

OPERATION MANUAL

CUPCAKE

Welcome Aboard!

We are happy that you have chosen Ship Harbor Yacht Charters and the vessel *Cupcake* for your vacation.

The *Cupcake* is a Sun Odyssey 43DS, a new concept in deck salon sailboats: wide cockpit, panoramic windows, solid teak interior, high headroom throughout -- all structured on a modern high-performance hull.

The equipment you will have available includes: top of the line running gear, genoa, radar, GPS, auto-pilot, tri-data, high performance VHF radio and chart plotter.

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.

We hope you enjoy your cruising experience in the lovely islands of the Pacific Northwest.

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. Check the level of your engine oil with the dipstick. Look at the etch mark on the dipstick that indicates proper levels. **DO NOT OVERFILL!** Fill only if oil level is below the ½ mark. Check the general condition of the hoses and belts.

Ensure the **RAW WATER THRU-HULL is OPEN** (lever in-line with hose). Check the 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

Cupcake has a 75 hp Yanmar engine. In the cockpit there is an engine control panel mounted on the face of the helmsman seat and a throttle and transmission control lever mounted on the instrument pod. The vessel cruises at 2400, 2800 rpms to a speed of 7 - 8 knots.

To start engine, set all 3 battery selector switches to the vertical position (ON). These switches are located on the panel in the Port Aft Stateroom (the top red switch is for the three "house batteries", the middle black switch is the "master" switch enabling or disabling all batteries and the red bottom switch is for the "engine" battery). These switches are off when in the horizontal position.

Place transmission lever in the neutral position (straight up) with the red button pressed in. Turn the starter key on the engine control panel partially clockwise. Your oil and temperature alarm will sound. Then turn the key further clockwise to start the engine (there is no "glow plug" time required to start your engine). After the engine starts, warm it up for about 5 minutes at about 1000 rpms. To keep the transmission in neutral while throttling up to 1000 rpms keep the red button pressed in while you push the throttle forward.

Check the transom for water and exhaust as an indication that your thru-hull is open and water is keeping your engine cool. Be sure to rev the engine occasionally when operating for a long time at low rpms.

To read the fuel gauge push the toggle switch on the engine control panel. The meter normally sits at zero.

To put the transmission out of neutral and into forward or reverse bring the throttle lever back to neutral and let the red button pop out. With the button popped out move the throttle lever forward or aft.

Shut Down

Before shutting down, let engine run at 1000 rpm for about 5 minutes to cool. Ensure the gearshift is in neutral (red button on throttle pushed in). Turn off the engine by pressing and holding the red button on the engine control panel until the engine shuts off. **NEVER TURN OFF THE KEY WHILE ENGINE IS RUNNING.** As soon as the engine shuts off turn the engine battery off, unless you are on shore power.

*Note: If water temp or oil pressure alarm sounds, **shut down engine immediately** and look for problem. Was there a lack of water exiting with exhaust? Is the thru-hull at the engine open and debris cleared from sea-strainer? Does the oil gauge read correctly? If problem keeps occurring, call SHYC Service.*

Getting Underway

Disconnect the shore power cord (see "110 volt AC", next page, for proper sequence). In rainy or rough weather close portholes, windows, and hatches. Turn on VHF and electronics. Assign crewmembers to their tasks. Put one crew member in charge of the dinghy if it is under tow. It needs to be kept on a tight leash when in the marina. Once outside marina, have crew members bring in fenders and put lines away.

Cruising

Slowly come up to cruising speed of 2800 - 3200 rpms where you will cruise at about 7-8 knots, using only $\frac{3}{4}$ - 1 gallon of diesel/hour. Using excessive rpms will only give you a $\frac{1}{2}$ knot of speed and may damage the engine. Speed at any given RPM will vary depending on weight, load, and weather conditions

Docking

Before docking, give clear instructions to the crew on what you will expect of them i.e. with lines and fenders. Always come into the dock slowly allowing for any wind or tide.

Have the bow, stern, and spring lines ready. If you are short on crew, lead the lines to the midsection of the boat where your crew member can easily step off with one of the lines, secure it, and quickly grab the next one.

As you are approaching the dock, have your crew call out distances to the captain (i.e. 20 feet, 10 feet, 3 feet etc.). This will help with a successful landing.

If you find you are too far from the dock, **DO NOT have your crew jump!** Back out and do it again. Disaster will follow if someone falls in the water.

Anchoring

Your primary working anchor, a 35 lb Rockna fast set plow, attached to 250 feet of 5/16" high test chain. The chain is marked with white paint every 25 feet and red paint every 100 feet.

Turn on the power to the anchor windlass at the panel in the aft port stateroom. Attach the handheld windless control to the connector in front cabin and proceed to raise or lower the anchor as needed. Be sure to always have your engine running. Alternately use the remote windless control and chain counter on the instrument pod in the cockpit. Turn off the breaker when finished.

When the anchor is up, use the provided carabineer or hook to attach the anchor chain to the D-ring in the anchor compartment.

When the anchor is deployed, use the snubber to reduce impact stress on the anchor chain.

Do not allow the chain to release freely or quickly. The windlass has power up and down. Use a scope of at least 4x in calm weather and 7x in rough weather.

Do not use the windless to pull the boat up to the anchor. Power the boat towards the anchor and take up the chain slack with the windless. Then break out the anchor by maneuvering the boat.

Be aware of the ocean floor contour before anchoring. If the floor drops off steeply from the shore anchor close to shore and secure boat by a line from the stern to the shore. Otherwise, if the boat drifts away from the shore it will pull the anchor downhill and will easily break loose.

Fueling Up

You will need to fill up upon completion of your charter. Your fuel tank holds 50 gallons. You should have a rough idea of the number of gallons you will need to add to your tank. The engine will consume $\frac{3}{4}$ to 1 gallon per hour.

Open the fuel filler cap located on the port side with the key located in the Nav station or with a winch handle. **MAKE SURE YOU HAVE DIESEL!** Make sure it is going into the right deck fill! **DOUBLE-CHECK!** Before pumping, have your oil/fuel rag ready to soak up any spilled fuel. Do not add water at the same time.

Put the **Diesel** 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 that it does not spill fuel into the water. Top off carefully, catching any spillage with your sorb. Replace the diesel fill cap, clean up any spatter and wash hands thoroughly.

BOAT ELECTRICAL

The electrical system is divided into two distribution systems: 110 volts AC and 12 volts DC. The systems are controlled from the electrical panel located at the NAV station and the battery switches located in the aft port stateroom.

When not connected to shore power your batteries provide 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.) When the engine is running the alternator will charge the batteries.

110 Volt AC

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

To connect to shore power first make sure that the dock breaker switch is off, the boat breaker is off (located in the aft port locker in the cockpit) and all 110 volt toggle switches (located at the NAV station) are off. Plug the power cord into the boat (located at the aft transom) and then into the dock receptacle. Check the power rating/plug size of the dock receptacle. Secure the cord around the shore power electrical receptacle and off the stern (i.e. wrap around stern line a few times). Turn the dock power breaker on first. Then turn the boat breaker on and lastly turn on the AC switches at the NAV station.

Before turning on the AC switches at the NAV Station be sure that the "Reverse Polarity" warning light is not on!

When disconnecting from shore power reverse the sequence (i.e. turn off AC switches at NAV station, then boat breaker and lastly dock breaker).

Turn on appropriate panel switches for battery charger and water heater. Watch your voltmeter for load. If the load is heavy it may exceed amperage ratings and pop a breaker. If this occurs, wait to turn on one of your systems (i.e. water heater) until the use of power decreases.

House 12-volt System

One 12 volt battery is provided for engine starting and two are provided for house use. Three battery switches are provided. These switches are located on the panel in the Port Aft Stateroom (the top red switch is for the three "house batteries", the middle black switch is the "master" switch enabling or disabling both house and engine batteries and the red bottom switch is for the "engine" battery). These switches are off when in the horizontal position.

When anchored or moored, **turn off the engine battery** (turn bottom switch to the horizontal position). **Note: Once the engine is started the engine battery must stay on. Turning off the engine battery with the engine running will cause damage! Only change positions with the engine off!**

Your 12 volt panel allows monitoring current and voltage for each of the two battery banks. A rotary switch selects the bank to be monitored. Position "**Bord**" for house – position "**Moteur**" for engine – position "**Aux**" for bow thruster.

Circuit breakers are provided for all the systems supported by your batteries. Primarily you will be turning on these breakers for lights, water pressure, electronics, etc. Be sure to always leave the Bilge pump switch on. Your propane switch 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 batteries to measure battery voltage. Typically each battery 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 as long as the battery switches are on. The engine, house and bow thruster batteries are charged by the battery charger while connected to shore power (provided the charger switch is on at the AC panel).

Voltage	Battery State of Charge
13.0 volts	100%
12.5 volts	75 %
12.0 volts	50 %
11.0 volts	25 %
10.0 volts	0 %

SANITATION SYSTEM

Marine Toilet (Jabsco)

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 the head, pump to remove waste from bowl. Then return selector back to the "dry bowl" position and pump for a few times until bowl is dry.

Your toilet raw water intake is located behind a door to the port side if you should need to shut off the water to the toilet.

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 system has one 10 gallon holding tank for each toilet (fore and aft). Be aware of the rate of waste production (between 1-3 quarts/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 for the aft toilet is located behind a panel in the shower where it cannot be easily accessed. The forward holding tank is located behind a door on the port side of the toilet. The forward tank is subject to the "watermelon test" by thumping it.

The holding tanks are emptied in one of two ways:

1. At the pump-out station, remove the deck waste caps located on the port side above each holding tank. 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.

If there is a fresh water hose on the dock, rinse the tank by adding water. 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 discharge valve. Simply open the valve (located in the compartment on the port side of the toilet). This should take about 2 minutes. Discharge can be seen on the port side of the boat. **Note-It is illegal to discharge the holding tank in US waters (anywhere within 3 miles of land) or when in port in Canadian waters.** Be sure to close the valve immediately after emptying the tank.

After emptying the holding tanks always add holding tank conditioner according to the instructions on the container.

WATER SYSTEM

Fresh Water Tanks - Pump - Hot Water Heater

Two fresh water tanks hold 100 gallons total. There is a tank under the floor panel next to the salon table and a "starboard" tank behind the cushions at the salon table.

A manifold to switch tanks is located behind a wall panel to the left of the NAV table pedestal. Only open 1 tank at a time starting from the top valve (top valve = forward tank, middle valve = center tank and bottom valve = starboard tank).

A water meter is located on the electric panel at the NAV station. This meter operates by setting it to zero when first starting to draw from a full tank. When the meter count reaches a certain value for each tank than the selected tank is about empty. These values are:

The water pressure pump is also located behind the wall panel. Activate the pump by turning its breaker on at the DC panel. If the pump continues to run when all faucets are off you are either out of water or have an air lock. If the selected tank is empty shut off its valve and turn on another before opening a faucet. An air lock will usually occur when you

switch tanks. To clear an air lock, turn on a faucet to expel the air. If you are totally out of water shut off the pump and **turn off the hot water heater at the AC panel to avoid serious damage**

The hot water heater has a 10 gallon capacity. It is heated when its AC breaker is on while connected to shore power or when the engine is running. When heating water with the engine it will take 30 minutes of run time to turn cold water hot. Do not use the water heater if your water supply level is low. The water heater is located under the seat in front of the galley sink.

To fill a water tank, remove its deck water fill cap located on the starboard side (three fill caps are provided, one for each tank). When filling, avoid flushing debris into the tank. **Do not fill water and diesel at the same time!**

Shower

Before taking a shower, make sure the water pressure and shower sump pump breakers are on at the DC panel. Take short "boat" showers by turning off the water between soaping and rinsing. The hot water can be scalding so turn on some cold water first and then adjust. Please wipe down the shower stall and floor when finished to keep shower clean. Turn off the sump pump breaker. 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. There is also a transom shower.

Waste water from the showers and sinks drain overboard through various thru-hulls, usually located under the sinks. Toggle switches are provided to operate shower sump pumps.

GALLEY

Propane/Stove

The boat is equipped with a pressurized propane system for cooking. The propane tank for the cook top and a spare are located in the aft starboard locker in the cockpit. Open the tank valve. Go to the DC panel at the NAV station and turn on the breaker labeled "USA LP Gas Control". When lighting for the first time, allow a few seconds for the gas to travel from the tank to the stove.

To light a stove top burner first set the knob to the large flame icon (9:00 o'clock), push the knob in and light. You will need to keep the knob pushed in for a few more seconds while the thermo-couple warms up.

To light the oven, follow the same procedure using the oven knob as described for the stove top burner knob. The match should be inserted in the small hole at the center/front of the bottom plate.

If the oven knob is left at the 9:00 o'clock position the oven will reach 350 degrees in about 10 minutes and about 400 degrees in 15 minutes. If left at this high setting it will slowly climb to 500 degrees and higher. Use the oven thermometer to help adjust to the desired temperature.

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

To prevent asphyxiation, always open the hatch and port near the stove whenever the oven or stove top burners are on and never use the oven or burners to heat the cabin.

Refrigerator/Freezer

The refrigerator operates on 12 volts. Carefully monitor the use of the refrigerator when shore power is not connected and the engine is not charging the 12-volt system (e.g. when you are at anchor). Use a cooler when possible for all your drinks. This will keep the refrigerator door closed as much as possible. The refrigerator/freezer is a very efficient system but when away from shore power, it may require running the engine an hour a day to replace battery drain. Check battery levels frequently.

The temperature setting for the refrigerator is located in the cabinet behind the refrigerator. A setting of 4-5 will keep the refrigerator at approx. 36-40 degrees.

ELECTRONICS

There is a Standard VHF radio located in the Nav Station. Make sure the "VHF" breaker is on at the DC Panel. Always monitor Channel 16 while underway.

There is an Autohelm, Tridata and Depth Sounder located on the helm instrument pod. To activate, turn the "Autopilot" DC breaker on.

The depth 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. The depth level is relative to the bottom of the keel thus 6.5 feet of actual depth reads 0.0 feet.

There is an AM/FM CD stereo at the Nav Station. The FADR selection will control the volume between the cockpit and the cabin. To select FADR push SEL (upper left corner) until FADR appears on readout. By using the +/- control on the left you can move the double lines to the right (reduces cockpit volume) or to the left (reduces cabin volume).

Raymarine Chart plotters are provided at the NAV station and the cockpit instrument pod. These displays are augmented with GPS and Radar. Both the "NAV Instruments" and "GPS" breakers must be on to operate the chart plotters and radar.

Operation manuals and summary cards for all electronics can be found at the NAV station bookshelf. See "Plus Series Color LCD Display" Owners Handbook for operation of the chart plotters and radar. See the red cloth Raymarine folder for manuals covering the instruments at the helm instrument pod.

SAILS AND RIGGING

There is a 110% Jib on a roller furler. The furling line runs on the port side to the cockpit. To unfurl the headsail:

1. Uncleat the furling line and both Jib sheets
2. Wrap the port or starboard Jib sheet around the appropriate winch
3. Pull the sheet aft while applying light tension to the furling line
4. Cleat the furling line when the Jib is fully out or when to point of appropriate reef.

When under way adjust Jib sheet fairleads forward in heavy air, aft in light wind.

To furl the jib, uncleat or loosen both jib sheets and apply light tension to one jib sheet while pulling in the furling line until there are 2-3 wraps of the Jib sheets around sail. Be sure that 2-3 wraps of furling line always remain around the furling drum.

BARBEQUE

The Barbeque will be stored in the port cockpit locker or will be on the aft rail. Propane is attached to the BBQ by first inserting the nozzle with the propane bottle in the horizontal position, and then is locked in by letting the bottom of the propane bottle swing down.

Carefully light the unit. This BBQ cooks fairly hot and fast so keep a good eye on your food. After the BBQ has cooled wipe it down with a rag or paper towel.

It can then be un-mounted and stored or covered with the cover provided. *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 the barbeque.*

DINGHY AND OUTBOARD MOTOR

Your dingy is equipped with a 5 hp engine. When the motor is not on the dinghy it is stored on a bracket mounted on the aft rail. The dingy has a capacity of 600 pounds (about 3-4 people).

When the dingy will not be used for a number of days it can be stored on deck, upside down, in front of the mast. It weighs about 90 lbs and can be lifted to the deck manually or winched up to the deck with the spinnaker halyard. When lifting it to the deck or back to the water do not allow it to rest on the life lines or stanchions. When placing the dinghy on the deck (upside-down) be sure to protect the deck from any hard surfaces or objects on the dinghy with proper cushioning.

When moving the motor between the dinghy and boat tether the motor to the dinghy or boat with the 15' ¼" red line provided. When towing the dinghy keep the motor on the boat using the mounting bracket on the aft rail.

After the dinghy is in the water and readied to go (PFDs, oars, etc), open the vent in the fuel tank and choke the engine once while starting. Make sure the 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 free of sand and grit.

SAFETY

Location of Safety Equipment

Life Vests - Under the forward seat by the Salon Table. (There are 10 adult life vests and 2 life vest for children. If you need more life vest for children, obtain them from Ship Harbor Yacht Charters)

Emergency Flares - Under the Forward seat by the Chart Table

Fire Extinguishers - Forward bulkhead by the Chart Table
Rear bulkhead by the Chart Table
Forward Bulkhead in aft Starboard

Air Horn - In the open box in front of the Electric Panel

Life Ring - On Starboard Stern Pulpit (be sure Life Ring line is attached to both the Life Ring and the Stern Pulpit)

Thru-Hull Plugs - Under the Forward seat by the Chart Table

First Aid Kit - Under the forward seat by the Chart Table

Emergency Tiller - In Starboard Cockpit Locker (access to rudder via cap on helmsman seat)

Tool Kits - Under the forward seat by the Chart table

Location of Underwater Thru-Hulls

Forward Head - 4 thru-hulls including:

1. Head seawater intake
2. Holding tank drain
3. Sink drain
4. Shower sump drain

Rear Head - 4 Thru-hulls including:

1. Head seawater intake
2. Holding tank drain
3. Sink drain
4. Shower sump drain

Engine Intake - 1 thru-hull: for cooling water intake at bottom of the engine compartment.

Fire Extinguishing Port for the Engine

A fire extinguisher port is located at the bottom starboard side of the stairway. If a fire occurs in the engine compartment insert the fire extinguisher nozzle through this port. In such an emergency **do not open the housing**. NOTE: if a fire is suspected in the engine compartment immediately turn the engine off.

Propane and Cooking

Always open the port behind the stove or the hatch above the stove, or both, when cooking. Use additional ventilation if more than one burner is on. **NEVER USE THE STOVE TO HEAT THE CABIN!** Always turn off the Gas Solenoid Switch at the electric panel and close the propane tank valve after using the oven or burners. Remind everyone of this. Check each other.

Bilge Pumps

The bilge pump and sump are located under the floor next to the NAV station. 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 behind a cover to the left and a little forward of the helmsman seat. The pump handle is located in the aft port side locker. Use this only in emergency situations.