

## Névé - Bali 4.6 Owners' Notes



Welcome aboard Névé!

After nearly a year of waiting, we're excited to finally have our brand new Bali 4.6 here in the beautiful Pacific Northwest for you to enjoy. Névé is our second attempt at bringing the best cool weather cruising catamaran to San Juan Sailing - our first attempt (Qanuk) resulted in a total loss due to shipping damage. If you're interested in hearing details of the saga or are considering purchasing your own Bali catamaran - let us know!

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Névé - pronounced /nā'vā/ - is a precursor to Firn - a granular snow, especially on the upper part of a glacier, where it has not yet been compressed into ice.

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We took delivery of our first Bali 4.6 (Qanuk) at the Annapolis Boat Show in October 2021. She was the show boat and also used by [Cruising World for their annual Boat of the Year awards](#). Exiting the Chesapeake Bay and rounding Cape Hatteras, we sailed her in the blue waters of the Atlantic, covering over 800 miles before reaching Fort Lauderdale. We enjoyed several weeks of warm weather cruising in Florida, learning all about her systems and sailing characteristics. In late November 2021 she was loaded onto a freighter bound for Victoria, BC - In January, a few days before she was expected to arrive, we received the tragic news that Qanuk was badly damaged and would be declared a total loss. Instead of giving up, we immediately requested the

next available new Bali 4.6 - which was slated to go into charter in the Caribbean - hence why Névé has 6 standalone AC units! We took factory delivery of Névé in April 2022 in La Rochelle, France - she was then motored across The Channel to Southampton UK for loading inside a vehicle transporter ship - we weren't going to risk another incident on the top deck of a freighter.

It's now May 2023 and Névé is ready for her second charter season with a few new upgrades. As a one-year-old boat, she is in great condition with all of her systems tested and in tip-top shape. We hope you'll help us keep her in great condition for many years to come.

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Névé is hull #81 - a 5 stateroom version with 4 queen size berths, 4 heads and a set of bunk beds, crew quarters with dedicated head, a hard top bimini, full size residential refrigerator, AC throughout, and the unique Bali "garage door". She's the perfect fit for large groups - being able to sleep 10 guests in staterooms and several more if using the crew quarters and salon areas. She's rated for 38 guests for day sails in inland waters - so bring your friends!

There are 3 primary living areas on Névé:

**Open concept salon and galley** - with direct access to the front deck through the forward door and the "garage door" and sliding side windows in the rear for bringing the outdoors in. A large galley with 4 burner stove, an oven, dual sink, and full size refrigerator with water and ice dispenser - offer all the comforts of home.



**Flybridge** protected by a hard top bimini and full enclosure, includes the helm, all sail controls, seating for 6 around an integrated table, and a large sunpad



**Front deck** is accessible directly from the galley, and unlike most catamarans with trampolines, Névé has a solid foredeck with a built-in anchor locker, folding table, and very large sunpad. If you like to exercise or do yoga in the morning, this is the perfect spot!



We plan to offer Névé for charter for the entire summer cruising season each year, while enjoying the windier off-season for our own personal use. We appreciate you helping us keep her in like new condition for many years to come - as there are no other catamarans of this size and condition available for charter in the PNW.

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Please don't bring **pets**, **red wine**, or **tanning spray** on board and avoid applying **aerosol sunscreen** near windows and cushions.

If you have any questions during your charter, we're here to help any time - **call or text 206-973-9468**.

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If you can think of anything that would make your stay aboard Névé more enjoyable, please let us know directly or by sharing with the San Juan Sailing crew.

Share your adventures on Névé by tagging us on  [@seattlepremiercharters](https://www.instagram.com/seattlepremiercharters)

Thank you for being our guests!  
Mike & Elissa

**Index**

Anchors and Windlass.....	7	Engines.....	23
Barbecue.....	8	Entertainment Systems.....	25
Batteries.....	15	Fuel.....	25
Berths and Bedding.....	9	Heads and Holding Tanks.....	26
Bilge Pumps.....	9	Lighting.....	28
Climate Control.....	28	Nuances.....	5
Cockpit and Helm Enclosure.....	9	Refrigeration and Freezer.....	29
Dinghy/Outboard/Davit.....	11	Sails and Rigging.....	30
Electrical.....	13	Showers and Sumps.....	31
Electrical Panels		Spares and Tools.....	32
Inverter.....	15	Specifications and Vessel Information.....	4
Solar.....	15	Stove/Oven, Coffeemaker.....	33
Electronics/Instruments.....	18	Water.....	34
Emergency/Safety Equipment.....	6		

**Specifications and Vessel Information****Vessel Information:**

**U.S. Customs Re-Entry Decal** – 23041282 on rear glass, next to sliding door

**Vessel Official Number** – CG# 1330174 (permanent number decal in port engine compartment)

**Coast Guard Boarding Document** –Refer to the Charter Guest Reference Manual (white binder) on board, 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.

**AIS MMSI No.** 338467439 – Transmitting full time Névé position and vessel data (heading, speed, vessel name, MMSI number). Refer to Section 12, Electronics/Instruments, for detailed description of AIS.

**Specifications:**

Year: 2022	Engine: 2 X Yanmar 57 hp diesels, sail drives, dual alternators on each engine
Make/Model: Bali 4.6	Propeller: FeatherStream - 3 bladed feathering with HydroAxe rope cutters
LOA: 46' 10"	Fuel: 211 US Gal in 2 tanks
LWL: 44' 6"	Water: 227 US Gal in 2 tanks
Beam: 25' 2"	Holding: 58 US Gal in 4 tanks
Draft: 4' 0"	Heads: 4 X electric, 1x manual freshwater flushing
Displacement: 45,000 lbs.	Electronics: Raymarine package (radar, autopilot, wind/speed/depth)
Air Draft: 78 ft.	

Staterooms:	4 queen size berths, two bunks, one double in forepeak
Port Aft Stateroom	Headroom: 6'6", Berth Dimensions: 79"x59"
Port Forward Stateroom:	Headroom: 6'6", Berth Dimensions: 79"x58"
Port Bunks:	Headroom: 6'6", Berth Dimensions: 78"x36" (bottom), 73"x32" (top)
Starboard Aft Stateroom:	Headroom 6'6", Berth Dimensions: 79"x64"
Starboard Forward Stateroom:	Headroom 6'6", Berth Dimensions: 79"x60"
Saloon Headroom:	6'7"
Refrigerator:	14.6 cu ft (residential style)
Freezer:	6 cu ft

## Nuances

There are a few things about Névé 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 some here because we believe they will help you plan your charter.

- **Névé has a mast height of 78'** - this prevents her from using the Swinomish Channel or crossing under the SR520 floating bridge
- **Névé has two 50amp 120v shore power connections** - 1 dedicated to the reverse cycle AirCon units and 1 dedicated for the house. Two shore power adapters are provide, a 50amp 240v to twin 50amp 120v pigtail allowing you to run both the AirCon and house off of a single pedestal, and a 30amp 120v to 50amp 120v adapter ONLY for use on the house when a 50amp service is not available.
- **Névé has power on by default to all lights, AC plugs and 5v USB chargers** - there is no switch to turn the house bank of batteries on/off - so please be mindful of power and turn off lights when not in use.
- **Névé has feathering 3 blade props mounted ahead of the rudder** - this offers great maneuverability for docking and very powerful thrust in reverse, but means shifting from between forward to reverse needs to be taken slowly to prevent shock loads on the feathering system. Additionally, the feathering props needs to be placed into reverse when sailing in order to feather. **Don't forget to return shifters to neutral before starting the engines.**
- **Névé displaces 45,000 lbs !** - this means she has lots of inertia, please maneuver slowly with the engines, it takes a few seconds for her to come to a complete stop and to get going again.
- Place covers on helm station instruments and unscrew remote VHF radio when docked or anchored for extended periods of time.
- **Névé has a very long anchor bridle** - always use the anchor bridle, we upgraded to a Mantus M2 chain hook to make it easier to attach the bridle to the chain, always lay out extra chain after attaching the bridle so that the load is only on the bridle and **NOT THE ANCHOR WINDLASS.**
- **Névé has dual alternators on BOTH engines** - providing 480amps of current for recharging the batteries. The generator will only charge at a maximum of 80amps - so if batteries are depleted, it is more effective to startup at least one engine. Motoring is a very effective way to recharge batteries.

## Emergency/Safety Equipment

Emergency/Safety Equipment Locations: You are not likely to need these but must know their location.

- **Bilge Pumps (manual):** Pumps are located on the inboard side of each hull above the aft stairs at the back of the Cockpit, underneath the rear winches. Pump handles are integrated into the pump, open by pulling from below and move in and out.
- **Carbon Monoxide Detector:** under the port side stairs leading down into the hull
- **Cockpit Cushions:** tan cushions are secured to the boat. In case of COB, use the port side red life ring mounted down the steps from the helm or the white Life Sling mounted starboard aft.
- **Emergency Tiller:** Long stainless rod stored in port engine room. Remove access port in either stbd or port sugar scoop to slot tiller.
- **Fire Extinguishers (5):**
  - Automatic in each engine room, breakable port hole on stbd and port stair allows for manual fire extinguisher to be used without opening hatch
  - Salon - starboard side near back door and plancha (large red)
  - Under nav table - across from galley
  - Port forward stateroom in inboard closet
  - Starboard forward stateroom in inboard closet
- **First Aid Kit:** Port head cabinet behind mirror, additional under front windows in galley
- **Flares (Pyrotechnic with gun):** Clear bin behind stbd salon couch back, aft section
- **Flashlights:** Nav Table - 2 small torches and 1 large searchlight
- **Horn, handheld:** Clear bin behind stbd salon couch back, aft section
- **Horseshoe Buoy:** Port side, down the stairs from helm
- **LifeSling:** Starboard stern pulpit
- **PFDs – Inflatables (10):** 6x Behind stbd salon couch, fwd section. 4 hanging in stbd forward stateroom closet. NSO: please check for “green” visible at bottom of clear canister before each cruise. That verifies the auto-inflate function when immersed. **Additional** - neoprene ski vests under aft stbd sofa
- **Spares:** engine spares are located in aft compartment of each engine room
- **Tapered Plugs, Red and Orange Plugs:** Thruhulls have plugs attached with red line, spares are behind stbd salon couch back, aft section
- **Tools:** Bin behind stbd salon couch back, aft section
- **VHF Radios:** VHF base unit at Nav Station & remote at helm. Portable Uniden VHF at Nav station plugged into 12v outlet for charging
- **Through-hull Valves/Fittings:** A schematic showing through hull locations is in the Charter Guest Reference Manual aboard.

## Anchors and Windlass

### Highlights

- Delta 70# primary with 225' chain, chain has one yellow poly line interwoven at each 25' and a combination yellow and red line at 100' and 200'
- Windlass breaker is located under the nav table. Breakers is on by default.
- Snub the anchor when fully retracted using carabiner on white/blue line to anchor ring
- Bridle should always be attached to chain when anchor is down using Mantus M2 chain hook. **MAKE SURE ANCHOR IS RIDING ON BRIDLE by slacking extra chain from anchor windlass**
- Chain can build into a tall pile under the windlass, interfering with it's operation. If necessary use the boat hook to knock down if needed.
- The corded remote for the anchor windlass should remain attached in the starboard anchor locker.
- If manual release is needed the windlass clutch release/tighten winch handle is located in a winch pocket inside the starboard anchor locker.
- **Danforth secondary** with 40' chain and 200' nylon rode under rear cockpit deck grating in black bins
- **600' blue polypropylene stern tie line** on spool under rear cockpit deck grating.

### To Deploy Anchor:

- 1) We check tide tables to determine current water level and amount of drop and rise while anchored.
- 2) Weather (ch 4 or 7, "Northern Inland Waters") helps select an anchorage avoiding lee shore.
- 3) Normal for the San Juan Islands is a 4 to 1 scope, bow to bottom (add 7 feet to depth sounder reading: 6' freeboard and 1' for transducer below waterline, add projected tide variation during planned stay). For example, if depth sounder reads 24 ft. + 7 ft. (to bow roller) + 4 ft. (tide rise) = 35 ft X 4 = 140 ft. of chain to deploy.
- 4) With one fluid motion we lower to approximately the number of feet on the depth sounder, so the anchor is near the bottom by depressing the down switch.
- 5) A signal to the helmsperson prompts reverse at idle speed while deploying rode to the desired scope.
- 6) Bring the boat to a stop and attach the bridle. Then let out chain until the bridle lines are taught and there are a few feet of chain hanging down from the chain hike to the anchor roller.
- 7) Then go back into reverse, both engines at idle, to set the anchor. Best to stay in reverse until the anchor chain comes up taught 2-3 times. Line up objects on shore or look at SOG on instruments to determine while in reverse at idle to be sure the boat is not moving. Once set, turn off engines.
- 8) Turn on the anchor light.
- 9) In windy conditions (25 kts or above), you can increase scope.
- 10) The secondary anchor is available for additional holding power if a storm is anticipated, but best if set before the storm hits.
- 11) If anchored in a small cove, you may wish to deploy a line ashore. 600' blue floating polypropylene on a reel resides under the rear cockpit deck. Deploy the line with the dinghy while the spool unwinds. If sufficient length, bring the line around a secure shore object and back to the boat to a transom cleat for ease of retrieval. The line should be tied to one or both stern outboard cleats on the corners of the boat. Do not rely on the reel to hold the boat.

To retrieve the anchor:

- 1) Start at least one engine, given that the windlass draws significant power.
- 2) Motor forward to create slack in bridle. Depress “up” switch on the remote, carefully bring the bridle clip up and over the bow roller making sure to detach it before it reaches the windlass. Fasten each end of the bridle to the white plastic cleats on each side of the windlass, making sure to keep the lines out of the way of the anchor, windlass, and clear of the water under the bows.
- 3) Have the helmsperson motor forward while retrieving the chain - assuring the chain is vertical during retrieval—this avoids pulling the boat with the windlass. In a breeze, we engage forward gear as needed, but exercise care that we don't overstand and drag the chain forward.
- 4) Keep track of the amount of chain you are pulling in. As you reach the point where you are directly above the anchor, the windlass may struggle to pull the anchor out of the mud. Rather than trying to pull with the windlass (which may trip the breaker), ease the boat forward past the anchor, and let the boat pull it out of the mud. Once out of the mud, the load on the windlass will ease, and the anchor should come up without tripping the breaker.
- 5) The anchor will default to facing with plow to stern, in rare cases it may need to be swiveled to achieve this. We use the windlass to bring the anchor shank up and over the bow roller in one continuous motion, then snub the anchor with the carabiner through the anchor ring.
- 6) DO NOT jam the anchor all the way with the windlass, after attaching the carabiner, you can **release the tension on the windlass** by letting out 1-2 inches of chain so the snubber holds the weight.
- 7) Reminder: put the windlass remote back in the holder *before* closing the anchor locker lid.

Rafting:

**Do not raft with other boats.** The anchor is sized to hold well for our boat but should not be assumed to hold the added load of rafted boats. Similarly, and perhaps most importantly, do not rely on the anchors of other boats to hold. Finally, external pressure applied to the large windows in the hulls may damage them, which may occur when rafting against the fenders of other boats.

## Barbecue/Plancha/Grill

Instructions:

- There is a plancha (flat plate griddle) built into the starboard aft lazarette.
- While grilling, both the fiberglass hatch and the stainless plancha lid must be left open.
- The plancha shares propane with the interior stove and oven and requires the propane solenoid to be turned on (under the galley sink, above the trash drawer). Turn off the propane solenoid when done grilling.
- There is a dedicated valve in the propane locker (port aft lazarette) for the plancha. When not using the plancha, close the valve.
- To light the plancha, turn the gas knob and hold down. Then press the red automatic lighter. **Continue holding the gas knob down for 10 seconds after the plancha is lit so the thermocouple can heat up.** You can then adjust the knob to the desired heat setting.
- Please clean the plancha when finished cooking using paper towels and a Scotch brite pad. **DO NOT SCRAPE WITH METAL UTENSILS AS THIS WILL SCORE THE ENAMEL.** The drip tray is removable for easy cleaning.

## Berths and Bedding

The 4 staterooms have similarly sized queen beds. The forward berths are slightly narrower at the head. The staterooms have springs mounted under the mattress for additional comfort.

The port midship cabin has a set of bunk beds. A ladder is provided to access the upper bunk. An additional TV bracket is provided in the bunk cabin, slide the TV into the bracket from the top and use the 120v outlet by the window.

Each berth has an alternative down duvet and cotton blankets. SJS provides a sheet and pillow cases for each berth. Berth measurements are shown in the Specifications section above.

## Bilge Pumps

### Highlights

- Emergency Manual Pumps: Located on the inboard side of the starboard and port hulls just above the transom steps. Handles are built into the pump, pull from the bottom and move in and out.
- Electric Bilge Pumps: Located in each hull, mid floor forward of the aft bunks. Plus, one in each engine room forward of the engines. Normally automatically controlled by float switches or can be manually turned on by pressing the rocker switch on the DC panel at the Nav Station. Leave the bilge pump 3-way switches in the "auto" setting.

## Cockpit and Helm Enclosure

### Highlights

- Névé has a full enclosure for the helm made of canvas/window zip/snap-on panels. These should be left attached. Several of the panels are on tracks and can be slid open and closed. For warmer days, you can roll up the panels as necessary, but please roll down at night so the fabric and plastic can rest.

### Details

- The mylar entries to the helm station and the upper deck should either be rolled up and secured with the straps at the top of each panel or slid open when underway to allow easy access to the side and upper deck. Please roll up mylar windows carefully to avoid creasing. Loosen the straps at the top of each panel to hold the rolled windows before snapping them in, then tighten to secure. Roll down the panels at night to prevent creasing.

## Garage Door (Back wall of salon)

- The back wall (Bali garage door) of the salon tilts out and up to create a very large open air salon.
- To open the garage door follow this procedure:

1. Unlatch both lower corners of the wall. RED LATCHES	2. Double check to make sure the upper corners are unlatched – they should stay this way as they are not used.	3. On the rear deck, open the RED LATCH on the ceiling with the handle facing downward.
		

4. Lastly, close the sliding glass door in the garage door with you inside. Turn on the “Hinged Door” switch on the DC Panel at the Nav Station. Then use the rocker switch on the upper aft wall of the refrigerator (above the TV) to power the hydraulic rams that open the garage door. Raise the door in one smooth motion, until the door is flush to the ceiling. Stop once the door is flush, otherwise the hydraulic rams can become damaged. Once the garage door is up, use the RED locking latch out on the rear deck ceiling to secure it.

5. Turn off the “hinged door” switch on the DC panel at the Nav Station.

**NOTE:** The door may occasionally jam as it first begins to pivot, in this case, STOP OPERATING THE SWITCH as the hydraulic rams will not be able to unjam the door. Gently lift up on the top edge of the door, which will unjam the rolling casters in the track. Then operate the switch, lifting the door the rest of the way.

- You can sail/motor with the door in the raised position during fair weather.
- The side windows can also be slid forward to completely open up the salon. There are two window sections on each side.
- To close the garage door, go in reverse order.
  - Release the RED LATCH on the ceiling of the rear deck
  - Turn on the power to the “hinged door” on the DC panel at the Nav Station.
  - Operate the switch above the TV to lower the door in one smooth motion until it is flush with the floor and ceiling.
  - Turn off the power to the “hinged door” on the DC panel
  - Close both RED LATCHES near the floor on both sides of the door

## Dinghy/Outboard/Davit

### Highlights

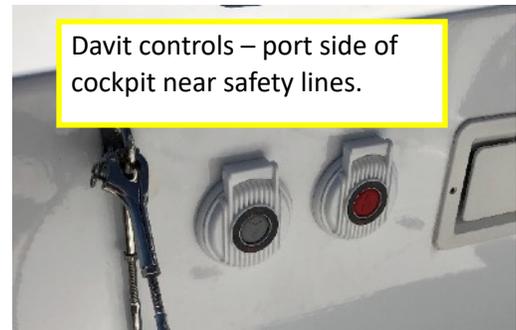
- 11.5' West Marine dinghy with a double fiberglass floor. Includes a 9.9 Mercury outboard. Electric davit operated from port-side aft controls.
- Do not tow the dinghy, raise on davits when underway and at night.

### Details

The davit system will raise the dinghy high out of the water and is easily raised and lowered using the electric winch controls.

### To lower the dinghy:

- Press the down button on the port side of the cockpit to lower the davit. Grey button
- Once the dinghy is in the water lower the davit about 6 more inches, this creates some slack in the lines that allows the dinghy to be pulled closer to the stern for boarding.
- Tie off the dinghy painter and unclip the carabiners.



### To raise the dinghy:

- If raised, lower the davit so that the carabiners can be reattached. Be sure the bow of the dinghy is pointed to the port side of Névé. The lines are two different lengths to allow the rear of the dinghy to drain.
- Raise the throttle lever on the outboard and rotate to port side so the davit line doesn't snag on the engine controls.



- Press the up button on the controls (port side of cockpit) until the blue threads on the lift line approach the winch drum near the ceiling (see picture to right).
- This position should allow the dinghy to rest against the davit arms. It may need to be lifted manually a few inches to clear the transom and rest in the “crook” of the davit arms like in the 1st image above.

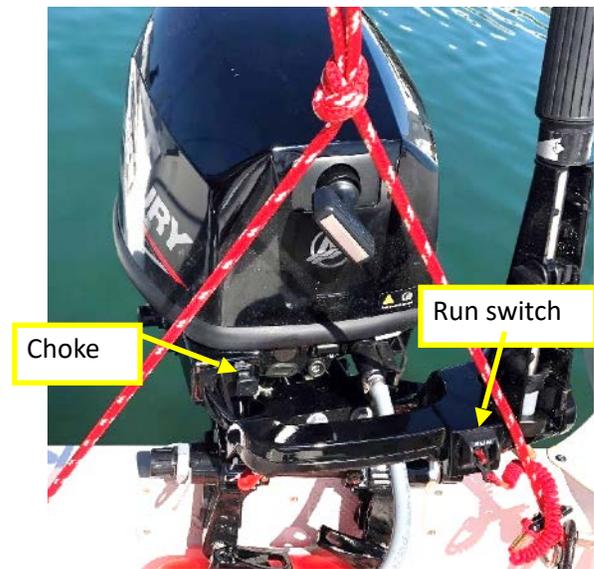
### **We have learned these precautions, please:**

- The davit will go up further but doing so will tilt the engine enough to get oil in the cylinders. This is why a stopping point is marked with blue tread.
- **Never leave the davits partially raised with the dinghy freely swinging.** Waves or wakes will cause the dinghy to swing, possibly damaging the davit system, and dragging the outboard in the water.
- **Never tow the dinghy or leave it down overnight.** Always raise the dinghy on the davits. If towed or left down it could flip and swamp, costing you an outboard.
- The 9.9 hp outboard is 4-stroke and takes regular gas. DO NOT ADD 2-cycle OIL TO GAS
- **The dinghy engine is heavy.** When beaching, raise the engine before approaching the shore and use the oars for the final approach to the beach.

### **Starting the Dinghy:**

Connect the engine shut-off cord to your wrist and snap the clip under the red kill switch. Open the air intake valve on the top of the gas tank and pump the bulb on the fuel line several times. The dinghy motor has a choke, pull it out (see picture). Turn the Run switch UP and set the throttle to the Start position. Pull the starter cord out slowly until you feel resistance, then give a strong pull straight out. When cold it may take several pulls to get the engine to start.

To shut off the outboard, hold the red button at the end of the throttle lever, or toggle off the Run switch. Close the air intake valve on top of the gas tank.



### **Beaching the Dinghy:**

The dinghy motor is heavy, making it difficult to take the dinghy up the beach. Use the black dinghy anchor and bungee to keep the dinghy offshore while exploring the beach.

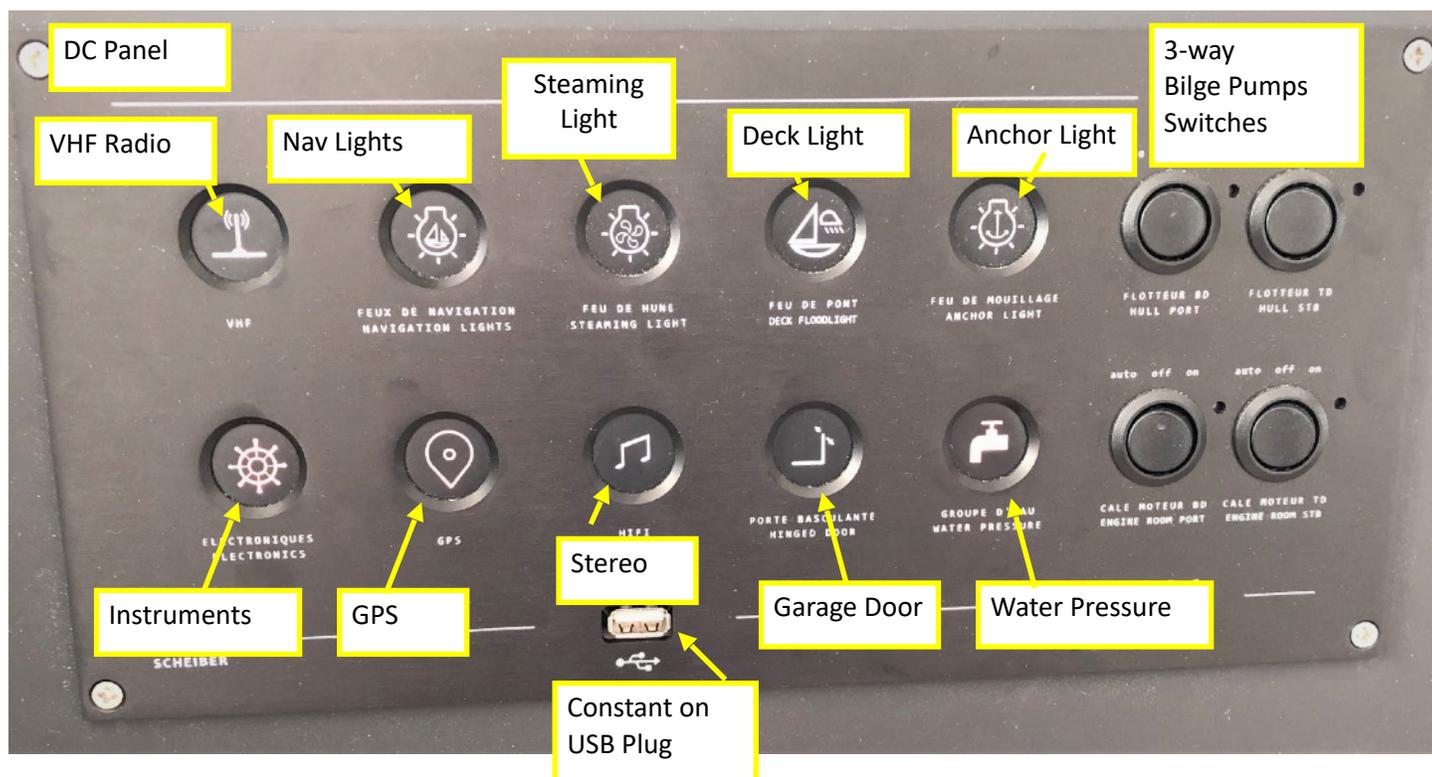
- Raise the motor and row the dinghy to shore as it can be challenging to raise the motor while surfing into the beach.
- There is a 50' white/gold mooring line with carabiner that can be used for mooring or attached to the transom and tied to shore.
- Secure the bungee on the mushroom anchor to the tow eye on the bow of the dinghy, you may use the forward davit ring if you have difficulty reaching the tow eye.
- Row the dinghy out into deeper water and drop the anchor.
- Return to shore stretching the bungee as you go.
- Pay out the white/gold mooring line letting the bungee pull the dinghy out into deeper water.
- Double check that the white/gold mooring line is securely attached to shore.

## Electrical

### AC/DC Panels

#### Highlights

- The DC Panel is located on the right side of the nav station.
- There are constant-on USB plugs in all of the cabins, and several more at the nav station for charging phone, etc. NOTE: the USB that is part of the audio inputs will supply power only when the “HIFI” is turned on.
- There is no AC panel, most items using AC are constantly powered, either by the inverter, shore power, or generator. There are switches to switch between shore power and the generator, see below.
- There are two 50-amp shore power cords, one for house power and one for the air conditioning.
- AC power can be provided by the inverter or generator.



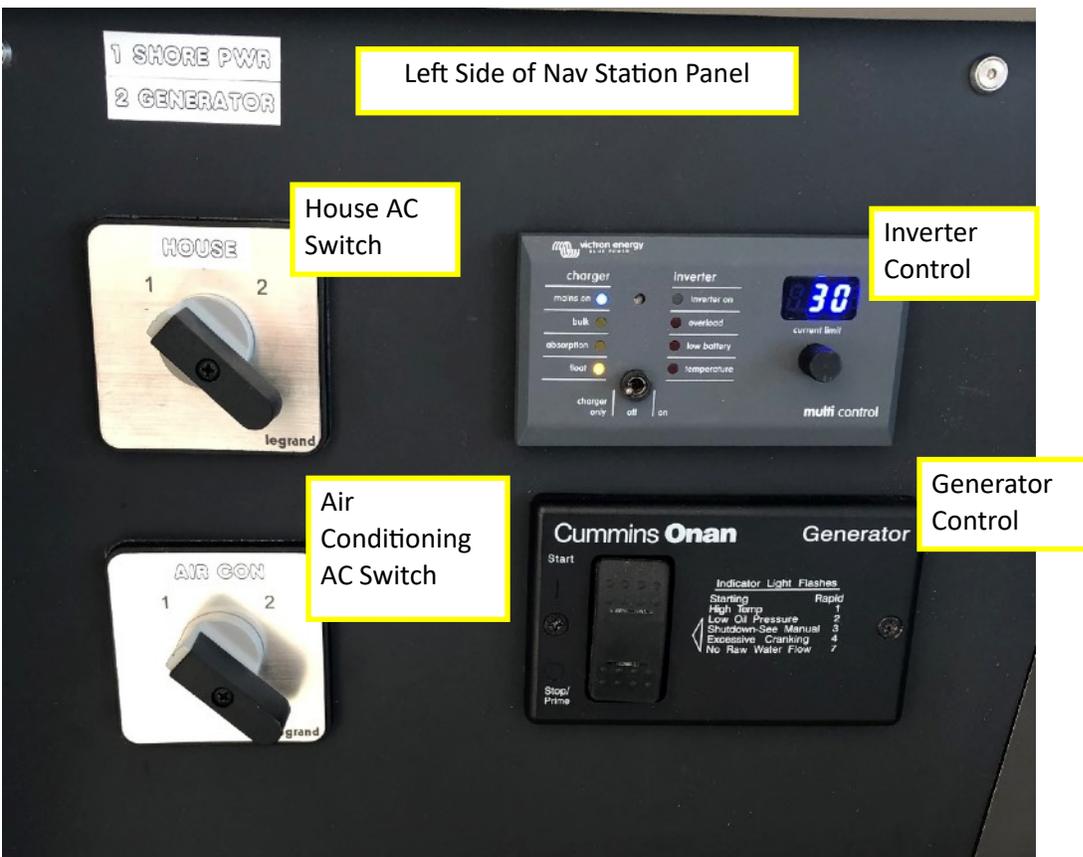
The DC panel is quite straightforward. Please note the bilge pump switches should be in the **Auto** position unless there is a specific need to turn them on, they should never be turned off.

On the 120v AC side the power can be supplied via shore power or by the generator. In addition, most items can be powered by the 120v inverter. Please note the inverter will not power the hot water tank or AirCon.

#### Shore Power

The shore power cords are normally stored in the starboard rear locker and plug in on the inboard port transom. The top plug provides power to the house systems and the bottom one powers the air conditioning. Before plugging in please be sure the breaker on the dock is off and the switches at the nav station are off (see below). On these switches, the middle position (directly pointed up between 1 and 2) is the off position.





## Generator

The generator is capable of powering the whole boat, including the air conditioning. Here is the procedure for starting it:

- Be sure both AC rotary selector switches are in the off position (pointed straight up)
- Press the bottom portion of the rocker switch on the generator control and hold until the orange light begins to flash rapidly. This primes the fuel pump and heats the glow plugs.
- Next, press the top portion of the rocker switch until the unit starts. It can take 20-30 seconds to start. If the unit doesn't start after more than a minute, stop and wait 30 seconds, before priming and starting again.
- Once started, turn the desired House or AirCon AC rotary switch to the "2" position.

To shut down, reverse the above. Turn both rotary switches to center (off) and turn off generator by pressing the bottom of the rocker switch.

## Inverter

The inverter is a Victron MultiPlus II 2000-watt unit. Not big enough to power everything at once, but certainly large enough to power one of these at a time: coffee machine, toaster, microwave, blender or several laptop chargers. This same unit also acts as the battery charger. The inverter can draw down the batteries quickly, so be judicious with what you plug into the AC outlets. Use the USB outlets to charge phones instead of using AC to USB adapters.

Do not set the inverter switch to the "Off" position, the batteries will not charge when on shore power.

NOTE: there is a second 230v inverter for the refrigerator and oven - as these are both European appliances. This inverter is always on. The refrigerator will draw down the batteries significantly on a cloudy day.

## Solar (NEW FOR 2023!)

1300 watts of solar from 3 solar panels (two 408 watt panels on the hardtop bimini and a single 480 watt panel on the salon roof)

Each panel has a dedicated MPPT solar charge controller to optimize charge output and minimize the effect of shading.

A Victron 1000 amp shunt monitors the input from the Photovoltaic panels, shore power, and generator into the batteries, as well as draw from the inverter and DC loads (including 230v inverter).

The entire system is monitored by a Victron Cerbo GX - the display is located at the nav station.



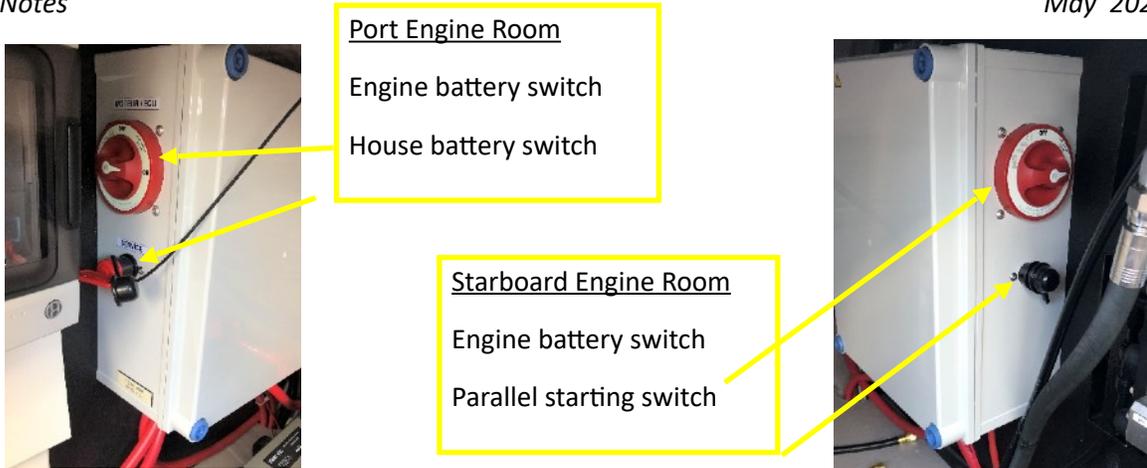
## Batteries

### Highlights

- Battery switch panels are located in the engine compartments.
  - Port side – house (domestic) batteries. Note the port engine starts using the house batteries.
  - Starboard side – starboard engine start battery, parallel (emergency start) switch.
- No need to touch the battery switches. All automatically charged with combiner.
- 6x 130Ah GEL House batteries – have just under 400 usable amp hours (Ah) which should last 2 days of moderate use on a cloudy day. With solar, the batteries only draw down 20-30% overnight and offer 13+ volts consistently throughout the day.

### Details

We check both Ah used and the voltmeter before retiring for the night, then check both again on engine startup next day to assure we are charging properly. The system automatically charges the house bank so you can just leave the switches alone, except to combine for emergency engine start. For reference only, battery switches are in both engine compartments. The domestic/house and both engine switches should always be on.



The parallel switch on the starboard engine compartment panel is the emergency crossover should you ever need it. Again, it should normally remain in the vertical/off (facing down) position.

**House Bank**

The batteries can be charged by:

- Running the engines - dual alternators on both engines (4 total) will charge at 480amps !!!
- Shore power – see **Charging** section on next page for detailed steps for connecting to shore power and ensuring the batteries are charging.
- Generator – will provide power to battery charger, but only up to 80 amps (same as shore power).
- Solar - 1300 watts of solar provides upwards of 80 amps of charging in ideal conditions

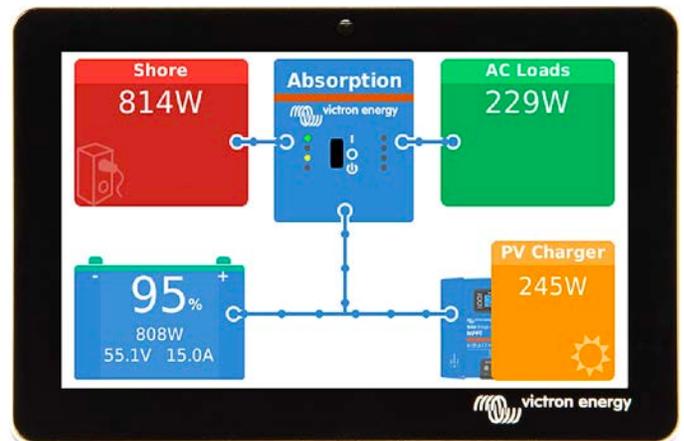
**House Battery Monitoring:**

Battery levels can be viewed on the monitor located on the upper right of the nav station, including individual battery voltage, temperature, and state of charge. If you notice the batteries are not balanced, one has 10% or more deviation from the rest, please let us know.

This same display can be used to monitor fuel, water, and holding tank levels.



The Victron Cerbo GX display also shows battery voltage, capacity and an estimated draw down time, as well as which systems are contributing power and using power.



## **Charging**

### **Highlights**

- The house and engine start batteries are charged when AC power is provided by shore power or the generator, or when the engines are running at cruise RPMs.

### **Details**

When AC power (shore or generator) is available the battery charger will charge the batteries, but it needs to be turned on. Be sure the switch on the inverter control is flipped to the left (Charge Only position). It will also charge in the On position, but this is a bad idea since the inverter will come on if shore power is lost and the batteries will discharge fully in 2 cloudy days.

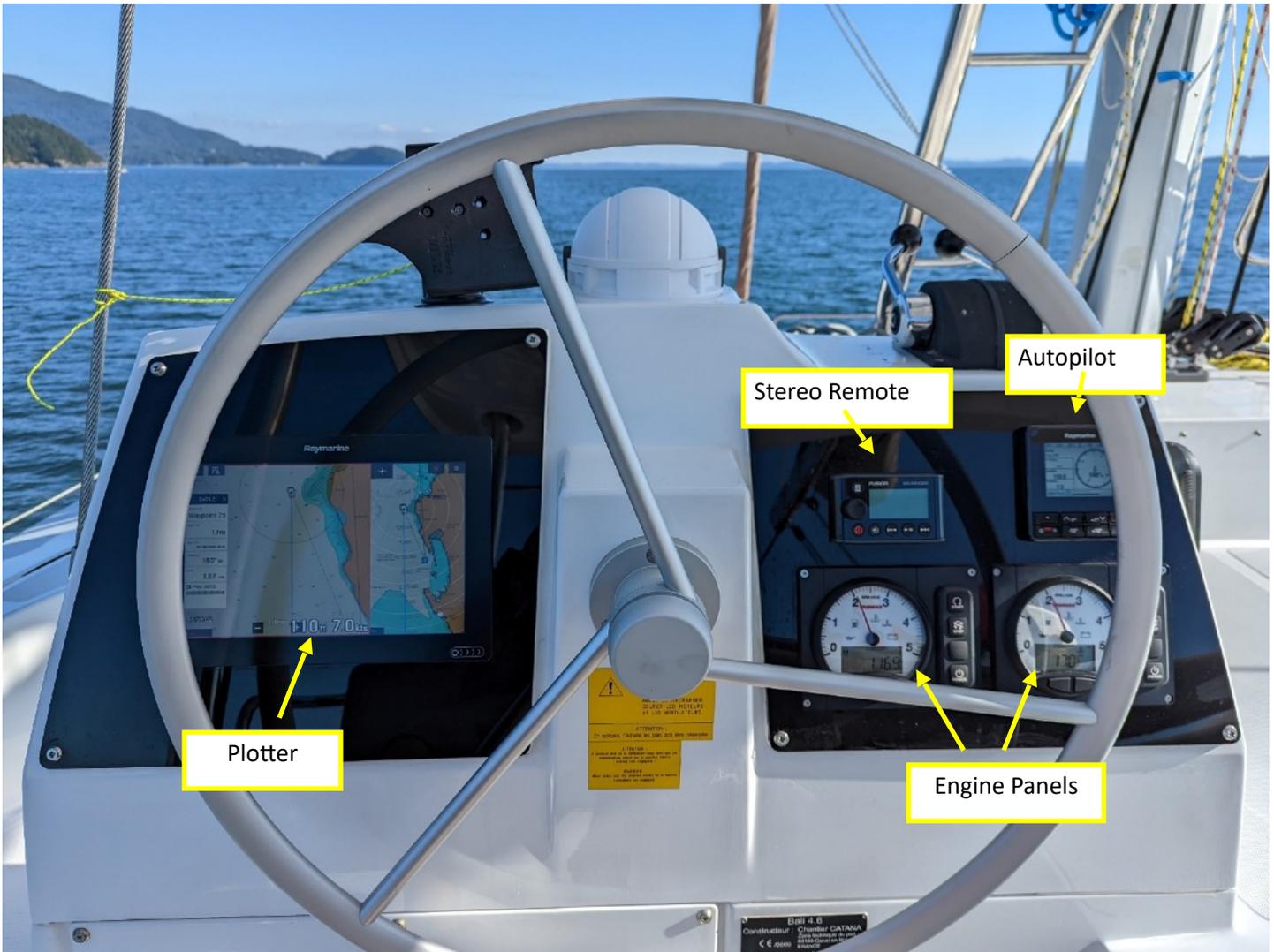


## **USB Device Charging**

### **Highlights**

- Each cabin has a single 5v charging port with two USB plugs.
- Nav Table DC panel has a constant on USB charging port
- The audio input panel at the Nav station will charge, but the HiFi (Fusion audio) has to be turned on.
- There is 1 additional dual USB plug and 2x 12volt plugs under the battery/tank monitoring panel at the nav station. Either of the 12v plugs can be converted to dual USB charger using the supplied adapter.

## Electronics/Instruments



### Chart Plotter:

There are two plotters onboard, a 7" Raymarine Axion at the nav station and a larger 12" model at the flybridge helm. It is important to turn on the Instrument, GPS, and VHF switches on the DC Panel (nav station) to make sure all the sensors (windex, depth sounder, AIS, etc) are on and synced.

### **Commonly Used Chart Plotter Selections:**

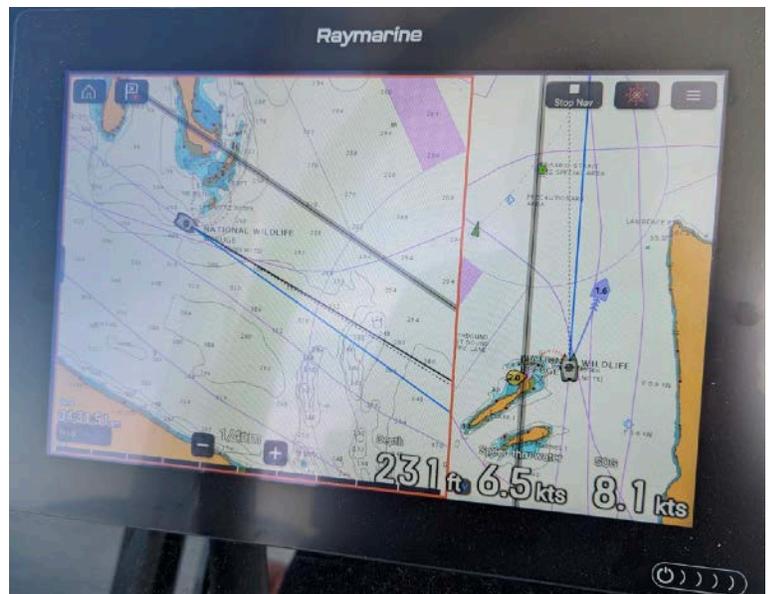
#### **Finding the Navigational Chart and/or Radar:**

- Touch the HOME icon (upper left corner)
- Touch MAIN VIEW, CHART/Dashboard, CHART, or RADAR or CHART/RADAR split screen.

#### **Zooming in and out:**

- With the CHART screen open, touch the +/- icons on the lower, middle of the screen, or pinch to zoom.

**Returning the screen to the vessel's current location: ie.**



Stop Panning or Clear Cursor.

- With the CHART screen open, touch the boat/cursor icon on the top row of the screen.

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

- With the CHART screen open, touch the MENU icon on the upper, right corner of screen.
- From the dialog box, touch the Waypoints, Routes & Tracks option.
- Select item to delete and touch the DELETE icon in the lower right corner.

**Chart Orientation:** subject to your preference, we recommend Heading Up.

- With the CHART screen open, touch the MENU icon on the upper, right corner of screen.
- Touch the SETTINGS/TOOLS icon at the bottom of the list.
- Touch VIEW & MOTION (top row, middle).
- Touch CHART ORIENTATION, then touch HEAD UP.

#### **Display Brightness:**

- Lightly press the Power button icon (lower, right corner), then swipe to the right.
- Adjust brightness slider as desired.

**Course over Ground (COG) Vector/Line:** Ensure the COG line is always ON. If not currently on:

- Zoom way in so the vessel symbol can be isolated. Then press on that symbol and hold for a second. Should bring up a sub-screen which will allow choosing which vectors will show. Recommend only the COG vector and have the Infinite box checked.

**Displaying and using a Split Screen:** Ex. Chart zoomed-in on one side and zoomed-out on the other, Chart on one side and Radar on the other.

- Touch the HOME icon (upper left corner).
- Touch MAIN VIEW - split screen.
- Touch CHART/DASHBOARD - split screen when sailing to view wind angles.

#### **Radar:**

- Touch the HOME icon (upper left corner).
- RADAR or CHART/RADAR split screen.

#### **AIS Overlay:**

- Touch the MENU icon (upper right corner) then TARGETS.
- Touch AIS SETTINGS (right side, top).
- Turn on "Show AIS targets in chart."

#### **Targets:**

- Touch the MENU icon (upper right corner) then TARGETS.
- Select desired function from top row.

#### **Radar:**

##### **Highlight**

- 4KW digital radar overlays onto chart display or standalone in Radar view

#### **Details**

The radar may be activated from either chart plotter. We typically use the radar as an overlay on top of chart data. To enter this mode, perform the following:

- Press the menu button (indicated by three horizontal lines), use the wheel to select "Overlay", then choose "Radar".
- To start transmitting, press the menu button, select "Radar Options", then select "Transmit".
- To stop transmitting, press the menu button, select "Radar Options", then select "Standby".

- From “home” you can also choose to show radar only or radar and chart plotter side by side. While we normally leave the unit preset to radar overlay when the radar is activated; sometimes we find it beneficial to show a side-by-side display for greater radar clarity.

We do not cruise at night or in fog. The radar is especially useful should one be *unpredictably* enveloped in fog or heavy rain. If there is fog either visible or in the forecast, we stay at our mooring until it lifts (normally before noon). Safety is paramount.

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

#### **Highlights**

- The AIS radio transmits Névé's 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).
- The chart plotter is tied to the AIS Unit and shows the positions of vessels with AIS as triangles.
- AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.
- AIS requires each vessel to have a 9-digit MMSI (Maritime Mobile Service Identity) number to transmit position and data. Névé's MMSI number is recorded in Section 1 of this document.

#### **Details**

AIS vessels appear on the chart plotter screen as triangles. The triangle points in the direction that the vessel is moving and if you touch the screen over the triangle the system will pop up the name of the vessel. Pressing on the vessel name will give you a menu to find additional information (such as name, size, speed, bearing, etc.) about the vessel. The system also transmits this same type of information about Névé to other vessels with AIS.

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 Névé'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:**

The autopilot may be used to hold heading when motoring or sailing. The autopilot controls are on the smaller MFD panel at top-right of the helm station.

- Press “AUTO” button (at bottom right) to activate Heading Hold.
- Press arrow keys to alter course to port or starboard by 1 deg or 10 deg increments.
- Press “STBY” (bottom left) to regain wheel steerage.

#### **Depth Sounder:**

The depth sounder is calibrated in feet and is set to read from the transducer, which is about a foot below water level. If you assume the reading is from the top of the water, you will have a very modest 1 foot safety margin. Due to rocks, we get nervous in anything less than 30 feet underway and 15 feet in an anchorage.

The depth sounder is powered through the nav instruments switch at the nav station.

Please note that depth sounders sometimes give false readings in deep water. In the San Juans, 400'-600' are common depths in some channels and you may see false readings as the sensitivity on the transducer increases in an effort to give some reading, often from changes in water density, salinity, or underwater debris.

Due to those changes in depth readings (especially in very deep water), we do *not* set depth alarms, but always know our position on the chart.

Please note: You *cannot* rely on the depth sounder to avoid rocks! It is possible to go from 300' to on the rocks in less than 30 seconds under sail in some areas! The answer is simple: we always plan our route on the paper chart and track our position on the chart plotter. Rocks are clearly marked.

### Knotmeter:

You have two speed sources: speed through the water registered by the knotmeter on the small displays, and speed over ground (SOG) (registered by the GPS on the chart plotter, which takes current into account).

### VHF radio:

#### Highlights

- Raymarine base unit VHF radio at the Nav Station. The VHF will power on automatically when power is applied through the DC panel. The button in the middle of the bottom row is the power button.
- Remote mic - located up at the flybridge helm station, right side. To power on remote mic, press and hold center button on top of remote. Please store handheld remote in the nav table when not using for extended periods of time.
- Always monitor Ch 16 - As the nearest vessel to an emergency, you may well be able to save a life or a boat.



#### Details

The Raymarine VHF radio is powered by the VHF switch (upper left on DC panel) at nav station.

**We recommend that you monitor Channel 16 during your cruise.** It is reserved for emergencies and boat-to-boat initial contact. After contact, move to channels 68, 69, 72, 74 or 78. We listen to weather channels 1-10 (whichever gives the best reception, normally 4 in the San Juan Islands) before we sail in the morning

and prior to anchoring for the evening. Listen for the reports identified as “Northern Inland Waters”. **San Juan Sailing monitors channel 80** during office hours (closed Sundays).

To access weather channels, press the large dial and scroll to Weather Mode, press again. To return repeat and choose Watch Mode. Channel #4 or #7 are most often in range in the San Juan Islands. We listen for “Northern Inland Waters”. Pressing “CH/WX” again returns the normal channel.

## Engines

### Highlights

- Yanmar 57hp 4-cylinder diesels, SD60 Saildrives, and 3 bladed feathering propellers, 4 alternators.
- The rear engine compartment hatches access the engines from the top for daily engine “lookover”. This “before engine start” shows us in one quick view any black powder belt wear or loose belt, oil in bilge, eelgrass in strainer, or coolant spillage.
- Avoid excessive idling, generally start right before leaving – getting off the hook or out of the harbor provides sufficient warm-up time of 2-3 minutes.

### Details

Raw water strainer is above water level. No need to open or clean unless the engine overheats but should be visually checked from the outside with a flashlight each morning prior to departure. If it's necessary to clean it out, close the water intake valve located at the front of the sail drive, remove the lid carefully, making sure not to lose the O-ring. The strainer bowl should drain when the cover is removed. When replacing the lid, please avoid over-tightening – hand tight only. **Re-open raw water intake valve on sail drive.**

Oil dipstick access is on the starboard side of the engines. The engines are barely broken in and are not known to use oil; nevertheless, spare oil is located in the rear part of each engine compartment, near the rudder stock.. Mechanics check the oil levels weekly so please do not check unless out on a multi-week charter.

### To Start:

- There are no keys to start the engines, so make sure both engine battery switches are turned on (Port and Starboard engine compartments).
- Check that RED dial on top of each engine (see image below) is set to “RUN”. If accidentally bumped the switch with default to “STOP”.
- Check all around the boat exterior to ensure no lines are in the water.
- Assure throttle/gearshift is in neutral.
- Turn on the engine control panel – press the “Power” button at the bottom of the panel – (see photo on right) – with just a tap. Holding it in will cause a turn on followed by a turn off.
- Start the engine by pressing the “Start” button at the top of the panel – hold until engine is running – but no more than 5 seconds.



- Walk over to port and then starboard to visually confirm cooling water is coming from the aft end of each hull. Watch for 10 seconds, as residual cooling water may initially come out, but then stop if there is a blockage or raw water intake valve is closed.
- Most engines idle too long, causing carbon buildup. If in a marina, we start the engine just before casting off. Same protocol if hoisting anchor or untying from a buoy—minimal idle. If starting after sailing, we allow one minute at idle, another minute in gear at 1000 before resuming cruising speed.



### Running:

We are careful to pause 1-2 seconds after the “click” into gear before accelerating, to protect the transmission and feathering props. And, of course, **we always pause when changing from forward to reverse, this is CRITICAL TO PROTECT THE FEATHERING PROPS.**

- 1200 rpm is about 4 knots—marina speed
- 1800 rpm is economy cruise, about 6 knots, approx. 0.9 gph per engine
- 2000 rpm is cruising speed, about 7 knots, approx. 1.2 gph per engine
- 2200 rpm is fast cruise, about 8 knots, approx. 1.4 gph per engine
- 2600 rpm is emergency max cruise, for short burst only.

Switch the engine display to “temp” to monitor engine temperature. See how to do that below.

### Owners Tip - running a “single screw” :

- Consider running a single engine at a time (alternating between engines each day to match hours)
- A single engine has plenty of power to cruise at 6-7 knots at 2000-2200 rpm. This results in impressive fuel economy, reduces hours and wear on the engines, and should you hit a deadhead or damage a prop, you have the other engine/drive/prop to use.
- We usually start both engines to leave an anchorage/ marina for maximum maneuverability, then turn off one engine when making passage, restarting the other engine when approaching our destination.



### Shutdown:

- Cool at modest rpm for 2 minutes after running at cruising speed, mainly if shutting down after the wind comes up (not necessary to cool down after entering a marina or anchoring, since the lower rpm will have cooled engine.)
- To turn the engine off, press and hold the “STOP” button on the engine panel until the engine stops. Once the engine has stopped turn off the engine control panel – press the Power button at the bottom of the panel for 2 seconds.

Alarm indicator lights

**Engine Alarms:**

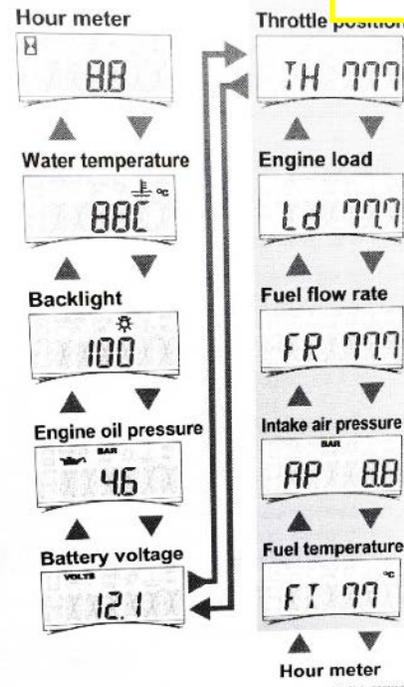
The engine is capable of alarming for multiple reasons:

- Over Temp
- Fuel issues, water in filter, low flow, etc.
- Low oil pressure

If it alarms the respective light will show on the panel.

The two buttons directly below the dial at the bottom of the panels can be used to scroll through the information shown below and to the right.

Normal engine temp is 170-180 degrees. If the alarm sounds, or steam comes out the exhaust, please check the amount of water coming out the exhaust. If it is little or none, the most likely cause is eelgrass plugging the raw water strainer, located at the front of each engine, which you saw on your Daily Engine Look-over. (Note: raw water impellers are replaced annually as part of preventive maintenance.) If the engine overheats with adequate water flow out the exhaust, check the coolant level in the engine. Normally, the coolant level in the overflow plastic container is at the "low" level when the engine is cold. If there is NONE in the overflow container add coolant to the low-level mark, but not before.



**Engine Emergency Stop Button:**

On top of each engine is a red emergency stop button. This button is prone to getting bumped and defaults to "STOP". If an engine won't start and the engine control panels buzzer turns on, please check that this button shown below is set to "RUN".



## Entertainment System

### Highlights:

- The Fusion radio system has the primary stereo at the nav station and a remote control at the flybridge helm.
- Connect through WIFI or Bluetooth to control the volume in each of the 3 zones (Salon, Galley, Flybridge)
- If you choose to download the Fusion Link app the Wi-Fi name is Neve-Fusion-WiFi and the password is QANUK2022.

**Volume control** – Volume for all three zones can be adjusted separately:

- Press the large black volume knob. The three volume zones will show in the display.
- Press the center of the volume knob repeatedly until the volume you want to adjust is highlighted by vertical bars or both are highlighted if you want to adjust both together.

NOTE: the Salon is the “master” volume and has to be at 3-4 level in order for the other zones to operate. If you put the Salon to 0 then regardless of level in the other zones they will not play.

**Mode Selection** – There are four modes; AM Radio, FM Radio, Aux, and BT. Press the Arrow button on the lower left to change modes. Sirius XM is not enabled.

**Bluetooth** – Select the BT mode. Turn on your device's Bluetooth and connect to “NEVE-FUSION-MAIN”.

## Fuel

### Highlights

- The fuel levels can be seen on the tank monitor, right side of nav station. Tapping the tank icon will show the percentage.
- Fuel fills are on top of the cockpit side walls, with a red filler neck.
- Each fuel tank holds 105 gallons (400l). **Details**

**Fueling:** Fill until the *gauge* reads just below full then carefully top off, reducing flow and listening closely for the pitch sound to start rising then stop filling immediately.

We find these guidelines helpful: we don't fill too fast, track how many gallons are in, keep our ear to the fill, and occasionally check the fuel gauge.



## Heads and Holding Tanks

### Highlights

- All four macerating toilets are electric freshwater flushing. There are three holding tanks for these toilets.
- There is a fifth manual toilet, with its own holding tank in the port forepeak which is NOT commissioned and NOT to be used.
- No Y-valves – the toilets flush directly into the holding tanks.
- All the holding tanks are gravity draining.
- Holding tank levels may be checked with the tank monitor at the nav station. Tapping on each tank will show the percentage.

### Details

Rule of the Sea: *The person who clogs the head, unclogs the head.*

Experienced sailor rule: *To avoid the “rule of the sea” above, nothing goes down the toilet that hasn't been digested.* Please place feminine articles *and toilet paper* in the waste basket, plastic bag, or zip lock...makes for a much more pleasant cruise!

The switch pictured on the right is used to 1) add water to the bowl and then to 2) drain without adding additional water. Again, no paper is to be flushed down the head – if it hasn't been through you, don't flush it down the toilet!



### Suggestion:

For solid waste, add a bit of water to the bowl before using, this will reduce the amount of residue that sticks to the bowl. For liquid waste, empty bowl of urine, fill 1/2 with water, empty again, fill 1/2 way with water, then empty again. This will prevent any urine from draining back into the bottom of the bowl and significantly reduce odors.

### Holding Tanks:

The three holding tanks are approximately 20 gallons each. There are no Y valves. The holding tanks are above the water line so can be evacuated by gravity (no macerator pumps). Each tank also has a deck fitting for pumping out at shoreside facilities. Be aware that discharge in deep water is permissible in Canadian waters, but USCG regs prohibit such discharge in US waters.

If the holding tanks are overfilled, effluent will overflow through the vents, which gives foul odors and dirties the hull.

Depending upon the number and type of flushes above, and the number of people aboard, each holding tank may hold two to three day's usage.

## Emptying the Holding Tanks

- 1) Deck Pump-out: The holding tanks can be pumped out via the labeled deck fills, each tank has it own. After pumping out the holding tanks, please refill each tank with 5 gallons of fresh water through the deck fitting to rinse, and then pump-out again. Finally, add in 1-2 gallons of fresh water so the tanks don't dry out. This will help keep the waste system smelling fresh! Thank you!
- 2) The deck fittings are located:
  - a. Aft Port Tank – Top of cockpit port wall, forward of fuel fill.
  - b. Center Port Tank – Midship port side.
  - c. Center Starboard Tank – Midship starboard side.
- 3) Overboard Discharge (**where legal**): The holding tanks are gravity drain, there is no macerator pump. They will normally drain in less than a minute (you may hear them finish with a 'whoosh' if the engine is not running). Open the large, red-handled seacocks located in the following places:
  - a. Aft Port Tank – under stairs to the right.
  - b. Center Port Tank – In floor of bunkroom closest to the window.
  - c. Center Starboard Tank - under floorboard at bottom of stairs from galley, it's a bit of reach.
- 4) Please make sure you close the seacock after the tank empties. If left open, then every time the toilet is flushed it will flow straight overboard!

### Holding Tank Monitors:

There are holding tank monitors for each of the holding tanks. The tank monitor is located on the right side of the nav station panel (see picture to the right). In the picture the bottom four black symbols are the holding tanks. Touching any of the tanks will bring up a more details screen for that tank and give the percent full numerically.



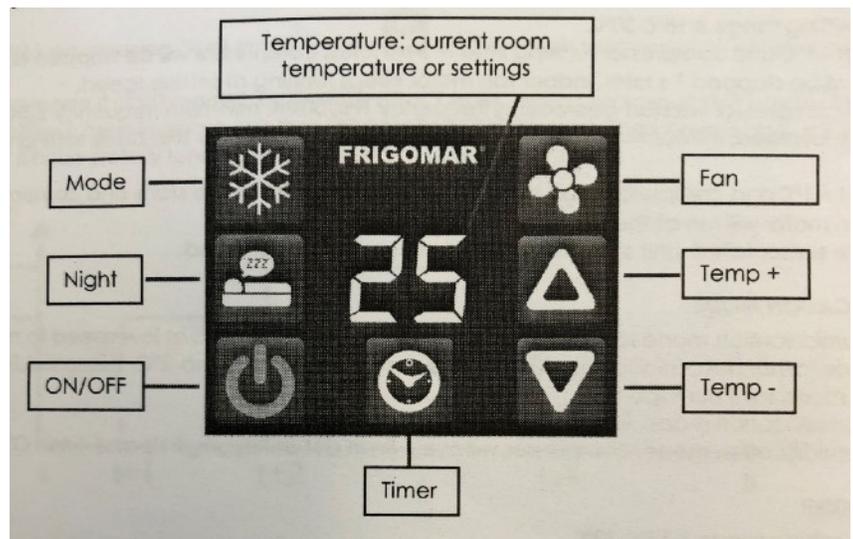
## Climate Control (Air Conditioning and Reverse Cycle Heat)

### Highlights

- There are 6 individual units, one in each cabin, one for the galley and one for the salon. Each is capable of heating or cooling.
- There are 6 individual thermostats.
- This system requires AC power so can be run only when on shore power or when the generator is running.

### Details

- Assuming AC power is available, use the individual thermostats to control the desired unit. See the diagram to the right:
- The unit offers 4 modes: cooling, heating, fan only, dehumidifier.
- When cooling, don't set the AC target temperature below 72F or 22C.



## Lighting

### Highlights

- The lights on Névé are controlled by individual switches - there is NO central ON/OFF breaker.

#### Indoor:

- Most of the lights are controlled by switches mounted on the back wall of the refrigerator wall. The switches are labeled.
- There are secondary switches for the port galley and starboard nav station at the base of the stairs to each hull.
- The small lamps in the galley and nav station are turned on by the small switch at their base.
- Each stateroom has both overhead and indirect under-bed lighting. The main staterooms have a light switch near/behind the door as well as at the head of the bed.
- The white reading lights in the staterooms are turned on at the base of the light with a toggle.
- The heads each have an overhead light.

#### Outdoor:

- Outside "puddle" lights are located on the rear deck near the sugar scoop and on the front deck - the switch for these lights is on the wall to the left of the nav station, right next to the front door.
- Underwater lights - are the large single toggle switch on the aft refrigerator wall, next to the interior lights. NOTE: currently only 3 of the lights are functioning

- Flybridge hardtop lights - the switch for these overhead lights is next to the speaker mounted under the mast

## Refrigeration and Freezer

### Highlights

- There is no breaker to turn off the refrigerator, it runs off the 230v inverter. If for some reason you need to turn it off, you will need to unplug it from the outlet located in the bottom of the cabinet directly aft of the refrigerator in the salon.
- The unit is a large domestic Samsung refrigerator like you would find at home.
- There is a dedicated water filter for the chilled water and ice maker, the filter is located in the cabinet directly aft of the refrigerator in the salon.



## Sails and Rigging

### Highlights

- Full-battened main with Stack Pack, 100% furling jib.
- All lines led to the flybridge helm station.
- 3 single line mainsail reefing points from helm station.
  - Green - 1st reef
  - Blue - 2nd reef
  - Red fleck - 3rd reef
- Apparent wind speed reefing guidelines in Details below.

### Details

#### **Mainsail:**

We have a “stack pack” buckled boom cover and lazy jack system. *No need to adjust the lazy jacks...just undo the sail ties and hoist.*

#### **Raising:**

- a) Untie the Stack Pack webbing holding the cover closed.
- b) Make sure that the clutches on the reef lines are open and feed out a few feet to reduce friction. The lines have a tendency of tangling at the clutches, so have a spotter monitor these as the main is raised.
- c) Turn Névé into the wind.
- d) Release both mainsheets (black lines) and begin hoisting the main halyard using the starboard electric winch. Watch to make sure the battens clear the lazy jacks, then raise the rest of the way. **BE VERY CAUTIOUS OF THE ELECTRIC WINCH, AS IT IS VERY POWERFUL AND WILL TEAR THE SAIL**
- e) Keep an eye on the end of the battens while hoisting to ensure they don't get caught in the lazy jacks.
- f) When the head nears the mast head you will hear the winch motor strain. Carefully tighten the halyard from this point until the luff is tensioned.
- g) Close the main halyard clutch.
- h) **If the winch motor strains unexpectedly, stop and check that the reef lines are not preventing the sail from deploying.**

#### **Reefing:**

The mainsail on Névé has three reefs. All reefs are single-line pre-rigged jiffy reefs led to the helm station.

Apparent Wind Speed Reefing Guideline: Note that it is imperative to not exceed the following guideline as having too much sail area in strong winds could result in damage to the sails and/or rigging or a catastrophic capsize, catamarans don't get “knocked down” to release sail pressure- they flip over. When the apparent wind is gusting to these levels please reef to the appropriate point:

- 20kts apparent – Reef #1 (Green line)
- 25kts apparent – Reef #2 (Blue line)
- 30kts apparent – Reef #3 (Red flecked line)

Remember - REEF EARLY, REEF OFTEN

**Reefing Procedure:**

- a) With the mainsheets eased and close hauled if under sail (or head to wind if under power) ease the halyard until the reef #1 grommet at the luff is next to the friction ring at the mast, then cleat off the halyard.
- b) While the main is lowering, pull in the slack on the desired Reef line.
- c) After the halyard is cleated, put the desired reef line on a winch and tighten just enough to remove slack from the luff and foot. Close the clutch and take the reef line off the winch.
- d) Put main halyard on the winch and raise to appropriate tightness.

**Jib:**

The jib is self-tacking but occasionally develops a twist between the traveler and sail block. This should be untwisted periodically, otherwise the sheets wear unnecessarily.

The jib furling line is flecked green and led along the port deck stanchions. It is not recommended to reef the jib. It should be either completely furled or if conditions allow, completely unfurled.

To furl, lead the jib furling line up to the flybridge port winch, steadily furling while keeping easing the jib sheet.

**Showers and Sumps****Highlights**

- Dedicated shower stall in each starboard head
- Wet bath/shower in port aft cabin
- Dedicated shower in port mid-ship head
- Separate shower in the port forepeak (crews quarters) — **DO NOT USE**
- Starboard freshwater transom shower (Hot and cold)

**Details**

- NOTE: there are NO sump or float switches in shower stalls. The water drains into the same accumulator basin as the sinks, which then drains automatically.
- **CAUTION: Water can be scalding hot.** Be very careful to adjust temperature appropriately. For best results, use half pressure and avoid a scalding/freezing cyclical shower. PLEASE ASSIST CHILDREN!
- The hot water tank is in the starboard hull under the aft berth. For an easier and more comfortable shower in the port hull, run the water in the sink in the port head until hot, then turn on the shower. It takes some time for hot water to get all the way to the other side of the boat.

**Transom Shower:**

The transom shower is in the two round plastic covers on the starboard hull above the transom steps. The shower features both hot and cold water. To operate, pull the shower hose out of the compartment and operate the knob in the other compartment. Push the knob aft to pressurize the hose. Turn the knob left or right to adjust temperature. Depress the shower head trigger for spray.

When done with the shower push the knob forward to depressurize the hose, release the remaining hose pressure by triggering the nozzle, and return the hose to the compartment.

**Spares and Tools**

Tools and common spares are located in a clear bin and black bag behind the stbd salon couch back, aft section. Long term and engine spares are located in the aft section of each engine compartment.

## Stove/Oven, Coffeemaker

### Highlights

- The stove/oven are propane-fired. The oven is very effective at heating the galley and salon from baking.
- The propane solenoid switch is located in the garbage/recycling drawer under the sink (see picture below).
- There are two 4.5 gallon aluminum propane tanks in the port stern locker. The locker is vented overboard for safety. (You may notice a propane smell in the propane locker itself as the fiberglass absorbs the odor of propane as we disconnect tanks to fill them.)
- The San Juan Sailing staff checks these tanks weekly to assure that you don't run out.
- For safety, turn off the solenoid switch after you are done using the stove, plancha, or oven.
- Caution: propane is heavier than air. If leak is detected, extinguish all flames and open all hatches and doors.



### Details

#### Lighting a Stove Burner:

- Make sure the propane tank hand valve is open and the solenoid valve switch is on.
- Depress the striker button while pushing the burner temperature knob to the "light" (flame symbol) position. If striker doesn't work, check black burner covers to make sure they are properly seated. If they are and burner still won't light, try using a BBQ lighter instead of the striker button.
- After the burner lights, hold the knob in for a few seconds to heat the safety "thermocouple", then release.
- Turn the knob to the desired heat level.
- If needed, two sets of stove potholder arms can be mounted to the rails surrounding the cooktop.

#### Lighting the Oven:

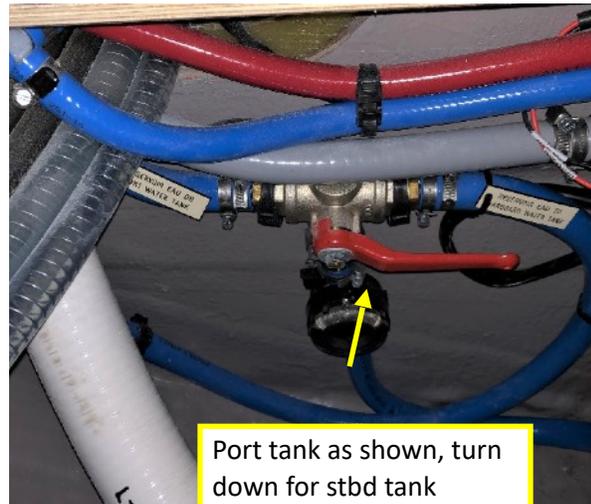
- Make sure the propane tank hand valve is open and the solenoid valve switch is on.
- Open the oven door.
- Push the oven temperature knob (leftmost) in and turn counterclockwise to "130C MIN" symbol. The oven striker should automatically ignite.
- The oven is also equipped with a broiler, to turn on the top mounted broiler, turn the temperature knob clockwise to the "broiler" symbol.
- After the burner lights, hold the knob in for a few seconds to heat the safety "thermocouple", then release.
- Turn the knob to the desired heat level.
- To turn on the oven light, use the center knob. There is a rotisserie's function on the oven, but the tray and rod are not on the boat.



## Water

### Highlights

- 227 gallons in 2 separate tanks.
- Valve to switch tanks is in the outboard floor compartment of the bunkroom (see picture).
- Water pump switch is on the DC control panel.
- Deck fills are located on both sides on the main deck, about mid-ship, color coded blue. Be careful, they are close to the waste tank fittings.
- Hot water is produced by three methods, AC Shore power, AC Generator, or the starboard engine when running at cruising speed.



### Details

#### Water Pump Breaker:

The water pump switch is on the DC control panel. Please turn off the switch when the system is not being used (note: the water pressure needs to be on for the toilets to flush). **If a water tank runs dry the pump will run continuously and burn out.** You will likely not hear the pump running over the sounds of motoring or sailing. Switch water tanks when one reaches 5%.

**Note:** The water system has an accumulator that will store a small amount of pressurized water, even after the pump is turned off.



#### Water Level Gauge:

The water tank level gauge is located on the right side of the nav station. Touching the symbol of a tank will bring up a more detailed view and show the percent full.

#### Hot Water Heater:

The hot water heater holds 15 gallons and is located under the starboard aft cabin berth.

- It takes about 20 minutes of running the starboard engine under load to get the water hot. The water is done heating when the starboard engine coolant reaches 172 degrees. **CAUTION: Engine heated water may be scalding hot. Please BE CAREFUL!**
- When on shore power or when the generator is running the hot water tank will use 1200 watts to heat the water. Please note the tank is smaller than a home tank and does not heat water as fast.

**Water Availability**

During the spring all marinas will have water. But during the summer some of the island-based marina either limit water use (i.e. no boat washing) or do not have water at all. Therefore, we suggest being conservative with your usage.

**NEVER FILL FRESH WATER TANK AT A PUMP OUT DOCK.**

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