

## Owner's Notes – San Juan Explorer



Dear Friends,

Welcome aboard *San Juan Explorer!*

We have placed her in charter with San Juan Sailing and Yachting starting in 2021. We chose this firm because of their excellent reputation in bareboat charters and the school that offers instruction if needed. Before that, we were long time sailors with a sailboat in charter based out of San Diego. We've elected to move to 'the dark side', so to speak as we take a more relaxed approach to cruising and now look forward to the wonders of the Salish Sea.

We chose the American Tug 362 because of its efficient use of space and the offering of a second stateroom, it simply offers options when it comes to having guests aboard or stowing extra gear. We believe you, our charter guest, will also find that a real plus for a vessel of this size.

We've equipped San Juan Explorer with comfort and safety in mind. If you can think of anything...anything at all...that would make her more enjoyable for you, please let us know through San Juan Sailing and Yachting.

We wish you fair seas and wonderful memories. Thank you for being our guests!

Sincerely,

*Larry and Audrey Sobel*

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**1. Specifications and Vessel Information**

**Washington State Parks Annual Permit Decal** – Located on the transom, port side.

**U.S. Customs Re-Entry Decal** – Located next to the aft entry door, starboard side.

**Vessel Official Number - 1313682** (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). San Juan Explorer's number is located in the salon floor locker at the forward end. Look for 3" high characters.

**Vessel MMSI Number - 368197010** (unique vessel ID programmed into the DSC function of the VHF radio and the AIS transponder)

**Coast Guard Boarding Document** – Refer to the Charter Guest Reference Manual (white binder), Section 5 Documentation. Explains what to expect if you are boarded by the Coast Guard and where to find the information/equipment they may ask to see as part of their safety inspection.

**Specifications:**

Year:	2020	Engine:	Volvo Penta D4-260
Make/Model:	American Tug 362	Fuel: (2 tanks)	115 US Gal each, 230 total
LOA:	36' 6"	Water:	60 US Gal, 120 total
Beam:	13' 3"	Holding:	45 US Gal
Draft:	3' 5"	Heads:	Tecma fresh water, electric flush
Displacement:	18,000 lbs. (Dry)	Electronics:	Garmin

Staterooms:	2 doubles
Stateroom 1:	Headroom: 6'-4" – 6'-10", Berth Dimensions: 75" x 58" (head), 75" x 48" (feet)
Stateroom 2:	Headroom: 6'-3", Berth Dimensions: 75" x 45" (head), 75" x 48" (feet)
Pilothouse:	Headroom: 6'-1" – 6'-8"
SalonHeadrm:	6'-6"

Refrigerator: 15" x 30" x 19" (WxHxD) Freezer: 7" x 29" x 19" (WxHxD)

## 2. Nuances

There are a few things about San Juan Explorer that are not 'typical'. These are the things that may require special attention or where it may be best to deviate from customary operating procedures. We have listed them here because we believe they will help you understand the vessel and enjoy your time aboard.

### Volvo Electronic Start

The ship has a Volvo Penta marine diesel engine that is electronically controlled and managed. To start, you simply activate the ignition circuit by pressing the button, a LED in the corner of the button will illuminate. Then start and stop is simply done thru the Start/Stop button.

Once you shut down the engine, please remember to turn OFF the ignition circuit after you shut down the engine. Leaving it on will place an unnecessary electric draw on the start motor.



### Aft entry door

The aft entry door has a plastic latch at its top edge that engages when the door is fully open. It simply disengages by lifting the aft edge of the latch to release and allow the door to close.

We also request that you keep the entry door closed whenever the engine is running or while underway. It will prevent the smell of diesel exhaust fumes from entering the interior spaces.



### Tank Monitor

The tank monitor has seven sensors for indicating the level of various tanks. Sensors 2 & 3 will always show full fuel, they are not used in this vessel. The actual fuel tanks are indicated on sensors 4 & 5.

### VHF Radio

The Garmin VHF radio is implemented with the latest radio standards. You will find that several radio channels are now four digits, not two digits. For example, channel 80A is now displayed as 1080. It's the same channel as before, now just with a new designation.



## 3. Emergency/Safety Equipment

Emergency/Safety Equipment Locations: For your safety and in case of an emergency, this is **Must Know** information.

**Bilge Pumps (3).** Toggle switches are located on the switch panel at the helm. The normal "auto" position of these switches is to have them all in the forward position. Moving any switch to the aft position forces the pump to run regardless of the auto float sensor. Pumps are located as follows: Bow – under the companionway stairs leading to the staterooms and head, Midship – access via



the large floor hatch in the salon, Stern – in cockpit floor locker forward end of bilge.

**Carbon Monoxide Detectors (3).** Forward stateroom, starboard side cabinet; second stateroom, on the aft side of the cabinetry; and in the salon, aft port corner on the wall.

**Fire Extinguishers (3):** in the forward stateroom to starboard; in the engine room (auto-triggered); and in the galley in the cabinet below the sink.

**First Aid Kit.** In head vanity cabinet.

**Folded Plastic Distress Flag.** In emergency mesh bag in starboard pilothouse step.

**Flares (Pyrotechnic - 3).** In emergency mesh bag, starboard step of the pilothouse.

**Flashlights.** Maglite flashlight in the pilothouse, port side bench seat, outboard drawer. Smaller, personal LED flashlights are in each stateroom and in the general items basket in the port corner of the salon.

**Horn, handheld.** In emergency mesh bag, starboard step of the pilothouse.

**Horn, vessel.** Activated from the dedicated switch at the helm station.

**Lifesling,** in the cockpit. Please review the cartoons on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.

**Type IV, throwable flotation device,** in the cockpit under the upper deck stairs

**PFDs (2 foam vests, 4 inflatables).** Located in the stateroom hanging lockers. NSO: please check for “green” visible at bottom of clear canister before each cruise. That verifies the auto-inflate function is armed and ready to activate when immersed.

**Propane Detector / Solenoid Switch.** The Xintex propane detector and solenoid switch control panel is in the salon, starboard aft corner near the sink. See photo on right.



**Tapered Plugs, Universal Foam Orange StaPlug.** Adjacent to each thru-hull is a dedicated tapered plug. An extra foam StaPlug is in mesh bag, starboard step of the pilothouse.

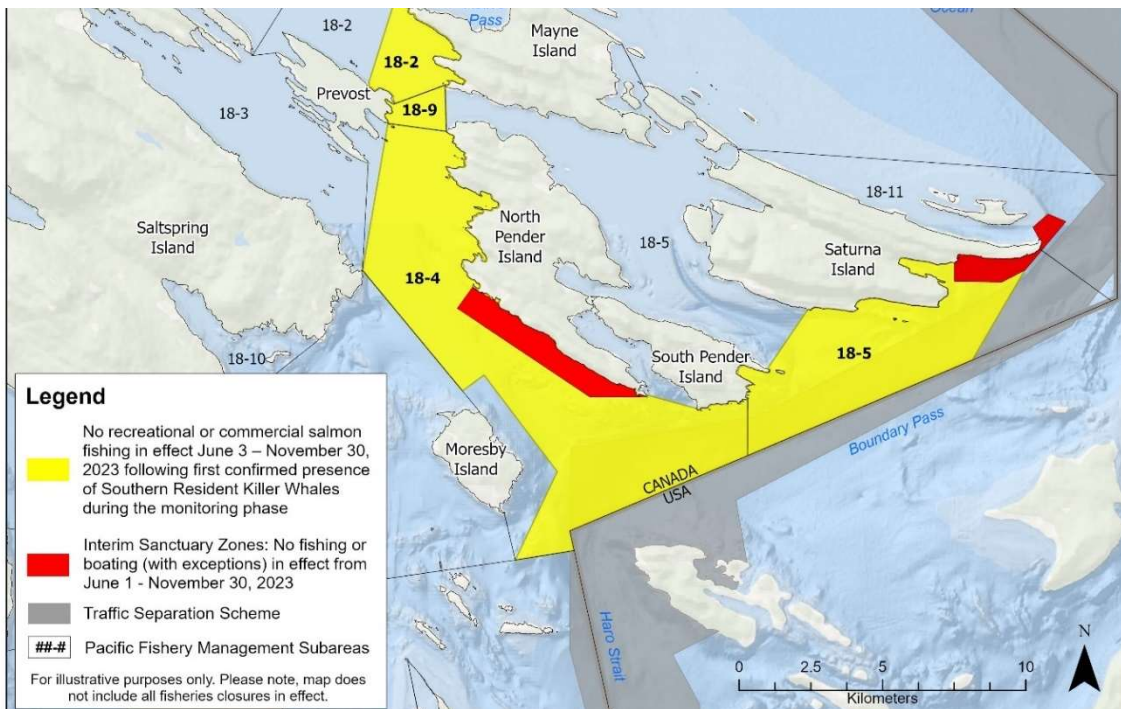
**Tools and Spares.** Engine room starboard side, forward end and tank room accessible in the salon.

**Windlass Clutch Release/Tighten Wrench (looks like a winch handle).** In the bow locker.

## 4. Being Whale Wise

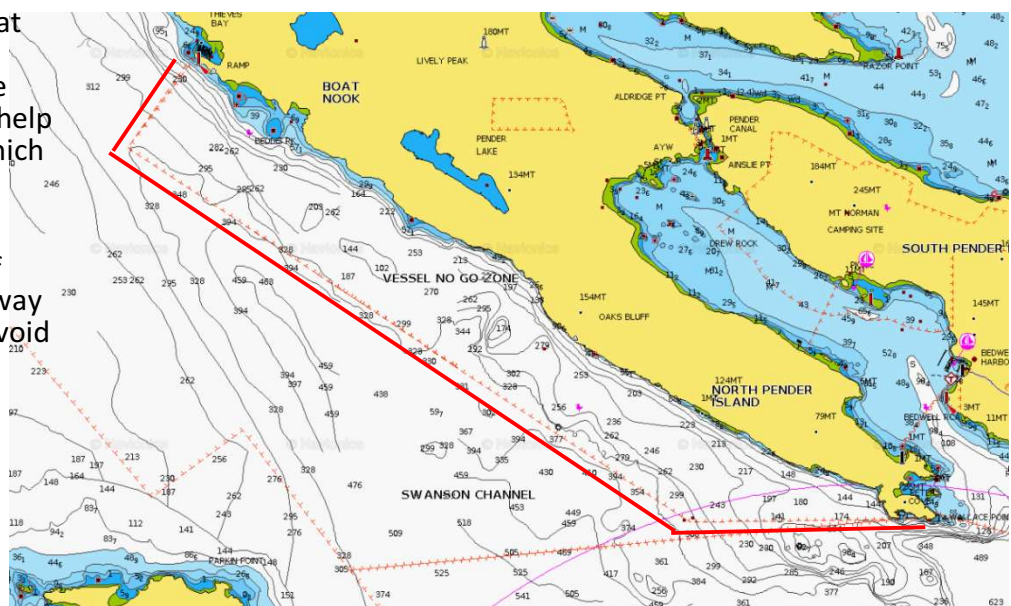
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to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

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



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

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



## 5. Anchors and Windlass

### Highlights

- Windlass raise/lower foot pedals are located on the starboard side of the windlass.
- Please do not use the windlass controller at the helm (far better to manage operations at the bow).
- Windlass breaker is in the forward stateroom, on the starboard side of the berth. The breaker switch should be left ON. If an overcurrent occurs and the breaker trips, reset the breaker by moving the yellow lever to the ON position.
- Windlass clutch release/tighten wrench is located inside the bow deck locker.
- Primary Anchor: 150' chain, 150' nylon rope.
- The SJS/SJY standard for chain marking is 1 piece of yellow poly line at 25' intervals and 2 pieces of yellow poly line side by side at 100'. The nylon rode is marked with number tags denoting the length including the chain rode. The placard shown on the right is glued to the inside of the anchor locker door as a reminder.
- Please use the anchor bridle while setting the anchor and to hold the anchor overnight. Attach the shackle on the bridle through a link in the chain. Bridle is stored in the bow locker.
- There is a raw water washdown at the bow. Insert the washdown hose into the deck fitting. Turn on the WASHDOWN switch at the helm. Please turn off the breaker when done. Stow the coil hose back in the deck locker on the bow.
- Secondary Anchor: 30' chain, 150' nylon rope. Stored in the floor hatch in the lazarette.



### Details

The scope normally used in the islands is 4 to 1, definitely not 7 to 1 (unless conditions call for it, i.e. sustained winds over 25 knots). Most of the anchorages are well protected and popular, so you will likely have someone anchored nearby. Most coves are 20'- 40' deep; so expect to pay out about 100'-180' of rode. If you deploy less than 150', use the bridle to secure the chain rode to the bow cleats. If you deploy more than 150', then you'll have nylon rode at the windlass. Take additional nylon rode to secure it to the manson post aft of the windlass to carry the anchor load. After you have paid out the suitable amount of rode, use 1-2 minutes of idle reverse to set the anchor. Also, the tides can change water depth up to 12' in the San Juan's so be aware of where you are in the cycle when choosing an anchorage and deciding how much rode to put out.

## 6. Barbecue

The Magma propane barbecue is mounted on the stern rail, port side. Please clean the grill grates after each use, allow the BBQ to cool, then replace the protective canvas cover.

The BBQ is plumbed to the propane locker where it connects to the low-pressure side of the system. The propane solenoid must be activated and the



yellow manual gas valve must be opened for the BBQ to receive propane. Be sure to close the yellow valve and shut off the propane solenoid when done.

## 7. Batteries/Charging/Inverter

### Highlights

- Please keep batteries above 60% State of Charge (SOC) as noted on the Victron gauge on the side of the helm.
- When charging, battery voltage will read above 13.2 V.
- Ensure batteries are charging when connected to shore power – see details below in Battery Charging section.
- When underway the engine is automatically charging all batteries.
- At anchor, the house battery bank is ample enough to handle normal DC loads including lights, the fridge, diesel cabin heater and the entertainment system. Typically, we find that after a single night at anchor, the SOC is 80-85%.
- Solar panel on the pilothouse top helps replenish house batteries during the day.
- Caution is needed when inverting and using 120V power. Only low draw (wattage) items like phone charging or computers. High wattage items like microwave oven and hair dryers should be used very sparingly or start the generator to support such heavy AC loads.



### Details

San Juan Explorer has the following battery groups on board:

- Engine start
- House (660 Amp-Hours in total, 330 Amp-Hours usable)

Unlike some vessels, there are no dedicated battery banks for the bow and stern thrusters. The bow thruster uses the engine start battery; the stern thruster uses the house battery bank. Avoid usage of the thrusters without the engine running.

All batteries are charged automatically when connected to shore power, to generator power or while the engine is running.

### **Battery disconnect switches**

The battery disconnect switches are remotely controlled using the three switches at the top of the electrical panel in the pilothouse. The port and starboard switches should remain in the ON position, they are the master ON/OFF connections for the start and house bank respectively. The center three position switch controls the combine function that joins the start and house battery banks. This should be left in



the AUTO position for normal operations. In AUTO, the banks are combined whenever there is charging power sensed and separated when charging power is removed.

### **BATTERY CHARGER/INVERTER:**

San Juan Explorer is equipped with a state-of-the-art Magnum Energy power management system which includes a battery charger and an inverter. The Magnum control panel is located on the port side of the helm console. The Magnum control panel has an LCD display that is always active and showing the operational state.



When AC power is available either from shore power or from the generator, the PWR LED will be illuminated, and the batteries can be charged. Use the charger button to activate the charge function so that the "CHG" LED is illuminated. This is the normal state of the charger / inverter and is left in this state. Any time AC power is connected to the ship, the charger will evaluate the quality of the power and once satisfied it is appropriate, it will start charging all batteries.

### **Charging – Shore Power**

- Connect the 30 Amp shore power cord to the receptacle in the port corner of the cockpit.
- Enable the master AC Shore Power breaker in the port cubby of the salon; then select the shore power to feed the AC panel.
- Ensure the double GREEN breaker for the INVERTER on the AC panel is ON.
- Normally the Magnum panel will automatically start charging (after a 10 second startup) and indicate Bulk, Absorb or Float charging. If not, press the CHG button on the Magnum panel.

### **Charging – Generator**

- Operation of the Generator is covered in a later section of these notes.
- Enable charging in a similar manner as described for shore power..

### **Charging – Engine**

- All batteries are automatically being charged when the engine is running.

### **Solar Power**

- There is a 330 Watt solar panel on the pilothouse. In sunny conditions, depending on the relative angle and uV level of the sunlight, the panel will make a significant contribution to recharging the house battery bank or at least supporting the on-going house battery bank load that is active.
- No user action is required for the solar panel and charging controller to work.
- There is a disconnect breaker on the port side of the pilothouse upper console, this should be normally left in the ON position.



## Inverter

- If 120V AC power is needed for low wattage devices when shore power or generator power is not available, the Inverter can be turned ON. It is activated at the Magnum panel with a momentary press of the Inverter button. The INV LED will illuminate when the inverter is active
- The inverter powers only two circuits in the ship, the FWD Outlets and AFT Outlets breakers at the electrical panel. The AFT Outlets includes the power for the MICROWAVE OVEN.
- Best practice is to enable the Inverter only when it is needed, disable it during all other times.

## 8. Berths

San Juan Explorer sleeps six. Two in the forward stateroom, two in second stateroom and two on the dinette table when converted into a sleeping berth.

### Converting the Salon Table to Berth

- Remove the small connector cushion that may be in place along the port sidewall, place aside.
- Open the two friction clasps that secure the telescoping table post.
- Push with moderate pressure on the center of the tabletop to collapse the table fully down.
- Lock the clasps in place.
- Use the bench seat backs to act as cushions for the tabletop.



## 9. Bilge Pumps

### Highlights

- 3 bilge pumps.
- Pump switches located at the helm. Each switch is three positions: AUTO – OFF – ON. Auto is the forward position of each switch. Keep each bilge switch in AUTO normally.
- All pumps are wired directly to the batteries. Can't be accidentally turned off by a breaker.



- Forward pump located under the companionway stairs, underneath a pivoting floor hatch.
- Middle pump located in the forward portion of the tank room, accessed by the floor hatch in the salon.
- Aft pump located in the forward end of the cockpit lazarette.
- The shower drains into a separate bilge area. The bilge pump for the shower is also controlled at this same panel.

## 10. Defroster / Defogger

### Highlights

- One DC powered fan is provided in the starboard corner of the pilothouse to circulate air across the pilothouse windows.
- Balanced use of the cabin diesel heat and cracking a pilothouse door open will provide lower relative humidity and comfortable temps to clear condensation from the pilothouse windows.

## 11. Dinghy, Outboard and Davit

### Highlights

- San Juan Explorer is equipped with a hard bottom dinghy and a 20 hp Tohatsu outboard motor. The dinghy is roomy (holds 4 adults) and the outboard is easy to operate.
- The dinghy is attached to the vessel using the popular davit system by Seawise. The Seawise davit is electrically operated and will lift and lower the dinghy with ease.
- The ignition key for the dinghy is stored in the pilothouse, under the bench seat, inboard drawer.
- Please keep the dinghy off rocks when beaching or shore combing.
- Tohatsu outboard is four-stroke, do not add oil to gas.
- Replenish the gas used at the end of your charter.
- Be sure to review the davit operation with your checkout skipper during your checkout.

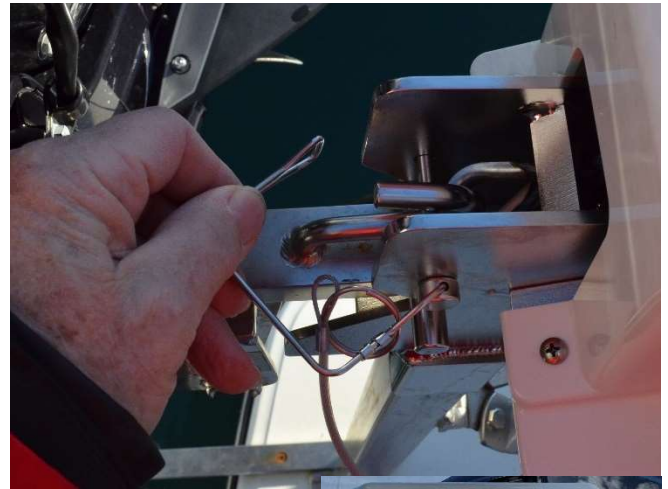


### Details

The Seawise davit system allows the dinghy to be easily deployed and retrieved. Review the deployment and retrieval process with your checkout skipper prior to starting your charter. This is also a good time to confirm the fuel tank level status.

### Davit Operation - Lowering

- **Remove ratchet strap** running from the dinghy to San Juan Explorer's transom (see photo in Highlights above).
- **Cleat off the dinghy painter** to San Juan Explorer leaving sufficient slack for the bow to rotate down to the water.
- Confirm the **bilge drain plug** on the transom is in place.
- **Remove securing pin** from bracket on backside of the davit motor (see photo on upper right). You may have to relieve the pressure on the pin by raising the cable slightly. Tap the raise/lower toggle switch on the front of the motor up once (see photo on lower right). This should relieve the pressure.
- **Titlt the motor up partially** as shown in the photo on right.
- **Lower the dinghy** into the water by pressing the motor toggle switch down. If the cable hook doesn't start moving out of the bracket on the backside of the motor, then immediately stop lowering and give the dinghy a push outward. This should move the hook out of the bracket and you can continue to lower the dinghy.
- **Ensure dinghy motor bracket** lowers correctly onto the dinghy transom and the slot on the port side of the bracket slips onto the locking bolt on the transom. See photo on right.
- **Tighten the wing nut** on the locking bolt to secure the dinghy motor bracket on the transom.
- **Disconnect the raise/lower cable** from the dinghy motor bracket and secure the cable end to the bracket on the aft side of the davit motor.
- **Disconnect the two hinges** on the port-side tubes of the dinghy from the hinge pin brackets on San Juan Explorer's swim step by pulling out the locking pins and rotating the hinge clamps on the tube (see photo on lower right). Best done from the swim step with two people. You may need to relieve pressure on the hinge pins from the buoyant tube by pressing down on the tube with your foot.
- **Before entering the dinghy**, move the dinghy to the starboard side of San Juan Explorer and tie off with the stern of the dinghy overlapping the swimstep for easy entry.



- **The steering console** has a “stowed” position and a “run” position. To rotate from stowed to run (or vice versa) pull on the spring-loaded pin at the aft end of the support tube.
- Make sure to **bring PFDs with you**.

### Davit Operation - Raising

- **Reverse the Lowering steps above.**
- **IMPORTANT:** Prior to raising the dinghy, ensure that the **wing nut** on the dinghy motor bracket locking bolt is loosened so that the bracket is free to rotate as the dinghy raises. And **partially tilt up the motor** as shown in the photo above.

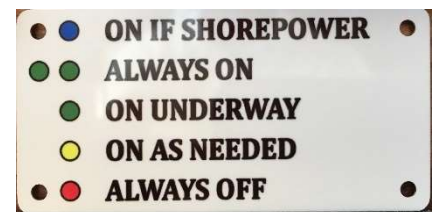
As owners, we would very much appreciate your special care when beaching the dinghy. Beaches in the San Juan Islands are seldom gentle, sandy beaches; most often they are rocky and covered by barnacles equipped with extra sharp rubber cutters. Here's what works best: launch a person off the dinghy bow as you approach shore; then offload everyone over the bow. Lift the dinghy above barnacle height and deposit it gently on the beach. We also secure the painter under a rock or to a log – a rising tide can leave you high, dry and dinghy less! And remember, as you get into shallow waters, tilt up the outboard to avoid rock dings / chips to the prop blades.

The outboard is a four-stroke motor, so do not add oil to the gasoline mixture. The fuel tank will be full at the start of your charter, please replenish the fuel used when your charter is complete. If San Juan Sailing and Yachting needs to replenish the fuel, there may be a refueling service charge in addition to the cost of the fuel.

## 12. Electrical

### Highlights

- The AC and DC panel breakers use the color dot convention as shown:
- There is a primary shore power breaker that is in the cubby outboard of the dinette on an aft facing panel. It should always be in the ON position. The LED will indicate if shore power is available.



- Main AC breakers for selection of either shore power or generator power are located at the top, starboard portion of the electrical panel. Use these to select the AC source for the ship.

- Main House DC breaker located on DC panel in pilothouse.

- There is a collection of AC Outlets throughout the vessel, split between the FWD Outlet and Aft Outlet breakers. The Microwave is part of the AFT Outlet circuit.



### Details

#### DC Panel

The DC breakers are organized in two columns with the Master DC breaker at the top of the first column (see photo below). Per the marking convention, the breakers should be managed depending on the planned

operations of the vessel. Note the three position toggle switch between the DC amp meter and the DC voltmeter. Bank 1 is the start battery, bank 2 is the house battery and bank 3 is not used.



### AC Panel

The AC breakers are organized in a single column with the Master AC breaker at the top of the column (see photo above). Per the marking convention, the breakers should be managed depending on the planned operations of the vessel.

## 13. Electronics/Instruments

### CHART PLOTTER:

#### Highlights

- San Juan Explorer is equipped with dual Garmin chartplotters. These are powered by the Electronics breaker on the DC electrical panel. **Note:** To get full navigation functionality, make sure you have flipped on the AUTOPILOT and VHF breaker switches too.
- After power is applied, the system will return to the last formats / settings selected. The most popular selections for screen formats are accessed by selecting Home, then Favorites, then choose the desired app for each plotter.
- Please refrain from changing settings beyond the typical functions like chart orientation, radar overlay, AIS overlay and range.



- For a more complete orientation of how to operate the chartplotters, refer to the “**Commonly Used Chartplotter Selections**” section below. The complete User Manual for the Garmin GPSMap 1243 plotter is loaded into memory of the plotters if you wish to look up additional information while onboard.

## Commonly Used Chartplotter Selections:

**Finding the Navigational Chart:** At the main Pages menu/Home Screen (see photo on right), touch the “Nav. Chart” icon in the upper left corner.

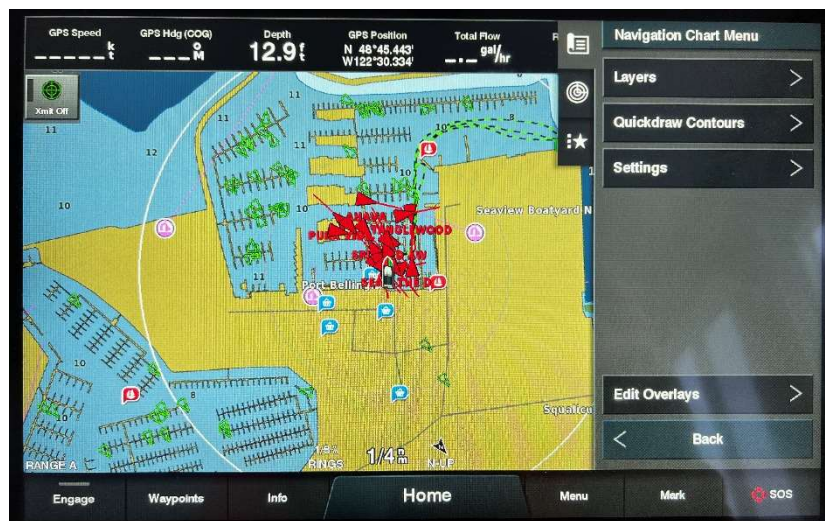
**Zooming in and out:** “Pinch” the screen inward/outward with two fingers.

**Returning the Chart screen to the vessel's current location:** ie. Stop Panning or Clear Cursor, touch “Stop Panning” at lower right corner of the screen.



## Main Menu for Nav Chart Options:

- Refer to the photo on right of the chart screen showing the Navigation Chart Main Menu.
- To get this display, touch the “Menu” tab at the bottom of the screen to the right of “Home”.
- On the right side of the screen, look for the short column of 3 icons for Chart Menu, Radar or Favorites.
- Touch the Chart Menu icon.
- Then, on the resulting column of options to the right, touch the desired option for Layers or Settings. Use these options for the commonly used selections below.



## Clearing Pre-existing Waypoints, Routes and Tracks:

- From the Chart page, touch the “Info” tab (on the bottom row, left side of “Home”).
- Then touch “User Data”, then “Delete User Data”, then choose Waypoints, Routes or Tracks.

**Chart Orientation:** Subject to your preference, we recommend either Heading Up or North Up.

- From the Chart page, touch Menu (bottom row), then Nav Chart menu icon (top right column), then Settings, then “Orientation” option, then select your preference.

**Display Brightness:** From any displayed page, quick touch the Power icon (lower right corner). A menu will pop up that includes a selection for Backlight setting.

## Heading Line:

- From the Chart page, touch Menu (bottom row), then Nav Chart menu icon (top right column), then Layers, then My Vessel, then Heading Line.
- Note that the Heading Line can be actual magnetic heading or GPS Course Over Ground which Garmin characterizes as another form of ship's heading. GPS Heading is what we recommend. Also note that COG is not displayed when a radar overlay is active.

**Radar Overlay:**

- From the Chart page, touch Menu (bottom row), then Nav Chart menu icon (top right short column), then Layers, then Radar.
- A Radar icon will appear on the upper left corner of the screen displaying "Xmit Off".
- Touch this icon and it will display "Xmit On" and a few seconds later the radar image will appear overlaid on the chart.

**Tides and Currents:**

- From the Nav Chart presentation: select Info / Tides & Currents / then select Tides or Currents

**Port and Starboard Plotter Presentations:**

- Underway:
  - Port Plotter: Chart Nav, Range @ 4nm or 6nm; occasionally select Engines to monitor the engine parameters
  - Starboard Plotter: Chart Nav, Range @ 0.2nm or less
- Docking:
  - Port Plotter: Video and the best camera view for the intended maneuvering
  - Starboard Plotter: Chart Nav, Range @ very close in, use what makes sense

**Displaying and using a Split Screen:** From the Home/Main screen, touch "COMBOS" on the right side of the screen. Choose desired split.

**Multi-function Instrument:**Highlights

- San Juan Explorer is equipped with a multi-function instrument mounted in the overhead console.
- Several screen formats have been programmed, the most useful is the windvane, providing both apparent and true wind, use it underway and whenever docking to assess the environment.

**A.I.S. (Automatic Identification System):**Highlights

- San Juan Explorer transmits her position and data via an AIS signal as well as receives AIS signals from other vessels equipped with AIS transmitters (Commercial vessels are required to have AIS, recreational vessels are optional). San Juan Explorer is transmitting her position whenever the Electronics breaker is ON.
- The chart plotter is interfaced to the AIS Unit and shows the positions of vessels with AIS as triangles. Make sure the AIS overlay is turned ON in the settings menu. From the Nav Chart page, follow the path of Menu / Layers / Other Vessels / AIS. Note that the selection of AIS is for the ON/OFF function which is the left half of the selection. The right chevron portion of the button takes you to a further submenu that we recommend leave it as is.
- AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport, radar will 'see' all objects, not just the ones with AIS transponders.
- AIS requires each vessel to have a 9 digit MMSI (Maritime Mobile Service Identity) number to transmit position and data.

## Details

AIS vessels appear on the chart plotter screen as triangles (must have AIS overlay turned ON – see above Quick Notes for how-to). The triangle points in the direction that the vessel is moving and if you touch the screen over the triangle the system will give you additional information (such as name, size, speed, bearing, etc.) about the vessel. The system also transmits this same type of information about *Vessel name* to other vessels with AIS.

The AIS is an added safety feature which allows large commercial vessels to easily see you and your direction/speed. They may try to contact you via VHF channel 16 to verify your course intent. In addition AIS allows San Juan Sailing/Yachting to provide faster assistance in case of unplanned maintenance issues as well as alert San Juan Sailing/Yachting of *San Juan Explorer's* return approach. Vessels with AIS can be viewed in real-time through mobile device apps and websites like [www.marinetraffic.com](http://www.marinetraffic.com) that will reveal vessel name, course, speed, track, and other information.

## **AUTOPILOT:**

### Highlights

- The autopilot is powered by a dedicated breaker.
- The autopilot provides the source for ship's magnetic heading.
- To engage the autopilot, press "Engage" soft key on the dedicated controller or the touch screen selection on the chartplotter (lower left corner).
- To disengage the autopilot, press "STBY" on the dedicated controller or the chartplotter.
- Garmin autopilot has a feature called 'Shadow Drive'. When engaged, if the skipper takes sudden action to change the direction of travel via the wheel, the autopilot will temporarily 'relax' and all the wheel input to take control. However, after the evasive action at the wheel ceases, the autopilot will resume control and return to the mode it was operating in.
- CAUTION: auto-routing is a very popular feature of modern chartplotters, it appears to take care of all the worries on setting up a safe route to your destination. However, due to the nature of the digital navigation data used by the chartplotter, an auto-route typically has several unexpected changes in direction that a mariner would normally not make when planning a route. Tracking them explicitly can result in abrupt changes in course that may be startling and could prove unwise. We therefore strongly recommend that you use Head Hold, NOT Route Tracking as the primary means whenever engaging the autopilot. Select a heading that follows the track line and nudge the heading to starboard or port a couple degrees to maintain a reasonably close track to the route while also avoiding sudden, unnecessary route changes that are artifacts of digital computation of a route.



**VHF RADIOS:****Highlights**

- Garmin VHF base unit is mounted in the overhead console and the mic is remoted to a convenient spot at the helm station, just to starboard of the wheel.
- The handheld mic (see photo below) is fully functional with same features as the base and they are linked together.
- The VHF has been programmed with the ship's MMSI identifier. This ID will be transmitted to the Coast Guard if you activate the DSC (Digital Selective Calling) emergency call function.
- Newer VHF radios such as the one on this vessel have several channel numbers that are now four digits, not two digits. This reflects a new standard. All affected channels will be in a format of 10xx, for example, channel 80A is now channel 1080. You can still operate the same as before, just the naming has changed for this new standard. Refer to the new listing in the Charter Guest Reference Manual binder on board, section 7, VHF Procedures & Weather Reporting.

**Details**

Listed below are instructions on how to use some common features:

**Note:** You can use the Base or Mic to control all of the features listed below.

**Turning On and Off the radios:**

- Flip on the VHF breaker/switch on the DC panel.
- Short press the 19/9 button to turn on, long press to turn off.

**Silencing a DSC Alarm** – When another boat (or the Coast Guard) press the DSC button on a radio it sounds an alarm on all boats in the area. To silence this alarm, press any key on the radio.

**Changing from High to Low transmit power** – Press the HI/LO button then press the left-hand soft key below the display to select 1W (low power) or 25W (hi power).

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

**Accessing the weather channels (WX)** – Press the center of the channel select knob will toggle between weather channels and normal channels.

**Adjusting Volume and Squelch** – Press the VOL/SQ button to toggle from setting squelch to volume. Turn the channel knob to adjust either.

**Changing between International & U.S. channel:**

- Press the MENU button.
- Rotate the Channel knob to highlight CHANNEL in the display. Press the volume knob center select.
- Rotate the Channel knob to highlight FREQUENCY BAND. Press the volume knob center select.
- Rotate the Channel knob to highlight USA, INTERNATIONAL, or CANADA.
- Please leave the radio in USA mode at the end of your charter.

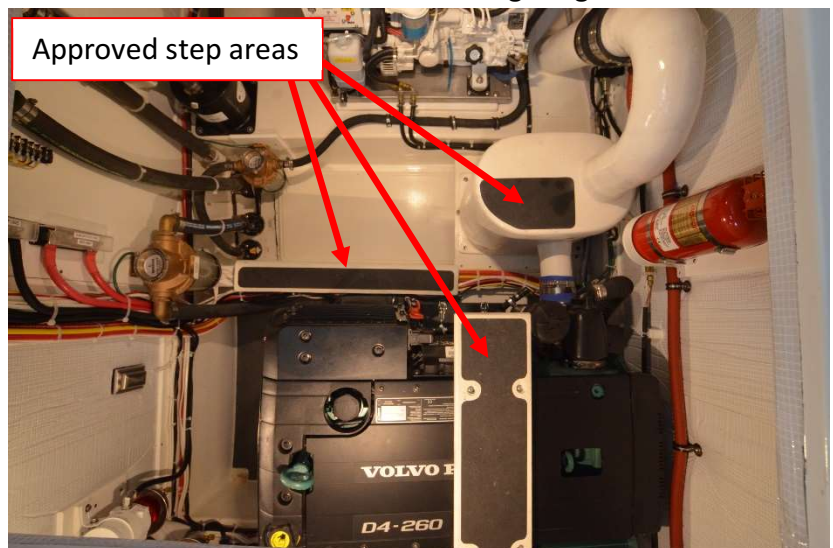
## How to set up and use Channel Scanning

- To setup the channels to be scanned, press the SCAN soft key (right-hand key below the display).
- Rotate the Channel knob to select the channel to be saved, then press the SAVE CH soft key. Saved channels have a \* on the screen (top row next to the 1W/25W indicator) when they are selected.
- Repeat this for all channels you want included in your scan. Pressing the SAVE CH key for a channel already saved will remove it from the saved list (the \* will not show).
- To start scanning press the SAVED soft key. To scan all channels press the ALL soft key. To stop scanning, press the EXIT soft key.
- To get back to where the Scan soft key is on the screen press the Clear button.
- To restart scanning after transmitting it is necessary to press the Scan and then Saved soft keys again.

## 14. Engine and Operating Under Power

### Highlights

- Main engine room access is through large floor hatch in the pilothouse.
- Engine room lights are controlled at the helm switch bank. This also controls lighting in the tank room.
- The engine is just slightly offset from the hatch. When intending to go down into the engine room, be careful to step only on the non-skid pads noted in the picture, do not step on other parts of the engine or any of the other equipment.
- Our Maintenance Pros will check oil and coolant levels, belt tension and debris in raw water strainer weekly. The Charter Guest is NOT required to perform these checks unless engine trouble is suspected. We do ask that you conduct a daily visual check of the engine room to look for any signs of fluid leakage or something amiss. If there is a concern, use the emergency contact list in the Charter Guest Reference Manual to seek advice. If on multiple week charter, then please check engine vitals weekly. Ask your checkout skipper how to do that process.
- Raw water strainer is in the engine room, forward end of engine slightly to starboard, and labeled.
- Left hand prop. Prop walk in reverse is to starboard however it is not pronounced due to a long deep keel.
- Economy cruise is 7.5 kts @ 1800 RPM using approximately 2.0-2.2 gph
- Fast cruise is 10 kts @ 2600 RPM using approximately 11 gph
- Normal engine temp is 180-190 F, oil pressure is 30-65 psi.



## Details

### Prep for Engine Start

- Check fuel tank levels on the tank monitor (tanks 4 & 5).
- Check around outside of vessel for loose lines in water.
- Close the salon door to keep engine exhaust out.

### Starting

- Gearshift in neutral, engine will not crank over if the shifter is out of the neutral detent.
- Turn ignition circuit ON, green LED in the button will illuminate.
- A dedicated monochrome LCD display for monitoring engine parameters is centered at the helm. Either plotter is also capable of providing an engine parameters page. We recommend that the LCD display be left on the Fuel Flow parameter and that for starting, the skipper select the Engine Parameters page for the left plotter prior to engine start.



d. Once ready, start the engine by pressing the Start / Stop button until you hear the engine begin to run, then release the button.

e. After engine start, check for cooling water flowing at the starboard aft portion of



the vessel. The exhaust is a split system where cooled exhaust gas and some water exits a port above the waterline while most of the cooling water is expelled below the waterline.

- Warm-up of the engine requires no more than a couple of minutes. We recommend not having a prolonged idle period as it is not efficient and is not necessary for the health of the engine. A better practice is to start and depart within 3-4 minutes.
- On very cold mornings when the engine is completely cold soaked, you can increase the idle speed temporarily without engaging the gear shifter. Select the Throttle Only function on the shifter/throttle and then you can advance the control forward to increase engine RPM without the shifter engaging. Return the control to the neutral detent and the function will cancel, the shifter is now ready to engage with the next control input.
- A recommended practice is to prepare the ship for departure ensuring all port lights are closed, gear is stowed, circuit breakers are in the appropriate selection, then start the engine. Monitor it for a couple of minutes and then depart the dock or anchorage at a slow speed. Keep engine RPM's below 1200 until the engine coolant temperature has reached at least 160 F.



### Shut Down

- Gear shift in neutral.
- Press and hold the STOP button until the engine shuts down.
- Then press the IGNITION button to depower the engine's computer. **VERY IMPORTANT** to do this final step, else the engine computer will remain powered and drain down the engine start battery.

## 15. Entertainment Systems

**Stereo Radio / Media (smartphone) Player** – Built into the inboard base of the port seat in the pilothouse is the radio / media controller. It is capable of tuning over the air AM/FM radio stations, streaming media from a smart device via Bluetooth, or playing content from an external media player via a USB port or 1/8 phone jack.

Consult the manual for the system to determine how to change modes, the manual is in file case in the tank room.



## 16. Fuel Tanks and System

### Highlights

- San Juan Explorer has two fuel tanks that are cross-connected. The engine draws fuel from a common feedpoint and returns fuel to both fuel tanks. For nearly all operations, the skipper need do nothing to manage fuel usage from one tank versus the other. Loading of crew and gear can create a list to the vessel and that will influence an imbalance between the two tanks. Correct the imbalance and the crossfeed line will level the tanks.
- The fuel tanks hold 115 gallons each. There are sight tubes on the inboard aft corners of the tanks. The petcocks should be opened to check the level and then both closed once done checking the sight tubes.
- Individual tank level can be checked at the tank monitor located above the electrical panel.
- Tanks 4 & 5 are the port and starboard fuel tanks. Ignore tank 2 & 3 indications, those are not used on this vessel.
- Filler deck caps are on each side of the vessel combing, just forward of the cockpit. The tank vents are located outboard on the hull just below the rub rail and adjacent the fill ports.
- Relatively close to the fuel filler caps are the water tank fill caps. **BE CAREFUL, DOUBLE CHECK THAT YOU HAVE THE CORRECT FILL PORT BEFORE YOU BEGIN REFUELING!**



### Details

#### **Fuel Filters**

- Located in the engine room, port forward corner of the engine. One for the engine, one for the generator.
- Spare filters are kept in a plastic bin in the tank room.



## 17. Generator

San Juan Explorer has a 5.5 KW Northern Lights generator. It is sufficient to power all AC loads of the vessel. You will likely not need to use it if you are regularly connected to shore power or using the engine several hours a day.

### Starting the Generator:

- First, check that the generator fluids are topped off and the raw water intake is open.
- At the AC panel, make sure the Generator AC breaker is OFF.
- The generator START/STOP controls are located on the aft facing surface under the helm wheel adjacent to the pilothouse door.
- To start the generator, use two fingers. Press and hold the Preheat toggle switch. Hold it for five seconds and note that the light comes on in the START/STOP toggle switch. After five seconds, while continuing to hold the pre-heat button, use your other finger to toggle the START switch and keep it depressed until you hear the generator engine start. Then release the START button while continuing to depress the pre-heat button. Five seconds after the generator has started, then release the pre-heat button. The generator should continue to run on its own.
- Let the generator warm up for about two minutes, then at the AC control panel, move the sliding protector up and activate the generator AC breaker. The ship now has AC power just like when you are plugged into shore power, select the necessary systems to operate.



### Stopping the Generator:

- First remove the electrical load by opening the main generator AC breaker.
- Let the generator idle for 2 minutes before shutting it down.
- At the generator control panel, momentarily press STOP button on the generator panel.

## 18. Heads and Holding Tank

### Highlights

- Only what has been eaten goes in the toilet.
- The toilet is electric with fresh water flushing. The control is mounted at the vanity with two functions, Add Water or Empty the bowl.
- The output of the toilet goes directly into the holding tank, there is no Y-valve.
- The holding tank level gauge is selection one on the tank panel at the electrical panel.



- The holding tank capacity is 45 gallons. Please empty BEFORE it's  $\frac{3}{4}$  full as a good practice.
- Emptying the holding tank – see detailed instructions below
- Once per day, add a half cap full of No-Flex Digester to the bowl and flush it down the head. It will help break down the solids and keep odors to a minimum.

### **Details**

Please do not put anything in the toilet that has not been eaten first. Experienced sailors deposit toilet paper in Ziploc baggies and put the baggies in the wastebasket, not down the toilet. Paper, feminine products and wipe cloths are all sources that will clog to inner workings of the toilet and macerator pump. Follow this process and you will have no problems with the operation of the head.

San Juan Sailing and Yachting staff is discussed in the Safety Briefing video. The charter guest reference manual has a tab depicting where all the pumpout stations are in the San Juan Islands. Our one plea is this: please do not over fill the holding tank as leaking sewage is most unpleasant! Thank you.

Please note that in our regional U.S. waters, it is illegal to discharge holding tanks overboard. While in Canadian waters outside of bays and harbors overboard discharge is allowed.

### **Emptying the Holding Tank:**

#### **There are two ways to empty the holding tank:**

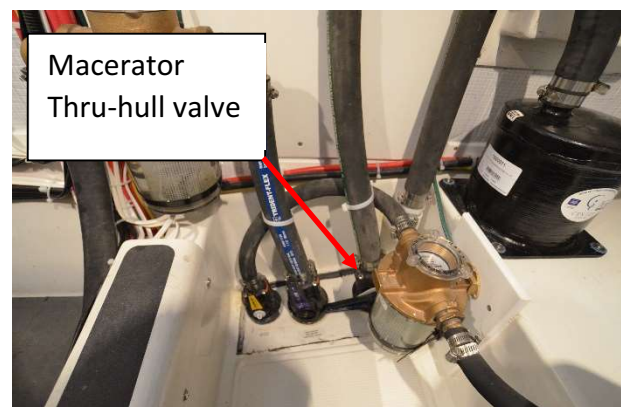
1. Pump out at a Shore Facility.
2. Where legal, discharge overboard using the macerator pump.

### **Pumpout at Shore Facility or Pumpout Barge/Vessel**

- Open the deck cap and pump out on the starboard combing adjacent the starboard pilothouse door.
- Deck cap key is in pilothouse in the inboard drawer under the port bench seat.
- Use the shore pumpout system to suck all contents out of the holding tank.
- Best practice is to then fill 5 gallons of fresh water back into the holding tank, then suck that contents back out (to essentially flush the tank).

### **Discharging the Holding Tank Overboard**

- Open the macerator thru-hull valve in the engine room.
- Turn on the macerator circuit breaker at the electrical panel.
- Activate the process by turning the macerator key at the helm.
- Set a countdown timer on a smartphone for ten minutes for a near full tank, 5 minutes for a partially full tank.
- When the timer runs out, shut down the process with the key, open the macerator breaker, and close the thru-hull valve in the engine room.



## 19. Heater (Cabin)

### Highlights

- San Juan Explorer is equipped with a modern diesel-fired hydronic heater.
- The system is controlled with a “SYSTEM HEAT/OFF” toggle switch and two thermostats. The toggle switch and the first thermostat are mounted inboard of the pilothouse bench seat (see photo on right). The second thermostat is mounted in the forward stateroom on the port side on the forward face of the closet. **Important Note: The system will not operate if the thermostat in the forward stateroom is off.** The slide switch at the bottom must set to the “Heat” position to the right.



### Details

- To operate, move the system toggle switch up to SYSTEM HEAT (the green light will illuminate) and ensure the slide switches on both thermostats are in the HEAT position (slide to the right). Press the up/down arrows on the thermostats to set the desired temperature.
- The system takes about 10-15 minutes to warm up before it produces heat.
- The **forward stateroom thermostat** controls the blower for the two outlet ducts in the forward stateroom only. The outlets are located on both sides of the base of the berth.
- The **pilothouse thermostat** controls the blowers for heating the following four areas:
  - Salon & Pilothouse - two outlet ducts on the base of the aft dinette seat
  - Head - one outlet on the inboard side of the toilet base.
  - Guest Room - one outlet on the base of the berth, inboard side.
- If you don't want heat in one of the heat zones described above, then set the temperature very low on the thermostat and the blowers will not turn on. Do not turn off the thermostat using the slide switch at the bottom.
- Note that the **small round black outlet louvers** (see photo on right) can be closed. Ensure that they are open for maximum heating efficiency but it's helpful to keep them closed when not in use as their floor level location makes them prone to accidental breakage by feet or other objects. The position of the cabin doors will also influence the heat distribution.
- The hydronic heating system only functions to heat the ship, it does not connect to the hot water tank.
- The heating system draws a modest amount of diesel fuel from the port fuel tank. It is powered by the house battery bank, no AC power is needed to operate.
- **To shut down the system**, move the toggle switch in the pilothouse down to the OFF position. The system takes about 5 minutes to run through its cool-down process. It is okay and preferable to leave the thermostat slide switches in the HEAT position.



## 20. Lighting

### Highlights

- Ensure the Lighting circuit breaker is ON.
- Lighting switches are on cabinet faces or bulkheads in each living area.

## 21. Refrigerator/Freezer

### Highlights

- The refrigerator/freezer is activated with a DC breaker on the electrical panel and should always remain ON.
- Set the temp controller in the frig for 3 for moderate food storage and 6 for very full storage.
- Best way to ensure cool / cold temps is to minimize the time the doors to the frig / freezer are open.

## 22. Showers and Sump

### Highlights

- Ensure the Fresh Water Pump breaker at the electrical panel is ON.
- Ensure the Sump Bilge pump switch is ON at the helm.
- The shower drains into the dedicated bilge sump. The sump has its own pump and float switch that will pump the water overboard as needed. The sump is viewable from the hatch in the floor of the forward stateroom.
- Please try to aim the shower head away from the door to keep water from dripping onto the floor outside the shower. If some water does escape, please mop up after showering.

### Details

There is also a fresh water shower fixture in the cockpit. The access covers are located adjacent the main shore power plug on the port side of the cockpit. This shower has a control knob to mix of hot and cold water. It is useful for rinsing off saltwater after a dip in the ocean or washing off shoes after returning from the beach.

## 23. Stove/Oven and Microwave

### Highlights

- The propane stove/oven has two burners on the stove top and an oven below. The oven door has a safety latch that releases when pressing the button on the oven door, then lift the door handle up to open the oven.
- Two 10 pound aluminum propane (LPG) tanks are located in the cockpit locker, starboard side against the salon bulkhead. The supply hose will be connected to one tank, the other tank is a spare. The supply hose feeds the





high pressure regulator. The low pressure side of the regulator then feeds both the stove/oven and the BBQ.

- Solenoid valve controller is in the galley, starboard corner below the sink.
- For safety, we recommend turning off the solenoid switch after stove each use.
- The San Juan Sailing staff checks the propane tank weekly and fills if necessary.
- Caution: propane is heavier than air. If a leak is detected or you smell gas, extinguish all flames and open all doors/hatches. Call for assistance.
- The microwave oven can be powered by shore power, generator or the battery inverter. If using the inverter, please only use for short (2-3 minute) cook times or you will rapidly drain the house batteries.



## Details

### Lighting a Stove Burner:

- Make sure the connected propane tank hand valve is open and the solenoid valve switch is on. It is best if one opens the tank valve first, then activate the solenoid ON/OFF switch.
- Light a butane lighter and hold the flame near the burner edge. Or use the electronic ignitor.
- Push the corresponding burner temperature knob in and turn to the "Light" (flame symbol) position.
- After the burner lights, continue to hold the knob in for a few seconds to heat the safety "thermocouple", then release.
- Turn the knob to the desired heat level.



### Lighting the Oven Burner:

- Make sure the propane tank hand valve is open and the solenoid valve switch is on.
- Open the oven door.
- Light a butane lighter and hold the flame near the burner. Or use the electronic ignitor.
- Push the oven temperature knob in and turn to 300 degrees.
- After the burner lights, continue to hold the knob in for a few seconds to heat the safety "thermocouple", then release.
- Turn the knob to the desired heat level.

### BBQ Grill:

- Uncover the grill and prepare it for use.
- Open the propane locker and open the yellow shut-off valve.
- Switch on the propane solenoid.
- Light the BBQ and grill away.

- Remember to close the yellow shut-off valve in the propane locker and turn off the propane solenoid when done. Finally, put the grill cover back in place securely.

#### Microwave Oven:

- Located in the forward portion of the galley.
- Make sure the AFT OUTLETS breaker is ON at the electrical panel.
- Leave the cabinet door open after use to allow heat to dissipate from the microwave.

## 24. Thrusters (Bow and Stern)

### Highlights

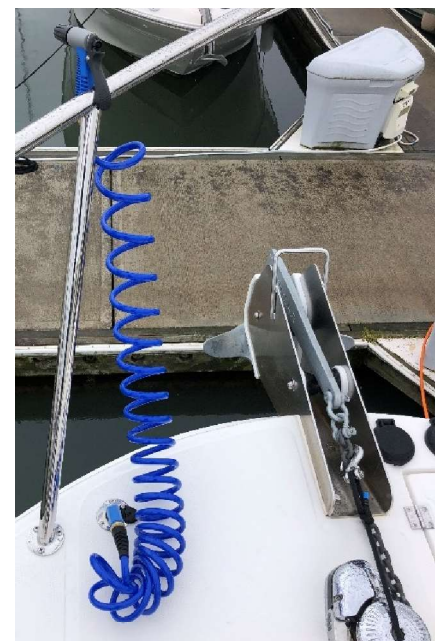
- Bow and stern thruster controllers (joysticks) are at the helm. Press and hold both ON buttons until the amber light turns on.
- Thruster controller will turn off after 10 minutes of no use.
- There is also a wireless controller for the thrusters, it is mounted just aft of the starboard pilothouse door.
- Thrusters can only be used in short (3-6 second) bursts. Prolonged use will overheat the thruster motor and may cause a thermal protection circuit to disable them until they cool off.
- Bow thruster breaker is in the forward stateroom under the berth cushion in the starboard side compartment, facing aft. The breaker is tripped off by pushing the big red button inward. Pull the red button out (with a notable click) and the bow thruster circuit is now active. We recommend you leave it in the enabled state for all normal operations.
- Stern thruster breaker located in the tank room (access via the hatch in the salon floor) on the port side, hanging from the ceiling. It looks like a big red button. Push it in opens the circuit, pull it out makes the circuit and the thruster is operational. Leave it enabled for all normal conditions.



## 25. Wash Down (Seawater)

There is a seawater deck wash down access port at the bow on the port side of the windlass. The hose (kept in the bow seat/locker) should be used to clean the anchor and chain as it is raised, or to wash dirt off the deck. To utilize the seawater washdown system:

- Plug in and twist the hose with fitting and nozzle into the seawater access port.
- Turn on the SEAWATER WASHDOWN switch at the helm station panel. Seawater should pressurize the hose already attached, and enable you to stand at the bow and use the spray nozzle to clean the anchor and chain as it comes out of the water. It is best to spray water on the chain before it gets to the roller so that



mud and other debris wash back into the sea and not onto the deck or in the chain locker.

Note: If there is no water flow, check to see that the seawater seacock (located in the second stateroom, aft inboard corner under the mattress) is OPEN and verify that the blue wash down adapter is twisted fully into the access port.

## 26. Water (Potable)

### Highlights

- The fresh water pump breaker is located on the DC electrical panel. Please turn this breaker off when away from the boat. The pump will burn up if air gets into the pump due to an empty/nearly empty tank or if a partially open faucet somewhere on the ship slowly uses up all the water, or if a broken line/loose hose fitting. So monitor your water usage and the tank level, listen for signs that the pump is running without a known reason.
- Please use care to fill the water tank using only a hose and water source known to be of good quality. Let the water run thru the hose for 30 seconds to clear the hose, then proceed to fill the tanks.
- There are two deck fill ports for the two water tanks (120 gal total) which are located just forward of the cockpit, port and starboard. Be careful to look at the deck fill port and read the label. The fuel port is relatively close. DON'T get them mixed up!
- The water tanks are cross-connected with a reasonably large diameter hose. It is not possible to count on this crossfeed to fill both tanks. Hence you must fill each tank from its respective fill port.
- Key for water deck fill caps is in the salon basket or in the pilothouse, inboard drawer under the pilothouse bench seat.
- Level gauge is located above the electrical panel in the pilothouse. Tanks 6 and 7 are the water tank sensors.
- There is a small accumulator tank in the water system so the water pump will not run each time faucet is open. It will run whenever the system pressure gets low and replenish the pressure to maintain a reasonable water flow rate.



### Details

#### Water Heater

Hot water is produced in two ways:

- a) Connected to shore power or generator power with the WATER HEATER breaker ON at the electrical panel. OR
- b) Engine running. The engine automatically heats the hot water tank while running under way, typically will reheat the hot water tank contents after one hour of operating underway.

#### Fresh Water Shower and Washdown in Cockpit

These functions will be active whenever the fresh water pump breaker is ON at the DC electrical panel.



## 27. Windshield Wipers/Washer

There are three windshield wipers and they can be operated in either intermittent or continuous motion. All of this is controlled by a sequence of button presses with the three-position rocker switch at the helm. The washer function is fed by water from the fresh water tank.

### To Operate:

- First recognize that the wiper controller takes into account each input from the rocker switch to sequence thru pre-programmed patterns of wiper action.
- When the aft portion of the rocker is depressed, the system is off. The center position of the rocker is generically the ON position. Pressing forward on the wiper icon on the switch has two functions depending on whether you push and hold the button (which causes the washer function to squirt water on all three windshield windows) or sequences the wiper controller to the next logical step of operation.
- Think of the momentary press of the washer rocker to be an action to sequence to the next state of the interval or continuous operation of the wipers. Remember to tap the button momentarily for changing the sequence state. In order, the sequence is this:
  - Rocker to the ON position: all three wipers will operate in sync, intermittently running with an interval of 5 seconds.
  - Rocker the switch momentarily to the wash position and release: all three wipers will operate in sync, intermittently running with an interval of 2 seconds (more frequently than before).
  - Rocker the switch momentarily to the wash position and release yet again: all three wipers will operate in sync and will operate full-time.
  - If you rocker the switch momentarily to the wash position again, the sequence goes back to the first state of operating in system with an intermittent interval of 5 seconds.
  - Each subsequent momentary rocker repeats the sequence noted above.
- When wiper action is no longer needed, press the aft portion of the rocker to turn off the wipers. Remember, wipers operating on a dry window is not good, it may scratch the window surface if the remaining residue is salt crystals from saltwater spray.
- To activate the washer function, initially turn on the wipers, pause for a second, then depress the rocker and hold it to activate the washer pump. Once you release the washer pump function, you may need to sequence the wipers to change the interval setting to the desired state.




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We hope this information helps. Have a great time!!

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