, many people have stopped trying to float and have sunk before the eyes of the rescuer.

a. Man Overboard Drill⁷

1. Yell “Man overboard!”
2. Control the boat, stop rowing.
3. Have a bow rider stand and point at the victim until rescued.
4. Throw a floatation device, try to get it close to the victim without actually hitting him/her.
5. Approach the victim from downwind to avoid running him/her over.
6. Pick up the victim midship, where the gunwale is lowest in the water.
7. Get wet clothes off, dry clothes on. Get back to shore if there is any risk of injury or hypothermia

b. Hypothermia Drill⁵

Hypothermia, low heat in the body’s core, subtly steals your ability to make a rational decision. Someone suffering from hypothermia may resist any form of help.

Signs/Symptoms

1. Gross coordination is lost; patient stumbles.
2. The brain is dulled by the cold, patient drops gear and doesn’t notice or care. Difficult to detect in others and VERY DIFFICULT to detect in yourself.
3. Loss of control of fine motor skills, patient can’t buckle buckles, etc. The brain is trying to save itself by shunting blood away from less important body parts such as hands and feet.
4. Uncontrollable shivering starts when the core reaches approximately 95 degrees F. Shivering produces heat, but requires high energy output. If the heat isn’t trapped near the body, or energy replenished with food, or both, core temperature continues to drop even faster.

5. Shivering stops and the patient enters what is termed a “metabolic icebox”: the body grows progressively more rigid, colder and colder to touch, with slow and weakening pulse and respirations that may become impossible to detect. Although a person can survive for hours, sometimes days, in this deteriorating condition, the eventual end is death unless quality care is provided.

Management of Mild Hypothermia

The mild hypothermia patient is still trying to re-warm internally. The patient can talk, eat, and shiver. Change the environment so the heat being produced is not lost. Get the patient out of wet clothes and into something dry, out of wind and cold and into some kind of shelter, even if the only shelter available is the protection of wind-proof, waterproof clothing. Cover the patient’s head and neck where critical heat is lost.

If the patient is able to eat and drink give simple carbohydrates to stroke the inner fire. Fluids are more important than solids to a cold person. A warm (not hot) sweet drink will add a tiny bit of heat and a lot of simple sugar for energy. Even cold fluids are better than no fluids.

If the patient can still exercise easily, keep moving after initial treatment. If the patient can’t exercise easily, do all you can to encourage inner heat production: insulate the patient from the ground, bundle in dry insulation, snuggle with warm people, place chemical heat packs in the hands or at the feet (but not against naked skin) – and wait until the patient returns to normal.

Management of Severe Hypothermia

The severe hypothermia patient is semi-conscious or unconscious, and has stopped shivering. He has lost the ability to re-warm. Handle the patient gently – roughness can overload a cold heart, and stop it. If the patient appears breathless, perform rescue breathing, but not CPR.

Remove wet clothing and wrap the patient up in dry insulation. Wrap heat packs in dry cloth and place them appropriately: palms of hands, soles of feet, chest, armpits, groin – in that order. Finish with a vapor barrier - tent fly, sheet of plastic, garbage bags, space blanket – something to trap any heat left in the patient. The final product is a cocoon, a “hypothermia wrap” open only to the mouth and nose.

Do not force food or drink on the patient. Treat for severe hypothermia even if the patient appears dead. No patient is dead, as far as you’re concerned, until warm and dead. Call for help (marine radio or cell phone) and row for shore.

Prevent Hypothermia

1. Wear clothing that retains body heat even when wet.
2. Stay dry by wearing layers of clothing, taking off layers before sweating starts, adding them back before chilling occurs.

3. Drink lots of water.
4. Eat lots, especially carbohydrates.
5. Maintain a pace that prevents overexertion. Rest often.
6. In a group, watch each other for signs of hypothermia. Treat early, and if one person is treated, treat everyone.

c. Dehydration Drill^{5, 9}

Water is easily and quickly lost from the body in the outdoors through sweating, urination, defecation, breathing, and diarrhea. Even mild dehydration causes loss of energy, loss of mental acuity, and loss of fun. Mild dehydration shows up as thirst, dry mouth and dark urine. Moderate dehydration adds very dry mouth, reduction of the amount of dark urine, a rapid weak pulse, and remarkable dizziness when the patient stands up. Severe dehydration adds very, very dry mouth, lack of urine, and shock

Signs/Symptoms⁹

- thirst
- less-frequent urination
- dry skin
- fatigue
- light-headedness
- dizziness
- confusion
- dry mouth and mucous membranes
- increased heart rate and breathing

Treatment of Dehydration

Treat with water and dilute fruit juices or sports drinks.

Prevention of Dehydration

Drink lots of fluids, water or dilute sports drinks. Drink a half-liter every morning. Drink one-quarter liter every 15 to 20 minutes during periods of exercise. Drink enough to keep your urine clear.

d. Use of Emergency Equipment⁷

The boatsteerer must be aware of the emergency equipment on board. The boat should have a flare, signal horn, first aid kit, and a throwable cushion, as well as

navigation lights. The safety equipment should be kept in the stern of the boat, so that in the case of an emergency, it is within easy reach. The equipment can be found in the lock box outside the sail loft near the dock.

The navigation lights should consist of a bow light, which is half red and half green, and a white stern light. The red light of the bow light should be placed on the port side of the boat while the green light faces starboard. Do not go out at dawn, dusk, or night without navigation lights.

e. Running Aground⁷

The boatsteerer must also familiarize themselves with the potential hazards in the harbor. A few places that are shallower than the rest of the harbor are found around Crow's Island and Palmer's Island, especially during low tides. Also be careful when rowing underneath the Popes Island Bridge at high tide. Be sure that you have enough clearance for the trip under and the return trip home.

If you are unsure in the stern of the boat as to how shallow the water is, ask your bow rower to be another set of eyes for the boat.

f. Right of Way Rules⁷

New Bedford Harbor is a *working harbor*! Be respectful of the commercial vessels. Stay out of the channel whenever possible. Never force a larger vessel to change their course. It is easier for you to change the whaleboat's direction than it is for a large fishing boat.

Most of the boats in the harbor have the right-of-way over the whaleboats. The only exceptions may be smaller power boats and jet-skis. It is the boatsteerer's job to decide what the best course of action is in these situations. Use common sense. Not all boats will stop for the whaleboats and it is up to you to avoid a collision. Make a decision about changing course to avoid another vessel early and obvious.

12. Races/Collisions⁷

Most races will have a set of rules that govern starts, turns, finishes, right-of-way, and disputes. When in doubt, the boat ahead has the right-of-way and the overtaking boat is "burdened." Always check the race rules, usually provided at a boatsteerer meeting prior to the race.

Starts and turns are where most collisions will occur because the boats are close together. The boatsteerer must concentrate on keeping the boat on course using the

sweep oar and the rowers. It is the boatsteerer's responsibility to avoid a collision, even if it means stopping the boat during a race for a few seconds.

Ways to Prevent a Collision

1. At the start of the race, refuse to signal "ready" unless you have at least 10 feet between your oar tips and those of your neighbor's.
2. When practicing race starts, pay attention to your steering. Stay on course by keeping the bow in line with a point on the horizon.
3. Make sure your commands and boat handling skills are second nature before you start a race.
4. Practice, practice, practice!

13. How to Tell Short-Range Weather without a Weather Report or Instruments

You can tell when the weather is about to change without a weather report or any instruments.

Meteorologist and oceanographer Roger Huff states in the current (November) issue of Boating that observing your surroundings will help you be aware of changing short-range weather. Look for these clues to avoid being caught off guard.

Clouds are the most obvious indication of what weather is to come.

With your back to the wind, look skyward. Which direction are the clouds moving? If you want to know about distant weather – more than six hours away – look to high-altitude clouds. Are they moving left to right? If so, the weather is going downhill. If they're going from right to left, the skies will improve. High-altitude clouds coming directly towards you or heading away means you're in the clear – the weather will stay the same.

Also consider the shape and color of the clouds. Wispy and white high clouds indicate fine weather ahead. Huff says, "When wispy high clouds, called Mare's Tails, give way to lower clouds, called Mackerel skies, the weather may deteriorate." Lower clouds related to weather that's quickly approaching. If clouds are lowering or gathering together, precipitation is on the way. If they're dark or dense, bad weather will be here soon. Here's the obvious bit. If the clouds are dark and dense, they're dangerous. Sharp-edged clouds are the worse of all.

A halo around the sun or moon indicates an approaching warm front.

The moon or sun shining through moisture in high clouds causes the halo. When the clouds totally obscure the outline of the sun or moon, chances are rain will come within 24 hours. Another indication of rain can be a ship or other objects in the distance that seem to float above the horizon.

If there are ships or houses in view, take a look at the smoke coming from their funnels or chimneys.

Smoke that hangs down by the water's surface means approaching rain. This happens because the lowering air pressure isn't dense enough to support the particles in the exhaust.

Aids to Navigation

Equipment Requirements - Vessel Operating Offshore

Aids to Navigation are placed along coasts and navigable waters as guides to mark safe water and to assist mariners in determining their position in relation to land and hidden dangers. Each aid to navigation is used to provide specific information.

Several aids to navigation are usually used together to form a local aid to navigation system that helps the mariner follow natural and improved channels. Such aids to navigation also provide a continuous system of charted marks for coastal piloting. Individual aids to navigation are used to mark landfall from seaward, and to mark isolated dangers.

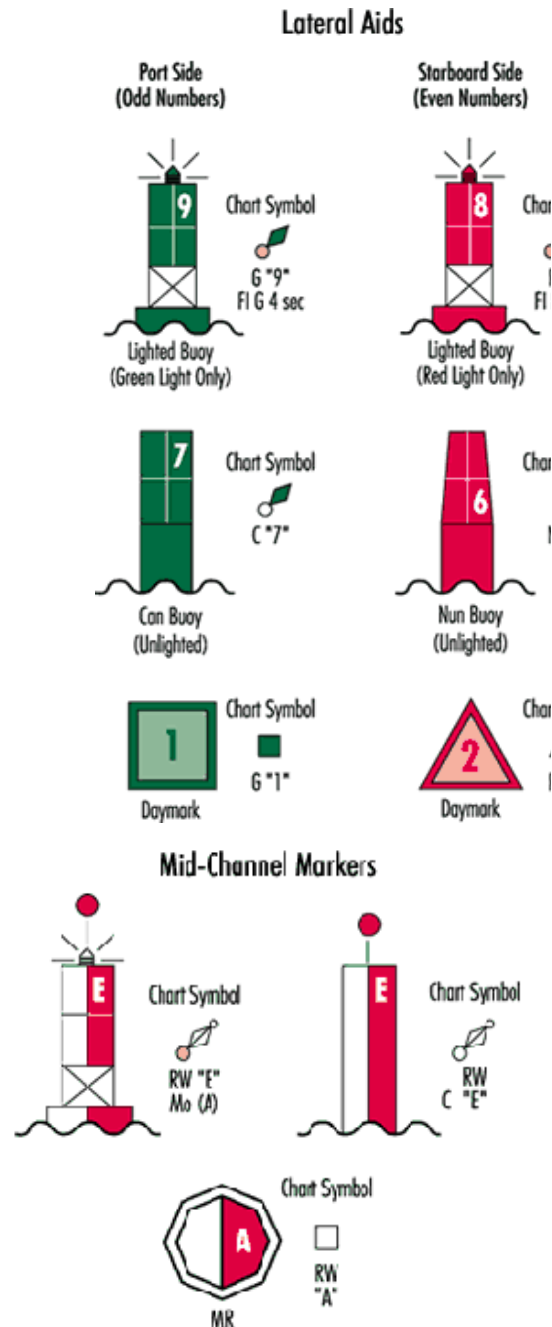
Lateral markers are buoys or beacons that indicate the port and starboard sides of a route to be followed. Virtually all U.S. lateral marks follow the traditional 3R rule of "red, right, returning". This means, when returning from sea, keep red marks on the right-hand (starboard) side of the vessel.

Mariners must NOT rely on buoys alone for determining their position. Storms and wave action can cause buoys to move.

Lateral Aids

Lateral aids marking the sides of channels as seen when entering from seaward.

Do not tie up to Aids to Navigation, it is dangerous and illegal.



Resources

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7. Whaling City Rowing Club – Boatsteerer Training Manual, revised November 24, 2003.
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9. http://www.umm.edu/non_trauma/dehydrat.htm