

NARRAGANSETT BOAT CLUB MOTORBOAT OPERATION - 2018

PLEASE NOTE: Every person using an NBC motorboat should review and put to practice the information contained within this document. If there are questions, please ask the Captain or Albin. If there are suggestions for improving this document, please make them immediately via email to Albin so that we can make the necessary adjustments.

I. RIGHT TO KNOW: Gasoline can be dangerous if not handled properly. Gasoline vapor is invisible, readily ignites and burns with explosive violence.

A. PROPER HANDLING:

1. **There is no smoking on Boat Club property.** This includes persons who are in our motorboats.
2. Do not store gas cans in boathouse. The gas box on the dock is the sole location for gasoline. Pour gas from the holding tank into the outboard motor tank only while on the dock. Place all tanks into the gas box so that they are **upright**, secure and will not leak gas.
3. For filling the tanks, please note the following:
 - a. There may be three types of tanks for the engines: tanks for the Hondas, tanks for the 4-Stroke Yamahas, and tanks for the 2-Stroke Yamahas that require gas **mixed with oil**. Connect the 2-Stroke Yamahas should only to the tanks which have **blue tape** on the engine head and the handles. **DO NOT POUR RAW GAS INTO THE MIXED GAS TANK.**
 - b. **To fill all Tanks**, please use the red funnel. Use the gas box as a wind shield by placing the tank on the leeward side of the gas box so that there will be little, if any, spillage of gasoline on the dock.
 - d. Tightly secure the gas cap to the motorboat gas tanks. Be careful not to cross-thread the caps as you tighten them.
 - e. Make certain that the vent cap on the motorboat tanks is open **only** when they are attached to the engine and it is ready for operation. **Close the vent cap** when returning the tank to the gas box. **Also, make certain that the small tanks are always placed into the gas box right-side up.** Do not tip them sideways, or place them precariously into the box so that they may slip sideways into a gap. This leads to seepage of gas. Use the "cuffs" to keep the hoses coiled. See the special "Don't Crimp" directions at the end of this manual.
4. Do not weld, heat or drill a gasoline container. Do not inhale the vapors.
5. Never mix gasoline with kerosene. It can cause a flash fire.
6. Avoid eye or skin contact with gasoline.

B. EFFECTS

1. When pouring gasoline into the motorboat tanks, you are standing on the dock; therefore, most people are not exposed to high concentrations and do not experience ill effects. However, if used in an area with poor ventilation, gasoline vapor can cause dizziness or irritation for the eyes, nose, and throat.
2. Gasoline is an important part of our lives. We use it everyday for our cars, trucks, lawnmowers, and coaching launches. Certainly, without it, coaching scullers and crews (and providing escort duty) would be a most difficult task. *As noted above, it can be dangerous and have adverse effects if not properly handled or stored.*

II. MATERIALS TO HAVE IN THE MOTORBOAT

A. It is mandatory that the driver and additional occupants of the motorboats **wear life vests at all times.**

B. One funnel megaphone and a set of flags (one white; the other red)

C. One seat cushion for yourself and one companion. Usually, there will be no companions in the early spring (or other cold-water months) so that there is maximum space in the boat for transporting drenched scullers and their shells.

D. The orange safety box should contain the following equipment:

- | | | |
|----------------------|------------------------|--------------------------------------|
| 1. First Aid Kit | 4. Nine space blankets | 7. Plastic Bags to encase all |
| 2. Throw Bag | 5. Fire Ext. Type BC | 8. Emergency Tools (See E. below) |
| 3. 50' Floating Rope | 6. Emergency Whistle | 9. One roll of black electrical tape |

E. A wide-mouthed water bottle holds these tools: pliers, a 4-way screwdriver, and two adjustable wrenches. *Nobody should remove these tools from the safety boxes. They are not for general use.*

F. One pool ladder or one stainless steel stirrup, which is attached with a rope to the center bench seats in the motorboats.

G. One rowboat oar, or a paddle, to help fend your motorboat away from rocks or shallows. It also serves as a quick depth guide, if you are trolling in shallow waters.

H. Two large white packets of life cushions for your rowers. These packets are also handy cushions for transporting disabled singles. **In addition, as already stated, all drivers and other occupants must wear Coast Guard approved life vests.** Do not take the life vests out of the life cushion bag except for emergencies. Keep the bags securely zipped. During cold weather months, there should be **no additional passengers.**

I. **Direct Scullers and others with the flags:** Use the red flag to stop rowers/traffic. Use the white flag to direct scullers and sweep boats from a distance. Use both flags together to gain the attention of boaters who may be waking your crews. In that case, be polite and judicious with your language so that you can gain a positive reaction from the approaching motor boater.

J. Bring your own cell phone. Pack it into a baggy. You'll be ready to call 9-1-1, if needed.

III. FUEL

A. **Do not purchase your own gas.** Let the Director of Rowing or his designee do it. If the tanks are getting low, make sure the Director knows. Call 401.952.1280.

B. Use gas from the holding tanks only. If you are the designee for purchasing gas, make certain that ***only raw gas goes into the small red tanks*** for the Hondas and Yamahas. In the **Yamaha tanks with blue tape on the handles** there is a prepared mixture of fuel containing oil with a 100:1 ratio. Use an 8-ounce styrofoam coffee cup filled with oil for the large red Yamaha tank. This tank has **BLUE** tape around the handle which is paired with the **BLUE** tape on the 15hp cover.

1. Failure to pour the correct type of gas into the designated gas tanks can result in serious damage to the engine Yamaha engines which require mixed gas. Do not use raw gas without **fuel stabilizer**. Without it the fuel clogs the carburetor.

2. We add the **fuel stabilizer** to all of the tanks each time that we pick up new gas at the pump.

IV. STARTING THE ENGINE

C. **Caution:** If your motorboat is moored between the dock and the street, **DO NOT** lower the engine until you have floated the boat into **deep water**. At low, or near low tide, boats moored in this area are very close to the mud, rocks, and other obstacles

that line the bottom of the river. In addition, there are still submerged pilings from the 1903 boathouse, which protrude up from the muddy bottom.

D. Lower the engine into the water. Unlock the chain. **Secure the padlock to the engine; NOT THE CHAIN.** Stretch the chain out onto the dock. Attach the hose and pump the bulb until it is firm. **Do not pump aggressively.** This may result in flooding the engine. Reset the red kill switch tab or switch.

E. **Keep the motorboat moored to the dock.** Get into the boat. Follow these steps:

1. Place the gas tank into the motorboat forward of the stern seat toward the center of the motorboat. This helps offset your body weight in the stern. **Make sure the gas tank's vent cap is open.** Connect the fuel line to the engine. Pump the blub until firm.

2. **Check the toggle bolts** which secure the engine to the transom. They should be extremely tight.

3. Pull out the choke, if there is one. For the newer Yamahas give the throttle two quick turns back and forth. That will engage the choke.

4. Make sure the engine is in neutral.

5. Set the throttle to "Start."

F. Pull the cord in the following manner:

1. Set your feet so that your body is in a **strong pulling position**. Make sure that you are stable. Grasp the pull cord with your strongest hand/arm. Place the other hand on the engine housing, or on top of the strongest hand.

2. Engage the pull cord before pulling, then the pull the cord quickly and straight back, **not up**. Push off with your left leg and then pull with the right hand (vice versa for lefties). **DON'T LET GO** of the starter rope. Let your pulling hand feed the pull cord back to the recoil position. Also, in warmer weather, when you may have a passenger, make sure that this person is not sitting directly behind you. They may get punched in the stomach, or mouth, when you pull the cord.

3. Once the engine turns over and runs, there are two additional instructions:

a. **For the Hondas**, push the choke half way in and allow the engine to run. After five minutes of running time, push the choke all the way in. If the outside temperature is cold, you may need to keep the choke open longer to give the engine time to warm up. **If the Honda Stalls** stalls after some significant operation, do not use the choke to restart. Instead, set the gas to half throttle and pull on the cord. Once it starts, reduce the throttle and put it into gear.

b. **For the Yamahas**, return the choke to the off position as soon as the engine begins to run. Adjust the throttle so the engine will run in idle without stalling. The newer Yamahas do not have a choke nob. Instead you will turn the throttle handle quickly twice to engage the choke. Once done, pull the cord to start the engine.

4. If your engine does not start after two pulls, check the fuel connector to the tank and to the engine, and the firmness of the bulb. Also, check the red kill switch tab to make certain it is fully engaged. Pull again.

5. If after two or three pulls it does not start, make sure you have pumped enough gas into the engine. You may hear a faint gurgle when the gas gets up into the engine head. **Be careful.** Sometimes the problem may be that too much fuel went into the engine *so that now it is flooded*. When that happens, you may smell gas and you may see the colors of gasoline decorating the water near the shaft of the engine. Remove the hose from the engine, pull out the choke, and pull on the cord until the engine starts. Once it starts, reengage the fuel line to the engine and turn off the choke.

6. Once the engine has been running, pulling the choke is usually not necessary for restarts. If it is a Honda, set the gas to half-throttle and then pull. For the Yamahas it should be as simple as just pulling the cord.

7. Please do not run the engines unnecessarily. In addition to wasting gas, excessive clogs the carburetor.

V. STOPPING THE MOTORBOAT

A. Put the engine into neutral.

B. As the bow approaches the dock, be ready to put the engine into reverse to prevent additional forward movement of the boat. Don't ram the dock.

C. When making turns close to the dock, do so by pushing the throttle stick to either **extreme** right or **extreme** left to get the bow to move to where you want it to go.

D. **IMPORTANT:** Once in reverse, be judicious with the throttle. **Do not reverse the engine at full throttle.** The buildup of water behind the transom will quickly flow into the boat and place you, and the boat, into the river.

V. DRIVING RULES

A. Make certain that you have reviewed the maps located within the Boat Club's Policies & Procedures. You can easily access these maps by going to www.RowNBC.org.

B. Put enough weight into the bow to keep the boat stable at half throttle. That is why we usually have at least three concrete blocks or some other weight in the bow. **Do not use dirty, slimy rocks from the river. Likewise, keep the interior of the motorboats clean. No dirt, mud.** Place your trash into the wastebaskets into the boathouse.

C. Coaching from the motorboat also serves as a safety launch. It is better not to take passengers. If a passenger is necessary, remove the weights from the bow, move your gas tank into the stern compartment nearest the transom, and have your passenger sit in the middle seat, **not** in the bow, or directly in front of you. This will help keep the bow high enough so that it does not plow through the water. **Return the concrete blocks to the motorboat when you have completed your workout.**

D. **Deep Water is Your Friend:** When driving the boat on the southside or street side of the dock, be very careful. This can be very shallow water when the tide is low. Keep the boat close to the dock until you get to the deeper water. Furthermore, if your motorboat is moored on the street side of the dock and it is low tide, it is usually better to remain standing on the dock so that you can pull the boat around to the south end's deeper water before lowering the engine into the water and attempting to start it.

E. Observe the standard driving rules of the road—usually **keep to the right of oncoming traffic**.

F. **Reduce Your Wake!** Cut the throttle to idle when necessary to minimize waking oncoming crews or scullers. Do so **BEFORE** they approach so that your wake will be less likely to affect them. Also, cut the throttle when passing by the dock for the same reason. To do so quickly and effectively, it is best to drive relatively close to the dock as you proceed northward from the Henderson Bridge.

G. If you are working with scullers, stay with the slowest sculler or in the middle of a large group of scullers where there may be a large difference between the fastest and slowest persons. How you do this will vary depending on your objectives within a workout and the water temperature. *Check the NBC Policies & Procedures for all additional instructions. Use your white and red flags to signal to your scullers. Many times they will not hear your commands. **Get them used to checking for the flags.***

H. Give your fastest scullers an endpoint so that they do not move out of your sight, when going down river, or out of hearing range on windy days. Slow scullers should turn around when the speediest reach the farthest point of their training course. As the driver and/or coach for the group, you will have to decide what that will be. **Members doing escort duty in March, and other cold water months, will follow a much tighter pattern of observation. Use the red and white flags to help signal scullers.**

I. At different times during the year, it can get very cold sitting in the boat. Therefore motorboat persons should overdress. You can always take off layers of clothing if you get too warm. Wear boots to keep your feet dry. You can also use the coxswain regatta suits, provided you are small enough and if the coxswains are not in need of them.

VI. LANDING

A. **Make sure to land before your scullers or crews** so that you can help them with any docking problems that they may have.

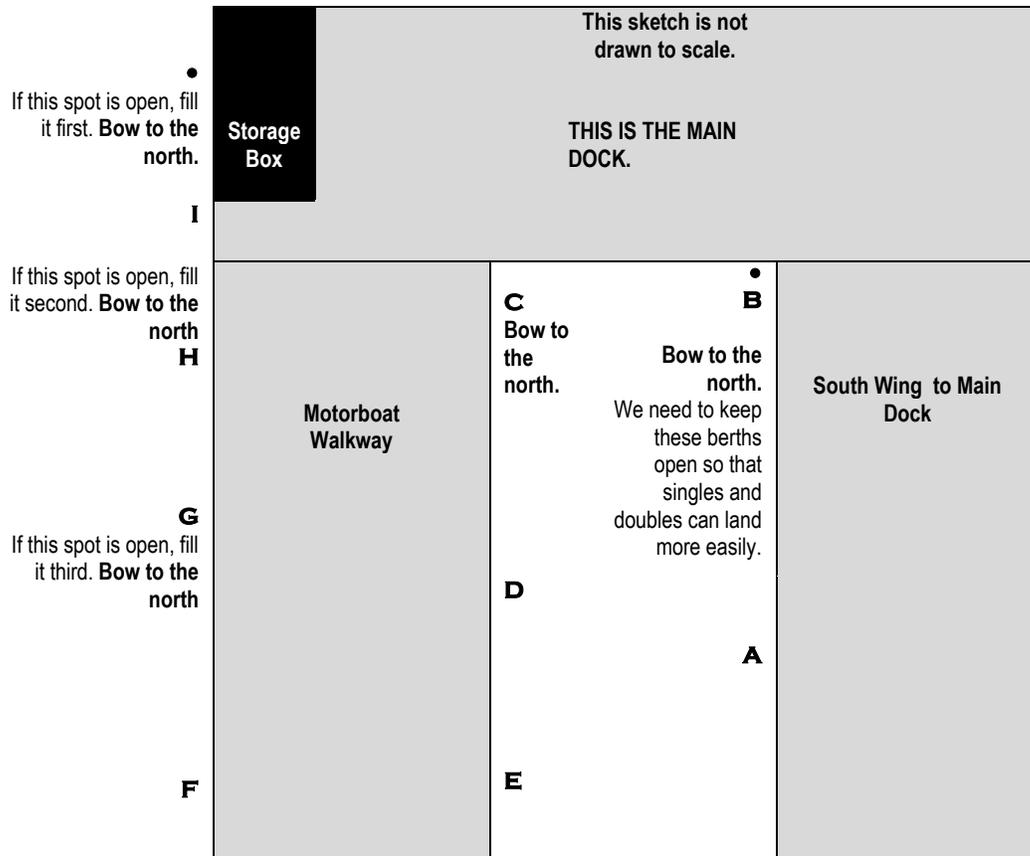
B. Approach the dock slowly and stay close to the dock, especially at the southern extensions that are close to the shore. This will avoid hitting the bottom during low tide.

C. Be ready to put the engine into reverse.

D. As your bow approaches the dock, flick the engine into reverse and then quickly into neutral. This will slow you down and enable you to land without crashing into the dock. If you need to turn the bow in a given direction, push the stick to the **extreme** right or left. Keep the throttle at a very low level. Judicious use of reverse and forward shifting plus moving the stick to the extreme left or right will enable you to make smooth landings that would make a tugboat captain proud.

E. Steer the boat alongside the dock, get out and secure the boat with the mooring lines, both **fore and aft**. Then turn off the engine. You may now assist your group. **A Repeat Reminder: Tether both ends of the motorboat so that other motorboats may land efficiently behind you.**

F. You may have a variety of “berths” to choose from when landing. In selecting your berth, think ahead. We need to moor the boats in some logical order. See the locations below. During high volume times, such as 5:45 AM, 7:00 AM, 3:30 PM, 4:45 PM and 6:15 PM, we prefer to keep Berths A and B open. So, the motorboats that should leave the dock first will be in Berths A and B. *In contrast, when all the berths are open, and you are the first to return to the dock, fill the berths in reverse alpha order, starting with H. These locations may change as the need arises.*



VII. CLOSING UP

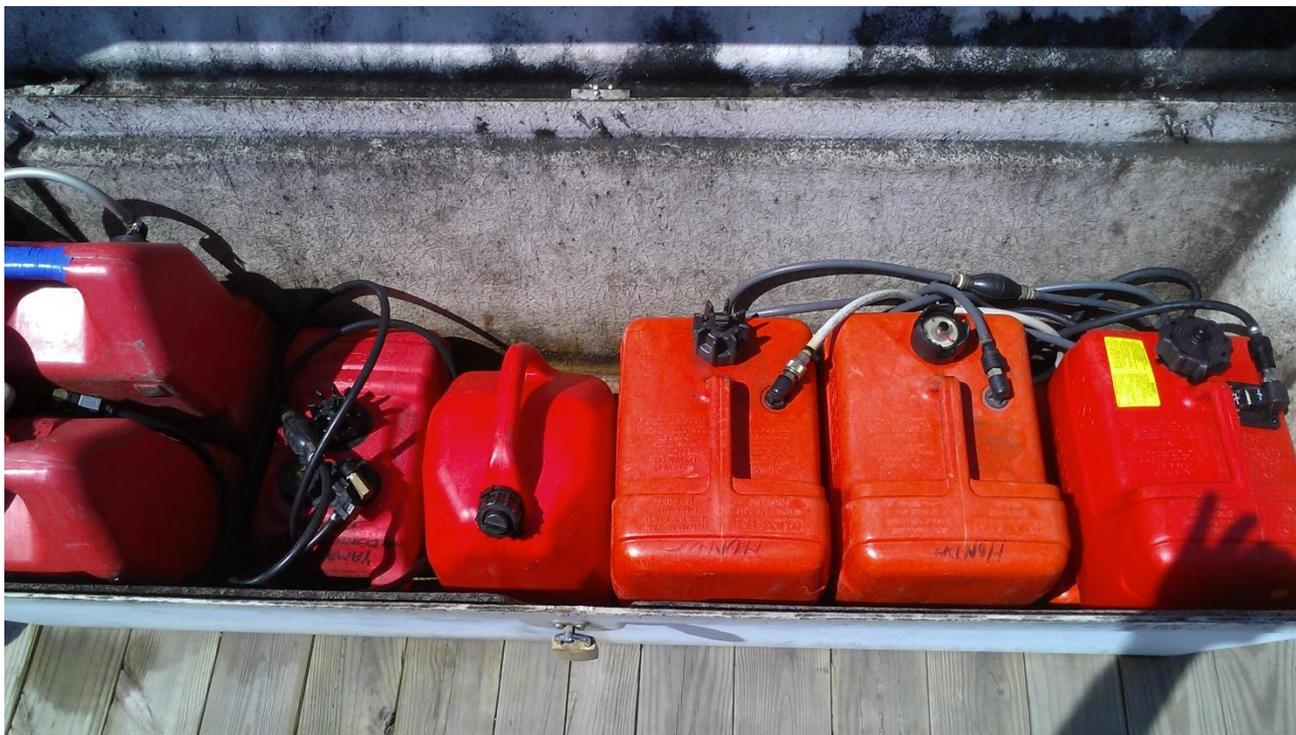
A. As stated already, once you have landed, your first priority is safely landing your shells as well as directing your scullers and crews so that they can efficiently return their equipment into the boathouse. **BUT**, make certain that you have attached **the bowline and the stern line** to the dock so that coaches and drivers for other motorboats may land without delay.

B. **Program Coaches and Others:** Once you have landed, check to see if the motorboat is needed for another workout. If not, ask your scullers/crews to take out all the equipment and return it to the boathouse. Show them where to place the items and make certain that they do so on each successive day thereafter.

C. Detach the hose from the engine. Tilt the engine so the lower unit is out of water. The engine should snap into place automatically for the Hondas. The Yamahas do have some idiosyncrasies which will require more hands-on instruction. Familiarize yourself with what is required by asking someone to show you. **Do not arbitrarily begin making adjustments with the lower unit. If you don't know what to do, ask someone for help. If nobody is available, call Albin at 401.952.1280.**

D. Reattach the chain to the engine. If the lock is difficult to close, squirt it with WD-40.

E. Close the gas tank's vent cap and return the gas tank to the gas box. Use the "cuff" to coil the hose. Stack the tanks neatly and do not stack them on top of the hoses. Keep the street side of the gas box free so the hoses can drop into the gap. Obviously, tanks left on their side or upside-down will leak gas. Lock the gas box, if you are the last one in. **Make sure to leave the gas box as noted in the picture below.**



F. Please make certain that the safety box, motorboat oars, and life cushions are neatly returned to their proper spot in the boathouse. Place the oars between the studs near the light switch located next to the overhead door. **Hang up** the seat cushions near the club sculling oar racks (right side of boathouse) and your life vest in the private oar area. **Keep the life vests and other equipment off the floor.** Coaches are ultimately responsible for what happens to all of this equipment. Your crews and scullers will continue to be confused until they know that you are checking on them for the correct placement of all equipment. Once they've been told, continue to make certain that they do it correctly.

VIII. SAFETY

A. **WEATHER:** Check the weather reports before heading out. If stormy weather is approaching, use your best judgment. Discretion is the better part of valor, which means if you think it's a challenge to launch boats, you are probably correct. So don't do it. If you can go out during "iffy" conditions, stick to the sheltered waters between the NBC and Brown, or stay within 1500 meters of the boathouse.

B. **NO SMOKING FOR ALL PERSONS:** It is obvious and was stated earlier, but it has to be said again: *No smoking or any type of flame on the boathouse dock and grounds.* Visitors may be oblivious to this rule. You will need to counsel them. This includes strangers who may be the guests of some other member.

C. **DEEP WATER IS YOUR FRIEND:** Keep your engine in deep water. Stay in the channel at low tide and do not stray too close to shore, especially when driving south of the Boat Club, close to River Road. When coaching crews or scullers that are rowing close to shore, keep the motorboat in deep water, never between the boat(s) you are coaching and the shallows. This includes the sand bar that is located on the west side of the river opposite of the Pawtucket Pier. *This is especially important with the longshaft Yamahas.*

D. **THINK AHEAD:** Keep your eyes posted for the buoys, bridges, debris, and other boats. If someone is in the boat with you, make sure they do not obstruct your view or distract you from your task of safely operating the boat and coaching your scullers/crews. *Keep idle conversation to a minimum.* Likewise, when driving alone, place enough weight in the bow of the motorboat to hold the bow down to maintain your best line of sight. If you are carrying another person in the boat, take the weights out of the boat.

E. **VIDEO TAPING:** If you plan to videotape a crew or scullers, plan to have someone assist you is over 18 years old and qualified to drive a motorboat. *If you have no qualified driver, you should drive and your passenger should do the videotaping*

F. **MAKE SLOW TURNS:** Do not make sharp turns at high speed, or let go of the throttle stick. The motorboat may flip.

G. **ASSISTING SCULLERS WHO HAVE FLIPPED:** If you are aiding a person in the water, approach him/her slowly and turn off the engine once you are within an arm's length of the person in the water.

1. If that person needs to come out of the water, he/she should use the stirrup that is tied to the middle seat of each motorboat. Hold the stirrup out so that the person in the water can place his/her strongest leg into the stirrup. ***Then, before he/she tries to stand up, you will need to move to the opposite side of the motorboat to counterbalance the incoming weight.***
2. If you cannot get this person into the boat, throw out a lifejacket and have him/her put it on. Then, toss him/her the line stored in the safety box and tow the person to shallow water. Warn them to tread lightly on the river bottom to avoid stepping on sharp objects. Keep the lower unit of the motor clear of the mud and rocks by tilting the motor out of the water, if necessary. Help the person get into the motorboat and then retrieve the single. If the water is extremely cold, leave the single behind and **take the person to the boathouse first.** Reclaim the shell later as a separate trip. Ideally, bring someone else along to assist you.
3. If you are returning capsized scullers to their shells, point the bow of the motorboat into the V behind the rigger on either side and the bow section of the cockpit. Have the sculler move to the bow seat of the motorboat to rearrange the oars and the seat. Once that is done, the sculler can use the bow of the motorboat as if it is the dock and board the single, as if it is alongside the dock. At this point, the driver, with the engine turned off, will also step toward the bow to steady the single as the sculler stands to get in. To steady the boat, it is best to push down on the nearest rigger so that the person you have rescued will not drop into the water a second time. **Do not push down on back braces!** Push down on the mainstay of the riggers.
4. Once the sculler is firmly seated in his/her single, have the sculler push away from you. Now you can restart the engine. If you are in shallow water, you should have raised the engine out of the water to prevent it from scraping the bottom. Use the oar to move back into deep water. Lower the engine and start it up.

5. If you cannot put the sculler back into the single and the weather conditions are warm enough for him/her to assist you, he/she will remain in the motorboat. He/she will remove the sculls from the oarlocks and assist you in taking the shell out of the water. Use the two packets of life cushions to support the boat. Put one on the stern seat of the motorboat and the other on the bow seat. Now place the shell on top of the packets right side up. In the case of narrow singles, watch out for the fin. The sculler can sit on the center seat. You can hold the stern end so that you will not lose the shell as you return to the boathouse. The sculls will rest on the benches, parallel to the single.

K. REMOVING/REPLACING SWEEPS ROWERS: Follow a similar procedure as noted above.

1. Choose the best spot for making the switch. Do not do so in narrow channels where other boats may be rowing toward you and too close shore. Keep both boats within safe and maneuverable water.
2. Make certain that the other rowers in the eight or four keep it level and hold on to their oars. Oars remain feathered.
3. Make certain that the rower who is leaving the boat steps only on the correct tread piece between the tracks, not directly on the hull or the footstretchers.
4. **ALSO**, make certain that before any rower steps into the motorboat, that he/she will hold the bow of the motor boat slightly away from the gunwale of the eight or four so that the mooring ring on the bow of the motorboat does not damage the eight or the four.

L. EMERGENCIES: If an emergency occurs and you need to get help, and you do not have a cell phone with you, go to shore wherever there may be a telephone. **In extreme emergencies, call 9-1-1.** Once you return to the boathouse, contact the Captain, the President, and the Director in that order. If you have a cell phone, take it with you, keep it dry, and use it. A Ziploc baggie can protect your phone. Put the Captain's, President's, and Director's phone number into your cell phone call list.

Cold Water Rescue: If a sculler has flipped in cold water: Leave the sculls in the oarlocks, get the sculler out of the water. Place him/her into the bottom of the boat, cover with a space blanket and drive to the boathouse. Get him/her to a warm place, and then you or someone else can return to retrieve the boat and oars. **Again, do not separate the oars from the shell.**

M. RIVER EVACUATION - EMERGENCY LANDINGS AT THE BOATHOUSE: If an extreme weather condition forces all boats off the water, the first coach to arrive on the dock shall act as the dockmaster in charge of ushering all boats off the water. There will be no rinsing down of boats and oars. The job of the dockmaster is to direct all of the personnel to help by lifting boats out of the water and clearing the dock of oars. **Very important:** In spite of the urgency to clear the dock, there is no running on the dock, up the ramp, or in the boathouse. Likewise, there will be no shouting. All of this will be done calmly and expeditiously. This has worked extremely well each year that we have needed to do it.

IX. LIFTING THE MOTORBOAT

A. In most cases, the motorboats will be moored to the dock and there will be no need to lift, or carry, any of the boats. However, should there be such a need, these recommendations apply.

B. **One person is in charge.** That person will designate the placement of individuals and muster more assistance as may be needed. This person will also give the commands. Usually this person will be the coach.

C. Individuals should share the load with the group, so that each person will be set in a specific position to do the work. The strongest persons should be holding the stern end. The weakest should be holding the bow. Everybody else will be in between.

1. For the 12-foot motorboats, follow these instructions:

a. Before pulling boat out of the water and on to the dock, make sure that you will not be pulling the boat over the fresh water hose, eye bolts, cleats, and/or other hardware that protrude from the surface.

b. A minimum of six 150-lb. persons can balance and carry the 12-foot motorboats with three persons on a side. If necessary, the engine can be removed first.

c. Make sure that the strength of the group is balanced so that the strongest are in the stern. There is no talking while the group is moving the boat. **Remember that there is one person in charge.**

d. Before the stern persons lift the boat, make certain that their knuckles are outside the lifting handles. This way they can easily release their hands once the boat is placed on the dock, or if they need to remove them quickly for some other reason.

2. For the **Low** and the **large SmokerCraft**, a bare minimum of **seven persons** is needed. Use techniques similar to those described above. The main idea is to divide the strength, find the balance points, and **stress that nobody talks until the lifting is complete.**

X. SUGGESTIONS? If there is more than we should include in this brief motorboat manual, please contact the Captain or Albin Moser at albinmoser@yahoo.com. Thanks.

Our goal is to do the best that we can in driving the boats so that our scullers and rowers will be safe and learn how to row very fast. At the same time, we wish to avoid damaging the lower units. See two photos below.



Photo #1: Note that the prop looks like someone took a bite out of it. It hit a rock while the driver was somewhere in shallow water. Make sure that you drive in water deeper than your shaft. **This was a \$150 repair.**

Photo #2: The dark spot that looks like a little football is a chunk of the lower unit's housing that was blown out by a bearing in the shaft. Once again, this most likely came from driving the boat in shallow water. **This was a \$950 repair.**

Coil, Don't Crimp, the Fuel Lines

Esteemed Coaching and Launch-Driving Colleagues: Please make a short coil with the fuel line and leave about 4-5 inches so that the coil will drop only slightly toward the road side of the tank. This assumes that you are placing the tanks into the gas box with the fuel lines on the road side and not the river side of the gas box.

Please note the photographs below. We will be moving into colder temperatures. (1) Crimping the lines will become more problematic, as Brent Basso noted last year. (2) Winding the fuel line into a small coil will help keep the lines open so that the fuel will flow freely from the tank to the engine. (3) Place the orange cuff close to the tank, this will keep the line short enough so that one could effectively stack another gas tank on top of it.

(1) This is a **CRIMPED** fuel line. It's short, but it flattens the fuel line. When it is cold, it may not allow fuel to flow from the tank into the engine.



(2) This fuel line is **COILED**. In contrast to the squishy image to the left, this one is elegantly formed. Small coil with the cuff close to the tank.



(3) Here is a fully stuffed gas box. If you are a gas-box-loading afficionado, it is exquisite. Notice that almost all of the fuel lines are properly **coiled** and in place so that the coils drop into the **westside gap** of the gas box. There is no mess of entangled fuel lines. Great Job!!

