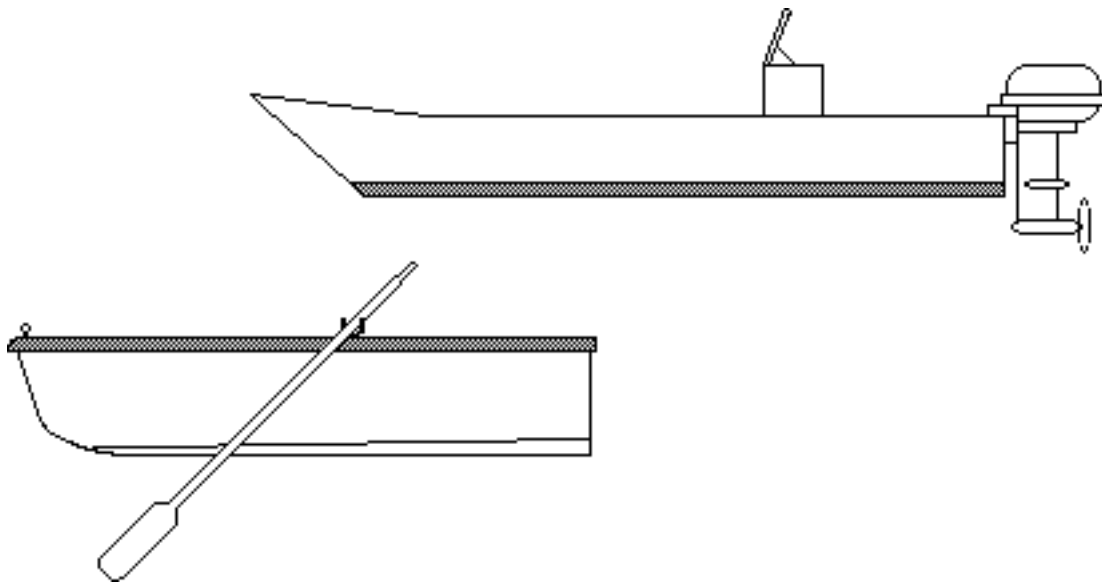


Rules for the Use of Boats at Friday Harbor Laboratories



(revised April, 2006)

Levels of Boat Use at Friday Harbor Labs

1. **Level I** check-out refers to use of rowboats for research or recreational activities. No individual training is required by the marine tech; anyone at the labs who has been briefed on general rules and sign-out procedures may use the rowboats.
2. **Level II** check-out refers to use of the labs' five motorboats for research-related activities only. In order to be checked out at this level, users must be trained by the Marine Tech – either individually or in a group course – including a knowledge-assessment quiz and a practical component operating at least one of the motorboats. These requirements may be waived by the Marine Tech if a boat-user has already demonstrated a certain amount of experience and proficiency.
3. **Level III** check-out refers to use of the labs' motorboats as a tender to SCUBA divers. In order to be checked out at this level, users must meet all the requirements described for Level II in addition to some basic training in the use of oxygen for SCUBA emergencies. This training can be administered by the “lead” diver on a trip by reviewing emergency equipment with the boat tender prior to their first dive trip. All the information on the “Level III boat tender to divers” form must be covered (see Appendix 2); this form must be signed and submitted to the Marine Tech prior to the first time the boat-user tends divers. A scientific diver who has been certified for oxygen can automatically be considered a Level III boat user once they have been checked out for motorboat use.

General Rules for Rowboat Use (Rowboaters need only read this section)

1. Rowboats may be used for research or recreation. In order to use them, you must be briefed or checked out either as part of a group or individually by a Marine Tech.
 2. Rowboats should carry no more than 550 pounds. This is equivalent to four small adults with no gear. The rowboats do not have flotation, and will sink if awash.
 3. **Do not take a rowboat outside of the harbor without first consulting Pema Kitaeff (the Marine Tech), David Duggins, or Craig Staude.**
 4. Life jackets **must be worn** by each person in boat. This is a Coast Guard rule, and you are subject to Coast Guard inspection.
 5. Row boats must be signed out and signed in on return. Sign-out sheets are in the westside boathouse. Rowboats cannot be reserved, so there is no need to check the reservation calendar.
 6. If you plan to go ashore, take one of the older rowboats (these are shorter, with smooth hulls), and use extra care when landing. Gravel beaches often have larger rocks that are hard to see. Consider the phase of the tide when securing your boat ashore... the incoming tide may wash it away when you aren't looking!
 7. Children under 16 may not use rowboats without an adult (defined as someone who is at least 16 and able to swim) present. Children must wear lifejackets.
 8. **Check the weather forecast before you leave the dock.** Consult the Marine Tech, call the Port Office (378-2688), or listen to your radio. Or, try one of the following websites:
<http://www.wrh.noaa.gov/>
<http://www.weatherunderground.com/>
- Boat use is not permitted under gale or storm conditions, and is restricted under small craft advisory. Be conservative, the weather can change very quickly. A tide chart is posted in most lab buildings and in the boat sign-out shed. At their peak, the tides in the channel are too strong to row against, so rowboaters should plan their trips accordingly.
9. When taking a rowboat to town, be sure to moor it at the locations set aside for small boats (see map in the Boathouse). Never tie up at the Customs Dock. If you take the boat to town, you are responsible for bringing it back!
 10. When the rowboats are temporarily moored next to a dock, the oars should be shipped (taken out of the oarlocks and laid inboard on the seats). Unshipped oars invite breakage by bumping into the dock or being struck by another vessel making a landing.
 11. When you return to FHL, pull your rowboat onto the dock, flip it over against the stack of other boats, and reattach the elastic strap. If you can't do this yourself, get help. Do not leave the rowboats in the water! (Strap can be omitted in summer.)

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12. If you are taking a rowboat out after sunset, be sure to take along a personal flashlight that can be turned on to show you position to an approaching boat in sufficient time to prevent a collision. This is a Coast Guard rule, and you are subject to Coast Guard inspection.

13. Remember - fishing is restricted in the University's Marine Preserve. See Preserve map in Boathouse and consult Washington State fishing regulations.

14. **Clean up** the rowboat when finished. **Hang up** the lifejackets in the Boathouse!

15. Violation of these standards will result in loss of boating privileges.

General Rules for Motorboat Use (for research use only)

1. You must receive a formal check-out by the Marine Tech (Pema Kitaeff) if you are using FHL motor boats for the first time. If it has been more than 6 months since you used the boat, see the Marine Tech for an update on procedures. If you are unsure about any aspect of boat operation, do not hesitate to ask the Marine Tech.
2. Motor boats can only be used for approved research projects
3. Report any boat or motor problem to the Marine Tech or directly to the Maintenance Department ASAP. This can be done via the phone, email, or by leaving a note in the office. Also record problems on the sign-out sheet. Report any fraying of the starter rope on pull-start motors. Report shortage of main fuel supply (i.e., when you notice one chamber of the fuel supply tank is empty).
4. Passenger/weight limits in boats must be followed without exception. This may be different than posted on the manufacturers specifications. See instructions for particular boats, which follow.
5. Boats with fiberglass hulls should **never** be beached. Rocks (sometimes hidden in a gravel or sandy beach) will damage these hulls. If you need to go ashore by boat, take the Gregor or one of the older (i.e., shorter, with smooth hulls) rowboats. Use extra care when landing. Under special circumstances the Auklet or Coot can be beached, but consult the Marine Tech first
6. **All excursions by motor boat that will extend beyond sunset must be cleared in advance with the Marine Tech.**
7. **All excursions beyond Cattle Point (south), the passage between Limestone Point and Spring Passage (just north of Jones Island), or the passage between Upright Head and Foster Point (east) must be cleared in advance by the Marine Tech.** See the yellow lines on the chart in the boat sign-out shed for the regular FHL radius of operations.
8. All outboard engines, **except the one on the Gregor**, use straight gasoline (not pre-mixed with oil) from the large red tank in the gas shed below lab 2. Two-cycle engine oil must be added separately to the reservoir to all boats **except the ones on the Auklet, the Gregor, and the small “kicker” engines**. Check the oil level by removing the black cover and yellow screw-plug from the top of the engine housing. Top off the reservoir before leaving the dock and check oil level during longer trips. Extra quarts of oil should be kept on each boat, and a larger container can be found in the fuel shed. The Auklet and kickers are four-stroke engines and do not need oil mixed with the gas.
9. **The Gregor uses pre-mixed gas that can be found in red plastic cans (marked pre-mix) in the gas shed.**
10. A frequent problem arises when users fail to vent their gas can (making it impossible for gas to flow to the engine). Make sure the gas cap is vented every time you switch cans.
11. Engine temperature must be monitored **continuously** during engine operation. A strong stream of water should be flowing from the engine housing. Check the flow before leaving the

dock and periodically while under way. Engine RPM and exhaust smoke should be monitored for signs of overheating. If the coolant stream stops, turn off the engine and check for kelp, plastic bags, or other debris that may be blocking the coolant intakes (near propeller). If blockage can be identified and coolant stream returns, you may proceed cautiously while monitoring engine, otherwise get help (see # 12 below). **Never** operate an engine that has overheated, or has impeded flow of cooling water.

12. If a boat you are operating breaks down: (1) Attempt to contact another vessel for a tow back to Friday Harbor, (2) call FHL (**360-378-2165**) for assistance, or (3) Contact someone on shore and request that FHL be called for assistance. After hours, call down the list of “Key Phone Numbers” that can be found in each of the boat’s first aid kits, and on laminated cards next to the sign-out sheet in the boat sign-out shed.

Do not attempt to operate an engine which is not running properly.

13. If your boat has broken down and you are adrift, deploy an anchor. It may be necessary to paddle close to shore in order to get the anchor to “bite”. Deploy only from the bow (front) of the boat, never the stern.

14. If you are unfamiliar with the "Rules of the Road", give way to all vessels that are on an intercept course with you. Make an early and decisive change of course or slow down to avoid a crossing situation. Drive defensively - assume other boat operators are oblivious of your presence. If you would like to learn proper boat handling, free evening classes are taught on a regular basis by the local Power Squadron, or consult Piloting, Seamanship, and Small Boat Handling by Chapman in the FHL library.

15. All boats must be signed out and signed in on return. Sign-out sheets are in the westside boathouse. When signing out, check the reservation calendar to make sure someone else hasn't reserved the boat you are taking.

16. Only faculty, staff, independent investigators, and students may operate motor boats.

17. All boats must carry lights after sunset. See the Marine Tech before you take out a motorboat after sunset to discuss your plans and to get the proper running lights. This is a Coast Guard rule, and you are subject to Coast Guard inspection.

18. Remember - fishing is restricted in the University’s Marine Preserve. See Preserve map in Boathouse and consult Washington State fishing regulations.

19. When anchoring, always allow ample line (up to 5x the water depth) for proper scope. Briefly, this means you should put out enough line so that the anchor tugs horizontally, not up. Boaters/divers working near shore may use a stern anchor as well, so that the boat won’t swing into the rocks with shifting winds or currents. Anchor from the bow, not the stern. Consult the Marine Tech for additional advice on anchoring techniques.

20. **Check the weather forecast before you leave the dock.** Wind is usually posted on the blackboard in the Fernald Bldg. If the winds are not posted, consult the Marine Tech, call the Port Office (378-2688), or listen to your radio. Or, try one of the following websites:

<http://www.wrh.noaa.gov/>

<http://www.weatherunderground.com/>

Boat use is not permitted under gale or storm conditions, and is restricted under small craft advisory. Be conservative, the weather can change very quickly. A tide chart is posted in most lab buildings. During spring tides, currents may exceed 4 knots in some areas... take this into account when planning your trip.

21. Life jackets must worn by every person while underway, and must be on board for each person in a boat which is on anchor. This is a Coast Guard rule, and you are subject to Coast Guard inspection.

22. Operate all motor boats **very slowly** in vicinity of FHL. Do not open up the throttle until you are **well clear** of the FHL breakwater. Be particularly watchful of swimmers, snorkelers and divers around the dock and breakwater. They should be flying a dive flag from the southwest corner of the dock, but frequently forget.

23. There is a great deal of material floating on and just below the surface of the water in this region. A log can put a hole in your boat; a plastic bag (which is almost invisible in the water) will clog your cooling water intake. **Be very cautions and go slow.**

24. If you use an anchor, please flake or coil the line when finished - don't leave it in a knotted heap.

25. Violation of these standards will result in loss of boating privileges.

Gregor Aluminum Boat [see also General rules above]

1. Maximum of 4 persons (550 pounds: equivalent to 2 divers with full gear and a boat tender without gear or, 4 persons without gear). Note that the 6 person limit of the manufacturer is not appropriate for marine conditions. Flotation is provided by foam under the seats. **When using this boat, wear your lifejacket.**
2. There is no flare kit or first aid kit on board. An extra first aid and flare kit is available in the boat-sign-out shed.
3. **Prepare the motor:** Flip the tilt lever on the starboard side of the motor mount to the down position (icon shows boat with motor down). Pull upward on the back of the motor to release it, then slowly lower it into the water. Connect the fuel line and pump the bulb until it is firm. [Check the arrow on the bulb to insure that the line is connected in the right direction.] Crack the seal of the fuel tank cap (if unvented) to equalize the air pressure.
4. **Gasoline for this boat is pre-mixed with two-cycle oil. There is a supply in the gas shed in red plastic cans labeled “pre-mix”.**
5. **Start the engine:** Make sure that the shift lever is in the neutral (vertical) position. Pull out the choke control (omit this, if the engine is already warmed up). [Do not adjust the fuel richness control; black round knob with pointer.] Advance the throttle by turning the tiller handle clockwise. If you are operating the boat alone, it is recommended that you attach the kill switch cord to your belt; it will stop the engine, if you are accidentally thrown from the boat. (It has happened here!) Pull the starter rope out slowly to determine its full extent of travel and to check for fraying. [Do not attempt to start the motor with a frayed rope - Report it to Maintenance.] Pull the starter rope briskly to roughly 3/4 of its full travel. Repeat as needed, trying different positions of the choke, and insuring that the throttle remains advanced. If it will not start in about a dozen tries, get help from a Marine Tech or the Maintenance crew. Once the engine starts, push in the choke and quickly reduce the rpm by turning the throttle handle counter-clockwise. As the engine allows, continue to slow the throttle to an idle. Let the motor idle for a full 5 minutes before leaving the dock.
6. **Engine temperature must be monitored continuously during engine operation.** There is no temperature gauge or warning alarms for overheating. The operator must frequently check that there is a strong flow of cooling water spraying from the lower starboard side of the motor. If this flow is obstructed by a piece of kelp, plastic bag, or malfunction, **STOP THE ENGINE IMMEDIATELY!** If the cause of the blockage (e.g., kelp) can be identified and removed, you may proceed cautiously with frequent checking of the cooling water. **If the cooling water cannot be restored, DO NOT OPERATE THE MOTOR;** flag down a passing boat for a tow home, or row ashore and call the Labs for assistance (378-2165).
7. After warm up, untie the boat, shove away from the dock, and (making sure that the engine is at idle) move the shift lever forward or backward as needed to leave the moorage. Leave (and return to) the dock slowly, watching carefully for divers or people working at the edge of the floats.
8. Once you are well clear of the breakwater, advance the throttle sufficiently to just bring the boat on plane (step). Higher throttle settings are wasteful of fuel and do not greatly increase speed.

9. When on plane, the bilge plug may be removed to drain any water in the boat. Keep the plug in your hand, so that you don't forget to replace it before coming off of plane!
10. While cruising, be very attentive to avoid floating debris. Wood can damage the prop or hull, and seaweed or plastic may plug the cooling intake of the motor. When steering to avoid obstacles while at high speed, do not quickly throw the tiller hard over to one side, as this could throw a passenger or gear out of the boat. Large wakes from ferries or yachts should be encountered nearly head-on (perpendicular to the wave front) to minimize rocking of the boat. Slow down, if necessary.
11. If you will be beaching this boat, use extreme care. Select a gravel or sandy beach, and be attentive to avoid for rocks in the water or nearly buried by the sediment. While still in deeper water, disconnect the fuel line, flip the tilt lever, and raise the engine. Put the oars in the oarlocks, and row ashore. Consider the phase of the tide, and drag the boat up the beach to a point where it won't be floated away by the incoming tide during the length of your stay (but not so far that you can't get it back). Carry the anchor up the beach and secure it.
12. On return, disconnect the fuel line, flip the tilt lever, and raise the engine.
13. Clean up the boat, check that the anchor line is neatly coiled or flaked, (you may leave the oars on board), adjust the mooring lines so they are secure (but not squeaky tight) and with sufficient spacing to prevent bumping nearby boats.
13. Return life jackets (Hang them up!), sign in the actual time of your return, and note any problems on the sign-out sheet. Urgent problems should be immediately brought to the attention of the Marine Tech or the Maintenance crew.

Coot, Grebe, and Buffelhead [see also “General” rules, page 2-6]

1. Maximum weight limit is 1000 lbs. Maximum number of people is 6.
2. Make sure that first aid kit and flare kit are onboard (see Marine Tech if you can not find them).
3. Starting procedures:
 - Check gas and oil levels. This boat uses straight gasoline (not mixed with oil) from the large red tank in the gas shed below Lab 2. Two-cycle engine oil must be added separately to the reservoir. Check the oil level by removing the black cover and yellow screw-plug from the top of the engine housing. Top off this reservoir before leaving the dock and check level during longer trips. Extra quarts of oil can be found in starboard storage box on the boat and in the fuel shed.
 - Lower engine, if necessary, by pressing the toggle switch on the side of the throttle handle.
 - Connect gas line to one of the tanks and pump bulb on gas hose until it is firm.
 - If engine is warm (or hot) simply turning the key should start the engine.
 - If engine is cold, the cold-start lever must be raised and the electronic choke activated. Simply push the ignition key in to choke the engine. Turn key to start engine.
 - If engine floods (you will smell gas and probably see gas on the surface of the water), disconnect gas line from engine and crank engine until it starts - then reconnect gas line.
 - Once engine has fired, reduce the cold-start lever to an intermediate position. If engine starts to stall, push the choke again. **Do not let engine race at high rpms after starting.**
 - After about one minute the cold-start lever can be lowered all the way. Engine won't shift gears until this is done.
 - To move shift lever into forward and reverse squeeze the red bar under the handle.
 - Idle engine at dock for 5 minutes.
4. Once you are well clear of the breakwater, advance the throttle sufficiently to just bring the boat on plane (“step”). Higher throttle settings are wasteful of fuel and do not greatly increase speed.
5. While cruising, be very attentive to avoid floating debris. Wood can damage the prop or hull, and seaweed or plastic may plug the cooling intake of the motor. When steering to avoid obstacles while at high speed, do not quickly throw the tiller “hard over” to one side, as this could throw a passenger or gear out of the boat. Large wakes from ferries or yachts should be encountered nearly head-on (perpendicular to the wave front) to minimize rocking of the boat. Slow down, if necessary.

6. Engine temperature must be monitored continuously during engine operation. A strong stream of water should be flowing from the engine housing. Check this flow before leaving the dock and periodically while under way. Engine rpm and exhaust smoke should also be monitored for signs of overheating. If the coolant stream stops turn off the engine and check for kelp, plastic bags, or other debris that may be blocking the coolant intakes (near propeller). If blockage can be identified and coolant stream returns you may proceed cautiously while monitoring engine, otherwise get help. **Never** operate an engine that has overheated, or has impeded flow of cooling water.

7. The Coot has an automatic bilge pump. If there is a significant amount of water in the boat, it means that the bilge pump/switch circuit is faulty, or the battery is dead. In the former case, you may still operate the boat, draining the bilge manually while cruising on plane. However, be sure to notify the Marine Tech or Maintenance on your return.

8. When shutting down, turn off the ignition key. In the fall and winter, raise engine using the toggle switch on the side of the throttle handle. In the spring and summer, leave the motor in the down position. Clean up the boat, check that the anchor line is neatly coiled or flaked, adjust the mooring lines so they are secure (but not squeaky tight) and with sufficient spacing to prevent bumping nearby boats.

9. Return life jackets (Hang them up!), sign in the actual time of your return, and note any problems on the sign-out sheet. Urgent problems should be immediately brought to the attention of the Marine Tech or the Maintenance crew.

Never beach these boats.

Auklet [see also “General” rules, page 2-6]

1. Maximum weight limit is 1600 lbs. Maximum number of people is 8.
2. First aid kit, flares and fire extinguisher are in the aft center storage box.
3. Make sure front hatch is firmly latched closed.
4. Starting procedures:
 - Check gas level. This boat uses straight gasoline (not mixed with oil) from the large red tank in the gas shed below Lab 2. This is a 4-stroke engine and oil does not need to be checked (our maintenance crew will do this).
 - Battery switch to on. **Turn off when finished.**
 - Lower engine, if necessary, by pressing the toggle switch on the side of the throttle handle.
 - Connect gas line to one of the tanks and pump bulb on gas hose until it is firm.
 - If engine is warm (or hot) simply turning the key should start the engine.
 - If engine is cold, the cold-start throttle must be advanced and the electronic choke activated. Advance the throttle by pushing the throttle lever forward, then simply push-in the ignition key to choke the engine. Turn key to start engine.
 - If engine floods (you will smell gas and probably see gas on the surface of the water), disconnect gas line from engine and crank engine until it starts - then reconnect gas line.
 - Once engine has fired, bring the cold-start throttle lever to an intermediate position. If engine starts to stall, push the choke again. **Do not let engine race at high rpms after starting.**
 - After about one minute pull back cold-start throttle lever all the way down. Engine won't shift gears until this is done.
 - While depressing the red shift-lock, push the shift/throttle lever forward and reverse for respective gears; continue moving it in either direction increases the speed.
 - Idle engine at dock for 5 minutes.
5. Once you are well clear of the breakwater, advance the throttle sufficiently to just bring the boat on plane (“step”). Higher throttle settings are wasteful of fuel and do not greatly increase speed.
6. While cruising, be very attentive to avoid floating debris. Wood can damage the prop or hull, and seaweed or plastic may plug the cooling intake of the motor. When steering to avoid obstacles while at high speed, do not quickly throw the tiller “hard over” to one side, as this could throw a passenger or gear out of the boat. Large wakes from ferries or yachts should be encountered nearly

head-on (perpendicular to the wave front) to minimize rocking of the boat. Slow down, if necessary.

7. **Engine temperature must be monitored continuously during engine operation.** A strong stream of water should be flowing from the engine housing. Check this flow before leaving the dock and periodically while under way. Engine rpm and exhaust smoke should also be monitored for signs of overheating. If the coolant stream stops turn off the engine and check for kelp, plastic bags, or other debris that may be blocking the coolant intakes (near propeller). If blockage can be identified and coolant stream returns you may proceed cautiously while monitoring engine, otherwise get help. **Never** operate an engine that has overheated, or has impeded flow of cooling water.
8. The Auklet has a sealed hull with no bilge pump; if you notice excess water in the boat, check the scuppers at rear of boat they may be clogged with debris.
9. When shutting the Auklet down, turn off the ignition key and turn off the battery switch. In the fall and winter, raise engine using the toggle switch on the side of the throttle handle. In the spring and summer, leave the motor in the down position. Clean up the boat, check that the anchor line is neatly coiled or flaked, adjust the mooring lines so they are secure (but not squeaky tight) and with sufficient spacing to prevent bumping nearby boats.
10. Return life jackets (Hang them up!), sign in the actual time of your return, and note any problems on the sign-out sheet. Urgent problems should be immediately brought to the attention of the Marine Tech or the Maintenance crew.
11. This boat may only be beached with prior permission from the Marine Tech.

Appendix 1

Friday Harbor Laboratories Float Plan

Please submit to Marine Tech Pema Kitaeff personally, or if previous communication has been established, pema@u.washington.edu, this form may be deposited in the Fernald mailbox marked "K".

Name of person filling out this form: _____ email address: _____

Cell phone number: _____ will you have this phone with you on the boat? Y N

Names of other passengers on the boat: _____

Which boat are you planning to take? (circle one) Auklet Coot Bufflehead Grebe

What is your destination? (if multiple, please list in the order you plan to visit them)

Date of planned trip(if multiple, please list): _____

When are you leaving and at what time do you plan to be back? _____

What is the purpose of your trip (include name of class or ongoing project if applicable)?

Please make sure you have completed the following pre-trip safety inspection, a check mark next to each of these items confirms that you have personally made sure it is adequate/on board:

- Fuel, how many tanks do you have with you? _____
- Oil, did you check the level in the engine? _____
- Communications Device, phone or VHF? _____
- Anchor on board with appropriate amount of line _____
- Lifejackets, at least one for each passenger _____
- First Aid Kit, flares, foghorn _____
- List of emergency numbers (inside first aid kit) _____
- Dive safety items, if applicable (flag, O₂ kit) _____
- Chart – inside the First Aid Kit OR other source _____
- Weather – please list the source that you checked _____

Any other pertinent information??

Who has approved this float plan/trip?

Name: _____

Date: _____

Level III Check-out Form – Boat Tender to SCUBA Divers

Each item on this list must be clearly explained by the “lead” diver to the prospective boat-tender prior to their first dive trip. Per the diver’s explanation, the boat tender should practice operating both the oxygen kit and the communications device before signing this form.

I. Oxygen Kit

- _____ Review opening pelican box and turning on O₂ system.
- _____ Take a breath of oxygen from tru-fit mask (be sure not to exhale into the mask)
- _____ Make sure boat-tender can answer this question: when would O₂ be administered?
- _____ Know the location of the “power inflate” button: when would this be used?

II. Communications Device

- _____ Review the dive locker cell phones: unplug phone, turn it on, check the battery
- _____ Know how to make a call & review the FHL procedure: check service prior to dive!
- _____ Know the location of emergency phone numbers & which to use in what situation

- _____ If using a hand-held VHF radio, review use & procedures (channel 16, when to say mayday)

III. Dive Flag

- _____ Know the location of the dive flags and where they can be raised and secured aboard the boat
- _____ Make sure boat-tender can answer these questions: when is the dive flag raised? taken down?

Confirmation of “Dive Tender” Skills Review session

LEAD DIVER:

My signature here confirms that I have explained each of the skills checked-off above

signature: _____ date: _____

BOAT TENDER:

My signature here confirms that I have reviewed each of the skills checked-off above

signature: _____ date: _____