

# NOTES FROM THE OWNERS OF “O’BENANNAS”

---

*Welcome aboard O’BENANNAS!*

*She’s a 2005 Lagoon 380s2. We bought her brand new. We hope you will appreciate the gear and equipment choices we made. And we hope you’ll enjoy sailing her and cruising the islands as much as we do.*

*O’BENANNAS is very well balanced and sails beautifully. She keeps her speed in light air and is very stable in heavy weather.*

*Our 4 favorite things about O’BENANNAS:*

- 1. She is a truly “Wow” sailing vessel. She is beautiful to look at and beautiful to be aboard. As a new catamaran, people stop and stare wherever we are. It feels special to be aboard her!*
- 2. As a catamaran, the main cabin is on the same level as the cockpit which creates a nice large open space for eating and hanging out. Great for happy hour and while cooking and relaxing in the evenings. Also it helps for everyone to be aware of what is happening on deck even when they are inside.*
- 3. The stability of a catamaran always amazes us. She handles so well while sailing and feels so smooth and streamlined. She is a joy to sail.*
- 4. As a French made boat, it seems they have gotten it down as far as making everything very user friendly. She is straight forward to understand in her handling and engine instructions. Makes life a lot easier!*

*O’BENANNAS’s primary nuances (which will be discussed in greater detail in our notes):*

- 1. Twin screws makes for surprisingly easier maneuvering than a monohull!*
- 2. Tall Deckt creates a lot of windage which is important to remember when docking.*
- 3. The wide beam of a catamaran creates need for more room when anchoring and docking. You will want to call ahead to marinas!*

*We’re immensely pleased with this well-built and beautiful vessel and look forward to sharing her with you, our guests. We hope you’ll love O’BENANNAS as much as we do and we thank you for taking special care of her. We do want to remind you that she is a NO SMOKING vessel. Please confine your smoking to on deck when aboard.*

*Happy Sailing!*

*Jim and Susan Holstine and Casey and Karen O’Keefe, Owners*

---

## ***INDEX:***

### Introduction: Favorites & Nuances

1. Anchors
2. Anchor Windlass
3. Barbecue
4. Batteries & Charging
5. Berths
6. Bilge Pumps
7. Dinghy
8. Dodger & Bimini
9. Electrical Panel
10. Electronics
11. Emergency/Safety
12. Engine & Handling
13. Fuel Tank
14. Head & Holding Tank
15. Headroom
16. Heater
17. Keel Depth
18. Inverter
19. Outboard
20. Refrigerator
21. Sails
22. Shower, Hot Water & Shower Sump Pump
23. Spares
24. Stove/Oven/Microwave
25. Water Pressure & Tanks

### O'BenAnnas SPECS

#### Documentation #

Builder: Lagoon  
Model: 380 s2  
Year: 2005  
Length overall: 37' 11"  
Beam: 24' 5"  
Mast Height (bridge clearance): 58'  
Draft: 3' 9"  
Displacement: 13,900 lbs  
Engines: Twin 27 hp diesels Volvo\*  
Fuel Tanks: 2-34 gal tanks (68 gal total)  
Transmissions: Counter-rotating sail drives  
Water: 2-80 gal tanks (160 gal total)  
Cabins: 3 plus crew cabin  
Heads: 2 marine Jabsco  
Refrigeration: Frigomatic  
Heating: Webasto Hydronic Diesel Heat  
Batteries: 2-gp 24 and 3-4D  
Windlass: 1200 Tigre  
Anchors: 3  
Instruments: Raymarine  
Winches: Harken self tailing X 3 (1 electric)

## 1. Anchors.

O'Bennanas is equipped with two anchors. The primary anchor is mounted on the bow roller and leads down the gangplank to the windlass in the starboard mid bow anchor locker. The primary anchor has 300' of chain and is marked with yellow paint every 25 feet. A bridle is used to keep the boat from sailing on the rode or mooring. It is attached to the bows and has a clasp hook to attach to the anchor chain.

Mooring ring: use a shortened bridle (on cleats) with safety line when picking up mooring ball. This will save tangling around ball

The secondary anchor is in the anchor locker and needs the rode attached prior to use. The unattached rode can be used as a shore tie line in close anchorages (as commonly practiced in Canadian waters).

The **stern tie line** is a 400 foot reel of line for stern ties in the forward port anchor locker . (Please do not cut the line; it is all needed for certain places in Desolation Sound.)

*The scope to use in the islands is 4-to-1 for the highest water depth you'll encounter in the spot where you choose to drop anchor. Check your tide data...to know how much water you may lose and how much water you will gain as the tide floods in and ebbs out during your stay. Since most coves are 15'-30' deep, expect to pay out about 60'-120' of rode. After you have paid out the suitable amount of rode, 2 minutes of reverse (in idle speed reverse) sets the anchor and tests its holding power. (Note other boats and points of reference on land. Are you moving? If not after 2 minutes, you've set your anchor successfully.) If you wish to sleep even better, throttle up to about 1500 RPMs in reverse for another 30 seconds to prove to yourself that the anchor is set well!*

*For storm conditions (sustained winds of 25+ knots), extend your scope to 7 or 10-to-1, provided you have room to leeward. Otherwise, set two bow anchors (using the secondary anchor, chain and rode) in a v-type pattern for extra holding power.*

## 2. Anchor Windlass.

Power is received from the port engine. Always operate the windlass while the engine is running! Otherwise, the windlass will drain the start battery. The breaker (i.e., the "on" and "off" switch) for the windlass circuit is located in the port aft stateroom near the battery switches in the cupboard. The up-down controller for the windlass is located on a handheld controller just inside the window to the main cabin above the anchor locker.

### **Deploying the Anchor.**

*Make sure the engine is running around 1500 RPM's in neutral.*

### **Retrieving the Anchor.**

*When retrieving the anchor, never use a windlass to pull the boat forward to where the anchor is set. (The windlass is not designed for it, would be a large draw on the batteries,*

*and might cause serious damage to the attachment base.) Instead, head the boat under power toward the anchor while using the windlass to take up the slack in the chain.*

*Also, when retrieving the anchor, only retrieve it up to where you can see the anchor about one foot below the water (again to buffer any possible “pendulum” action if the anchor were just out of the water). Then, by hand, retrieve the anchor from just below the water onto the bow roller. This prevents possible pendulum action, plus, if the anchor gets hung up on the bow roller and you continue to press the “up” button on the electric windlass, you will probably damage the attachment base. DO NOT use the windlass power to take up the last few inches of slack. Just take the extra chain and snug it up and hand-set the chain back onto the gypsy. Wearing gloves while doing this is recommended.*

*Take your time, the anchor chain dropping off of the gypsy sometimes bunches up under the windlass and you might need to push it down several times (with your foot or a mop handle) to the bottom of the chain locker to prevent the chain from jamming in the windlass.*

### **Securing the Anchor.**

*Once the anchor is on the bow roller, be sure to secure the anchor with the latch that is on the deck. You turn it clockwise to tighten and counterclockwise to loosen. (The chain on the gypsy on the windlass should not be the only thing keeping the anchor from unexpectedly returning to the sea bottom!) After securing the anchor with a line, immediately switch the windlass breaker “off” to prevent draining the battery should the windlass system decide to short out.*

### **3. Barbecue.**

The propane BBQ is plumbed to the propane tank or you can use a small propane bomb and attach it directly to the BBQ. If using the propane tank, make sure the faucet-like valve on the tank is turned on. After that, the BBQ’s little blue regulator is the control. Turn the control to the “on” or “light” position, and with the LID OFF, light the burner. (With the lid on, the BBQ tends to be hot and cook quickly, so tend your meat often.) *As a courtesy to the next guest, please use the wire brush attached to the BBQ to clean it after use.*

### **4. Batteries & Charging.**

For normal operations, leave the battery switch(es) “on” (in the vertical position) all the time. A battery combiner isolates the start battery, assuring all batteries are charged, while protecting the engine start battery from draw-down by house usage. The House bank has three 70 amp-hour deep-cycle batteries for house services.

The level of the engine batteries can be checked w/ the rocker switch on the 3<sup>rd</sup> panel from left on electrical panel. A reading of 13 volts indicates charging/full charge and a reading of 11 volts signals a low battery level. This monitor is for the engine batteries only. The House batteries can be monitored on the inverter master panel.

***CAUTION:*** *Never turn a battery switch to “off” while the engine is running! This will blow the diodes on the alternator, and your batteries will no longer charge.*

## 5. Berths.

*O’Bennanas* is ideal for 6 people, but she’ll sleep a maximum of 9 - two in the forward cabin, two in each of the aft cabins, two people on the dinette table (converts to a double berth), and one in the forward starboard cabin accessible from the forward deck(unfinished), The port forward berth is a full size mattress and the two aft beds are queen size. The converted dinette is full size. The forward starboard deck berth is a twin size bed.

**Converting the Dinette into a Double Bed.** Pull up on each side of the table, then remove legs (they’re attached by friction only). Insert the shorter legs into the same holes( those legs can be found in the storage under the dinette seat closest to the cockpit). Then place the table back on the shorter legs and insert into the peg holes on the floor. The extra cushions are found in the aft cabins.

## 6. Bilge pumps.

There are two electric bilge pumps and 2 manual bilge pumps:

- (1) The electric bilge pumps are controlled by float switches. They can also be turned on manually which requires that the switch on the electric panel be turned on.
- (2) The **manual emergency** bilge pumps are in the middle of the cockpit and the handles are in the port cockpit locker.

## VII) BILGE PUMP SYSTEM

REF	DESCRIPTION
1	Electric Bilge Pump 17 l/mn
2	Electric Bilge Pump Intake (Sump)
3	Seacock to Select Draining (Shower / Sump)
4	Electric Bilge Pump Outlet
5	Manual Bilge Pump Intake (Sump)
6	Manual Bilge Pump 0.75 l / each time
7	Manual Bilge Pump Outlet
8	Seacock for the Fwd Watertight Compartment Draining
9	Seacock for the Aft / Engine Watertight Compartment Draining
10	Watertight Compartment
11	Filter - Shower Outlet
6A	Lever of Manual Bilge Pump

**Make sure the bilge pump system is in good working order before you put out to sea.**

Make yourself acquainted with the way the bilge pump system of your boat works :

- Locate the manual bilge pump and the handle which enables you to make it work.

- Locate the on switch of the electric bilge pump and get to know how the seacocks work

(for the boats fitted with an electric bilge pump).

(See the lay out drawing of the system in the owner's handbook)

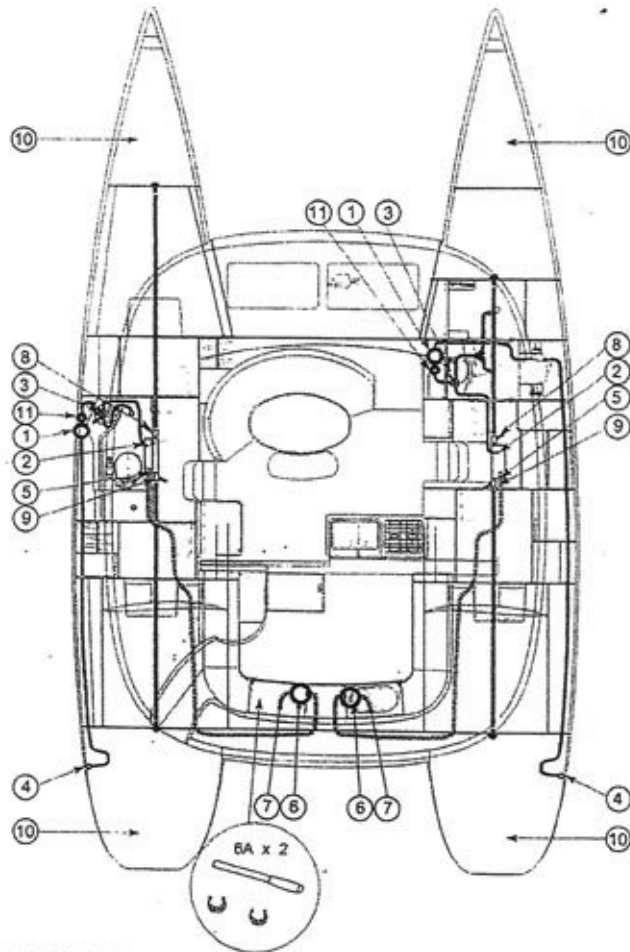
Make sure that the bilge pump intake strum box is not blocked with dirt.

Regularly clean the intake strum box on the sump and the filter of the system in case of an electric pump.

**LAY OUT OF THE BILGE PUMP SYSTEM**

LAGOON 380

OWNER'S VERSION



MAJ ANGL 19/11/99

18/42

**7. Dinghy.**

*O' BENANNAS* has an inflatable Brig 10'2" dinghy, two seats, oars and an outboard engine. (See "Outboard" section.)

The dinghy should be stored on the davits. There are lifting bridles on the transom and bow of the inflatable. Clip the carabineer on the davit line to the ring on the bridle. Lift the bow first and then lift the transom leaving it lower. Make sure the plug is removed to allow drainage. Placing the bow to the port hull leaves more room for the outboard on the mount. The transom lift is heavy. If assistance is needed to hoist use the starboard winch.

The key to start the dinghy is in the nav table. Make sure kill switch is in place. Choke is rarely required. Make sure fuel vent is open. Dinghy has large wake, come from plane to stop slowly or a following wave will swamp.

*Please take special care when beaching the dinghy (refer to the dinghy beaching procedure in your charter guest book). Most of the beaches you will land at are strewn with barnacle-covered, bottom-slicing rocks. When approaching the shore, weight the dinghy aft by leaning or moving the crew toward the back of the dinghy. Then offload everyone over the bow. Lift the dinghy above barnacle height using the hand lines on either side, and set it down gently on the beach. Also remember to secure the painter under a rock or to a large driftwood log – we have very large tidal fluctuations (so your dinghy won't float away).*

## **8. Dodger & Bimini.**

Our dodger provides protection from wind and weather while sitting at the helm.

Please don't take off the dodger. (It can be difficult to put back on.)

*The dodger's plastic "glass" is vulnerable to scratching from salt crystals, especially after sailing into a challenging breeze. When salt spray on the glass dries in the wind, tiny salt deposits are left behind and tend to obscure your vision. Please avoid directly touching the glass with a damp rag or sponge. Salt does dissolve in water, but not as fast as you might think. The salt crystals remain un-dissolved for several seconds. It's like rubbing the glass with sand paper! To clean, please use generous amounts of fresh water from a pan from the galley and "flood" the glass to dissolve the salt crystals away. (Better yet, wait until you're at a dock where you can hose off the salt crystals. If the dodger glass is really clear, you can thank previous guests for their diligence. And we thank you too!*

CAUTION: *We have found that most spray sunscreens react chemically with the plexiglass. So please inform your crew to spray sunscreen downwind of the dodger glass. And please don't lean against the dodger with sunscreen on your back and shoulders. Once that chemical reaction takes place, the glass is ruined and must be replaced (at a cost of around \$400).*

The bimini can be unzipped over the helm if weather allows but please don't remove it over the cockpit.

## **9. Electrical Panel.**

### **ELECTRICAL PANEL**

The electrical panel is above the chart table. The left side (aft) is 12 volt and the right (fore) is for 110 volt. The 110-volt operates only when plugged into shore power or when the inverter is functioning.

The panel is pretty straight forward except the shower drain is on the switch marked "Comfort". Central navigation is the switches for the instruments (depth, speed, GPS, and chartplotter).

There are 12-volt power plug for use w/ cell phone chargers, laptops, etc. Built in.

The level of the engine batteries can be checked w/ the rocker switch on the 3<sup>rd</sup> panel from left. A reading of 13 volts indicates charging/full charge and a reading of 11 volts signals a low battery level. This monitor is for the engine batteries only. The House batteries can be monitored on the inverter master panel.

**120Volt Circuit Main Disconnect Breakers** are BEHIND a wood panel in the port companionway, next to the stairs. They should not need to be accessed unless a shore power problem occurs. Additional breaker is in port engine compartment.

**Engine Batteries.** Boat has isolators/combiner between house/engine banks. If engine batteries drain and engines will not start, you can turn on the “coupler” switch in the aft port cabin to connect the two systems. This should give enough power to start the engine.

**A/C (120V) Power.** The A/C outlets will only function when the A/C Outlet breaker is in the “on” position.

**Chart Plotter:** turns on with a control switch on the control panel labeled “nav instruments”

**Autopilot.** Located at the helm. Turned on when “nav instrument” switch is on

**Cabin Lights.** Once you have turned on the switch at the electrical panel labeled “cabin lights”, an on/off switch for all cabin lights is located in the individual cabins. The berths have small lights for reading as well as overhead lights. The heads also have a light over the sinks as well as an overhead light.

**Water Pressure.** On when water pressure switch is turned on

**Shore Power A/C Circuit Breaker.** This box is located in the port engine locker. It rarely trips, but if it does, just turn it back on.

**Running & Steaming Lights.** Please be advised that night passagemaking is not permitted under terms of your charter agreement with San Juan Sailing. Only use in cases of reduced visibility (like fog or on the rare days in the Pacific Northwest when there’s heavy overcast).

**Anchor Light.** Should be on all night in an anchorage. (It won’t deplete batteries.)

## 10. Electronics.

The radar/chart plotter/GPS, depth sounder, wind instrument, and autopilot are all RayMarine products.

**Cellular Telephones.** is equipped with a 12-volt cigarette lighter type outlet that may be used for recharging your cellular telephone. The outlet is part of the control panel.

*The digital depthsounder will not give accurate readings beyond 400'. In deeper water, the sensitivity on the unit increases as the transducer tries to get some reading back. Consequently, you will receive many false readings caused by currents, changes in water temperature, fish, and seaweed. Use the depthsounder only as an aid to navigation in shallow water.*

**IMPORTANT:** *The key to avoiding rocks is NOT the depthsounder – but knowing where you are at all times. (Rocks are the greatest navigational and safety hazard in the islands – but they are all clearly marked on the charts.)*

*We do not recommend using the depthsounder's alarm during night. Besides a fairly high battery drain, it's likely to sound at inappropriate times such as late at night while fish are passing beneath the transducer. (Instead, consult the onboard tide data to determine whether you're anchored in a safe location, considering how shallow your depth will become when the tide ebbs out of your anchorage in the middle of the night.)*

**Radar & Chart Plotter.** *O' BENANNAS* is equipped with a RayMarine Radar and a color C80 chart plotter at the helm. (The chart plotter may be used without the radar to minimize battery drain.) GPS input to the Chart plotter comes from a Raystar 120 WAAS receiver antenna mounted on the saloon roof deck. To start the Radar/Chart plotter, turn on the electrical panel switch labeled "Nav Instruments".

*We recommend that in addition to using your PRIMARY navigation aids – namely, the Maptech waterproof chart book or the roll charts (with the most active "killer rocks" marked in red) – up in the cockpit while underway, you also utilize the chartplotter for added safety. It helps you to see if you are where you think you are on the chart book or paper charts. If someone asks, "Where are we?" Within 3 seconds, you need to be able to point to the chart and show them the vessel's precise position. If you can't, you're in danger of hitting a rock.*

*The only time when the chartplotter becomes your primary navigation tool is when you're in a "tight spot" like going through a narrow pass or approaching the entrance to a secluded cove. (With the chartplotter, you can "zoom in" to make something that's the size of a dime on a paper chart into the size of a paperback novel or larger on the screen. You can see more detail and, importantly, any hazards in the area. Your boat's position on the chartplotter is accurate to within 3 meters – about 10 feet. )*

*You should have little need of the radar except for the highly unlikely event that you are suddenly enveloped by fog, which is rare in this area. The fog that we've encountered in the islands usually forms in the wee hours of the morning and burns off by mid-day. So if it's a little soupy after breakfast, we put on an extra pot of coffee until it lifts. Never depart from a safe location into the fog! To do so, even with radar, would be contrary to prudent seamanship. FYI – Fog becomes "reduced visibility" when you can see ¼ mile (about 4 football fields) in all directions. It is safe to proceed CAREFULLY in reduced visibility using your radar to "see" beyond the haze, but be sure to look up from the screen about every 10 seconds and use your eyes to scan the horizon forward, behind, and side to side. A motoryacht, tanker or freighter traveling at 20 knots takes only 39 seconds to travel ¼*

*mile! You need to see these fast-moving vessels sooner-rather-than-later so you can prepare, if indicated, to quickly take evasive action to avoid an impending collision.*

**Knotmeter.** Power on by flipping “on” the breaker labeled “nav instruments. Speed is indicated in knots or nautical miles per hour. (For comparison, 7 knots is approx. 8 statute mph.)

*If the digital knotmeter shows a reading of “0.00” while underway, the impeller is most likely clogged with a piece of eelgrass. Sometimes it will float off overnight. You can also try removing it by traveling for a short distance in reverse. The impeller is located beneath the most forward salon sole board. (It’s not recommend that you try to remove the impeller to clear it, unless you are VERY experienced in such things. An open hole in the hull is a scary situation, and if not plugged quickly, it can jeopardize the boat and the safety of your crew.) If the knotmeter is temporarily “out of service”, the GPS input to the chart plotter provides an alternate and quite accurate speed indication called SOG (speed over ground).*

### **VHF Radio.**

The VHF radio is mounted at the nav station and a RAM microphone is mounted at the helm station. The “VHF/HIFI” switch needs to be activated on the electrical panel. Turn the VHF on by pressing the “Power” button for a short period. In order for the RAM mic and the VHF to recognize each other you will need to plug in the RAM mic before you turn on the power to the VHF. The stereo may turn on when you flip the switch on the electrical panel. If so it can be muted by pressing the power button for a short period or turned off by holding down longer.

Please use the radio properly, as you will find violations are expensive! The radio license is included with the boat documentation papers in the O’BenAnnas manual.

*To listen to the weather reports (should be done in the morning before you head out and ½ hour before your final destination), push the “WX” button on the radio. Scan the weather channels for the one with the best reception before sailing in the morning and prior to anchoring for the evening. This is generally a light wind region but weather changes can be sudden. Listen for the “inland waters of western Washington”*

*Both cover the San Juan Islands and the Canadian Gulf Islands. You will also hear “Strait of Juan de Fuca” (south of the San Juans), “Georgia Strait” (north), and “Rosario Strait” (runs through the eastern part of the San Juans).*

*You should monitor channel 16 (the hailing and distress channel) during your cruise. You may save a vessel or a life. You may hail vessels on channel 16, but after establishing contact on channel 16, ask the skipper of the other boat to switch to working channels 78, 79 or 80. San Juan Sailing monitors channel 80 during office hours (closed Sundays). If you need a review of VHF radio protocol, you’ll find information located in the onboard Charter Guest Reference Notebook. (By phone you can reach the San Juan Sailing office at -800-677-7245 or SJS’s owner, Roger Van Dyken, at 360-224-4300 on cell or 360-354-5770 at home.)*

*In case of a distress where you can no longer stand by the radio to pass your mayday, use the red distress button on the radio. First flip up the cover, then press the button. GPS input is automatically coded into your signal.*

## **11. Emergency / Safety Equipment.**

**Flares.** Visual day/night distress signals are located under the nav table seat.

### **FIRE EXTINGUISHERS**

There is a fire extinguisher mounted in each of the aft staterooms and one mounted under the chart table as well as in the aft lazarette. **In case of an engine compartment fire DO NOT open the lid to the engine!** There are openings (with plastic caps) in the bulkheads between the aft staterooms and the engine compartment specifically designed for use with a fire extinguisher. Remove the cap and place the extinguisher nozzle into the opening before activation of the extinguisher. This will extinguish the blaze. An additional extinguisher is in cockpit Lazarette.

**Emergency Tiller.** It sort of looks like a metal pipe, with an “elbow” bend in it. It’s located in the port cockpit locker. The rudder post attachment point is behind the helm. (To remove the cover, insert a winch handle in the star-shaped fitting and unscrew).

## **12. Engine & Handling.**

O’BenAnnas has twin 27HP Volvo diesel engines. They are easily accessed through the aft lazarettes on each hull. The raw water strainers are above the water line so in most instances you will not need to close the seacock to clean the strainers. We’ve found these engines to be very reliable, providing us with a cruising speed of about 7.5 knots at 2500RPM (varying according to conditions).

If the buzzer sounds while the engines are running, immediately check the engine instrument panel for oil and/or coolant temperature lights. If the oil light is on, shut down the engine, check the oil level, and contact San Juan Sailing. The alarm buzzer is more likely to indicate engine overheating. Check for water gurgling out the exhaust before you shut down the engine. If you had a wet exhaust, check the coolant level after the engines cool down. If there was no water gurgling out of an exhaust, the seawater strainer is likely plugged with eelgrass. Check the raw water strainer/filter in the applicable engine compartment.

The best solution to this problem is prevention—keep an eye peeled for eelgrass masses, especially along those “soapy” tide and eddy lines in the water. When eelgrass gets sucked into the engine cooling water intake, it jams the raw water strainer.

**Reverse.** When reversing, there is little need to use the wheel. Lock the wheel and use the engines against each other (like a tank) for small maneuvering. You can turn on a dime with one engine in forward and the other in reverse.

**Forward.** Again, use the engines against each other for maneuvering or have both engines in forward and steer normally with the helm.

**Docking.** *O'BENANNAS* carries momentum well, so your final approach and turn in toward your slip can usually be done with the shifter in neutral...you'll certainly need no more than "idle speed forward" (unless there are high winds). Steer with engines as stated above. Recommend locking wheel during docking. Allow transmission moment to stop prior to changing directions rapidly.

Never turn off the engine until the vessel is securely tied at the dock. Remember, you'll need to use your engine – in reverse – to stop the boat. It's very difficult and often impossible for people holding lines to stop the forward momentum of a vessel as heavy as a cruising sailboat.

*When coming into our docks in high winds or if you'd just like a little assistance upon arrival, simply hail "San Juan Sailing" on VHF channel 80. We'll be glad to offer some "coaching" and/or catch your lines. In fact, most marinas in the islands will help you if you hail them and ask for assistance. Asking for docking assistance, especially in windy conditions or with an inexperienced crew, is a sign of prudent seamanship.*

### **Starting.**

1. Check the oil level. The dipstick is accessed by releasing the latches on the companionway steps and pulling them forward. The dipstick is on the front starboard side of the engine. There is a wide gap on the dipstick between the full line and the fill line. **Do not overfill.** Use the onboard spare oil to add no more than a cup at a time. Then, after waiting about 2 minutes for the oil to trickle down to the pan, check the level again. Overfilling is a bad thing to do to a diesel. The excess oil will escape somehow, perhaps by blowing the head gasket. Also, if the dipstick indicates no oil the first time you check it, reinsert and try again - the correct level will show when the air lock bubble is broken. Expect the oil to be blacker than that of a gasoline powered automobile engine...this is normal for a diesel after only a few hours of operation.
2. Check the coolant level...anywhere between the two lines (high and low) on the overflow reservoir is "good".
3. While you have access to the front of the engine, check for belt tightness and leaking fluids.
4. Look over the stern for kelp, logs or branches that could foul the propeller.
5. Make sure the gearshift is in neutral (9 o'clock looking from the starboard side) with the red clutch pin pushed in. Then, keeping the red pin pushed in, advance the throttle lever to about the 10 o'clock position.
6. Hold engine toggle up to heat glow plugs around 10 seconds
7. Push start button. Expect the engine to start in 5 seconds or less. If the engine doesn't start after 10 seconds of cranking, check to make sure engine kill switches are down..
8. After the engine starts, release the button, check for water gurgling out the exhaust, then gradually ease the throttle back to idle near 1000 RPM.
9. While the engine warms, check your fuel level. *O'Benannas* has an on-demand fuel gauge. To activate the gauge, push down on the toggle switch.
10. Please allow 5-10 minutes of warm up before placing a load on the engine. It is very hard on a diesel to be placed under load when cold.

### **Proceeding in Forward / Reverse.**

Bring the throttle back to the neutral position (10 o'clock position with neutral position marked with black ink), and the red clutch pin will pop out. Now you may engage forward gear by

pushing ahead on the throttle or reverse gear by pulling back on the throttle. To keep the transmission “healthy”, please remember to pause 2 seconds (say “one and two and”) in the 10 o'clock neutral position when shifting from forward to reverse and visa versa.

## **Operation.**

27 HP Volvo engines are very reliable. Cruising speed is **6 knots at 2000 to 2500 RPM** consumption is approximately 1 gallon/hour at 2500 RPM.

Please do not exceed 3000 RPM because it’s hard on the diesel and fuel consumption goes WAY UP (at very little increase in actual speed). We find the engine will have least vibration at 2500 RPM...and at some points below 2500 RPM. (6 knots at 2000-2500 RPM – economy cruise speed at less than ¾ gallons per hour.)

*To avoid the possibility of sucking air or sludge when the fuel level approaches 1/4 of a tank, refuel when the fuel drops below ½ full and before it reaches ¼ full.*

*Engine Overheat. If the buzzer sounds while the engine is running, about 999 times out of a thousand it’s no more serious than eelgrass plugging up your raw water strainer. The best upfront solution to this problem is prevention—keep an eye peeled for eelgrass mats, especially along those “soapy” looking tide and eddy lines in the water. And don’t run over it. When eelgrass gets sucked into the engine cooling water intake, it jams at the raw water strainer.*

*To clear the eelgrass from the raw water strainer (above the water line in the engine compartment in O’BenAnnas), simply twist off the clear screwtop and extract the eelgrass and toss it in the galley garbage can. Replace the lid and tighten by turning it clockwise until the lid is seated firmly on the rubber gasket. Then restart the engine.*

*If upon restarting the engine overheats again, check the seal between the strainer, the rubber gasket, and the lid. If the strainer is drawing air, it won’t draw water. If needed, open and then retighten the lid on the strainer...and check to make sure the rubber gasket is in place in the lid (and not lying in the bilge.)*

*If the above fails to solve the problem, call San Juan Sailing for assistance.*

*There may be other reasons you hear the buzzer. If you lost oil pressure, the oil icon warning light will light up, so check which light is showing red. If it’s the oil light, shut down the engine, check the oil level, and contact San Juan Sailing. The alarm buzzer is more likely to indicate engine overheating, and the temperature icon light will light up. Before you shut down the engine, check for water gurgling out the exhaust. If you have a “wet exhaust”, check the coolant level in the overflow reservoir bottle and if none is seen, add enough to reach the top level line on the bottle. (ONLY AFTER THE ENGINE COOLS DOWN, you might remove the cap on the engine block and add coolant.) And check the bilge for a light green liquid. If found in the bilge, call San Juan Sailing. If the coolant reservoir bottle is full, check to see if the engine threw a belt. Without a belt on the raw water pump, the coolant won’t circulate and cool the engine. (Replacement belts are located in the engine spares kit.) One other possibility is that the impeller in the raw water pump has failed. While they are replaced each spring with a new one, it’s still possible that a hard object may be drawn in and break off an impeller blade. (A replacement impeller is found with the engine spares.) Call San Juan Sailing if you suspect you have an impeller problem.*

**Engine Shutdown. Remember--do not shut the ignition button while the engine is running!** (This can damage the diodes on the alternator, and the batteries will no longer charge. If you accidentally do this, turn the key back to the “on” position as soon as possible.) Instead, first bring the engine to idle and the gearshift to neutral. Allow the engine 5 minutes to cool down. Then push the fuel cutoff button located next to the key. After the engine stops, turn the key to the “off” position (turn it counter-clockwise) and remove key.

### 13. Fuel Tank.

*O’BenAnnas* has 2 34 gallon fuel tanks. The engine consumes approx. 1 gallon of diesel per hour.

*Please be very careful when fueling. Never allow maximum flow from the filler hose. If you do, the fill tube will surge and diesel will spill from the vents onto the side and onto the deck. It takes only a few drops of diesel fuel in the water to create a sheen and subject you to a Coast Guard fine. Fill slowly and carefully. Check the side vent and, with dish washing soap, wipe up any excess fuel to avoid yellowing the hull and stern and polluting the water. Also be very careful of drips when removing the hose. Diesel and shoe bottoms are a very slippery and dangerous combination. After wiping, please use soapy water to scrub down any drips so it does not stain the fiberglass.*

*Put your ear down to the fill hole and listen to the diesel flow. When the pitch changes and gets higher and higher, the tank is likely full and you’re now filling the hose between the tank and the fill hole. Avoid a fuel spill – STOP! Check the fuel gauge. If the gauge is not on “F”, continue filling. When you think you’re finished fueling, check the fuel gauge one last time to make sure it’s reading “F”. That way, San Juan Sailing will not charge you a \$50 fueling charge (plus the cost of fuel).*

*Note: Unlike automobile fuel gauges, fuel gauges on boats are notoriously inaccurate, especially on the low end. Therefore, whenever the fuel level drops below 1/2 full, you should refuel at your next opportunity. NEVER let the fuel level fall below 1/4 full or you’re in danger of running out of fuel. (Towing and the cost of a mechanic to bleed the air from the fuel lines is an expensive proposition for a charter guest.)*

**14. Head & Holding Tank.** *O’BenAnnas* has an 18-gallon holding tank, (San Juan Sailing staff will discuss holding tanks, overboard discharge and pumpouts upon your arrival.)

*If the toilet pump starts to resist your flushing effort, don’t force it! Exploding or leaking sewage is most unpleasant! Search out the problem and correct it. The heads on O’BenAnnas are electric. Flushing the toilets puts everything into the holding tank located in the cabinet behind the toilet. It is a greenish-blue tank. The port head is a manual discharge system. The starboard is a gravity discharge system and to empty it, or simply pass waste through it directly overboard, open the red-handled large seacock located under the head sink. All tank contents will drain overboard in just a few seconds...you’ll hear a noticeable “whoosh” as it discharges. Then close the large seacock handle, and all toilet contents go to and remain in the holding tank once again.*

*If you pump out the holding tank at a shore facility, please fill it with about 5 gallons of fresh water through the deck fitting to rinse, and then pump it out again. Thank you!*

*Offshore sailors have a rule: “Never put anything down a marine toilet that hasn’t been eaten first.” And that, of course, includes feminine items. In fact, offshore sailors do not even put soiled toilet tissue down a marine head. They simply deposit soiled toilet tissue (and feminine items) in a receptacle such as a waste basket with a liner bag or a ziplock baggie, but not down the toilet. We and San Juan Sailing highly recommend you follow this rule. And since we’ve been recommending this, we’ve had almost no incidents of plugged heads!*

## **15. Headroom.**

The headroom on *O’BenAnnas* (taken centerline in the main salon) is 6’3”.

## **16. Heater .**

The diesel-fired Webasto cabin heater will make the interior “toasty” within 10-15 minutes. The heater control is located near the Navigation Station. There is an on/off switch on the wall to the right of the electric panel. Each cabin has its own thermostat for temperature control. The heat is dry, comfortable, and on those rainy days or cool evenings, makes a huge difference in cruising comfort!

*When it’s cool, we recommend warming the boat before turning in for the night, with the last person to go to bed instructed to turn the diesel heater off before retiring. (Otherwise, the boat will get too hot and the electric fan in the diesel heater will drain the house batteries. The down comforters will keep you warm in bed.) Then, the first one up in the morning can simply turn the cabin heater back on.*

## **17. Inverter.**

When not on shore power, A/C power may be enabled by pushing the Xantrex button below the electrical panel (lower right area). A red light comes on. Then, flip the “Outlets” breaker switch on the A/C electrical panel “on”.

## **18. Keel Depth.**

O’BENANNAS has twin fin keels and draws 3’9”...so figure on 4 feet to be on the safe side.

*San Juan sailing strongly recommends that you always maintain a minimum of 10’-12’ under the keel at all times, both underway and at low tide on anchor.*

## **19. Outboard.**

O'BENANNAS is equipped with a 4-stroke Honda 15 horsepower outboard. This brand and size has proven to be a practical and VERY reliable dinghy outboard.

DO NOT add any oil to the gasoline mixture – it uses just straight gasoline. The fill cap is located at the top of the engine.

*As a courtesy we have an additional red spare gasoline container tied into your dinghy. **WARNING** – Gasoline fumes are explosive and a very dangerous fire hazard if stored on a boat. Keep the spare gasoline container in the dinghy and tied to the transom so it stays upright. NEVER store the spare gasoline container in a locker, lazarette, or any other storage area on your vessel.*

### **To Start.**

1. Push the fuel valve lever (starboard aft corner of the outboard) aft to open the fuel valve.
2. Pull out the choke switch (starboard forward corner of the outboard).
3. Open the air vent on the top of the fuel cap (top of outboard) by turning counter-clockwise about 3 full turns.
4. Make sure the black U-shaped kill clip (with the red lanyard) is clipped into the red shut-off knob (port forward corner of the outboard).
5. Turn the key

### **While Running.**

1. Push the choke back in shortly after the engine starts (after about 10 seconds).
2. There is no transmission--just throttle up to go forward and throttle down to stop. If you want to go in reverse--just swivel the outboard around 180 degrees.

### **To Shut Off.**

1. Shut the outboard off by pushing in the red shut-off knob (where the kill clip is clipped in). Or just pull the red lanyard until the clip pops off.
  2. To avoid prop damage, shut the outboard off and raise it out of the water before you reach the shore. Pull the outboard forward and out of the water until it clicks at stays in place.
- To put the outboard shaft back in the water, release the stainless steel lever on the starboard side of the shaft.

### **When Not in Use.**

1. Put the outboard back on the outboard mount on the stern rail and tighten both braces.
2. Push the fuel valve lever forward to close (starboard aft corner of the outboard).
3. Close the air vent on top of the fuel cap (top of outboard) by turning it clockwise.
4. Secure the outboard further by tying the safety lanyard with to the stern rail.

### **Troubleshooting.**

If the engine won't start, review steps 1-6 above to make sure you've done all 6 steps. There is a spare spark plug and spark plug wrench in the tool box in case the engine won't start or is running rough. (A new spark plug solves myriad outboard problems. If you use the spare spark plug, notify your check-in skipper upon your return so a new one can be placed aboard for future guests.) If the

outboard is running and you're heading toward shore, and the engine suddenly quits, it's usually that someone has forgotten to vent the fuel cap. If the engine is running fine but the propeller isn't moving, the shear pin is probably broken – just take the cotter pin out to remove the propeller and replace the broken shear pin (a spare pin is located forward of the shaft under the handle grip) and put the propeller and new pin back into place.

## 20. Refrigerator.

The well-insulated refrigerator (1'3" wide, 2'6" long, 1'8" deep) must be turned "on" at the electrical panel. The temperature thermostat control dial (with 1 through 7, 7 being coldest and will probably freeze your lettuce) is located inside the refrigerator, on the top left wall. There is a small freezer compartment in the refrigerator that can store several hot dog packages but is fairly small so you will want to plan on using the refrigerator and the cooler.

*We recommend running the refrigerator at all times to avoid it becoming smelly. You may want to turn the thermostat down to "3" (the medium setting) at night. This will help conserve house battery power. Then turn it back up to "5" or "6" during the day.*

The water in the fridge drains automatically. Be sure to keep the drainage pump on. The fridge is water cooled and drains under the boat. The strainer is under the aft starboard floor boards.

## 21. Sails.

### **Catamarans do not heel therefore choosing the correct sail combination is critical!**

Use the greater of apparent or true wind with the table below to determine what sail combination to use. Failure to reef sails enough may result in mast / rigging failure or capsizing the vessel!

**More sail than recommended will not make the boat go faster.**

**Do not sail with headsail only unless Force 9 winds (40 knots) or greater.**

**Green** colored lines are for the main sail (halyard).

**Blue** colored lines are for the jib and main sail (sheet).

**Green** halyard is for the spinnaker and is located on the mast spore.

**Yellow** and **Green** lines on the port side are reefing lines for the main.

The **Mainsheet** is double ended (it can be sheeted or eased on both port and starboard).

### **Prepare and check the Rigging Forward**

- \* If sailing, go on cabin top (using stair at mast step, untie lazy bag).
- \* Detach halyard banger preventer, attach halyard carabineer to lazy bag loop
- \* Check main halyard is running free and not fouled
- \* Check that main halyard shackle is firmly attached to sail head
- \* Check that genoa furler line is wound well and not fouled

### **Prepare and check Rigging Aft**

Remove boom sway preventer running to aft cleat, store in cockpit locker

## MAIN SAIL

The mainsail is a 80% battened, conventional rig with a lazy bag and two pre-rigged reefing lines.

To raise the sail

- Point the boat straight into the wind
- Open the port side clutches Helm on the green and yellow flecked lines ( Reef 1&2 )
- Remove the line connected to the lazy jack that restrains the halyard from slapping.
- Wrap the main halyard around the port winch and raise the main. Be very careful the battens do not catch
- on lazy jacks, which will rip the sail. If winching gets hard or slows check to make check to make sure nothing is caught or stuck. Loosen the topping lift.
- Loosen mainsheet to raise to top. Do not go beyond the black mark on the halyard.
- Sheet the main sail and begin sailing!

## JIB

The roller furling line for the jib is on the port side (red) and leads to a stopper outboard of helm station. Release the stopper lock and hold light tension on this line while unfurling the jib with the appropriate jib sheet for the tack you are on. Keeping light tension on the furling line and jib sheets while furling/unfurling will prevent fouling the line making for a much nicer sail!

Reefing the Headsail – Simply ease the jib sheets (keeping control of them) while pulling in the jib reefing line until only the amount of sail you desire is deployed.

5. Then, winch the halyard up the last few inches to eliminate wrinkles in the luff. (Don't over-crank on the winch or the sail could possibly rip somewhere along the luff.)
6. Fall off and you're sailing! (Now you're ready to deploy the head sail.)

When letting the mainsail down, it will flake nicely for the first 1/3 to 1/2 of the sail, but then will require a few tugs on the leech or luff to help flake the rest of the mainsail neatly into the lazy bag.

Reefing the Mainsail: “Reef early and reef often.” This will keep your crew comfortable and you from rounding up. Reefing the main is easy and can be done from the cockpit. Here's how.

1. De-power the main (by heading up or heaving to).
2. Be sure the topping lift has not been loosened, and will hold up the boom.
3. Let the tension off of both the boom vang and the main sheet.
4. Lower the mainsail so that the reefing point you desire is about 24 inches above the boom and cleat off the main halyard to keep tension on the mainsail halyard when reefing down the foot of the main.
5. Pull in on the reefing line (using the winch if necessary) to tighten the sail, which will draw down the reef point much closer to the boom and “shape” the sail.
6. If needed, raise the main halyard slightly (with the winch).

## Lowering the Sails:

### JIB

Keep tension on the active jib sheet and pull on the roller reefing line to roll the jib. Roll

several wraps of the jib sheets around the sail. Lock the reefing line and jib sheets in the stoppers to prevent unfurling.

## **MAINSAIL**

Tighten the topping lift in the stopper on the mast. Point the boat directly into the wind and release the halyard to bring the sail down. Do not pull the reefing lines back through the stoppers – rather place the extra line in the sail cover. This greatly aids in raising the next time. Make sure boom is safe distance from bimini top to prevent chafe.

## **22. Shower, Hot Water & Shower Sump Pump.**

### **TAKING SHOWERS**

Make sure there is hot water. (Unless you need a cold shower ! ) The electric hot water tank is only 5-6 gal so a long leisurely shower is not possible. (Unless everhot tank is used - see below– but doing so risks using your ENTIRE water supply.)

Turn on the power to the shower sump pump at the electrical panel with the “comfort “ breaker. The shower water collects in the floor on the head or shower stall and is removed by pressing the black button in the stall on the left of the bench (starboard head) or under the light switch (port head).

Minimize water use by wetting down : shut off the water and lather up. Then turn on the water and rinse off. Squeegee the walls down after showering to prevent mildew and to dry the boat for a more comfortable trip.

O’BENANNAS has a full size shower in the right forward cabin. It is fabulous to have a nice roomy shower on a boat-something almost unheard of!

**CAUTION:** The engine heats water to scalding temperatures! So please BE CAREFUL!

*Experienced cruisers know the sailor’s shower: get wet, turn off the water, soap up, rinse off. (If the shower basin overflows, you’re using too much water.)*

*On warm, sunny days, an alternative to the below decks shower is the swim platform shower (with hot and cold water) located next to the swim ladder. This is also a good way to rinse off salt after swimming or dirt after going ashore.*

## **23. Spares.**

O’Benannas is equipped with engine and general spares. They are located in plastic containers under the left seat in the saloon table.

## 24. Stove/Oven/Microwave.

The propane stove has three burners and an oven. Propane is a hazardous gas, and requires caution. For your safety, please follow these procedures:

1. Open the faucet-like hand valve at the propane tank all the way open. This is located in the starboard rear cockpit compartment below the grill.
2. Make sure all stove control knobs on the stove are in the “off” position.
3. Turn the electric solenoid switch that says “gas” located near the electrical panel to “on”. A red light will appear.
4. Push in the stove control knob in and turn to the left to high and then simultaneously push the red starter button on the top right of the stove.. The burner should light immediately. Hold the knob in for 2-3 seconds (warming a thermal couple) and release. You may then operate the knob like a normal stove.
5. When finished with the stove, shut off the burner(s), then shut off the gas switch. (What little propane remains in the line from the tank to the galley is insignificant, and even if this tiny amount of propane were to leak into the cabin, it would not cause a problem.) No need to shut off the propane tank during the day.
6. At night, it’s recommended that you turn off the propane tank with its faucet-like hand valve. That way, should the solenoid valve fail, there’s no chance that propane will leak into the vessel. (Since propane is a deadly gas, you’ll sleep much better!) Then, the first one up in the morning can go out to the tank and turn it back on to start the water boiling for the coffee!

To operate the oven you can either light the lower burner for baking or the upper burner for broiling.

Turn the knob either up or down depending on which one you would like to light. Then push the red start button and you should hear a click sound and it should light immediately

The microwave is fairly user friendly. Just follow the directions on the buttons on the face of it. It is best to use only when plugged in to shore power as it can drain the batteries quickly.

*Please note that the propane tank and both propane valves (the hand valve and the solenoid valve) are located in the propane locker in the starboard aft cockpit locker, which is vented and isolated from the rest of the boat. Any leaks there will move down, out, and away from the boat.*

*While the propane tank normally lasts for 4 weeks or more, San Juan Sailing’s staff tops them off every 2 weeks...so you’ll have plenty for you cruise!*

*If cooking underway, , use the fiddles that hold the pots/pans on the burners. **WARNING:** Never cook in high wave conditions or in strong, gusty winds. Food will definitely go flying!*

## 25. Water Pressure & Tanks.

## FRESH WATER SYSTEM

The fresh “water pressure” switch is located on the electrical panel. Push the breaker “on” to activate pump.

### **Water tanks.**

There are 2 tanks for fresh water in the mid bow lockers. Each holds 80 gallons. The level is monitored by the tubing in each forward mid ship storage compartment. The deck fill caps for the water tanks are black with blue rings and located between the cabin windows and hatches for the sail and anchor lockers. These are filled using the hoses store in the lockers at the base of the mast (hung on a blue line). The deck keys are stored in the nav station. The black key is for water and waste . Metal key is for fuel.

The pump and manifold to switch between the port and starboard tanks are located under the galley sink. The tank is closed if the line on the valve is perpendicular to the hose. The pump has to be turned on at the electrical panel. If the pump keeps running without water flow the tank is empty and it is time to switch to a full water tank (if you still have one). Make sure to close the empty tank when you open the new full one. Do not let the pump run dry or it will burn out.

An additional ever hot heater is available. The valve is located under port aft berth outboard cabinet. Use with diesel heater on for “unlimited” hot water (160 gallons). If plugged in to shore power you may use the 110 tank heater (5 gallon) with the switch on electrical panel. Switch the valve under port aft berth (inside the outboard cabinet) to choose between the hot water heater and heating the water with the diesel hydronic heating system. *NOTE: Water will not be heated simply by running **the engine under a load.***

*It’s okay to leave on while someone is below decks. But please turn “off” when motoring or sailing. You could burn out the domestic water pump should one of the tanks run dry as it tries in vain to pump water to build pressure (and you would not hear the pump running continuously over the sound of motoring or sailing).*

*State parks have no pressurized water to refill tanks, but all points of civilization do. If your crew does not let the water run continuously while they brush their teeth, shave or shower, you shouldn’t need to refill too often.*

**Enjoy your vacation aboard O’BENANNAS!**

\* \* \*