

OPERATION MANUAL

BESSIE

Welcome Aboard!

We are happy that you have chosen Ship Harbor Yacht Charters and the vessel **BESSIE** for your vacation. We hope you enjoy your cruising experience in the lovely islands of the Pacific Northwest.

This manual will help you become more familiar with your boat. If you have any further questions, about the boat or your itinerary, please do not hesitate to ask the SHYC staff.

Remember our vessels are non-smoking boats. But please feel free to smoke out on deck.

Bon Voyage!

The Ship Harbor Yacht Charters Staff

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BOAT OPERATION

Engine Inspection

Remember your "WOBBS" every morning. (Water (Coolant), Oil, Bilges (Inspect and Pump-out), Belts, and Sea Strainer. Check the level of COOLANT in the expansion tanks. Check the level of your engine oil with the dipsticks. Your dipstick is located [on the starboard side of the engine](#). Look at the etch mark on each dipstick that indicate proper levels. **DO NOT OVERFILL!** Only fill if oil levels are below the 1/2 mark. Check the general condition of the hoses and belts. [Check the generator oil as well.](#)

Ensure the valves on each RAW WATER THRU-HULL are OPEN! (Lever in-line with valve). Observe through the glass of each sea strainer for debris. If necessary, close the thru-hull, open the strainer lid, clean out debris, and reassemble. **REOPEN the Thru-hull!**

Start Up

Having finished your inspection, start your engine [from the lower helm station](#). Ensure that Gearshift is in **neutral** or the engine will not start (neutral lockout). Run your throttles up and bring back to just above the idle position. Inset the key into the ignition and turn the key starting the engine.

Turn the key clockwise until the engine alarm sounds and [pre-heat](#) the engine. After 10-30 seconds turn key fully to engage the engine. If the engine does not turn over, move the gearshift slightly while turning the key until the engine engages. If the engine cranks slowly, check the condition of your batteries at the electrical panel. If the battery is low, engage the Battery Parallel Switch to connect other batteries. After the engine has started, return Battery Parallel Switch to "Off".

After the engine starts, warm it up at about 1000rpms for about 5 minutes. Observe your gauge readings. Oil pressure reads around **40-60** psi and water temp around **190** degrees. Engine temperature should rise very slowly.

*Note: If water temp.is high or oil pressure low, **shut down engine** and look for problem. Was there a lack of water exiting with exhaust? Are thru-hulls open and debris cleared from sea-strainer? If problem keeps occurring, call SHYC Service.*

Shut Down

Before shutting down, let engine idle for about 5 minutes letting them cool. Ensure each gearshift is in the neutral position and each throttle is in idle.

Getting Underway

Disconnect the shore power cord (see AC Power next page). Close portholes, windows, and hatches. Turn on VHF and electronics. Assign crewmembers to their tasks. Once outside marina, have crew members bring in fenders and put lines away.

Cruising

All close quarter maneuvering should always take place at the [upper](#) helm. Make certain the throttles are in idle and engage the gearshift. Be sure the bow and stern thrusters are on and transferred to the operating station. Slowly come up to cruising speed of 18 rpms. If you run at 18 rpms, you will cruise at approx. 9 knots, using only 3 gallons of diesel/hour. Your speed may vary depending on weight, load, and weather conditions.

Note: Avoid high engine speeds as it causes the engine to overheat causing damage as well as high fuel consumption.

Docking

During docking, use the upper helm for the best visibility. Give clear instructions to the crew on what you will expect of them i.e. with lines and fenders.

While moving slowly towards the dock, center the wheel and use the gear and thrusters to maneuver the vessel. Throttles should only be used in moderate to windy conditions. Otherwise, the use of the transmission should be sufficient.

Fueling Up

Open filler cap located [port side](#) with the deck-fitting key kept [in the side entry step](#). **MAKE SURE YOU HAVE DIESEL !** Make sure it is going into the right deck fill! DOUBLE-CHECK! Before pumping, have your oil/fuel sorb ready to soak up any spilled fuel. You should have a rough idea of how many gallons you will need, but have someone check the fuel gauge periodically by turning on the key.

Put [Diesel \(gas\)](#) nozzle into the deck fitting and pump slowly listening to the sound of the flow. Pumping too fast may not allow excess air to escape, which will lead to spillage out the vent. As the tank fills, the sound will rise in pitch or gurgle. Pay attention to the vent, located on the hull starboard side, that it does not spill fuel into the water. Top off carefully, catching any spillage with your sorb.

Check your gauges [and if you have a sight gauge in the engine room, double-check they are open and filled!](#) Replace the deck fill caps. Clean up any spatter and wash hands thoroughly.

BOAT ELECTRICAL

The electrical system is divided into two distribution systems: 110 volt or AC and 12 volt or DC. The systems are controlled from the electrical panel located [at the inside helm station](#) and the battery switches located [in the engine room](#).

When not connected to shore power your batteries provide most of your electrical power. Therefore the use of onboard electricity needs to be monitored very

carefully. **Turn off electrical devices** when they are not being used (lights, instruments, etc.)

110 Volt or AC (Alternating Current)

Shore Power supports all AC equipment and receptacles on board as well as the battery inverter/charger.

To connect to shore power, plug the power cord into the boat and then into the dock receptacle. Check your power rating/plug size of the dock receptacle (i.e. 30amp, 20 amp etc.) If necessary, add an adaptor. Secure the cord around the shore power electrical receptacle and off the bow (i.e. wrap around bowline a few times) turn the dock power breaker on.

On the boat, turn the shore circuit breaker on at the electrical panel. Turn on appropriate breakers for battery charger, refrigeration, or any other device needed. Watch your voltmeter for load. If the load exceeds the voltage, it will pop the breaker. If this occurs, wait to turn on one of your systems (i.e. water heater) until the use of power decreases.

Inverter/Charger

The inverter provides AC power to the 110 receptacle plugs (i.e. microwave) when the boat is disconnected from shore power. The inverter does not supply power to the water heater or battery charger. Your inverter/charger panel is located **below the electrical panel** and in the engine room with an on/off switch. Make certain it is on. The actual inverter/charger is located in the engine room. **Your inverter also acts as a battery charger.** The Inverter is powered by batteries located **in the engine room**. The amount of DC power is **limited** to the capacity of these batteries so **use it very sparingly!!!** This means use of your hair dryer, microwave, coffee maker etc. must be limited!

When connected to shore power, the inverter acts as a battery charger for the 12-volt house batteries. Should you detect the inverter failing to charge the batteries, check the circuit breaker on the AC panel and the inverter panel to make certain that it is on. There is usually a circuit breaker located on the inverter itself that can get tripped during a surge of power.

House 12-volt System

Three battery banks support your 12 volt system: **#1- House Barrter, #2- Start Battery Bank (Inverter), #3- Bow and Stern thrusters.**

Your battery switches are located **in the engine room**. Normally you will leave the switches in the on position. *Note: Changing the position of the battery switches with the engine running **will cause damage!** Only change positions with the engine off!*

Your 12 volt panel shows all the systems supported by your batteries. Primarily you will be turning on these breakers for lights, water pressure, electronics, etc. Bilge pumps will always be left in the automatic position. Your breakers such as propane should be turned off after every use.

When disconnected from shore power, the 12-volt systems will drain the battery especially when at anchor. Monitor your batteries very carefully. The DC voltmeter on the DC panel can be switched between your battery banks to measure battery voltage. Typically the bank should read from about 13.0 to 14.5 volts when being charged. While at rest, your voltage will drop as indicated in the figures below.

All your batteries are charged while underway by the alternator. The engine and house batteries are charged by the battery charger/inverter while connected to shore power. Ensure that the inverter/charger is on.

Voltage	Battery State of Charge		
12.65 volts	100%	12.25 volts	50 %
12.47 volts	75 %	11.95 volts	25 %
		11.70 volts	0 %

SANITATION SYSTEM

Marine Toilet

It is imperative that every member of the crew be informed on the proper use of a marine head. The valves, openings, and pumps are small and will clog easily. If the head gets clogged, **it is your responsibility!** Always **pump the head for small children** so you can be certain of what is being flushed. *Note: Never put in paper towels, napkins, sanitary products, household T.P., or food into marine heads. Use only marine T.P. provided by SHYC.*

To use toilet, move selector switch to the "wet bowl" position. Pump the handle 3-5 times to wet the bowl. After using head, pump to remove waste from bowl (approx. 20 times). Then return selector back to "dry bowl" position and pump for a few times until bowl is dry.

Should the toilet squeak or be a bit sticky to pump, lubricate with a couple of squirts of dish soap or salad oil. Put in bowl and pump 2-3 times to get it to pump and leave overnight. Again, leave in the "dry bowl" position.

Holding Tanks

Your sanitation holding tanks holds 65 gallons. Be aware of the rate of waste production (about 1 gallon/flush). If you overfill your tank, you will break a hose, clog a vent, or burst the tank **which is an indescribable catastrophe!** And a very **expensive fix for you.** Empty the tank at least every other day to avoid any problems.

The holding tank is located **in the engine room.** **There is a tank watch warning light located in the head.** **But do not rely on this as they are subject to being inaccurate.**

The holding tank is emptied in one of two ways:

#1 At the pump-out station, remove the deck waste cap located [on the port side deck](#). Turn y valve to deck fitting pump-out, Insert the pump-out nozzle into the waste opening. Double-check that you have the right deck opening! Turn on the pump on the dock and open the valve on the handle of the hose. When pumping is finished, close lever on handle and turn off pump. Remove from deck fill. If there is a fresh water hose on the dock, rinse the tank by adding water for 1-2 minutes. Then re-pump to leave the tank rinsed and clean for the benefit of the next charterer. This also eliminates any head odors.

#2 The tank's contents can also be discharged at sea by using the [macerator \(Sealand pump\)](#). To operate the macerator, turn y valve to macerator out, open thru-hull located [at the tank](#), depress macerator switch on 12v panel, and pump until pitch becomes higher indicating an empty tank. This should take about 2 minutes. Discharge can be seen on the [port](#) side of the boat. *Note: Overboard discharge is only allowed in Canadian waters. It is illegal to discharge overboard within U.S. waters.*

Y-Valve

The Y valve directs the flow of waste either to macerator or to waste fitting on deck. The Y Valve is located above waste holding tank in engine room. Usually, because of Coast Guard regulations, the Y- Valve will be wire-tied to the waste deck fitting position.

WATER SYSTEM

Fresh Water Tank/ Pump/ Hot Water Heater

The fresh water tank(s) holds [100](#) gallons and is located [in the engine room](#). To fill the tank, remove the deck water fill cap located [on the port side deck](#). Fill the tank avoiding flushing debris into the tank. **Do not fill water and diesel at the same time!**

Waste water from the sinks and showers drains overboard through various thru-hulls usually located under the sinks

The water pressure pump is located [in the engine room](#). Activate the pump by turning on the breaker at the DC panel. If when in use, the pump continues to run, you are either out of water or have an air lock which can be corrected by opening a faucet. If you run out of water, shut off pump and **turn off hot water heater** on AC panel. **You can cause serious damage** to the heating element.

The hot water heater has a [12](#) gallon capacity. It is heated when the AC breaker is on while connected to shore power [or run the main engine](#). Do not use the water heater if the water level is low.

Shower

Before taking a shower, make sure the water pressure and shower sump pump breakers are on. Take short "boat" showers by turning off the water between soaping and rinsing. Please wipe down the shower stall and floor when finished to keep shower tidy. Pick up any accumulation of hair in the drains as it clogs the hoses. Ensure that the faucets are tightly turned off after each shower to save water.

GALLEY

The boat is equipped with a low pressure propane system for cooking. The propane tank is located [in the Flybridge helm locker](#). Open the tank valve. Go to the DC panel and turn on the breaker. Then turn on the propane solenoid switch [in the galley](#). When lighting the first time, allow a few seconds for the gas to travel from the tank to the stove. You might need to keep the stove top or the oven in the light position for a few more seconds while the thermo-coupler warms up.

To ensure safety, turn off the propane solenoid switch, the propane at the bottle, and the DC breaker when finished.

Refrigerator

The refrigerator is dual voltage (12 volt and 110). It will automatically use the 110 volt power when shore power is on and the AC breaker flipped on. Carefully monitor the use of the refrigerator when the engines are not charging the 12-volt system as when you are at anchor. Use a cooler when possible for all your drinks to keep the refrigerator door closed as much as possible.

The power switch is located below the front door of the fridge. The thermostat can be turned down at night to conserve energy while anchored or moored.

HEAT

The [Webasto](#) diesel forced-air heater is located [in the engine room](#). It provides heat much like your household furnace. Turn on the toggle switch in [the main salon](#) and set the temperature at the desired temperature. Check the exhaust port on the [port midships](#) to make certain that no obstruction such as a fender or line exists. Let the furnace run at least 15 minutes before turning it off. Turn the furnace off back at the thermostat.

Electric heaters are also available when connected to shore power. Make sure the appropriate AC breaker is on.

ELECTRONICS

There are [2](#) VHF radios located [at the helm stations](#). Make sure the breaker is on at the DC Panel. Always monitor Channel 16 while underway.

There are [two](#) depth sounders located on the [upper and lower helm](#). To activate, ensure that the DC breaker is on. The sounder is reliable in waters less than 200 feet and at slower speeds. If your reading is blinking, it might be a false reading due to excessive depths or strong currents! Watch your depth carefully in cruising unknown waters that might have rocks or obstacles.

To operate the radar [press and hold the power button](#). To turn off, hold the power button for about 3 seconds. Remember you are not allowed to travel in fog or at night. The manual is aboard.

A [Chartplotter/GPS](#) is located [at the lower and upper helms](#). [Operating instructions are at the lower helm station](#).

[Chart Plotter](#)
[Stereo/CD Changer/ TV](#) are all available in the salon.

ANCHORING

Your primary working anchor, a [45 lb plow](#), is attached to [300' of 5/16 chain](#) and. It is marked [every 25 feet](#).

Turn on the anchor windlass on the AC panel and proceed to raise and lower the anchor as needed. Be sure to always have your engines running. [Windlass Instructions here](#). See page 9 in the White Binder for further anchoring instructions.

Turn off the breaker when finished.

BARBEQUE

The Barbeque and mounting bracket are stored [in the cockpit lazzerett](#) or on the aft rail. Place mounting bracket on the cockpit rail.

Attach the propane bottle and regulator usually found with the BBQ. Carefully light the unit. This Barbeque cooks fairly hot and fast so keep a good eye on your food. Store the barbeque back in the [lazzarette](#) when it has cooled. Please wipe it down with a rag or paper towel before storing. *Note: Propane bottles are not stocked by SHYC so you will need to purchase a bottle if one is not found on board during your check-out. Ensure that outboard gas or any other flammables are not near barbeque.*

DINGHY AND OUTBOARD MOTOR

Your dinghy is equipped with a 5 hp engine.

To deploy the dinghy,

[Lower it into the water from the swim step using the hand winch.](#)

After the dinghy is in the water and readied to go (PFDs etc), open the vent in the fuel tank and choke the engine once while starting. Make sure outboard is in neutral. While there is extra outboard gas on board, if you need to add more mix

gasoline with 2-cycle motor oil at a ratio of **50:1**. *Note: Failure to use proper mix will damage outboard.*

Please use extreme care in beaching your dinghy. Make sure the engine gets tilted up a safe distance from shore so the prop does not hit the bottom or shear the pin. Do not drag the boat on the beach. Please lift it up with your crew. Make sure it is secured as the tide comes in fast in these here parts.

When returning to the boat, leave your shore shoes in the cockpit and slip on your deck shoes or slippers to keep the boat neat and tidy.

OTHER NOTES

Safety should be paramount to your daily cruising. A man overboard drill (person?) should be discussed and practiced with an unlucky PFD as the victim. (please rinse and dry afterward before stowing). Remember that your lifejackets are stowed [in the flybridge seat and under the stairs in the salon](#). A few should always be readily available. Flares and other safety equipment are located [here also](#).

Always have a sharp lookout posted for logs, deadheads, or other flotsam and jetsam. A log hitting your prop can ruin your vacation. As you are traveling, the debris does seem to gather along current lines. It is sometimes best to go around these areas and miss the "mine fields".

[Bessie](#) is equipped with numerous automatic bilges pumps that can be activated on the DC panel. The switch should normally be left in the "Auto" position can be switched for a minute or so to "manual" to pump the bilge. If you continually hear the bilge pump running, **check your bilge!** You may have a serious problem!

[An auxiliary hand-operated bilge pump](#) is located _____ and operated by _____. This is used in an emergency situation.

The engine spares are located [in the engine room](#). They include extra oil filters, impellers, head pump, etc. Extra oil and coolant is located in the engine room.

Crabbing is fun but requires the correct license and season. Please be sure not to crab off the stern as the crab line can easily get tangled in your prop as you swing with wind or current. You certainly don't want to be the person who has to dive over and cut the line out of the propeller. It is best to use the dinghy to set your crab pot/ring away from the boat. A partially open can of seafood catfood works well as any other bait and is less messy. Please clean up any seaweed or crab shells afterwards to keep the boat neat and tidy.