



Solitude

Selene Europa 42
Owner's Notes

Dear Friends,

Welcome aboard *Solitude*!

We are a family of four from Eastern Idaho and purchased *Solitude* in April of 2024. Our love of boating and the Pacific Northwest stems from visiting Katie's Grandparents aboard their sailboat, named *Solitude*. Hence, the name is a tribute to all the fond memories that began this journey!

Before purchasing, we were long time charter guests, so we have been in your shoes! We have chartered many different types and styles of vessels but have always been drawn to trawlers. The large open layout of the *Selene Europa 42* along with the luxurious interior finishings and the huge upper deck with flybridge make this vessel one of our favorites. We are excited to make new memories aboard *Solitude* and even more excited to share her with you.

Solitude has been incredibly well maintained over the last nine years, but we have worked hard to make some refinements and ensure she is ready for charter. Some of the more notable improvements include a vessel-wide battery upgrade, a Roskelley Olsson dinghy davit on the stern, new Rocna Vulcan Anchor, USB-A and C outlets installed throughout, new mattress in the guest berth, new extendable faucet in the galley and Starlink high speed internet.



If you think of anything during your charter that would make your vacation better, please pass it along to San Juan Yachting!

We hope you enjoy your time aboard *Solitude*!
Bon Voyage!

Katie, Aaron, Emmy & Sev
Solitude



@solitudecharters

And Just a Reminder

These notes have been prepared to give the charter captain and crew a helpful resource of information. While the goal is to summarize information from multiple sources into a single item, this document does not pretend to be the ultimate authority on the equipment and systems on board. Consult the manuals provided by the various manufacturers. Further, the captain accepts and is the ultimate person responsible for the safety of the crew, passengers and the vessel. It is expected that he / she is qualified to operate a vessel the size, type and complexity of Solitude and has become thoroughly familiar with her prior to leaving the dock. Good judgment and following all applicable laws during operations is fundamental to a safe and successful experience on board this vessel and in the maritime environment.

No warranties are expressed or implied by this document.

Table of Contents

1. SOLITUDE OVERVIEW	5
2. SAFETY ABOARD AND EMERGENCY EQUIPMENT	7
3. VESSEL CARE, NUANCES AND TIPS	9
4. BEING WHALE WISE	10
5. ANCHORING AND MOORING	11
6. DINGHY	14
7. ELECTRICAL SYSTEMS	17
8. ENGINE AND THRUSTER SYSTEMS	22
9. ENTERTAINMENT AND STARLINK	27
10. GALLEY, BBQ AND CRABBING EQUIPMENT	28
11. GENERATOR SYSTEM	30
12. HEAD SYSTEM	31
13. HEATING	33
14. NAVIGATION, RADAR AND AUTOPILOT	34
15. SALON, DINETTE AND FOLDING BERTH	36
16. VHF RADIO	38
17. WEATHER STATIONS	40
18. WATER SYSTEM	40
APPENDIX A: SCHEMATIC OF THRU-HULLS	43

1. SOLITUDE OVERVIEW

Solitude Specifications:

Vessel:	2015 Selene Europa 42, Hull No. XJE4209C515
Dimensions:	Length Overall (LOA): 44 - 8" w/o dinghy Beam: 14 - 6" Draft: 4 - 8" (lowest point is the bottom of the rudder shoe) Height: 21' - 2" (top of mast) Displacement: 41,000 lbs (Dry)
Engine/Generator:	Main: John Deere, Single, Diesel Engine, 180 HP @ 2400 RPM Generator: Cummins/Onan, 9KW, 60 amp
Dinghy:	Apex A-10 Eurosport dinghy with a 20hp Yamaha
Tankage:	Fuel: (2 tanks) 350 US Gal each Fresh Water: (2 tanks) 270 US Gal (Forward - 180 US Gal; Aft - 90 US Gal) Hot Water: 20 US Gal Holding/Black Water: 70 US Gal
Refrigerator/Freezer:	Norcold 7.0 Cu. Ft. - Fridge: 1' 6" W x 1' 5" D x 2' 4" H and Freezer 1' 6" W x 1' 2" D x 1' 2" H
Headroom:	Salon/Galley: 6' - 6" avg. Pilothouse: 6' - 6" avg. All Staterooms: 6' - 6" avg.
Berth:	Master Berth: 81" tall x 55" wide Guest Berth: 79" tall x 50" wide
Head:	Tecma head with simple all-in-one Smart Flush push button control panel
Electronics:	Garmin (2) GPSMAP 7612 and (1) Garmin GPSMAP 7608 multi-function displays provide Chartplotter/Radar/GPS/Knotmeter; (2) Garmin VHF110 Radios; Garmin GHC20 Autopilot

Discharge of Oil Prohibited Decal: Galley engine room access hatch, underside.

MARPOL (Marine Pollution) Decal: Galley engine room access hatch, underside.

Vessel Official Number - 1281415: Number shown on the Coast Guard Certificate of Documentation found in Section 5 of the Charter Guest Reference Manual (white binder). Located in the lazarette, forward starboard side.

AIS MMSI Number - 368156880: Programmed into the VHF radios and the AIS transponder. The transponder periodically transmits MMS #, Lat/Long position, COG, SOG, vessel parameters and the vessel name.

Boat Highlights: These are some of our favorite features on Solitude.

- All new house batteries provide 900 amps of capacity
- Stern davit for extremely easy launch and retrieval of the dingy
- Whole boat water filtration - drink water from any tap
- Large, roomie shower (the biggest shower we've had on a boat!)
- Starlink high-speed internet allowing connection throughout the islands
- New mattress in guest stateroom providing more headroom and a comfortable night's sleep
- USB-A/USB-C ports installed throughout vessel
- DC outlet ("cigarette lighter" style port) in forward stateroom.
- New Rocna Vulcan Anchor
- Large flybridge area for entertaining and sitting
- Breezeway door on starboard side allowing for an easy step on and off the boat

2. SAFETY ABOARD AND EMERGENCY EQUIPMENT

Assign a Skipper: Assign one person as the skipper each day that will accept responsibility for the safety of the vessel and its occupants.

Brief the Crew: Before starting each day, brief all occupants on the plan for the day, the route, the weather and their responsibilities.

Take it Slowly: When in doubt, slow it down! Take your time and NEVER be in a hurry. Accidents at slower speeds always have a better outcome.

Know the Safety Equipment: Make sure everyone aboard knows where the fire extinguishers and safety equipment are located. (See Appendix B for listing and how to use them)

Lifejackets: All crew and passengers should ALWAYS wear lifejackets when underway. Even on a sunny day, situations can develop quickly, and our cool Pacific Northwest waters can make for unforgiving dips in the water.

Life-Sling: Located aft in the cockpit on the port rail. Make sure everyone knows how to use it in the case of a person overboard.

Two People on the Bridge: When underway, assign two people to always be on the bridge - one helming and operating the vessel and one as a second pair of eyes watching for hazards and monitoring location.

This vessel has passed a Coast Guard Safety Inspection each boating season (sticker on forward port window). But, if you are boarded by the Coast Guard for any reason, you may be required to locate the following items:

- **Flares and Flare Gun:** Salon, aft drawer under starboard settee.
- **Handheld Air Horn:** Salon, aft drawer under starboard settee.
- **Whistle:** Salon, aft drawer under starboard settee.
- **Life Jackets/PFD's:**
 - Guest stateroom lower closet - (1) Adult XS >90 lbs, (1) Youth 55 lbs to 88 lbs.
 - Guest Stateroom upper closet - (2) inflatable type, (2) foam type
 - Master/Forward Stateroom, port closet - (2) inflatable type
- **Life-sling Rescue System (2):** One hanging on the rail on the inboard portside of the cockpit. An extra is located on the port side upper deck, inboard rail.

- Fire Extinguishers:

- Engine Room: Fireboy extinguisher automatic discharge, clean agent system
- Pilot House: BC type; mounted at the helm to the right of the wheel
- Guest Stateroom: BC type; mounted on the forward bulkhead
- Flybridge: BC type; Starboard side locker
- Galley: BC Type; Under galley sink

OTHER SAFETY EQUIPMENT:

BILGE PUMPS: There are three high-capacity bilge pumps. All are powered by separate breakers on the electrical panel that should be on at all times. All have sensors to detect a modest level of water in the bilge and will pump automatically as needed. There are also override switches at the top of the electrical panel which can be used to force the pumps to run before the float switch triggers them.

Flashlights:

- Pilothouse Map Cabinet - (2) LED flashlights
- Forward Cabin Port closet - (1) LED flashlight
- Salon, Aft Portside Cabinet, Top Drawer - (1) LED flashlight
- Salon, Aft drawer under starboard settee - (1) LED handheld search light

First Aid Kit: Located in second drawer next to settee in salon.

Boat Hook: one secured above the cockpit door.

Tools: A fully equipped toolbox is located on the port side of the engine room.

Thru-Hull Plugs: The universal foam type are provided in the salon, aft starboard drawer under settee.

Smoke Detectors: There are two smoke detectors on board. One in the salon behind the refrigerator enclosure and one in the master stateroom, starboard side closet wall.

CO Detectors: Each stateroom and the salon have a carbon monoxide detector. Please keep these clear as piles of clothing, towels, etc. stashed too close to the carbon monoxide detectors could elicit a false alarm.

VHF Distress Call Using DSC (Digital Service Calling): fixed mount VHF radios in the pilot house and on the flybridge can send DSC messages including a distress call. See the section on VHF radios for further information. The "PILOT HELM ELECTRONICS" circuit breaker controls DC power to the VHF radio.

3. VESSEL CARE, NUANCES AND TIPS

1. Shore Shoes Removed: Shore shoes can pick up lots of "stuff" that increases the wear and tear on the interior of the boat. Please help us keep Solitude up by removing your shoes whenever inside. We've provided a mat and basket just outside the salon door to place your shoes. At night bring the basket inside to keep dry.

2. Damp Life Jackets Need Fresh Air: If a life jacket, flag or canvas cover is even slightly damp, please hang it where fresh air circulates until it's completely dry. The slightest moisture in an enclosed place creates mildew quicker than one would think.

3. Wash Down the Anchor Chain: Use the saltwater wash down system with the dedicated hose to thoroughly wash must and marine debris from the anchor chain BEFORE it goes into the chain locker. This will prevent foul odors in the chain locker.

4. Please Keep Salon Door Closed When Engine is Running: The diesel engine produces soot when it runs and that can build up a film in the cabin. Please keep salon doors closed whenever the engine is running.

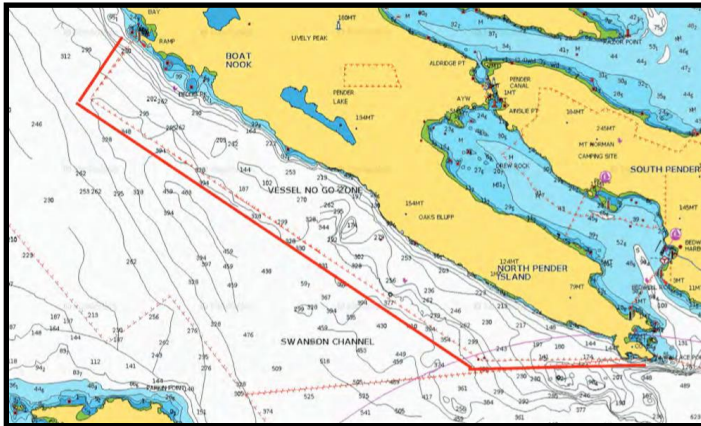
5. Dinghy/Outboard Housekeeping: With the dinghy riding at the stern while underway, it will accumulate salt deposits from the sea water. When arriving at a marina, please take the time to hose off the dinghy and outboard. *Check with marina for their policy on boat rinsing*

6. Handling at Low Speeds: Solitude has a full displacement hull and full-length keel. This design has the common characteristic of slower response to wheel input at slower speeds. Specifically, when in marinas and anchorages be patient with your course corrections at the wheel. Be thinking ahead. Give the vessel a few seconds to respond before making another correction. Multiple turns of the wheel all at once can cause oversteer and a meandering path.

7. Prop Walk/Running in Reverse: Prop walk is to starboard. It is moderate, but noticeable. Minimize the impact by shifting into reverse for a few seconds to get the boat moving and then shifting back to neutral.

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 makes it harder for them to thrive.

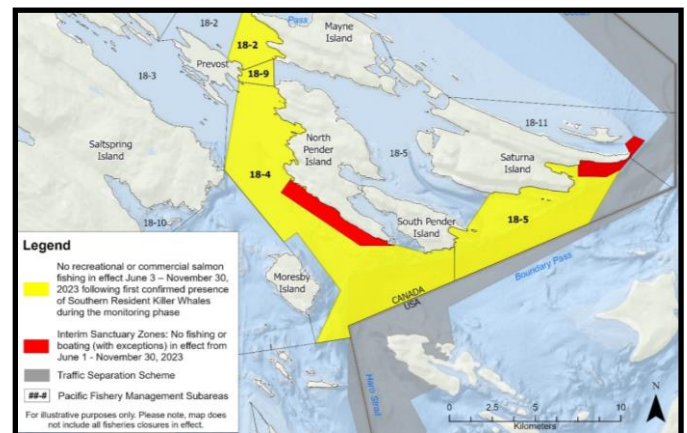


In general, stay at least 400 yards away from whales. Sometimes they come to you, and if this happens, shut down the engine and turn off the instruments (assuming it is safe to do so). They can hear the pings of the depth sounder.

Note: This is just to the west of Bedwell Harbour, so on your way in and out of there, be sure to avoid it.

This further improves the environment for the whales. The red areas in the diagram below show these zones.

The above is an example of what these zones should look like on a standard plotter. The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.



5. ANCHORING AND MOORING

ANCHORS AND RODES

Solitude carries a 73lb Rocna Vulcan Anchor in the bow pulpit with 400' of 3/8" high tensile steel 3B chain and a small section of nylon rode at the bitter end attaching the chain to the vessel. This is all lifted by a Maxwell RC10 electric windlass. The secondary anchor is a Bruce claw 66lb secondary anchor and rode (30' of chain and 150' of nylon rode) located in the rear cockpit lazarette.



CHAIN MARKINGS

YELLOW nylon line segments are woven into the chain at 25' increments and are combined with RED painted segments marking the chain in 50' increments. A DOUBLE YELLOW segment is woven into the chain at the 100', 200', 300' and 400' marks. A GREEN painted section marks the last 10' prior to the end of the rode. DO NOT PASS "GREEN."

In an emergency, if the captain determines that personnel and/or the vessel are in significant danger, the anchor can be severed manually. The rode can be completely let out and the triple braid line at the end can be cut with a knife (stored in the pilot house, under the navigation table).

This is an expensive, last resort option! If possible don't do it. If you must, attach a fender to the bitter end of the rode and note your lat/long position (use the Man Overboard, MOB, function on the chart plotter), this will allow for future retrieval of the anchor and the chain rode.

RODE CONSIDERATION FOR NW WATERS

In the Northwest, due to limited tidal variation, we usually do not follow Chapman's "7:1 scope minimum." It is common for boats with all-chain rode to use a 4:1 or 5:1 ratio (i.e. in a depth of 30 feet, you let out about 120-150 feet of chain). 10-15-foot tidal variations are common with occasional minus tides (level below the chart datum). **Do your calculations for the expected high tide level and yet be sure there will be sufficient depth in your anchorage at low tide.**

Anchoring Depth Reminders: The depth sounder is calibrated to the bottom of the vessel, not offset to account for the fact that it is already submerged in the water by approximately two feet. So, when the indicated depth is 8 feet, for example, you are in about 10 feet of water, a small safety margin. Yet remember that in total, the ship draws 4' 8" and the sea bottom has uncharted rocks and man-made debris, it's not perfectly flat!

- **Minimum Anchoring Depth: 10 Feet.** We recommend always being in at least 10 feet of water at a lower-low tide level as a conservative standard.
- **Maximum Anchoring Depth: 100 Feet.** Given Solitudes chain length, windlass capacity and a 4:1 scope do not anchor in more than 100 feet of water.

ANCHORING PROCESS

As you prepare to anchor, think about the total length of the anchor rode you need to deploy given your position relative to shore and other boats, along with tide and wind conditions.

Also, before anchoring, consider how you will judge your position and whether the anchor is dragging. We highly recommend using an app named "Anchor Alarm Pro." It costs just a few dollars, but has two great features: first, there is a late set option which allows you to mark the location of your anchor if you forget to do it when first dropping and, second, you can separate alarms for degraded GPS position error and actual radius distance from anchor.



DEPLOYING AND SETTING THE ANCHOR

1. Turn ON the "WINDLASS" power on the DC breaker panel.
2. From the bow sprit, release the safety tether that secures the anchor.
3. The windlass is powered by the house batteries. The windlass should only be operated when the engine is running, as the system places a heavy load on the batteries.
4. Position crew at the bow to monitor length of chain as it pays out and to troubleshoot if it gets tangled.
5. We recommend lowering the anchor using the foot switches on the fore deck. Arrows on top of the foot switches indicate the direction the chain will travel when pressed. For reference, the port foot switch lowers the anchor, and the starboard foot switch raises the anchor. (Note: We do not recommend using the windlass rocker switches at the pilot house and flybridge helm, as you cannot 'see' what's going on during windlass operations.)
6. Please be careful that the anchor doesn't swing wildly and hit the bow. The best technique is to lower the anchor over the roller by hand initially while letting out a short burst of anchor rode.
7. Deploy the estimated length to initially hit the sea bottom and then continue to pay out the anchor rode while the helmsman begins to slowly back down the vessel. (Remember to activate your anchor watch app if you elect to use it.)
8. When desired chain length is out, stop windlass. Target scope of at least 4:1 at high tide.
9. Attach anchor bridle hook to anchor chain. Secure bridle line to port and starboard bow cleats. Run out enough rode to create a loop in the chain transferring chain rode tension to the bridle line and bow cleats.
10. Skipper to reverse the engine at idle speed to test the set of the anchor.
11. Turn OFF the "WINDLASS" power on the DC breaker panel.
12. Turn engine key to OFF.
13. Turn OFF unnecessary systems at the circuit breaker panels, replace screen covers on electronics, canvas covers on pilothouse windows as appropriate.



RAISING THE ANCHOR AND WASH-DOWN

1. Before raising the anchor, prepare the wash-down hose (kept in the locker next to the anchor).
2. At the electrical panel, turn on the "DECK WASH PUMP" and "WINDLASS" circuit breakers.
3. Start the engine so it can be used to inch the boat forward toward the anchor and manage vessel movement once the anchor releases. Recognize the bow pulpit and windlass will be under strain as you haul the anchor rode and you don't want to use the windlass to pull the boat toward the anchor.
4. Press the starboard side foot switch next to the windlass to raise the anchor. Wash chain and anchor thoroughly as you haul it in. This prevents unpleasant odors from marine growth ending up in the anchor locker.
5. Remember to remove the anchor bridle as soon as you can reach the hook.
6. **Please bring the anchor up to the windlass carefully to protect the fiberglass around the bow pulpit and roller. To prevent damage to the windlass and pulpit, we strongly suggest that you raise the last few feet of anchor chain by hand, taking up the slack chain with short bursts of windlass power.** Stow the anchor in its support with no tension on the windlass and secure it with the safety tether before getting underway.

**EMERGENCY ANCHOR DEPLOYMENT / RETRIEVAL**

In the event the windlass motor fails, you can deploy the anchor and rode manually. Find the manual windlass handle (looks like a winch handle for a sailboat) in the salon aft drawer under the starboard settee.

Please use caution for these next steps: To loosen the clutch, insert the handle in the socket on top of the windlass barrel. Turn the handle slowly counterclockwise to release the clutch. It is a friction clutch and will release the anchor rode as you ease tension. The anchor chain will run freely using gravity. Stop or slow the deployment by turning the handle clockwise. Use care with the amount of clutch tension and you'll find it is quite easy to deploy.

Note: Retrieval is not nearly so easy. If you face this challenge, we recommend you call for help as it is an involved process and requires expertise and stamina to be successful.

STERN TIE LINE

Solitude is equipped with a 600 ft stern tie line on a reel in the lazarette. In crowded or narrow anchorages, a stern tie limits your swing and allows the anchorage to support more boats.

To use: Survey your location to determine depths, hazards, tidal swing, winds, etc. Estimate where you will drop the anchor and aim to be 50-75ft out from shore once the total anchor rode is deployed (this assumes sufficient depth and no hazards this close to shore). The stern line is paid out, passed around a tree or a steel ring. If sufficiently close, you can pass the bitter end of the stern tie line out to the point on shore and back to the boat. This practice will enable a "quick

release" without having to go ashore when you're ready to untie. Have the dinghy deployed and ready to go to shore and have your mate keep the boat stern toward shore with short bursts of stern thruster. Sometimes a helpful boater already anchored will help you by taking your line to shore for you with his/her dinghy.

MOORING EQUIPMENT

Dock lines: Stowed in cockpit lazarette

- Four 25ft, typically at the stern
- Two 30ft, typically at the bow
- Two 35ft, typically used for midship spring lines

Fenders: There are 6 black fenders and 1 white ball fender on Solitude. We use 4 fenders for the dockside of the vessel and 2 fenders tied high for protection on the non-dockside. The white ball fender is used for non-dockside protection at the point where the bow starts to curve inboard, usually attached to the railing adjacent to the head porthole. When not in use, store the fenders in the cockpit lazarette or tied off to the stern rail.

Orange Fender: The orange fender is to be used as a 'rover' while in close quarters, placing it between Solitude and anything you get close to.

Boat Hook: A floating, telescoping boat hook is stored on a mount in the cockpit above the salon door.

6. DINGHY

THE LAW REQUIRES EVERYONE UNDER 12 IN THE DINGHY TO WEAR A LIFEJACKET AND ALL OTHERS TO HAVE A LIFEJACKET READILY AVAILABLE.

Solitude is equipped with an Apex A-10 Eurosport dinghy (named Chicken Tender by our kids) powered by a 20hp Yamaha outboard motor. The dinghy accommodates up to 4 adults and features an inboard steering console, cushioned seats with backrest, navigation lights, electric bilge pump, and a 6-gallon fuel tank in the bow locker.

Solitude has a newly installed Roskelley Olsson Davit on the stern which makes the dinghy more readily available for use and a breeze to deploy.



LAUNCHING THE DINGHY

1. Find the davit remote control located in the top basket of the cockpit locker under the ladder. Plug the control cord into the connection port located on the stern transom wall.
2. Power is always on and available to the davit winch through the house batteries.
3. There are two stabilizing spring lines going from the bow and stern of dinghy to the davit. Slide the white webbing up the bar loosen and unclip the spring line. (Pictured to the right) Unclip from the dinghy and store in the cockpit locker under the ladder.
4. Loosely tie the dinghy bow line/painter to a stern cleat or rail on Solitude allowing enough slack for the dinghy to be lowered fully.
5. Using the remote control, give the toggle a quick "bump" in the UP direction. This will relieve pressure on the stand-off brackets and allow them to be disconnected from the transom eyebolts.
6. **MAKE CERTAIN THE BILGE PLUG IS IN THE DRAIN HOLE AT THE STERN**
7. Lower the dinghy by pressing the remote-control toggle in the DOWN direction. Lower just to the point that it floats with a bit of slack in the lifting bridle lines.
8. Board the dinghy using the starboard davit arm for support. Tweak the davit arm down further if needed to provide enough slack to unclip the bridle lines from the dinghy.
9. Raise the davit UP to its normal full up position and reattach the standoff arms for support.
10. Disconnect the remote control cord, coil, and return to the cockpit propane locker.



Slide Up to Clip/Un-Clip

Slide Down to Tension

STARTING THE OUTBOARD MOTOR

1. Be certain the fuel line is connected; squeeze the bellows pump until firm and confirm the tank air vent is open.
2. Lower the motor with the tilt/trim button on the throttle lever to the full down position.
3. Attach the "kill switch" (the red coiled cable attached to the dinghy key) to the black binnacle on the lower face of the control console.
4. Insert the key into the ignition (lower face of the console), ensure the shifter is in neutral, push the key in and turn clockwise until the starter motor engages. It should start very quickly. There is no choke, the engine manages the process as it warms up.
5. You are ready to go once the engine sustains a smooth idle.

RETRIEVING THE DINGHY

1. To retrieve the dinghy, reverse the "Launching" procedure with a few additional items to note.
2. **Please ensure the dinghy bilge is mostly dry by activating the bilge pump or by removing the bilge plug.**
3. Trim/tilt the outboard all the way down. Turn the steering wheel so the outboard is centered in line with the dinghy hull. This will position the outboard to avoid contact with the lifting bridle.
4. **Remove all crew and unnecessary gear from the dinghy before lifting. The key should also be removed and returned to the stern salon cabinet top drawer.**

5. Find the davit remote control located in the top basket of the cockpit locker under the ladder. Plug the control cord into the connection port located on the stern transom wall.
6. Power is always on and available to the davit winch through the house batteries.
7. Position the dinghy approximately into place using the mooring lines of the dinghy.
8. Lower the davit arms by pressing the remote-control toggle in the DOWN direction. Lower just to the point that the lifting bridle lines can be attached to the dinghy.
9. Raise the dinghy to the full up position, far enough to reconnect the stand-off brackets. Using short bursts of the remote toggle in the DOWN direction, equalize the weight of the davit on the stand-off brackets.
10. Find the stabilizing lines in the cockpit locker under the ladder. Clip each line to the dinghy first then clip to the white webbing. Slide the webbing down the bar to tighten the lines. (See pictures above.)
11. **Very Important:** Secure the dinghy painter and mooring lines to the davit arms to prevent them from being caught in the prop or stern thruster.
12. Disconnect the remote-control cord, coil, and return to the cockpit propane locker basket.
13. When possible, at the next marina stop, rinse off the dinghy and outboard with fresh water.

DINGHY CARE:

1. Keep the dinghy clean and well inflated. There is a foot air pump under the seat of the dinghy.
2. A spare fuel filter and spark plugs are kept with other spares in the engine room.
3. It is the responsibility of the charter guest to refill the dinghy fuel tank at the end of your charter.

IF DINGHY DOESN'T RUN:

Is the safety clip in place? Is the tank vent open? Is the fuel line connected? Fuel in the tank?

*If it still won't run or runs very rough, first suspect contaminated gas. If you can't figure it out, call the San Juan Sailing office.

TRIMMING THE DINGHY AND BALANCING THE WEIGHT: The dinghy is heavy aft so passengers should sit forward as much as possible, and the engine should be trimmed all the way down.

ANCHORING THE DINGHY: There is a collapsible anchor in the dinghy that can be attached to the end of the painter for anchoring the dinghy.

GOING ASHORE: Estimate the change in tide during your time ashore and secure the dinghy accordingly. The anchor can be used to secure the painter on a sandy beach. Otherwise, secure the painter to a log on the beach using the additional 50' painter line stowed in the bow.

SHOES: Your shore shoes are likely to pick up gravel or dirt on shore. Please remove them before boarding *Solitude*.

USE OF THE SWIM LADDER: The swim ladder is attached to the swim platform and can be self-deployed by someone in the water. Please make sure it's in its stowed position prior to getting underway.

7. ELECTRICAL SYSTEMS

ELECTRICAL SYSTEMS OVERVIEW



Solitude has two electrical systems - AC (alternating current, like you have in your home) and DC (direct current, like you have in your car).

The AC system powers most of the ship's domestic services and is the primary source of electrical power while not underway. The AC system derives its supply from one of three sources - shore power, on-board generator or on-board inverter.

The DC system powers most of the ship's operating systems and is the primary source of electrical power while underway. The DC system derives its supply from on-board batteries, which are charged primarily by the engine and generator.

The diesel powered genset (generator) system can be activated to charge the house and other batteries and to provide AC power when away from shore power (e.g. When at anchor or moored.) *See generator operating instructions on page 30.

The Victron inverter can be used to provide power to the AC outlets for small appliances (e.g. Toaster, coffee maker, AC outlets, etc.), microwave and Starlink. Batteries provide electrical power when not connected to shore power, or underway. See sub-section "Managing Battery Status" at the end of this section.

ELECTRICAL CONTROL PANELS

The AC/DC electrical panels are on the inboard side of the starboard pilothouse seat. You will use the circuit breakers on these panels to control each of the systems on the ship. The circuit breakers act as switches.

The 12-volt DC main breakers make up the top 2/3 of the electrical panel while the 120-volt AC main breakers make up the bottom 1/3. The DC main breaker should be on during all normal operations. The AC main is two sets of breakers that are interlocked so that only one source of AC power can feed the ship (shore power or generator). Slide the interlock to expose the appropriate breaker source.

MANAGING AC USAGE IN RELATION TO SUPPLY

Marinas typically provide 30-amp shore power supply adjacent to guest slips. Given that the AC power supply has a finite "capacity", it is necessary to manage the systems and devices that you use at any given time, to stay below the total AC power capacity feeding the ship. If demand exceeds supply, the main AC breaker will trip. In this case, demand should be reduced by turning off selected devices via the individual breakers and resetting the main AC breaker.

Total power draw at any time is managed using the AC circuit breakers as "switches" to turn functions and devices on and off. With the knowledge of what a given service uses for power, you can estimate what the total "load" will be and then select functions to turn off to stay within the available power capacity (usually 30amps or 3,600 watts).

To help you plan and manage power consumption in relation to supply, here is a table of the typical load required by various functions on board:

- House/Engine Battery Charger - 2500 watts (approx. 21 amps)
- Water heater - 1800 watts (approx. 15 amps)
- Microwave - 1000 watts (approx. 8 amps)
- Refrigerator- 400 watts (approx. 3.5 amps)
- Freezer- 400 watts (approx. 3.5 amps)
- Starlink - 100 watts (approx. 1 amp)

*Note: If the various battery banks have had significant use without recharging, the current draw can be significant and may limit the other functions that can be powered at the same time. The AC multimeter located on the upper left of the AC panel will show you the load in watts, Hz, volts and amps if you push the arrow keys.

SHORE POWER

The main shore power connection to feed the ship is located at the starboard side of the cockpit. The ship is designed for, and the main power cable is rated for, a 30amp/120V service connection. The primary shore power cable is stored in the rear cockpit lazarette and can be recognized by the orange SmartPlug end used on the vessel side of the cable. An additional yellow cable extension is stored in the lazarette. You will also find a 30amp to 50amp adaptor.

Once connected to a shore power source, enable that source to feed the ship by engaging the main AC breaker at the main panel labeled "SHORE POWER." Also, ensure that the "SHORE 1" breaker is on. The AC voltmeter will register the voltage of the shore power and you can then use the individual AC breakers to manage the total load within the available capacity.

INVERTER

The Victron inverter takes DC power from the house battery bank and converts that energy into AC power. The circuits that can access this AC power are the breakers that control the AC outlets throughout the ship, the microwave and Starlink.

The Inverter is controlled through the "Victron Energy" control panel at the helm station, just above the main engine ignition key switch and start button. The house batteries will charge automatically when either shore power or generator is connected, and the toggle switch is in the "Charge Only" position. When not connected to shore power and you wish to use the inverter, switch the toggle to ON. Be sure the "INVERTER OUT" breaker is on at the AC panel. When done, switch the inverter to "Charger Only" to avoid inadvertently draining the batteries. **We recommend only using the inverter when needed and turning it off at night. *The inverter has a residual draw even with all AC loads turned off that will continue to draw down the house battery bank.**



The inverter has a capacity of 3000 watts of AC power generation. So, when using the inverter to provide AC power, it will be necessary to manage loads to stay below the 3000-watt limit. Use the same table preset above to help plan concurrent usage.

Reminder: As an alternative to using the inverter, the generator can be turned on to activate the full AC panel. The operation of the generator is on page 30.

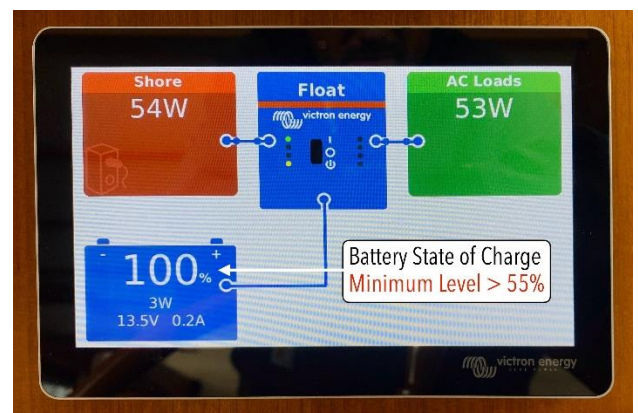
MANAGING BATTERY CHARGE STATUS

Please Take Note: Solitude has been recently outfitted with all new batteries for the house bank, main engine/generator start banks, and bow/stern thruster banks. Specifically, the new house bank provides 900 amps of capacity. A state-of-the-art battery monitor has also been installed to help manage the new house battery bank. These are wonderful upgrades, and they provide a large amount of capacity and peace of mind for comfortable nights on a mooring or at anchor.

Battery Monitor

At the helm station, just below the VHF radio is the Victron touch screen battery monitor (picture to the right.) The screen provides an instant overview of the battery management system on Solitude. With a quick glance you're able to see the direction of current flow, total power usage and the house battery status (including voltage, charging current in or sourcing current out and the State of Charge (SOC)).

The key parameter to monitor is SOC. 100% is completely full. We ask that you avoid getting below



55% SOC. As you would expect, the appropriate action if getting down to these levels is either to start the genset to allow the battery chargers to do their job or plug into shore power or be underway with the engine alternators providing the charging power.

Battery Charging Instructions:

1. A shore power connection will fully charge the vessel batteries to full. We have found that from a 100% SOC the house battery bank will provide enough capacity for at least one night on anchor or mooring without having to run the generator.
2. **After a night at anchor or moored, please check the SOC using the battery monitor display.**
 - 1) If SOC is approaching or below 55%, the main engine and/or generator can be used to charge the batteries.
3. The combined charging capability of the main engine and generator running at the same time will provide more than adequate recharging of the batteries.

AGAIN, YOU SHOULD NOT LET THE STATE OF CHARGE FALL BELOW 55%.

FIREBOY-XINTEX AUTOMATIC EXTINGUISHER AND ENGINE SHUTDOWN SYSTEM

Solitude is equipped with a Fireboy-Xintex automatic fire extinguisher and engine shutdown system. If the ambient temperature in the engine room reaches 175 degrees, the Fireboy system will automatically shut down the engine, and discharge a fire suppressant.

If the Fireboy system is activated, and it is once again safe to start the engine, the switch on the circular Fireboy control unit, located above the starboard pilot house door on the "Mimic Panel", (see photo above) can be used to "override" and bypass the shutdown system and allow the engine to be restarted.



8. ENGINE AND THRUSTER SYSTEMS

Solitude is equipped with a John Deere diesel engine rated at 180 hp at 2400 RPM. The prop is on the centerline of the vessel with a sizable keel and rudder directly aft of the propeller. The engine is controlled from a single lever ZF engine throttle control. The Side-power 11hp bow and stern thrusters are controlled by dual joy sticks just to port of the engine control lever. These are primary controls to maneuver the boat.

ENGINE ACCESS

In the galley floor, directly in front of the galley stove, is the engine room access hatch. The engine room lights are controlled by a breaker on the main electrical panel labeled "E/R LIGHTS." There is a switch on the hatch door which will also turn the lights off when the door is closed and back on when open. The best practice is to shut off the DC breaker when done in the engine room.

PRE-START CHECKS

Before starting the engine each day, conduct a thorough inspection of the engine and engine room, following the directions on the laminated Quick Start Procedures (QSP) check list located at the helm.

ENGINE KEY

The engine key is unique to the KEY ignition slot at the helm. It doesn't work in any other lock on the vessel. The key is used to turn on the ignition for the main engine. Turning the key alone will not start the engine. When not underway, we recommend you remove the key and place it in the starboard aft corner of the map table drawer.

STARTING

The John Deere engine requires no preheating during normal seasonal conditions although it is good practice to allow the engine to warm for a few minutes. Confirm the throttle/transmission lever is in neutral (center detent position). The engine key at the helm has two positions: OFF and ON. When the key is inserted, it is initially in the OFF position. Turn the key clockwise to the ON position. An audible tone will sound momentarily. The engine is ready to start. Now press and hold the "START" button next to the key. The engine will crank for just a few seconds and begin to run. If the engine does not start easily, stop and investigate.



ENGINE CONTROL FUNCTIONS

Solitude features the ZF Marine MicroCommander engine control system, which is operated via 2 control heads, one in the pilot house and one on the flybridge. These control heads engage the transmission while simultaneously controlling the engine RPM. To turn it on, flip the "Electronic Engine Control" breaker on the DC electrical panel. A short steady tone, followed by an intermittent tone will sound at both the pilot house station and flybridge station. To take control at either station simply press the black transfer station button for 1/2 second. The tone will stop at all stations and the red LED indicator light will turn on at the control head. Note: Only one station can be in control at a time.



The control heads have three detent positions: neutral, ahead and astern. In neutral, the engine will run at engine idle RPM. Moving the control lever to the ahead or astern detente will engage the transmission propelling Solitude forward or aft at idle RPM. Further movement ahead or astern will increase engine RPM and vessel speed in each respective direction.

The black control button makes available a "fast warm up" function. This allows RPM to be increased without engaging the transmission. To activate this function, push and hold the black control button while simultaneously advancing the throttle to the forward detent position. The engine RPM will increase, and the LED will blink. To cancel, press the control button and return the throttle to neutral. Other control button functions (not typically required for guest use) are explained in the ZF Marine Control manual in the stern salon cabinet, bottom drawer.

ENGINE ALARMS

The engine is managed by an Electronic Control Module (ECM). The ECM has numerous sensors for various engine parameters and uses those to create any cautionary or warning alarms. The Murphy Engine Display is located in the eyebrow panel above the helm. This display provides real time status of the engine functions and any abnormal conditions. A caution (yellow) alarm should result in immediate action to slow the vessel, consult the Murphy display and potentially shut down the engine. A warning (red) alarm requires immediate action to slow the vessel and shutdown the engine.



BOW AND STERN THRUSTERS

Solitude features Sidepower 11hp bow and stern thrusters. They are controlled by two dedicated joysticks on the right side of the helm next to the engine control head. They should only be used to maneuver the boat when docking, mooring or maneuvering in confined spaces.

It is a good practice to make short bursts of thruster engagement and then evaluate if the vessel is making adequate progress in the desired direction. Too much input generally results in further inputs of the opposite direction to slow or reverse the process. Learn to make less of an input and wait to see the result.

The thrusters are high current, short term use devices. They will significantly drain the dedicated batteries if overused and potentially will overheat and shut down to protect the motor from damage. The master cutoff switch for the stern thruster is in the rear cockpit lazarette, port side. The bow thruster master cutoff switch is in the master cabin, starboard side closet.



Remember, the thruster batteries will only be recharged when the ship is connected to AC power, either via shore power or through operating the genset.

Activation: On the DC Panel, ensure that the THRUSTER breaker is ON. To activate the thrusters, depress the two "on" buttons on the thruster control panel. Note the thrusters will only activate when the ignition is on, so we normally leave this until the engine is running.

EXHAUST

The engine's exhaust port is at the port stern of the vessel. At idle, you will see a periodic burst of water as the water lift muffler fills with seawater and the exhaust gas pressure pushes the water out the exit port. This exhaust system and the clean running diesel engine do a good job of minimizing the amount of diesel soot that enters the environment. Nevertheless, please keep the salon door closed while the engine is running to prevent diesel exhaust film from settling on interior furnishings.

PUMPS

The engine is dependent on several pumps to operate properly. Most important of these is the seawater (raw water) pump, which circulates seawater through a heat exchanger to cool the engines and then expels it through the exhaust system to keep the pipes cool. If the pump fails, it could severely damage the engine. If something smells "hot" or the overheat alarm sounds, investigate at once! There should be no steam or water spraying in the engine room.

FUEL

Solitude carries up to 700 gallons of diesel, 350 gallons in each port and starboard tank located in the engine room under the salon. Fuel cross-feeds from the port and starboard tanks to a common manifold and then passes through either a port or starboard Racor primary fuel filter (shown at right). Racor primary fuel filters are mounted on the forward wall of the engine room, port side. A lever on the face of the support brackets determines which filter is in use.



The engine pre-start procedure includes a visual check of the glass bowl at the bottom of the filter to ensure it has only tinted diesel fuel, and no visible debris or clear liquid. If either is noticed, there is fuel contamination. Call San Juan Yachting for assistance.

FUEL CONSUMPTION

Solitude is a full displacement hull design and is very efficient at low speeds. We've found Solitude to be extremely comfortable to cruise between 1500 rpm and 1800 rpm. This provides anywhere from 5 to 8 knots of cruising speed depending on wind and current. Fuel consumption will be around 2 gph to 4 gph. At around 1800 rpm to 2100 rpm she will cruise at around 8 to 10 knots with a fuel consumption of around 4 to 6 gph.

FUELING PROCESS

There are 2 filler locations on Solitude, one each for the port and starboard tanks. They are located roughly mid-ship on their respective sides behind filler doors. The fuel caps feature a tab that can be flipped up for easy tightening and un-tightening. No key is necessary. The fill level of each tank can be observed via the respective circular fuel tank gauges located in the pilot house on the eyebrow panel. We have found these gauges to be fairly accurate in providing actual tank levels. There are also sight gauges mounted on each tank for additional verification. (Note: The red handled valve at the bottom of the sight gauges must be opened for an accurate reading. As the tanks fill the white tabs will roll over to burgundy with a green tab every 10th position. There will still be approximately 6 or 7 white tabs showing when the tanks are full.)

While filling, be certain to form a "donut" around the filler hole with paper towels or absorbent pads. As you fill, have someone watching the fuel gauge and advise you as the tank approaches the "full" mark. Listen for the changing filling sound as the fuel level reaches the top of the tank, and cease fueling at that point.

REMEMBER: Protect the environment. Fuel spills are your responsibility and may need to be reported to the Coast Guard. If in doubt, leave the tank a few gallons short of absolute capacity to prevent spilling.

CHECKING ENGINE OIL LEVEL

The oil used in the engine and genset is the same, 15W-40 weight Chevron Delo 400. Spare oil is kept in the engine room under the red toolbox on the port side.

- Each day before starting the engine, conduct a visual check underneath the engine for any evidence of oil seepage or leaks. If any oil is noted, clean, check the oil level and replenish as necessary. If you consider the oil leakage to be significant, or if leakage becomes progressively worse, call San Juan Sailing for instructions.
- If chartering for more than seven days, once per week, conduct a check of oil levels using the dip stick, and replenish as necessary.

The engine dipstick is located midway along the starboard side of the engine. Using a clean paper towel and with the engine off for at least a few minutes, pull the dipstick and wipe it clean. Then reinsert it fully and pull it again. The oil level should be between the upper fill mark and the lower fill mark on the dipstick. If below the lower mark, add oil to the engine via the oil fill cap next to the dipstick. You should also question why oil is needed if it is a sudden change during your trip, as the engine uses virtually no oil. Look for spotting or leakage. Call for advice if in doubt.

Note: Diesel engines create some residue as part of the combustion process that ends up accumulating in the oil, hence in part because the quantity of oil in a diesel engine is so much more than a gasoline engine. A by-product of this process is that the engine oil will appear very dark, almost black even just a few hours after an oil change. This is normal.

CHECKING TRANSMISSION OIL LEVELS

The oil used in the transmission is an SAE 30 oil. Spare oil can be found in the storage bin in the engine room. The dipstick for the transmission is found at the rear of the engine, down low and on top of the transmission. It has a finger pull cap for ease of removal.

Transmission oil should be checked while the engine is not running. This should be done weekly assuming no spotting is observed in the bilge as part of your daily engine room checks.

Using a clean paper towel, pull the dipstick and wipe it clean. Then reinsert it fully and then pull it again. The oil level should be between the upper and lower marks on the dipstick. If the oil level is below the lower mark, use a funnel and the provided SAE 30 oil. It won't take much to move the level on the dipstick, the capacity of the transmission is just 3 quarts in total. If oil is added, please make note of it and mention it to San Juan staff during checkout at the end of your trip as it is a potential indication of a more serious issue.

COOLANT

The coolant reservoir sits on the top of the engine on the starboard side. Engine coolant should be at or slightly above the "cold" level (when the engine is cold). There is spare pre-mixed (50/50) coolant in the engine room. Note that raw coolant is concentrated and must be diluted to a 50/50 mixture of coolant and distilled water before use.

9. ENTERTAINMENT AND STARLINK

AUDIO/SURROUND SOUND SYSTEM

The salon has a 4-speaker sound system and audio can be played from a smart phone via the Fusion Entertainment stereo system mounted at the starboard side of the helm, as you're walking downstairs. Power to the unit is provided by the "Stereo" breaker on the DC Panel. The unit is activated via the "power" button on the unit. A Bluetooth connection can be made to a smart phone via the discoverable device listed on your phone as "AV-750." The manual for the stereo can be found in the bottom drawer near the salon door.

SALON SMART TV AND DVD PLAYER

A flat screen smart TV/DVD player is mounted in a ceiling cabinet in the salon above the sofa on the port side. While holding the cabinet up, release the latch and the TV will swing down and be viewable from the salon table. Please do not allow it to "free fall" into place. The TV controller is in the top drawer next to the sofa.

The TV connects through popular streaming apps (Netflix, Prime Video) when connected to WiFi, either via a marine system or via Starlink (see below). The TV also includes a DVD player accessible through the Fusion system.



WIFI VIA STARLINK

To provide Wi-Fi connectivity, Solitude is equipped with a high performance Starlink system. It provides connectivity to any of your smart devices and to the entertainment systems on board. The system connects to Starlink satellites, so a clear view of the sky will ensure the best connectivity.

To get started:

1. Starlink will run when AC power is available via shore power, genset or using the inverter.
2. The Starlink router is connected through the AC panel "WIFI" circuit. This breaker should be ON in order to connect.
3. When accessing Starlink via the inverter be mindful of your usage. Starlink draws around 100 watts so prolonged use via the inverter will draw down the house battery bank. **It is not recommended to leave the inverter and Starlink on overnight.**
4. Use the Wi-Fi network name and password located on the inside cover of the Charter Guest Reference Manual.

Be advised the Starlink system may take up to 5 minutes to connect with satellites once powered on. Reports regarding coverage are positive. However, there is no guarantee of service. We hope it opens a new window of capability for those who want to stay in touch, particularly in the more remote cruising areas of the PNW.

10. GALLEY, BBQ AND CRABBING EQUIPMENT

COOKTOP/OVEN

Solitude is equipped with a Force 10 three burner propane cooktop and oven. The cooktop can be accessed by lifting the hinged countertop section to the right of sink. When fully raised there is a support arm that extends out and can be locked into place using the black round thumb screw.

Please note: The hinged countertop that covers the stove should be lowered when the stove is not in use. This will help prevent accidentally falling and causing damage or injury.

To light the Cooktop/Oven:

1. Open valve on propane tank (Upper deck, starboard side cabinet.)
2. Turn ON the "GAS ALARM" circuit breaker switch on the DC panel.
3. Turn on propane solenoid switch by hitting the "PRESS VALVE ON/OFF" button located on the square control/gauge right above the stove.
4. To light the cooktop, press the igniter button while pushing in and turning the corresponding control knobs counterclockwise to the "light" position. The burners should ignite easily. The knob may need to be depressed for several seconds for the burner to stay lit.
5. We've found the oven/broiler knob needs to be depressed a bit longer than the stovetop for the burner to stay lit. Holding the knob in for 30 to 60 seconds before staying lit isn't unusual.



Steam: If cooking creates a lot of steam (such as the crab cooker), please open the pilothouse and salon doors to encourage air flow or use a fan to help circulate the steam to minimize buildup on upper cabinets and ceiling in the galley.

MICROWAVE

The operation of the microwave is self-explanatory. However, note that the microwave uses a lot of power, so you may need to reduce unnecessary draws before use. For more information, see the instruction manual located with the other ship's instruction manuals under the port side pilothouse seat.

WATER FILTRATION SYSTEM

Solitude is equipped with a triple filter potable water system allowing you to drink water right from any faucet.



FRIDGE AND FREEZER



The refrigerator/freezer runs strictly on DC power. The compressor and cooling fan are very quiet but can be heard if you listen carefully. Outside the fridge at the top is a temp controls/indicator for the freezer and fridge. They work well when the indicator with the white line is set to 2.5 marker. (See picture to the left) The green light indicates that the fridge is on and working.

Note that unlike a modern household fridge, this unit does not have an automatic method of evaporating water that forms during a defrost cycle. Please check it every 2-3 days to make sure water is not collecting in the fridge, especially during the warmer months. Wipe up any water that may be collecting.

COUNTERTOPS

The countertops are granite and are very durable, but please do not cut or chop food on the surfaces. Please don't put hot pans from the stove or oven directly on the countertop or table. You will find heat proof trivets stowed in the galley under the stove and cutting boards in the third drawer of the galley and under the sink. The cutting board under the sink fits into the left side of the sink and is another of our favorite features!

DRYING DISHES

A dish strainer and drying pad are in the third drawer down to the right of the stove. Please take care to dry dishes and flatware thoroughly before putting it away.

SMALL APPLIANCES

Using too many at a time may cause an outlet circuit breaker to 'trip'. Unplugging them when not in use helps to conserve inverter battery power while at anchor.

BBQ

The BBQ grill is mounted on the port side of the transom railing. The grill has a permanent connection to a dedicated propane tank located in the locker behind the cockpit ladder. With the lid of the locker open you'll see a white hinged inspection hatch. The propane tank sits just underneath this hatch. Turn on the propane tank while grilling and shut it off when done.

To light the BBQ, unlock the latch and open the lid. (Tip: Re-lock the latch with the lid open. This prevents the latch from catching as you open and close it while cooking.) Depress and turn the propane valve knob on the BBQ counterclockwise to high. Depress the igniter. If the flame does not ignite, return to OFF and repeat.

*If the igniter doesn't work, use a butane lighter stowed in the galley. BBQ cooking utensils are also stored in the galley drawer under the oven.

CLEANING THE GRILL: Please keep the grill clean inside and out so that food stains won't build up and it will look good for the next charter guest. A good practice is to run the grill burner on high

with the lid closed for 10-15 minutes after all grilling is done, then use the grill brush located in the top of the propane locker. Also, when finished, please secure the lid lock and keep the canvas cover on when cruising.

CRAB FISHING AND COOKING EQUIPMENT

A collapsible crab cage is stowed in the lazarette along with line, a buoy and a bait box. The crab cooker pot is located inside one of the blue foot stools inside the salon.

11. GENERATOR SYSTEM

Solitude is equipped with a Cummins/Onan diesel powered AC generator with a capacity of 9 kwatts (60 amps at 120V AC). The ship's AC electrical system is limited to 30 Amp service so the genset can easily source the ship's AC system at 50% load. You will find that the generator runs very quietly thanks to the well-insulated engine room and quiet exhaust.

The generator can be started in one of two ways. The recommended method is to use the digital display panel (image to the right) in the pilot house on the lower left side of the helm. The generator can also be started in the engine room using the control switch panel on the genset enclosure.



STARTING GENERATOR FROM THE HELM

1. Press any button on the control panel to activate and turn on the digital display.
2. Press and hold the "Start" button until you hear the generator start. (You may need to listen closely as, again, the generator is fairly quiet.) The generator status lamp (green) will blink while the engine is cranking or the fuel system is being primed. The light will go solid when the generator is running.
3. Look over the aft starboard side of the vessel near the water line. You should be able to see and hear the exhaust and seawater exiting the muffler system. If not, stop the generator and check the strainer and the thru-hull valve.
4. After two minutes of the generator running with no electrical load, bring the generator on-line with the ship's AC circuits by engaging the main breaker at the top left of the electrical panel. You will see 110-125 volts on the AC voltmeter.
5. Activate AC loads as necessary through the AC circuit breakers at the electrical panel.

STARTING GENERATOR FROM THE GENSET CONTROL PANEL

1. In the engine room, locate the genset positioned centerline aft and the control panel on the top left-hand side of the genset.
2. Visually check for any fluids and leaks in and around the genset.
3. When ready to start, press and hold the control switch until the generator starts. The status lamp will blink while the engine is cranking. The light will go solid when the generator is running.

4. Additional procedures noted above should be followed as with starting the generator using the digital display panel in the pilot house.

TO STOP THE GENERATOR

1. Remove the electrical load from the generator by turning off the generator master breaker at the electrical panel (Bottom left of the electrical panel).
2. Run the generator with no load for a 2-3 minute cool-down period.
3. Press the stop button on the digital display and hold it until the unit stops completely.

NOTE: The generator will shut itself off if there is low oil pressure, low coolant level or high coolant temperature.

Check the generator level at least weekly. The oil dipstick is behind the forward enclosure cover. With the unit off for at least a few minutes and using a clean paper towel, pull the dipstick and wipe it clean. Reinsert and pull the dipstick to verify the oil level is between upper and lower marks.

12. HEAD SYSTEM

The main cause of problems with the head system is misuse. Dealing with a stopped-up head is an unpleasant task, especially when it can be easily avoided. **The only thing that should be put into the head is human waste. Under NO circumstances should tissues, feminine hygiene products or wads of hair be flushed down the heads.**

It is current SJY practice to provide household quality toilet paper (not ultra-thin marine toilet paper) and dispose of the used paper in small ziploc bags. There is a supply of small plastic bags at the head to dispose of all toilet paper. After use, put the bag into the trash bin next to the toilet, hence never flushing any paper down the head. One less thing to cause problems. Change the trash bin as needed to keep things fresh and the net result is no problems with clogged heads.

FLUSHING

Solitude has a Tecma electric head which uses fresh water from the water tanks. The toilet controls have the following effects:

- "BEFORE" Button adds water to the bowl. About 1 gallon.
- "AFTER" Button - Flushes the toilet, about 2 gallons. After a delay of 15 seconds, you will hear a purge to clear the line.

To reduce freshwater usage, press the BEFORE button only when solid waste is expected. A recommendation is to let urine sit for 2 or 3 uses before flushing. The AFTER button is pressed when you are ready to flush.



For odor prevention, use the Zaal Noflex Waste Digester located in cabinet behind the head. Add the recommended dose of 1 tablespoon per person, per day to the bowl. Also, after flushing and waiting 15 seconds for the system to purge, add water to the bowl by pressing the BEFORE button.

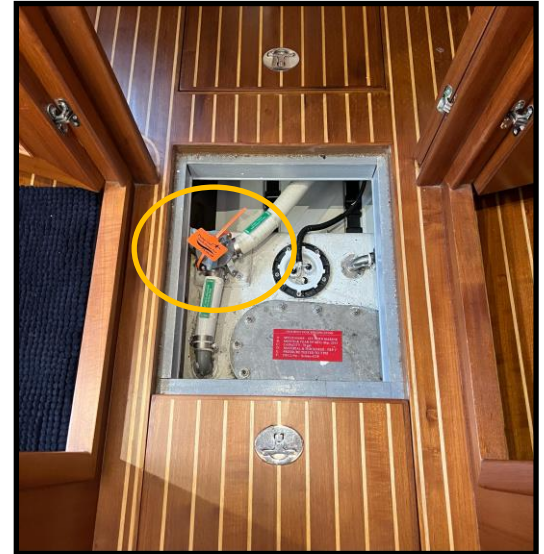
HOLDING TANK- IMPORTANT

The black water holding tank capacity is 70 gallons. The tank monitor panel is mounted in the head just below the sink. It shows four fill stages- green (empty), yellow (low), amber (mid) and red (full). We aim to empty the black water tank whenever it reaches the amber (mid) stage. A completely full tank can cause problems, so stop head use immediately if it reaches the red (full) level. We



recommend emptying the holding tank every 2-3 days for a crew of four persons, or when it reaches the "mid" level on the tank monitor panel.

If you are boarded by the US Coast Guard and they ask to see the Y valve, locate the thru-hull valve and the Y valve under the floor hatch in the forward bilge. The thru-hull is located just forward and to port of the holding tank. It is preferable for the Y valve and the thru-hull valve to be in the closed position as this assures that accidental dumping overboard is not a risk. Wastewater from sinks and the shower is legally discharged overboard as "gray water".



TO PUMP OUT AT A PUMP OUT STATION

Pump out access is on the starboard side walkway forward of the pilot house door. Follow instructions at the pump-out. SJY has provided a list of pump-out locations in the Charter Guest Reference Manual.

DISCHARGING THE HOLDING TANK

Discharging the holding tank overboard in the Puget Sound No Discharge Zone (ie. the San Juan Islands and Puget Sound) is NOT legally allowed. However, discharging in the Straights of Juan de Fuca, three miles offshore and West of the Puget Sound zone is allowable. Discharge of waste overboard in Canada is permitted in most open, free flowing waters, except in harbors, stagnant tidal flow areas and near land.



To discharge the holding tank under allowable conditions, open the thru-hull valve, turn the Y valve so the arrows on the handle are pointing to the tank and through-hull valve hose, and turn ON the "MACERATOR PUMP" breaker on the DC panel. Monitor the tank level until it reads empty. After the tank is empty, remember to shut OFF the "MACERATOR PUMP" breaker, turn the Y valve so the toilet contents will flow into the holding tank and close the thru-hull valve. Note that discharge occurs below the water line so be underway at a modest speed while discharging the tank.

13. HEATING

WEBASTO DIESEL FURNACE

Solitude's living space is heated using a WEBASTO diesel fired hot water heating system with fan forced air handlers. This system can be used at all times whether off or on shore power.

The diesel furnace has a dedicated switch located on the starboard side of the helm as you're walking down the stairs. (Image to the right.) There is NO electrical panel breaker that needs to be flipped on. To turn on the heating system flip the dedicated switch to "SYSTEM HEAT." The green light will illuminate. It will take less than two minutes for the system to heat up enough to start distributing warm air throughout the ship. Once the desired temperature is reached flip the switch to "OFF."



Again, as noted above, the heat in Solitude is controlled via a manual process by switching the "SYSTEM HEAT" on and off. While there are 3 thermostats on board, the temperature setting on the thermostats currently do NOT independently control the heating for their respective spaces. The thermostats are always on and provide a reading of the current temperature in the room. If the up or down arrows are pressed, then the selected temperature will display, but this doesn't set a temperature for the room. After a few seconds the display will revert to the room temperature reading. Leave the switches on the thermostats set to heat.

DEFROSTERS

There are defrost/defog vents under the forward windows of the pilothouse. They can be opened and rotated to direct air flow as needed. The engine, once warmed up, provides the heat to feed these vents and a fan control switch is at the helm station



14. NAVIGATION, RADAR AND AUTOPILOT

Solitude is equipped with a comprehensive set of Garmin multi-function displays and sensors, which includes navigation displays, radar, automatic identification system (AIS), and autopilot. All the equipment works together to provide a wealth of information during all operations.

There are 5 DC circuit breakers which manage the power supplied to this equipment labeled "NAUTICAL INSTRUMENT," "RADAR," "AUTO PILOT," "PILOT HELM ELECTRONICS" and "F/B ELECTRONICS." All 5 breakers need to be on for full functionality of the Garmin system.



Garmin Multi-Function Displays:

Highlights:

- Solitude is equipped with a dual Garmin 12" multi-function display (MFD) navigation system in the pilothouse and a single Garmin 8" MFD on the flybridge. These are sometimes referred to as chartplotters.
- Power is controlled by the "PILOT HELM ELECTRONICS" and "F/B ELECTRONICS" DC circuit breakers. After power is applied a disclaimer acknowledgement will be displayed prior to any use.
- After the disclaimer is acknowledged, the MFD's will present the last used display screen.
- We have included the most used display options in the "Favorites" tab. Some examples are the Nav. Chart, Radar Overlay, and Engines.

Commonly Used Chartplotter Functions:

Finding the Navigational Chart: Home (bottom middle), Charts, Nav Chart .

Zooming In and Out: These are touch screens so use two fingers or the + and - buttons on the screen.

Returning the screen to the vessel's current location: Stop panning (lower right corner of screen)

Clearing Pre-existing Waypoints, Routes and Tracks: Info (left of Home), User Data, Delete User Data, then the desired option for Tracks, Routes or Waypoints.

Chart Orientation: Menu (right of Home), Choose the tab with the curled page, Settings, Orientation.

Display Brightness: Power button (short press), Brightness.

Course over Ground (COG) Vector/Line: Menu (right of Home), Choose the tab with the curled page, Layers, Heading Line - set source to GPS. USB & 12 V outlets on port side of helm Horn switch MFD for wind and depth Autopilot ` 22

AIS Overlay & Targets: Menu (right of Home), Choose the tab with the curled page, Layers, Other Vessels, AIS.

- For a more complete orientation of how to operate and get the most value from the chart plotter app, we recommend referencing the user manual for the GPSTMap 7612 software system. It can be downloaded from the Garmin website, or a copy of the manual is retained in the aft drawer under starboard side salon couch.

GPS SENSORS

The primary GPS antenna is mounted on the starboard exterior side of the pilothouse just above the helm. It maintains excellent reception of the satellite signals.

RADAR

Radar's primary use is to sense objects and land masses that are within a 5-10 mile radius of the vessel. When used properly, it provides a useful tool in monitoring the performance of the navigation and AIS systems by providing independent 'painted' images of other vessels, navigation aids and land masses that should be depicted already. In reduced visibility conditions, it is another tool to help the captain maintain situational awareness. Consult the manual for proper operation and settings. We encourage you to practice using the radar during fair weather conditions so that it is familiar and will be less daunting when conditions become more challenging.

AUTOPILOT

Engage the autopilot to reduce the tedium of holding a heading so you can focus your attention on what's floating in the water, what's coming at you from the sides or behind, and allow for periodic glances at the engine displays. Be sure not to use the autopilot to divert your attention from the operation of the vessel. The autopilot has a dedicated screen in the pilothouse and the flybridge for easy use and monitoring.



- When the autopilot is first turned on it will default to "Standby" mode which means it is ready, but not engaged. "Standby" appears in yellow and the yellow

LED indicator appears in the upper-right corner of the screen. The current magnetic heading will be displayed.

- To engage the autopilot, select "Engage" using the corresponding button/icon at the bottom of the screen. "Heading Hold" appears in green at the top of the heading screen, and a green icon appears in the upper-right corner. Your intended heading will now be displayed.
- To adjust your heading to port or to starboard, use the corresponding button/icon to select the adjustment you want to make. Pressing the corresponding button/icon once will move the heading 1° while a press and hold will move the heading 10°.
- To return to "Standby" mode press the red STBY button/icon.

15. SALON, DINETTE AND FOLDING BERTH

DINING TABLE

The salon dining table has a folding leaf that can be extended to provide seating for 4-6 people. Pull the table apart at each end and the middle will unfold as you pull. The table has a high gloss finish. Please refrain from placing heavy or sharp-bottomed objects directly on the table to avoid scratching the surface. **PLEASE DO NOT SIT OR LEAN ON THE TABLETOP, IT WILL STRESS THE MOUNTING OF THE TABLE STAND.**

Under the table, there is a cabinet door that opens and inside are 2 round thumb screws that can be loosened to allow you to move the table in and out to make more room if needed. Please ensure these are snugged down after the desired location is found.

PLACEMATS are in the forward drawer under the U-shaped bench. Please use them to keep the table in tip top shape.

STOOLS

We have provided two extra stools as extra seating options for the table. The stools also serve as storage, and we usually use one for pantry items. The crab cooking pot is stored in the other stool with the tea kettle inside of the crab pot.

WINDOWS AND PORTHOLES

Windows are double glazed, so should help keep the interior warm in cool weather and cool in warmer weather. In general, it is a good idea to keep a couple of windows in the salon cracked open to prevent condensation and mildew formation. Similarly, portholes (especially in the bathroom) should be opened a crack each day to encourage air circulation. That said, please ensure that portholes are ALWAYS closed when underway, even on seemingly calm days.

WINDOW BLINDS

All windows in the salon are equipped with adjustable blinds which can be used for privacy and to shade the salon in hot weather. Please treat these blinds with care. External window covers for the pilot house are stored in a plastic bin under the helm in the flybridge and are very effective in keeping the internal temperature cool in hot weather.

A NOTE ABOUT CLEANING WINDOWS: There is a spray bottle of vinegar-based cleaning solution under the galley sink. (1 part vinegar, 2 parts water) Use this and paper towels only for touching up glass smudges. No ammonia-based products, please, as they destroy the UV protection built into the glass.

DINETTE FOLDING BERTH

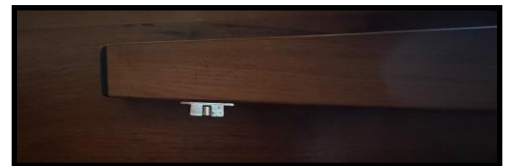
The sofa across from the salon table converts into an additional small double berth (We would say big enough for one adult). The extra cushions for the sofa bed are located under the guest stateroom bed. To convert, slide the sofa out and gently pull down on the legs to lower them down. Fit the cushions from the guest stateroom (located under the guest stateroom mattress) onto the sofa bed. San Juan will provide extra bedding for this berth if needed.

GAMES

Our kids have a growing selection of games, fun for young and less-young alike, located in the aft port-side cabinet, third drawer down.



Two legs fold down to support pull out bed.



Sofa bed legs fold back in and clip back into place.

16. VHF RADIO

VHF RADIO

Solitude has 3 VHF marine radios on board. There is 1 Garmin base unit in the pilot house and 1 on the flybridge.

There is also 1 Standard Horizon handheld VHF stored on port side of the pilot house along with a charging station.



Each radio has GPS position sourced into it. In an emergency, the radio's DSC function can be activated to broadcast a unique identifier code along with GPS position. The MMSI (Maritime Mobile Service Identity) identifier code for Solitude is 368156880. This number is unique to Solitude. The MMSI is registered in a database that is accessible to both the US and Canadian Coast Guard. We hope it never becomes necessary to use it, but if it does, we want you to know that it will broadcast who you are and your position so long as the radio and GPS signals are functioning.



OPERATING INSTRUCTIONS

TURNING THE VHF RADIO ON AND OFF - When the "PILOT HELM ELECTRONICS" breaker is switched on at the electronics panel the full Garmin electronics package is powered up including the VHF. This is also true with the VHF on the flybridge when the "F/B ELECTRONICS" breaker is switched on. These units can be individually turned off and back on by pushing and holding the 16/9-PWR button on the top right.

ADJUSTING VOLUME - The volume can be turned up or down by rotating the VOL/SQL dial. Turn clockwise to increase volume or counterclockwise to decrease volume. Best practice is to make sure the squelch is turned all the way down before adjusting the volume (See directions below for adjusting squelch.)

ADJUSTING SQUELCH - Press the volume button once and SQUELCH will appear on the screen. Again, turn clockwise to increase squelch and counterclockwise to decrease squelch. The basic function of the squelch adjustment is to decrease background noise when receiving transmission. You're looking for the "sweet" spot, rotating the dial clockwise to adjust to a level just slightly above the background noise.


SELECTING A CHANNEL - Select a channel by rotating the "SELECT" dial on the head unit clockwise or counterclockwise. Turn clockwise to move up through the channels and counterclockwise to move down through the channels. The channel can also be changed on the handset by pressing the up and down arrows. The currently tuned channel appears on the display.

USING THE CHANNEL SCAN - When you scan channels, the radio searches for channels that are broadcasting. When a channel is broadcasting, the radio pauses on that channel until the broadcast stops. After four seconds of inactivity on a channel, the radio resumes scanning.

HOW TO QUICKLY SELECT CHANNEL 16 - Press the res 16/9 button once to quickly tune the radio to Channel 16. Note that when you change to a priority channel the transmit power is set to high (24 W). Press 16/9 again to quickly tune the radio to Channel 9. Press 16/9 a third time to quickly retune the radio to the previous channel. When you change back to your current channel, the transmit-power setting is restored.

CHANGING FROM HIGH TO LOW TRANSMIT POWER - You can control the transmitting power of the radio. Low (1 W) is used for local transmissions, and high (25 W) is used for distance and distress transmissions. To adjust the transmit power, press the HI/LO button and select either "1W" or "25W" and select "OK." Important: The radio automatically sets itself to low transmit power if you tune into channels 13, 67, 75, 76, 77 based on FCC rules.

ACCESSING WEATHER (WX) CHANNELS - To hear your local forecast and regional weather information, press the SELECT button, WX appears on the screen. Turn the SELECT dial to change the weather channel.

USING WEATHER ALERT - You can enable weather (WX) alerts to sound when you are using standard radio channels. When tuning weather broadcasts, select ALERT to enable or disable weather alerts. The  icon indicates that weather alerts are enabled. Select EXIT. The radio returns to normal operation while continuing to monitor weather alerts.

DISTRESS CALL ACTIVATION - When you make a distress call, your call is transmitted to all DSC-capable radios within receiving range. Your current GPS position (latitude and longitude) and the current time are included in the transmission.

Sending an Undesignated Distress Call - When you send an undesignated distress call, the nature of your emergency is not transmitted to the receiving stations. Sending an undesignated distress call is a faster procedure that can save you time during an emergency.

1. Lift the red spring-loaded door and hold DISTRESS for at least 3 seconds. The radio beeps and counts down the seconds. DISTRESS CALL COUNTING DOWN appears on the screen. The radio sounds an alarm, switches to channel 70, and transmits your call on high (25 W) power.
2. Press any key to silence the alarm sound. The radio tunes to channel 16 on high (25 W) power.
3. Hold PTT on the handset or radio to relay your distress message. The radio waits for an acknowledgment (ACK) on channel 70 from a listening station.

Sending a Designated Distress Call - When you send a designated distress call, the nature of your emergency is transmitted to the receiving stations.

1. Lift the spring-loaded door and press DISTRESS.
2. Turn the SELECT dial and select the type of distress call. TIP: You can select CLEAR to exit the screen without sending a distress call.

3. Hold DISTRESS for at least three seconds. The radio beeps and counts down the seconds. DISTRESS CALL COUNTING DOWN appears on the screen. The radio sounds an alarm, switches to channel 70, and transmits your call on high (25 W) power.
4. Press any key to silence the alarm sound. The radio tunes to channel 16 on high (25 W) power.
5. Hold PTT on the handset or radio to relay your message. The radio waits for an acknowledgment (ACK) on channel 70 from a listening station.

VHF PROTOCOLS

You should always monitor channel 16 (emergency call frequency) when underway. There is a standard protocol for communication on the marine VHF radio. For guidance, refer to the "VHF Protocol" page in the Waggoner's Guide, which provides a summary of channel uses in US and Canadian waters, radio emergency calls and a good tutorial on radio etiquette.

17. WEATHER STATIONS

We strongly encourage charter captains to listen to daily weather briefings available via VHF radio. We also advise the use of weather apps accessible via smart phone, such as Windfinder, which provide real time and projected wind speed/direction and wave conditions for all PNW cruising areas.

Solitude is also equipped with a Garmin GMI20 MFD at the pilot house helm and flybridge which incorporates a wind vane mounted at the top of the mast. It provides actual wind speed (adjusted for vessel speed when underway) and wind direction. The weather station will activate automatically when the "PILOT HELM ELECTRONICS" breaker is on.

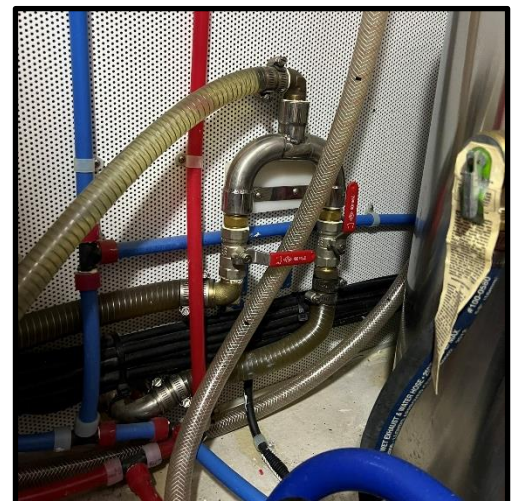


18. WATER SYSTEM

FRESH WATER

Solitude has 270 gallons of fresh water onboard. This water is stored in two tanks, one 190-gallon tank centerline forward underneath the stateroom berth and one 90-gallon tank centerline aft below the salon. The forward tank is filled through a deck plate on the port side walkway forward of the pilot house. The aft tank is filled through a deck plate on the starboard side of the cockpit. Please take care in filling the tanks with only clean water and from a hose of known quality/cleanliness.

The design of the water system allows for switching between the forward and aft water tanks. The control valves are in the engine room and sit forward, just behind the engine room



access ladder and to port of the water heater. You're looking for 2 read handled valves. (See picture above.) The starboard valve controls the flow from the forward tank and the port valve controls the flow from the aft tank. The tanks can be drawn down individually or simultaneously. We have tended to draw down the stern tank first to more evenly transfer weight as water is drawn down. (Drawing down 190 gallons first from the bow tank shifts a great deal of weight to stern.) If you completely drain the stern tank, then you can simply shift to using the forward tank.

The freshwater pump is controlled by a 12V circuit breaker called "FRESH WATER PUMP" located on the DC side of the electrical panel. It pressurizes the entire water system and works to maintain pressure throughout the entire vessel's water system.

A freshwater gauge for each tank is on the eyebrow panel above the helm and is active when the "NAUTICAL INSTRUMENTS" circuit breaker ON. Be aware that while underway, these gauges may not give an accurate reading.

Solitude is outfitted with a triple filter potable water system. The filters are changed prior to every cruising season. Try it, we believe you'll find the water quality is great.

Turn off the circuit breaker switch when you are not on the boat so that if a leak develops, you won't lose all the fresh water.

WATER HEATER

The water heater on Solitude is a 20-gallon tank located forward in the engine room behind the access ladder, port side. The water is NOT heated automatically, it takes one of the following actions.

1. If on shore power or the generator is running, turn on the WATER HEATER breaker on the AC panel. We suggest turning this on and leaving it on for your whole trip. If there is not AC power available nothing will happen, and the inverter cannot power it, so no harm.
2. The other option is to turn on the furnace (Hydronic heating system) using the switch located on the starboard side of the helm as you're walking down the stairs. Turning this on will cause the hydronic system to heat the water. It is a good idea to turn this switch off when on shore power, otherwise the furnace will continue to cycle. The advantage of this system is hot water is generated while at anchor without running the generator. Also, it is best to turn this system off at bedtime due to less noise and less draw on the batteries.

USE OF SHOWER

The shower on Solitude is one of our favorite features. It is spacious and easy to use with plenty of room for standing and sitting using the built-in seat. The shower faucet functions similarly to what you have at home. The dirty water freely drains to an automatic sump pump. If water isn't draining and pumping out, please ensure the "SUMP PUMP" breaker is on. It's located at the upper right corner of the DC panel and has 3 positions: Auto/Off/On. It can be kept in the Auto position. The water exits to port via a through hull adjacent to the shower.

To conserve water supply, take "Navy showers," e.g. turn off the shower while lathering. Also, to keep moisture down in the head, we suggest turning on the blower in the head. The switch to turn it on sits next to the light switch. The DC breaker that provides power to this switch is labeled "SHOWER ROOM BLOWERS."

MUST DO'S AFTER SHOWERING:

1. Please squeegee off the shower door using the squeegee located in the shower.
2. Please wipe down any water spills on wood areas around the shower.
3. Hang wet towels using the various hooks and towel racks around the head so they are not left up against wood surfaces. (Moisture turns wood black and encourages mildew.)

APPENDIX A: SCHEMATIC OF THRU-HULLS

