

# Sea Otter Owners' Notes

## ISLAND PACKET 37

Welcome aboard *Sea Otter*.

We have owned Sea Otter for 18 years. In 2006, when we acquired Sea Otter, she had been in the San Juan Sailing charter fleet for several years. We decided to keep Sea Otter in the charter fleet because we knew San Juan Sailing is a well-run charter company, one of the best, if not the best. We also knew that San Juan Sailing's charter guests are the best. Our 18 years of experience with San Juan Sailing has confirmed our trust and confidence in SJS and the sailors who have chartered Sea Otter.

Sea Otter is an Island Packet, built in Largo, Florida. Island Packets are widely recognized to be among the best built blue water sailing yachts in the world. Sea Otter is an Island Packet 37, built in 1997. San Juan Sailing requires all boats in its charter fleet to be maintained in "like-new" condition. In 2017 Sea Otter was repowered with a new Yanmar diesel engine, and in recent years virtual all of her systems, equipment, sails and instruments have been updated and replaced. We've tried not to overlook any detail in our effort to keep her in top condition and make her the perfect cruising sailboat. If you can think of anything...anything at all...that would make Sea Otter better or more enjoyable, please let us know through San Juan Sailing

We sail Sea Otter ourselves every year and have made many wonderful memories sailing her in the San Juan Islands and points north and south, including sailing her up the outside of Vancouver Island and once up to southeast Alaska. Our hope is that you will enjoy Sea Otter, and maybe even cherish her, as much as we do.

Thanks for being our charter guests,  
Mike and Julie Dillard.

## SPECIFICATIONS

Year Built:	1997
LOA:	38' 5"
LWL:	31' 0"
Beam:	12' 2"
Draft:	4' 6"
Mast height:	49' 6"
Water Tank:	90 gal
Fuel Tank:	50 gal
Holding Tank:	14 gal
Displacement:	18,500 lbs.
Ballast:	8,200 lbs
Engine:	38 HP Yanmar (new 2017)
Cruising RPM:	2100 to 2400

## Other Vessel Info

### USCG Official Number 1067575

No. on inside bottom of port cockpit locker &  
Certificate of Documentation in Guest Binder.

### U.S. Customs Re-Entry Number

Decal on the aft side of the binnacle.

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Key to Markings: Throughout these notes we have used the following markings

- ALL CAPS: used for safety and operational warnings
- Underlining: indicates location of things
- **Bold**: indicates important knowledge or data

## SAFETY/EMERGENCY

You are not likely to need many of these items, but must know their location.

### BILGE PUMPS

**Electric Bilge Pump:** Sea Otter is equipped with an automatic electric bilge pump. The switch for the electric bilge pump is located on the battery switch panel on the bulkhead behind the companionway stairs. The switch should be kept in the AUTO position. (To run pump manually, you must hold the switch in the manual position.)



You may occasionally hear the pump operate due to condensation and water from the shaft seal accumulating in the bilge. If you hear the bilge pump running a lot, you need to check the bilge for leaks. One source to check for a leak is the lid on the seagrass trap for the sea water engine cooling water, located under the bed in the aft stateroom. It can leak if not seated properly. Th

**Hand bilge pump:** An auxiliary hand-operated bilge pump is in the cockpit on the aft starboard side near the wheel. It is generally used only in emergency conditions. The handle for the manual bilge pump is in the port cockpit locker.

### THROUGH HULL SEA COCKS AND FREQUENTLY ACCESSED VALVES

Refer to the diagram placed in Tab 3 of the Charter Guest Reference Manual binder (located onboard) for below waterline through-hull and frequently accessed valve locations. An appropriately sized wooden plug is tied to each. Seacocks are open when their handles are “in line” with plumbing (typically vertical) and closed when perpendicular to plumbing (typically horizontal). All seacocks (except as noted herein) are normally left open while cruising. Please leave all open when returning the boat.

### EMERGENCY TILLER/STEERING GEAR FAILURE

In the event of steering gear failure, use the emergency tiller, which is stowed on a hanger on the roof of the large starboard cockpit locker, just outboard of the locker opening. To use the emergency tiller, remove the wood cover located in the center of the helmsman seat in the cockpit, and insert the emergency tiller.

### VHF CHANNEL 16.

VHF at nav station & at helm. (The VHF speaker/mike for helm is stored plugged in at the helm. Please DO NOT remove or unplug it.)

### FIRST AID KIT

The ship's first aid kit is located behind the settee cushions on the port side of the salon. Please notify San Juan Sailing of any items used from this kit during your trip so they may be replaced.

## FIRE EXTINGUISHERS

- **There are four hand-held fire extinguishers:**
  - **2** mounted on bulkhead at top of companionway stairs:
    - Larger one is Halon for use for fire in engine compartment. (Slightly open one of side doors to engine and shoot Halon in engine compartment.) under the counter in the forward cabinet.
    - Smaller one behind stairs is ABC for multiple use, including galley fire.
  - **1** AB mounted forward in V-berth on port wall under berth.
  - **1** AB mounted in port cockpit locker.
  - There is also a **fire blanket** for kitchen fire on bulkhead/wall in galley
  - Use the **large Halon fire-extinguisher** at the top of the companionway stairs for a fire in the engine compartment – this extinguisher is designed for engine room fires and will also do less damage to the engine and electrical equipment. (Crack open side door to engine and shoot Halon into engine compartment.)

## PFDS/LIFE JACKETS

3 Type III inflatable vests and 4 vest type PFDs.

- The 3 inflatable vests are stored in the aft stateroom, port side hull shelf. [NSO: please check the inflatable vests for “green” visible at bottom of clear canister. That verifies the auto-inflate function when immersed.]
- The 4 traditional vest PFDs are stored in a yellow bag in the large starboard cockpit lazarette/locker

## FLARES AND WOOD TAPERED PLUGS

The emergency flares and wood tapered plugs are located on the port side of the salon behind the forward settee seat back cushion.

## LIFESLING & BLOCK & TACKLE

- **Lifesling** is stored on port stern cockpit railing. Please review the cartoons on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.
- **Block & tackle**, for use raising a person up onto the boat, is stored in bag in the small port cockpit locker.

## FOG HORNS & FLARES

- A canister foghorn is kept in the small port cockpit locker.
- A hand pumped foghorn and flares are stored in the port side of the saloon in a storage space behind the middle settee backrest. There are variety of flares, including a flare gun & an “electronic flare” (a floating orange strobe light & an orange NC flag, both stored in in an orange mesh bag).

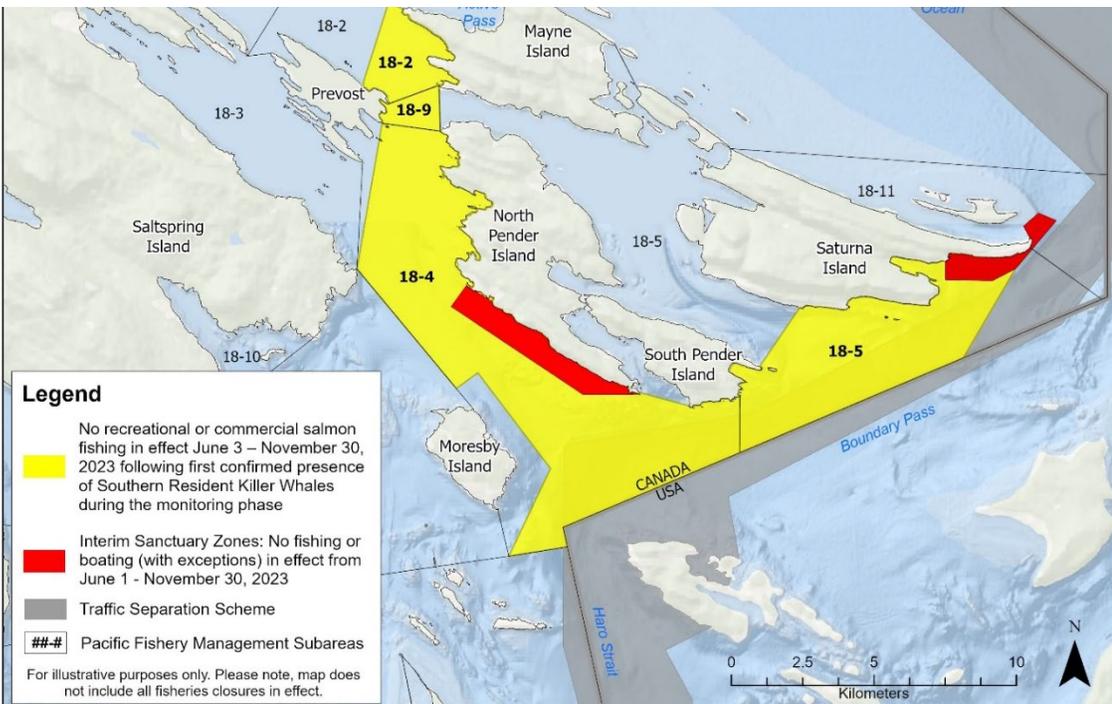
## TOOLS

Tool bags are located on the port side of the salon behind the aft settee back cushion. **(Please pull out seat cushion before pulling out backrest cushion, to avoid damaging backrest cushion.)**

# BEING WHALE WISE

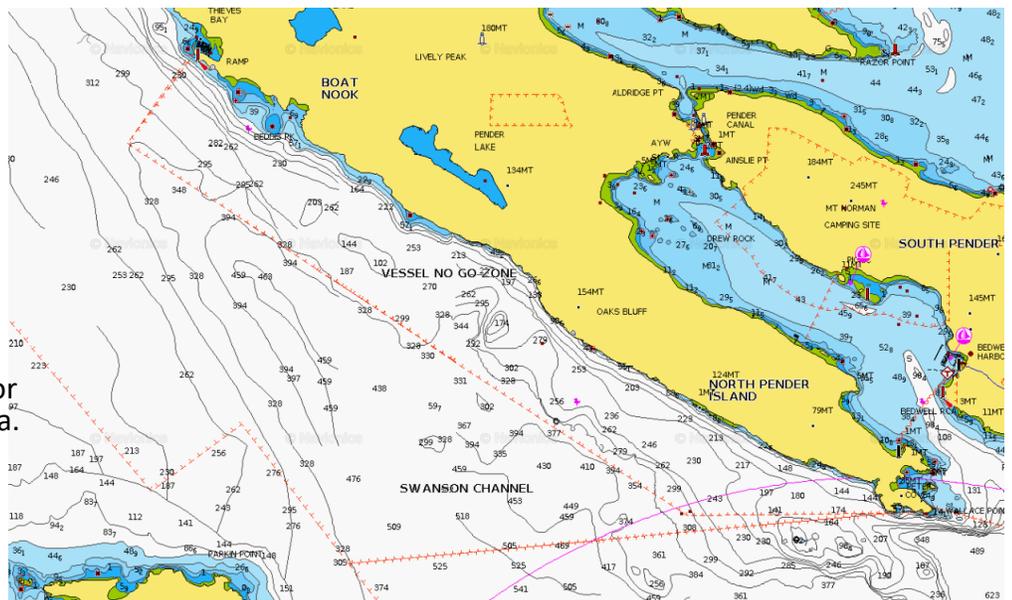
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to decrease human impact both the Canadian and US governments have implemented rules. We provided you a summary of these rules in the packet you receive when you arrived and there is more information in section 10 of the white reference book onboard your boat. In general, stay at least 400 yds. away from the whales. Sometimes they come to you, if this happens shutdown the engine and turn off the instruments (assuming this is safe to do). They can hear the pings of the depth sounder – this is why we have you turn off the instruments.

**In Canada they have gone a step further by creating some zones where boats are not allowed. This further improves the environment for the whales. The red areas in the diagram below show these zones**



And here is an example of what they look like on your boat's chart plotter(s). The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.

Note this is just to the west of Bedwell Harbour, so on your way in or out of there be sure to avoid this area.



## ANCHORING

- Sea Otter's primary anchor is a 44 lb. Rocna with 200 ft. of 5/16" chain and 150 feet of 5/8 inch nylon rode.
- The backup/emergency anchor is a Fortress FX-17 anchor in the starboard lazarette with 40 feet of 5/16 inch chain and 250 feet of ½ inch rode.

### LOWERING ANCHOR:

Start the engine. **Do not run the windlass without the engine running.** Turn on the power to windlass using breaker switch located in the cabin under companion way stairs.

Detach the bridle from the anchor chain and from the cleats and flip up the cam brake on the chain, just ahead of the windless (Use attached line to temporarily hold the cam "up" away from the chain by tying the line to railing.)

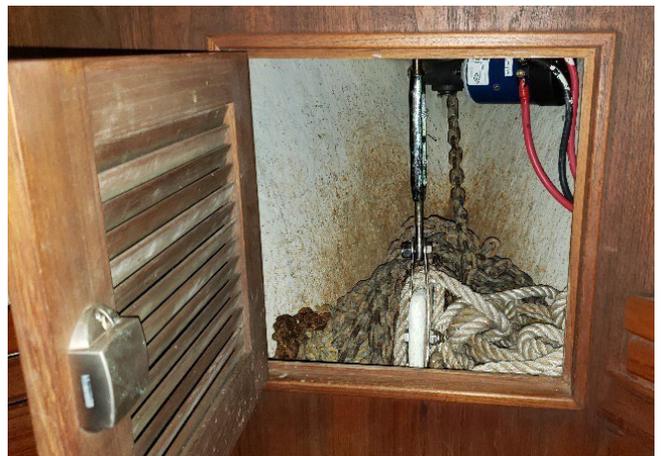
Depress the "DOWN" footswitch for the windlass on the bow deck and let out the desired amount of anchor chain. Stop the windlass, **attach the anchor bridle over the bow sprit to the chain and secure it to the forward cleats on both sides of the bow**, and then release the chain tension on the windlass by a tap on the "DOWN" footswitch. Anchor bridle is stored in small port lazarette. Flip the cam chain lock back on the chain. Turn companion way breaker switch off.

### RAISING ANCHOR:

Start the engine. **Do not run the windlass without the engine running.** Turn on power to the windlass at the breaker switch under the companion way stairs in the cabin. Take off the anchor bridle by taking in a little chain. Move the boat forward very slowly, taking up chain as you go by pressing the "UP" footswitch in short spurts. As the anchor nears the anchor roller, use short toe taps on the footswitch to finish bringing the anchor on the roller. Put the rubber caps back on the footswitch when done.

### Suggestions/Reminders:

- Anchor and rode should be cleaned of mud and kelp as they are brought aboard using the bow saltwater hose & nozzle (turn pump on/off using switch on electric panel in salon, the seacock for the anchor washdown water inlet is located under the floorboard outside of the head in the main salon).
- NEVER OVER TENSION THE CHAIN WITH THE WINDLASS. The windlass is extremely powerful and damage could occur.
- Turn off the windlass power switch in the cabin when finished lowering or raising the anchor.
- During raising anchor, best to have someone checking inside the chain locker (looking in with a



flashlight through the door in the v-berth) to make sure the chain is not stacking up on the incline panel or going over onto the wrong side of the anchor.

- If there is a second anchor on the bow, and the second bow anchor is used, when raising it the nylon rode needs to be wrapped 2 or 3 times around the smooth upper portion of the windlass post. (You will switch to the lower portion of the windlass post when you get to the chain portion of the anchor rode. Cleat off end of chain portion using the anchor bridle to get the necessary slack in the nylon rode to wind it off the post.)
- NOTE: When raising the anchor, sometimes the chain piles up inside the chain locker, backing up the chain in the deck chain pipe, and jamming the windlass. If this occurs, you'll need to have a crewmember access the chain locker through the door in the V-berth and un-pile the chain using a small board with a hook attached, located on the starboard shelf in the V-berth.

### **SECURE ANCHOR ON BOW WHILE UNDERWAY:**

While underway **make sure to secure the anchor on the bowsprit** using the chain lock and/or hooking a snubber or anchor bridle to the anchor chain and cleating the snubber line or bridle to a bow cleat(s). When using the anchor chain lock to secure the anchor to the bow, be sure to insert the pin through the anchor chain lock over the cam to prevent the lock from popping open. If the anchor is not properly secured on the bowsprit while underway it can fall off the bow and cause serious damage to the boat.

## **BAR-BE-QUE**

The stainless-steel propane barbecue sits on the port stern rail. The barbecue propane hose is connected to a propane tank in the starboard propane locker, There are two propane tanks. If you should run out of propane, simply connect the hose to the spare. (Check if threads are left hand or right hand and use one of the adjustable wrenches for a "snug only" connection!) Note the T fitting on the propane tank, enabling propane to feed the BBQ and the galley stove simultaneously. Please remember to turn off the valve at the BBQ after use and the valve at the tank as well (as an extra precaution). **Also remember the propane will not work unless the Propane Breaker is on at the 12V electrical panel** (same is true for the stove / oven) so make sure it's on for use and off after use. And so, as a courtesy to the next guest, please clean the BBQ after use. You will find a wire brush for this located in the BBQ. Best I've found is a good saltwater wipe down and the burn with the BBQ empty to cook off the residue; try it. Please be careful about drips etc. and make sure to clean up anything on the fiberglass or teak. Thank you.

## **DINGHY**

The inflatable dinghy is equipped with a pair of oars and a foot operated inflation pump. (The pumps and a dinghy patch kit are stored in the middle storage compartment under the starboard settee in the main cabin.) There is also a 2.3 hp outboard motor for the dinghy, which when not in use should be stored on the mount

on the transom railing. Use the brass padlock to lock the motor onto the mount

#### Suggestions/Reminders:

- The red plastic safety clip must be on the stop button for the ignition to be turned and the engine to start.
- Assign one of your crew “dinghy duty” upon entering a harbor to anchor or a marina to dock. Their job is to shorten the dingy painter to bring the dingy close to the transom. This will assure the painter does not get wrapped around the prop shaft. (The dingy painter is floating line so that will help too.)
- Coming to shore in the dinghy, avoid sharp rocks and barnacles that could cause damage.
- If you beach the dinghy, consider the tide direction. (Tie to a tree or rock if the tide is coming in.) If you need line for a longer painter to tie up on a beach, there are additional three strand rope lines in the small blue canvass bags in the large cockpit lazarette.

## ELECTRICAL SYSTEMS

### AC 110 VOLT SYSTEM

The procedure to **HOOK UP** to shore power is:

- Turn off “MAIN AC” breaker on board (located on the AC panel above the chart table)
- Turn off breaker at dock outlet.
- Connect the female plug of the orange power cord to the boat first (outlet socket located on the port side of the cockpit combing). [Note: The shorepower cord is stored in starboard lazarette, usually in a black satchel. There is also a yellow shorepower cord extension stored in a yellow bag in the starboard lazarette.]
- Connect the male plug of the power cord to the dock outlet.
- Turn the breaker on for the dock outlet.
- Turn on the “MAIN 30 AMP” breaker at the chart table AC panel.
- Ensure that the “BATTERY CHARGER” breaker is on (**this breaker should always be on**).
- The system will take about 30 seconds to cycle up. Then check the Magnum Energy power management panel display to ensure it indicates you are charging the batteries (bulk, absorb or float). The panel is located inside the cabinet just forward of the VHF radio (see photo below).

The procedure to **DISCONNECT** from shore power is as follows:

- Turn off “MAIN” breaker on AC panel above the chart table.

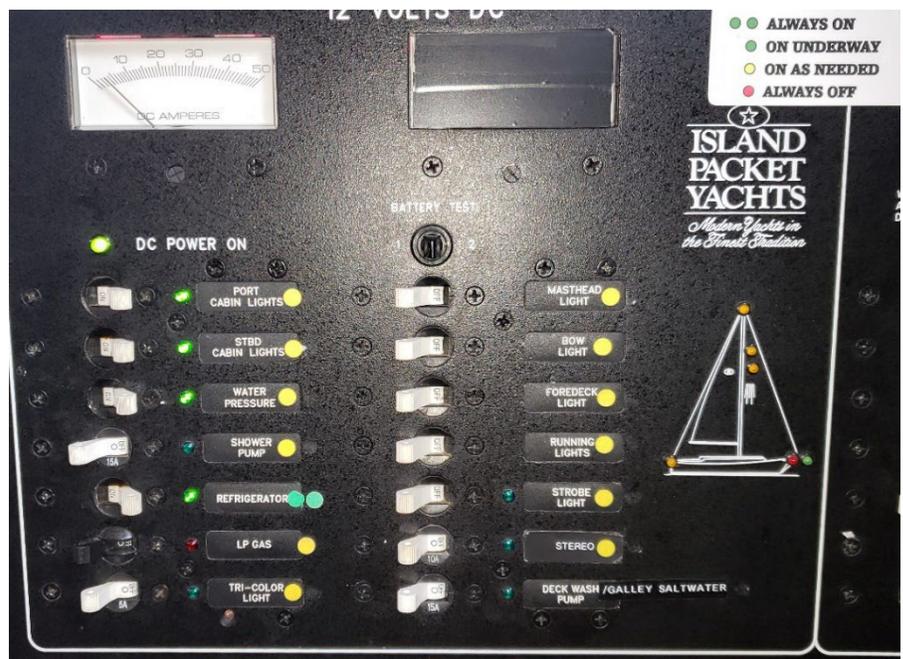


- Turn off breaker at dock outlet.
- Disconnect the orange power cord from both the orange socket on the boat and from the dock outlet.
- Roll up and store power cord back in starboard lazarette. (There is a black bag for storing the power cord, which also contains adapters for non-30 AMP dock outlets.)
- There is also a yellow bag in the starboard lazarette containing a yellow shore power cord extension.

## DC 12 VOLT SYSTEM

The battery system is divided into two “banks”. One bank is the “Start Battery” for the engine (one Group 27 battery). The other bank is the “House Bank” (three 8D batteries). The Start Battery is used to start the engine and run the windlass. The House Bank runs everything else.

The Battery Switch, which is a modern “Combiner” switch, is located on the bulkhead under the companionway steps. The Battery Switch has 2 separate sets of contacts to turn on but isolate the Start Battery and the House Bank batteries. **The Battery Switch should always be kept in the ON (1) position.** Only if the Start Battery goes bad should you have to turn the Battery Switch to the COMBINED position to start the engine; then put the Battery Switch back in the ON (1) position. NEVER switch the Battery Switch through OFF with the engine running, as it will blow the diodes and the alternator will stop charging.



All the batteries are AGM. The House Bank (Bank #2) consists of three 8D batteries – each with a rated capacity of 260-amp hours; and the Start Bank (Bank #1) is one Group 27 battery (new in 2008) with a rated capacity of 100-amp hours. The Group 27 Start battery and one of the House Bank 8D batteries are located under the aft berth amidships and behind the engine. A second House Bank 8D battery is located under the chart table seat. The third 8D battery under the starboard settee in the main



cabin and back under the galley sink. The charging output of the alternator goes directly to the House Bank 8D behind the engine and is protected by a 130-amp fuse that sits on top of that battery. **[Note: There is a breaker switch in the wire from alternator to battery, to switch**

**off power to alternator to safely work on alternator.]** The charging output of the inverter/charger goes to the power post and is protected by a 200-amp fuse. That fuse is mounted in the next locker outboard of the batteries in the aft cabin. When the Battery Switch is in the normal ON (1) position, and you are charging and the voltage of the House Bank goes above 13.1 volts, a battery combiner closes and the system also charges the Start Battery. When the system not charging and the voltage of the House Bank drops below 12.8 volts, the battery combiner opens and the battery banks are isolated. The combiner is mounted next to the Start Battery under the bunk in the aft cabin.

## BATTERY MONITORING

Sea Otter has 2 battery monitors in the salon. There is a Balmar Smartgauge at the top of the companionway stairs next to the battery selector switch and a Xantrex LinkLite display at the nav station. The Balmar is easiest to use, but it is not accurate when engine & alternator are running. To use the Balmar, press the left-hand button to see the Start Battery voltage, middle button shows the House Battery % charged and the right button shows the House Battery voltage. The Xantrex LinkLite monitor at the nav table provides more accurate and detailed info re the status of the batteries.

Watch that the voltage reading for both battery banks doesn't drop below 11 volts; when not charging, the voltage reading for each bank should be 12 volts or higher. When underway and charging the voltage reading should show 12.5 to 13 volts. Please do your best to keep the House batteries from dropping below 50% charge.

## ENGINE

Sea Otter has a 38 horsepower 3 cylinders fresh water cooled Yanmar diesel engine (Model 3JH5E). The combination shift lever and throttle is located on the starboard side of steering pedestal. The control/instrument panel for engine is located on the starboard side of the cockpit. The Start Button, Stop Button and Power Button are located on the engine control panel.

**For normal engine cruising the engine should be run at 2100 to 2400 rpm** (70% to 80% of max 3000 rpm). The engine will push Sea Otter along at 6.5 knots at 2100 rpms and close to 7 knots at 2400 rpm. Using higher throttle settings will produce very little increase in forward speed but will increase fuel consumption. Fuel consumption at 2100 to 2400 rpm is approx.  $\frac{3}{4}$  to 1 gal/hr.

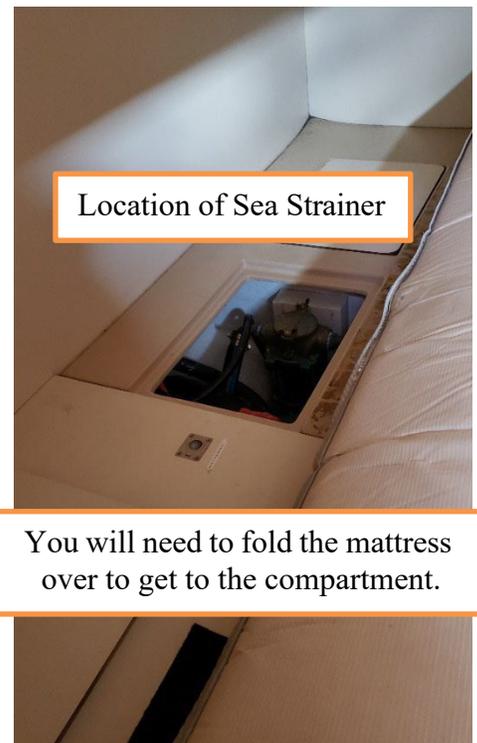
Running the engine for long periods at low rpms is bad for the engine. And it is good for the engine to run it every day or two for 10 to 15 minutes at high rpms (2800 to 3000 rpm), to burn out carbon buildup.

## ENGINE CHECKS AT THE START OF EACH DAY

- **Check spill pad under engine.** Before each new charter, a dedicated vessel Maintenance Pro will check the engine fluid levels and replace soiled spill pads. Please check the spill pad for oil, diesel, transmission fluid, and water. It is NOT necessary to check the oil level in the engine unless you are out for a multiweek charter. If you need to add oil, **DO NOT OVERFILL**. Spare oil is kept onboard in the storage compartment behind the aft cushion on the starboard side of settee in the salon.



- **Check the sea water strainer** located under the inboard cushion of the berth in the aft stateroom. Use the following sequence of steps:
  - a) Close the seacock for raw water intake in the bilge under the sole access panel in the galley (placing the handle in perpendicular position relative to the water flow is the closed position);
  - b) Unscrew the clamps and rotate aside the bronze lid on the strainer located amidships under the berth in the aft stateroom;
  - c). Pull out the strainer and remove any eel grass etc.;
  - d) Replace and reseal the strainer;
  - e) Reseat and clamp down lid on strainer;
  - f) Reopen seacock under galley sole;
  - g) Check to make sure bronze lid on strainer is not leaking sea water.



## STARTING

1. Make sure Battery Switch under the ladder into cabin is set to position ON (1).
2. Place the shift/throttle lever in a vertical neutral position. **The starter will not engage if the shift lever is not in the neutral.**
3. **Push the Power Button** on the engine control/instrument panel in the cockpit. If the alarm buzzer and alarm lamps operate when you turn on the Power Button, the warning devices are



operating correctly. **(NEVER turn off the Power with the engine running as it may blow the diodes on the alternator and it will cease to charge the batteries; push the Stop button first.)**

4. **Push the Start Button.** (No glow plug warm-up is needed.) Release the Start Button when the engine starts. Holding down the Start Button will continue to run the starter.
5. Never hold the start button for more than 15 seconds. This will overheat the starter and could pull water into the engine through the exhaust system and damage the engine. If the engine doesn't start within 15 seconds, wait for 30 seconds before trying again with increased throttle. (Increased throttle in neutral is obtained by depressing the red button on the shift/throttle lever and then pushing the lever forward a short distance.
6. Run the engine in neutral at 1000 rpm for no more than 5 minutes to warm; then return to idle.)
7. Always check for engine cooling water coming out of the exhaust. If there is no water, turn off the engine, check the raw water intake seacock and sea water strainer (close seacock and check strainer basket for eelgrass). If necessary, check engine water pump V-belt, cooling hoses, and as a last resort, the raw water impeller.
8. Whenever the engine is started, run it for 15 minutes before turning off as it must be hot enough to evaporate any water remaining in cylinders.

## SHIFTING

ALL SHIFTING SHOULD BE DONE AT IDLE SPEED. Shifting at higher speeds may damage the transmission. Shift the lever smartly from neutral to forward or reverse.

## STOPPING ENGINE

To stop the engine, **push the Stop Button** on the engine instrument panel. This cuts off the fuel supply to the engine. Alarm will sound. **After engine stops** and alarm sounds, and only after it does, **push and hold the Power Button.** **(NEVER turn the running engine off with the Power Button** as it may blow the diodes on the alternator.)

## ENGINE OVERHEATING **Overheating will seriously damage the engine.**

1. **Normal operating temperature for engine is 76° to 90°C (169°to 194°F).** -- Keep an eye on the temperature gauge on the engine control panel --
2. Overheating may be preceded by black smoke issuing from the exhaust.
3. **IF ENGINE OVERHEATS, IMMEDIATELY SHUT DOWN THE ENGINE!!**
4. The most likely cause of engine overheat is plugging of the raw water filter with seaweed. Check the raw water filter located under the aft berth. To clean the filter, close the raw water through-hull valve. (As with all through-hull valves, placing the handle in perpendicular position relative to the water flow is the closed position). Unscrew the filter top, lift out and clean the filter.
5. After clearing any obstructions, it is very important that the lid to the filter is properly seated so that there is no air leak. Otherwise, the water pump will suck air from the filter rather than raw water for cooling. Adjust the gasket on the filter element if necessary for proper seating.
6. Tighten the filter assembly to obtain an even seal. Reopen the seacock and watch for leaks.
7. Check the coolant level (in the plastic overflow tank with the engine off). Add made-up fresh water and coolant if necessary.
8. Check the belt to the water pump.

## OIL PRESSURE FAILURE

1. If the oil pressure light comes on, or the gauge shows a significant drop in oil pressure, **IMMEDIATELY SHUT DOWN THE ENGINE!!**
2. Normal oil pressure is 3 to 5 BAR (41 to 78 psi)
3. Check the oil level. Add oil if necessary.
4. If the engine oil is not low, do not restart. Contact San Juan Sailing or other personnel listed on the emergency contact list included in the SJS Charter Guest Reference Manual binder.

## SUPPLIES FOR ENGINE

Engine oil, radiator fluid, transmission oil, absorbent pads (diapers), etc. are located on starboard side of the salon behind the aft settee back cushion. (A vacuum is also stored here.)

### Suggestions/Reminders:

- Keep Battery Switch in "ON" (1) position.
- Check engine oil level and make sure "raw water" seacock (under galley floor) is open before starting engine.
- Gear shift/throttle lever must be in neutral to start engine.
- It's ok to use some extra throttle when docking especially with wind; although Sea Otter is heavy, good throttle power can stop it fairly quickly. (Engine can run up to 3000 RPM.)
- Running at high rpm (2800 to 3000) for around 10 minutes every day is "good" for the engine. It clears carbon build up in engine.
- Monitor temperature gauge for overheating (should be around 80° to 85° C.).
- Monitor oil pressure gauge.
- Never turn battery switch to "OFF" or push the Power Button off when the engine is running.

## FUELING

The fuel tank holds 50 gallons of diesel fuel. The tank should be kept as close to full as possible to prevent water from collecting due to condensation. Use the fuel gauge located at the chart table to check fuel tank level. Diesel fuel fill fitting is on starboard deck amidships (screw on cap marked "DIESEL"; tool to unscrew cap is in chart table). Refill the fuel tank upon returning to Bellingham. When fueling, ALWAYS keep an absorbent pad or several paper towels near the fuel nozzle to catch any diesel. **Do not over fill! When you hear fuel coming up inside the fill tube stop filling – before it foams up and out!** (It's helpful for crew to watch fuel gauge in cabin while filling & give warning when nearing full.)

## GALLEY

### STOVE

The galley has a three-burner gimbaled propane stove with oven. It is fueled from a propane tank located in a locker on the starboard side deck. The manual valve on the top of the tank should be kept closed whenever

the stove is not in use. There is also a solenoid operated electric valve that must be operated by a switch on the electrical panel at the chart table to get the propane to the stove.

Propane is heavier than air so the gas will collect in the bilge, therefore a certain amount of caution is required. A full tank of propane normally lasts a little more than two weeks.

Please follow these procedures:

1. Make sure that the controls on the stove are in the OFF position.
2. Turn the PROPANE circuit breaker to the ON position. The red indicator light should come on to confirm that the solenoid valve at the tank opened properly. If no light is seen, check to see that the battery master switch is ON.
3. Once you have the red light, push the knob in and turn to the light position. Twist the ignition button while continuing to hold the control valve in for 20 seconds or the thermocouple safety valve will shut the burner off.
4. Turn on the gas and pop the ignition button. If it does not light in 4 or 5 tries, turn off the gas and wait. Try again after a few minutes. If you have followed all the procedures and the oven still will not light, you may have exhausted the propane supply.
5. Check the oven periodically to assure that it remains burning. Be sure that you turn OFF the PROPANE circuit breaker when you have finished with the stove. For greater safety, close the hand valve on the main propane tank before retiring and at the end of the cruise.
6. For cooking underway, the stove is gimballed. Unlatch the forward base of the stove.

## HEAD, HOLDING TANK & SHOWER

The head contains a vanity with sink, a showerhead, and a marine toilet with hand operated pump for flushing.

### TOILET

The toilet is easily plugged by 2-ply tissue, Kleenex, hair, tampons, or paper towels. The person who plugs a head is responsible for unplugging it. Flush only waste and marine toilet paper through the toilet.

### HOLDING TANK

The holding tank has a capacity of 14 gallons and needs to be emptied frequently. For estimating purposes, approximately 1 gallon is added to the holding tank per use. The holding tank has a sensor which triggers a red indicator light in the head when the

tank is close to full and requires emptying. Over-filling the holding tank will force sewage into the vent line. Once the vent line is plugged the entire system functions poorly if at all. The holding tank should be emptied on a regular basis by going to a pump out station several times a week and following the directions found at the pump out station. The waste pump out deck fitting is located on the port side deck. The holding tank may also be emptied overboard with the Guzzler hand pump located under the port side settee in the main salon. See procedures in the next section.

### Controlling the Toilet and Holding Tank Discharge Configurations:

The toilet and the holding tank each have two options for discharge:

#### Toilet

- a) Toilet flushes directly to the holding tank (normal setup, required in US waters <3 miles from shore)
- b) Toilet flushes directly overboard bypassing the holding tank – **This configuration is for use in the open ocean not for our local waters.**

#### Holding Tank

- a) Holding tank can be pumped out via the deck fitting at a pump out facility (or dock cart).
- b) Can be manually pumped directly overboard (not legal in US waters less than 3 miles from shore).



There are two Y-valves and one seacock that control the flow of waste from the toilet or tank. The Y-valves and manual overboard discharge pump are located in the salon, behind the port settee seat back (see photo above). The configurations are as follows (refer to the Flow Selection placard and valve photos - see photos on right and below). The arrows on the placard indicate which direction that the arrows on the valve handle should point.

Top Row - Toilet Flushes Directly to the Holding Tank and the Holding Tank is set up for Deck Pumpout.

Middle Row - Toilet Flushes Directly to the Holding Tank and the Holding Tank is set up for manual Pumpout to sea as follows:

Open the discharge seacock located under the port settee seat, near the middle of seat.

Insert the pump handle into the pump (handle and pump located in the same cabinet as the Y-valves, at the aft end). Pump until resistance reduces and you hear air in the pump.

Bottom Row - Toilet Flushes Directly to sea, bypassing the holding tank. This configuration is for use in the open ocean not for our local waters.

Black Water Flow Selection			
FLOW	VALVE - A	VALVE - B	SEACOCK UNDER SETTEE
Toilet to holding tank w/deck pump out	←	→	CLOSED
Toilet to holding tank w/manual pump out to sea	→	→	OPEN
Toilet direct to sea	←	←	OPEN



## SHOWER

Turn the circuit breaker switch labeled WATER PRESSURE to the ON position. (Note: The cockpit shower faucet also requires the water pressure to be on.) If no water comes out of the shower, check the valve between the faucet controls and the valve at the shower head.

The shower empties into a sump under the shower floor and is emptied by a sump pump. Turn this pump on at the electrical panel and activate the pump pull out switch in the shower to empty the sump as you use it.

Always use the shower curtain to prevent water from getting into the main cabin and to minimize cleanup. Wipe the walls down after the shower to prevent mildew.

## HEATER (Cabin)

The Webasto diesel-fired cabin heater is controlled by a thermostat located on the port side of the salon at the forward end of the large cabinet nest to the nav station.

Use the ON/OFF switch to turn the heater on and off and set the desired temperature. The furnace will go through its startup process and then heated air will come in through the outlet in each cabin. Should start to feel heat from the outlets in a few minutes. You can heat up the salon area faster by closing the outlet louvers in the two staterooms. To shut down the heater, turn the switch off.



The heater uses considerable battery power when running so to conserve the batteries when not on shore power. It's best to use the heater only in the evening and morning to take the chill off and leave the heater off overnight while sleeping.

## INSTRUMENTS

### GPS, Instruments and Chart Plotter

At the sub panel to the right of the main AC/DC panel at the nav station, turn on the Autopilot, Nav Instruments, Radar and VHF breakers.

For more instructions regarding the GPS, the DEPTH meter, KNOT meter, WIND meter, electronic Chart Plotter and Autopilot, please refer to the user manuals. All of the manuals for Sea Otter's equipment are kept in a blue Island Packet satchel located in the cupboard on the port side of the main cabin, just forward of the chart table.

The alarm feature of the depth meter can be very helpful. The depth alarm is set at the depth instrument.

### CHART PLOTTER

The Raymarine Chart Plotter is installed at the helm. It is integrated with the radar and AIS. After the breakers are turned on, press the power button (lower right corner) and then press "I Accept" to clear the notice. Once powered up, it will bring you to a "Home" screen. Select "Chart" to bring up your plotter.

**Zoom in or out:** either using the + and – buttons on the right or on the touch screen.

**Screen Brightness:** press the Power Button and then use your finger to drag the bar to your desired level.

**Panning:** move chart with your fingers. To stop panning and return to the ship, just press the blue box with a boat inside it located on the left side of the screen. Your current Vessel Position is listed at the top of the screen.

**Waypoints:** To make, view, change, or delete waypoints select "Menu" → "My Data" → "Waypoints"

**Course Over Ground (COG):** This line shows up as GREEN on this plotter. The COG vector should be turned on by default, but you can verify it by selecting "Menu" → "Presentation" → "Vectors"

**Radar:**, go back to the "Home" screen, select "Radar"



“Connect” → “Tx”

Once your radar connects, you can go back to “Home” and select Chart. This will overlay the Radar information onto the Chart Plotter.

To turn off the Radar, touch “Menu” on the right. The first item will show the Radar transmitting. When you select that, you can change it back to “Standby” mode.



## VHF RADIO

Sea Otter is equipped with a marine VHF radio transmitter. This radio can be a valuable source of information such as weather and tides and in an emergency, it is a vital source of assistance. Channel 16 is the distress, safety, and calling frequency and should be monitored whenever the radio is on and not in use on another channel. This will allow you to hear emergency weather bulletins, calls to you (from San Juan Sailing or other boats), and any distress calls where you might be able to assist. The VHF speaker/mike for helm is stored plugged in at the helm. Please DO NOT remove or unplug it.

**VHF RADIOS:** See photos on right. Standard Horizon Intrepid base unit is located in the salon at the nav station. RAM mic (Model CMP23W) is plugged into the port side of the binnacle at the helm and is stored on the nav table when not in use.

- Power to the VHF's is supplied by the “VHF RADIO” breaker switch on the DC panel at the nav station in the salon.
- **Turn on the base unit first then plug in the RAM in the cockpit.**
- **Refer to the “Commonly Used Features” section below to quickly get you up to speed with the fundamentals of operating the VHF radios.**



## Commonly Used Features

The following features are for the Base Unit VHF at the Nav Station. Most features on the cockpit RAM VHF are the same or similar. The RAM will change to match the features selected on the base unit and vice versa.

**Turning On and Off the radio** – Flip on the VHF RADIO breaker switch on the DC panel. The power switch on the radio is the Volume knob (upper right gray knob) – turn clockwise.

**Adjusting Volume and Squelch** – There are separate gray volume and squelch knobs on the right side of the radio.

**Selecting a channel** – Press the up/down arrows on the left side of the LCD to select channel.

**Viewing and Silencing a DSC Alarm** – When another boat (or the Coast Guard) activates a DSC alarm it sounds an alarm on all boats in the area. Press the up/down arrow to view the nature of the alert. To silence this alarm, press any key on the radio. **Note:** do not simply silence an alarm without understanding the nature of the emergency.

**Activate DSC** – Flip up the red with white text plastic DISTRESS cover and press the small red button underneath for 5 seconds.

**Changing from High to Low transmit power** – Toggle high/low power by pressing the “H/L” (25W/1W) button on the bottom row of the radio controls.

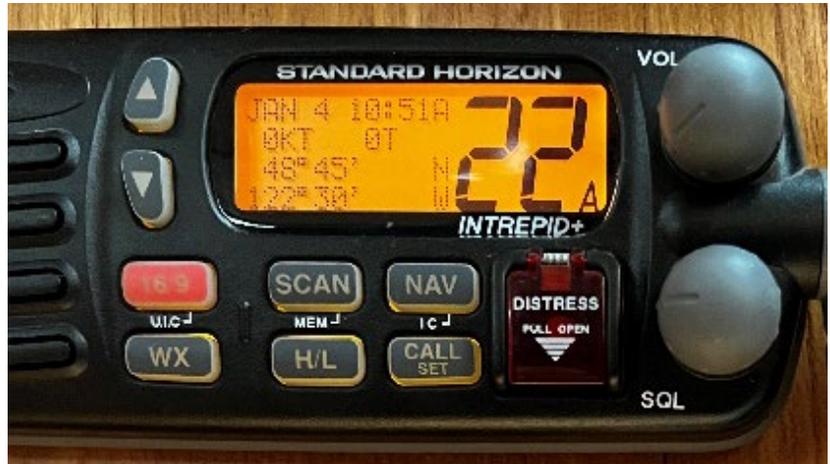
**To quickly get to channel 16** – Short press the red 16/9 button. Long press to get channel 9.

**Accessing the weather channels (WX)** - Press the button “WX” on the lower left. Press the up/down arrow keys to change weather channels. Channels 4 and 7 will give marine forecasts for the San Juan Islands (Listen for “Northern Inland Waters: forecast”). Press the “16/9” button to return to monitoring channel 16.

**Changing between USA, CANADA & INTERNATIONAL channel groups** – Press and hold the 16/9 button then short press the WX button repeatedly to change between USA, INTL and CAN. The current group is shown at the top center of the LCD. Remember to return to the USA channel grouping when returning to the U.S.

**Channel Scanning** - In flotillas or when keeping company with another boat, monitor a second or multiple channels. **NOTE: Scanning will always include 16/9.**

- Select the first channel you want included in your scan.
- Long press the SCAN button to save it in memory. MEM will appear in the upper left of the LCD. Long press SCAN again to remove from memory.
- Repeat above two steps to add additional channels to the scan memory.
- Short press SCAN to start scanning. Short press SCAN again to stop scanning.



## TRADITIONAL NAVIGATION TOOLS AND CHARTS

The cruising guide books, tide tables, Washburn's tables and current atlas are kept on the bookshelves. The dividers and parallel ruler are kept in the chart table. Charts are located in the chart drawer beneath the starboard salon settee and also in a clear plastic storage tube bungeed to the ceiling in the forward stateroom.

## REFRIGERATOR and FREEZER

The refrigerator can be drained using the pull switch just above the counter on the aft wall of the galley. It is necessary to first turn ON breaker switch labeled "shower pump" on the DC breaker panel. The freezer is a separate compartment under the refrigerator floor. The refrigerator thermostat is located in the top left corner of the fridge. It should be set and left at "3"; higher than that will freeze you mild and vegetables. The (ON) switch for the freezer at the bottom of the far-right row switches on the electric panel over the nav table.



## SAILS AND RIGGING

Sea Otter is cutter rigged and may be sailed with a variety of sail combinations to suit weather conditions. The staysail provides added sail area (about 25% more) plus versatility. Light air sailing is improved using the main and double headsails, plus a variety of reduced sail area combinations are possible in stronger winds: e.g. main & jib; main & staysail; reefed main & staysail, etc.

### MAINSAIL

The fully battened main (new in 2018) has two reef points, lazy jacks, and jiffy reefing with two reefing lines led aft to the cockpit. Be sure there is adequate slack in the reefing lines and main sheet when hoisting the main. Also, make sure the boomvang is not too tight when raising the main.

Out haul line for the main is cleated on the port side of boom. Set it normally at the spar manufacturer's label; at the front of the label, if you want more shape in the main; toward the rear of the label, if you want flat sail.



Topping lift attached to the aft end of the boom is cleated on the starboard side of the boom.

The main has a dual line "jiffy" reefing system that allows one person to quickly reef while remaining in the cockpit. One line reefs down to the first set of reef points; the second line reefs down to the second set.

Don't tighten up the loose reefing lines in the cockpit when the main is lowered and on the boom. Instead, wrap the line dangling from aft end of the boom in the mainsail flukes on the boom; the main will be much easier to hoist the next time out. Also, once the main is down and tied on to the boom with several sail-ties, if you loosen the lazy jacks lines at the cleats on both sides of the mast, pull them forward and attach them to the two short bungies on the mast, and then re-cleat the lines, it will be much easier to put sail cover on over the sail on the boom. (While underway we keep the mainsail cover down in the aft stateroom.)

## STAYSAIL

The staysail is self-tending and roller furling. The staysail furling lines are on the port side, outside the cockpit combing. To unfurl the staysail, pull out the outhaul line which will run the sail out to the end of the staysail boom. Cleat this line off. As you pull out the clew line, keep some light pressure on the roller furling line to prevent a "rat's nest" in the furling drum. When you furl in the staysail, never use a winch on the furling line as it will damage the furler.

The staysail boom is controlled by a single sheet that runs to the small winch on the port side cabin top. The staysail will self-tack as you come about. The sheet will act to control the tension on the boom and sail shape.

## HEADSAIL/JIB

The roller furling line for the headsail runs down the starboard side to a cleat near the stern. Keep light pressure on furling line as it unwinds. The roller furling headsail can be adjusted/reefed for the wind conditions using the roller furler.

## SAIL CONTROL LINES

<b>Green/White Fleck</b> →	Main Halyard	<b>Red/Green</b> →	Reefing lines
<b>White/Green Fleck</b> →	Main Sheet (in cockpit)	<b>Solid Blue</b> →	Staysail Halyard
<b>White/Blue Fleck</b> →	Jib Sheets	<b>White/Blue Fleck</b> →	Staysail sheet
<b>Solid White</b> →	Traveler control	<b>White/Black Fleck</b> →	Jib & Staysail Furling lines

### Suggestions/Reminders:

- Turn into the wind to raise sails or to "reef."
- Best order to raise sails is: Main first, then staysail, and jib last.
- While underway, close the deck hatches and portholes if there is going to be any spray.
- Consider shortening sail from 15 knots of wind up.
  - 1<sup>st</sup> adjustment, reef main to first set of reef points;
  - 2<sup>nd</sup>, roller reef jib;
  - 3<sup>rd</sup>, furl up staysail; and
  - 4<sup>th</sup>, fully furl jib or reef main to second set of reef points.
- The clutches for each line are released by rotating the brake lever FULLY forward.
- Winch handles are stored in the cockpit combing lockers with teak lids.
- If motoring in light winds may want to put the main; will stabilize the boat and improve mileage.

## TOOLS & SPARE PARTS

- Spare engine parts (alternator, starter, etc.) are stored in 1<sup>st</sup> locker on port side, in V-berth under the mattress.
- Spare toilet pump assembly, and also rebuild parts, are in same 1<sup>st</sup> locker on port side, in V-berth under

the mattress.

- First locker on the starboard side, in V-berth under the mattress, are boxes or nuts, bolts, screw, a bosun chair, and other miscellaneous boat stuff.
- In a small locker at floor level on port side of v-berth is a spare prop with shaft nut.

## WATER

### DOMESTIC

The potable water tank has a capacity of 90 gallons and is filled through a fitting on the starboard deck amidships.

### HOT WATER

Hot water can be generated by 3 means. When the engine is running under load, the engine cooling system will heat the water in the hot water tank. When at dockside, the 110-volt power system can be used by turning on the switch marked "Hot Water" on the AC breaker panel. And you can also heat water on the stove.

## UPON RETURNING TO BELLINGHAM

- Stop and fill up diesel at Fuel Station.
- Pump out holding tank at Pump Out Station (just east of Fuel Station).
- Fill water tank.
- Attach all halyards to the rails or mast pulpit clear of the mast. This avoids the halyards banging against the mast when the wind is blowing.
- Leave the bilge pump switch in the "AUTO" position.
- Connect to shore power following the procedure in Section 4 of this document. Check the Magnum Energy power management panel display to ensure it indicates you are charging the batteries (bulk, absorb or float).
- Leave refrigerator and freezer circuit breakers on the DC panel "ON" so they remain cold to prevent mildew.