Fresh Aire Owner's Notes
Welcome Aboard!

We're thrilled that we can offer up Fresh Aire for your adventure. She's an awesome boat!

We chartered boats with San Juan Sailing for seven years to see which one we liked and would want to own and sail. As soon as we sailed Wind Song, the 2015 Bavaria 41 in the fleet, we were in love and knew the Bavaria 41 was our boat of choice.

Why?

Because she is fast, she is simple to sail, yet elegant enough that serious sailors can challenge themselves. She is sturdy and strong, pushing through 20 knot winds and 6-8 foot swells on a few occasions. And finally, she has a simplistic, yet open interior. Everything we wanted in a boat.

We have worked diligently to prepare Fresh Aire for charter and hope she meets your needs. We already have ideas for improvements and would love to know any suggestions, issues, or questions you may have.

We hope you enjoy your sail with Fresh Aire!

-Rich and Roberta

RR Sail, LLC

Contents

1. Nuances

Some things we love about Fresh Aire and some things we don't:

1. Please lock ALL hatches before sailing. The lines catch on the hatches and rip them off. Each overhead hatch costs over $3000 to purchase and install. not to mention the time to fix and inconvenience to the next guests. So if you don't want to forgo this year's large purchase, make all hatches WATERTIGHT before sailing.
2. The addition of larger batteries and the upgraded solar, should make days of gunkholing fun with wise electrical management.
3. Boat hook in the bimini is within easy reach for quick access, but some folks may find it difficult to release and attach to the clasps.
4. Because of the davit we can keep the motor on the dinghy, so you don't have to mount and dismount it. Keeping the dinghy out of the water during transit also saves about ½ knot in boat speed.
5. The Webasco heater has a dosing pump under the starboard berth. The pump ticks as the heater warms.
6. Having to go out on deck to change the Main furling between free-wheeling and ratchet is one of our least favorite activities. Set to Ratchet only for reefing in rough weather. Otherwise, leave set as Free.
7. Fresh Aire, like many boats, has sensor issues. The forward water tank always flashes 0% even when full. Please fill the tanks before leaving and do not trust previous guests or cleaning crew to have topped off the tanks. Because Fresh Aire likes to plow through the water, we fill both tanks to the top, but pull from the aft tank first. It's time to look for water when you switch to the forward water tank.

2. Vessel Information

U.S. Customs Re-Entry Decal – Located at the starboard helm behind the wheel.

Vessel Official Number - **1276629** (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). Fresh Aire's number is located in the bilge, next to the salon head door, on a stringer. Look for 3" high characters.

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

Specifications

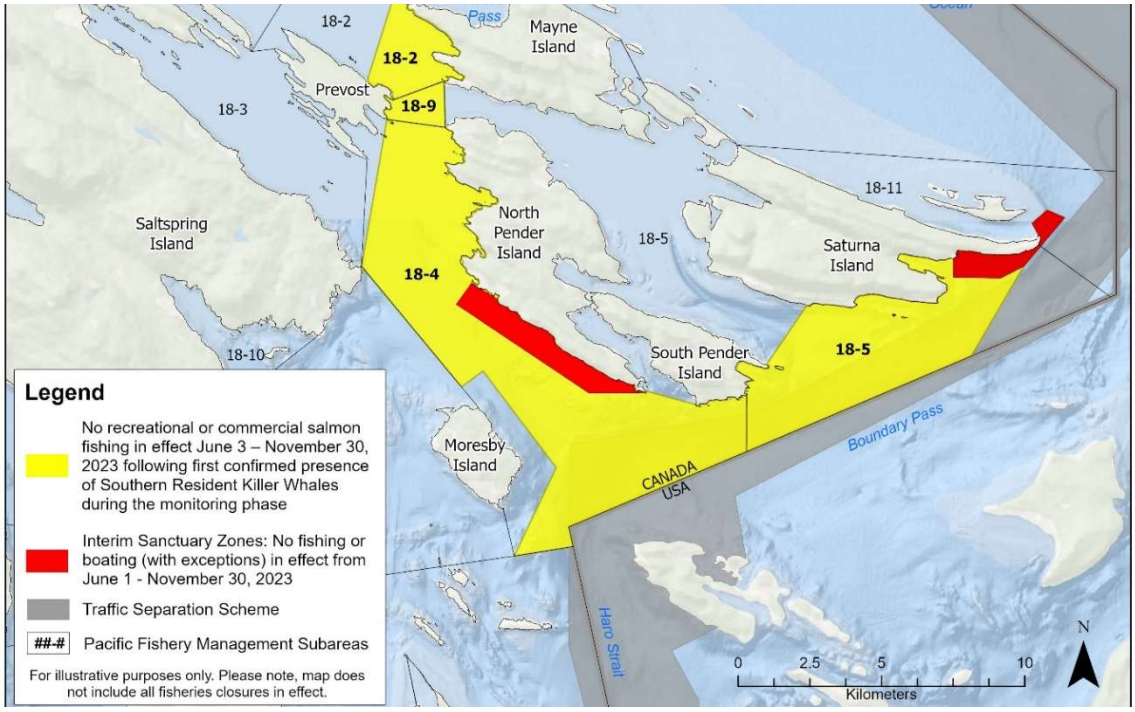
Year: 2016	**Engine**: Volvo Penta 40HP diesel engine with saildrive
Make/Model: Bavaria Cruiser 41	**Fuel**: (1 tank) - 55 US Gal
LOA: 40' 6" 45' with davit/dinghy	**Water**: 96 US Gal (2 tanks)
Beam: 13'	**Holding**: 40 US Gal in 2 tanks (20 gallons each)

Draft: 6' 10"	**Heads**: 2 Fwd head is electric, aft head is manual
Displacement: 19,135lbs (Dry)	**Electronics**: Garmin
Mast height: 61’4”	**Bridge clearance**: 66’
Staterooms: 3 2 Queen berths aft, v-berth forward	
Stateroom 1: Headroom: 6’4”, Berth Dimensions: 6' 5" long	
Stateroom 2: Headroom: 6’4”, Berth Dimensions: 6' 5" long	
Stateroom 3: Headroom: 6’4”, Berth Dimensions: 6' 5" long	
Salon Headrm: 6’4”	
Refrigerator: 4.6 cu. ft. 29.6” high x 20.7” wide x 25” deep	**Freezer** 9” high, 10” wide and 16” deep.

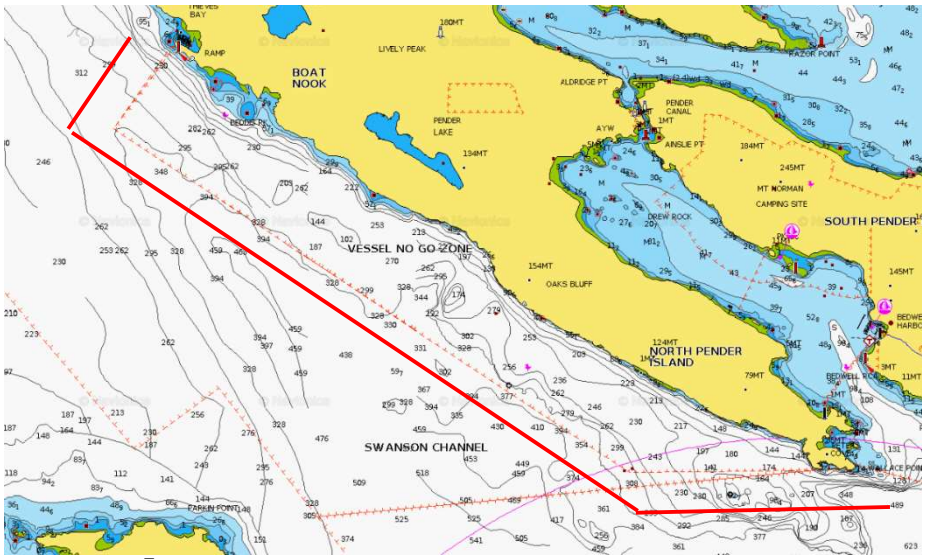
3. Being Whale Wise

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

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



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



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

4. Emergency/Safety Equipment

Emergency Signaling Devices

- Visual day/night flares are under the nav station seat.
- A large spotlight is above the nav table. It has an SOS mode, obtained by pressing the trigger multiple times to cycle through the modes.

Emergency Tiller - The emergency tiller looks like a metal pipe with an elbow bend and is in the starboard cockpit locker. The rudderpost attachment point is under the cover in the middle of the cockpit sole between the helm positions. To remove the cover, insert a winch handle in the star-shaped fitting and unscrew.

Fire Extinguishers - Fresh Aire has six (6) fire extinguishers.

- All locations are marked with a red fire extinguisher sticker or a FIRE EXTINGUISHER label.
- Four (4) **red** fire extinguishers are USCG approved Type A-B-C extinguishers and can be used on all types of fires.
- Two (2) white fire extinguishers are USCG approved Type B-C, which means they're not as effective on type A fires (trash, wood, and paper).

Fire extinguisher locations

1. Under the galley sink (red)
2. Aft starboard berth in left hand hanging locker (red)
3. Aft port berth in the bench seat (red)
4. Attached to starboard side of steps of engine compartment (white)
5. Forward berth in the port hanging locker (white)
6. Cockpit in starboard locker (red)

First Aid Kits - Please note any usage of these items when you return so SJS can replace for the next guest.

- A complete first aid kit is above the nav station in one of the cabinets.
- A smaller first aid kit is in the emergency equipment bag under the nav station seat.

Bilge pumps - See Section 8. Bilge Pumps.

CO Detectors - The **CO detector** is located under the companionway stairs.

Air horns - Two **air horns** are located in the navigation cabinet. We usually move one to the cockpit table while under sail.

Lifesling - The **lifesling** hangs off the stern port rail.

Life ring - A USCG life ring hangs off the starboard rail.

PFDs - Each berth locker contains two inflatable **PFDs** and a **foam vest**.

Tools and spares - A massive amount of tools and spare parts are available under the forward settee. Spare engine parts are in two toolboxes under the forward berth.

5. Anchors, Windlass, and Anchoring

- Always anchor with a minimum of two people: one at the helm to move the boat to and from the anchor and another at the anchor locker to lower and raise the anchor.
- From personal experience: Because of limited hearing due to length of boat, engine noise, and bimini cover, open and friendly communication improves the anchoring experience.
- We also recommend establishing friendly hand signals for "move forward", "back up", "STOP".
- **Do NOT** use the windlass to move the boat to the anchor. Based on your weather conditions, tides, and current - drive the boat to the anchor.

Anchors

Fresh Aire is equipped with two anchors.

1. The **primary bow anchor** is a 45# Mantus with 300 feet of 5/16" chain.
2. The **secondary anchor** is a 27# PVC covered fluke-style with 160' feet of 5/16"chain and 160' of 5/8" nylon rode; these are UNATTACHED. All should reside in the starboard cockpit locker.

Chain, anchor tension line, and anchor bridle

The Primary anchor chain is 300' marked as follows:

The **anchor tension line (snubber)** is red and used to keep the primary anchor chain taut and remove stress from the windlass when underway. ***Do NOT use when anchored***.

DO NOT untie knots. Simply unclip from the anchor.

The **anchor bridle** is a blue thick line with a slotted anchor chain hook stored in the port cockpit locker. The bridle replaces the snubber line when anchored. The line allows the boat to pull straight while at anchor and releases the weight of the chain and anchor from the windlass.

Please do not store a wet bridle. Hang the wet bridle from the bimini to dry before stowing.

Pick a Safe Anchorage

Fresh Aire's transducer is on the hull just forward of the keel.

You must add in the keel length to properly identify how much depth you have between the keel and the bottom. Fresh Aire draws approximately 7 feet from water line down.

The scope normally used in the islands is 4 to 1.

Most of the anchorages are well protected and popular, so you will likely have someone anchored nearby. After you have paid out the suitable amount of chain, 1-2 minutes of IDLE reverse sets the anchor (no more than 1000 RPM). Here is an easy formula for how much chain you need out; add the water depth on sounder, plus any tide increase expected during the night, plus 5' (to account for the distance from sounder to roller on bow) and take that total and multiply by 4 (typical example would be 25' of water + 6' of tide increase + 5' = 36' x 4 = 144').

Using the Windlass

The windlass remote is stored in the anchor locker. Please ensure it is safely in its cradle AND the hatch does not close on the cord.

Please don't try to remove the windlass remote. The device is hardwired in its location.

IMPORTANT NOTES!!

Run the engine when operating the windlass. Otherwise, the windlass will drain the battery, potentially causing damage to both the windlass and battery. You may then have to deploy or retrieve the anchor by hand using a winch.

The windlass and bow thruster run off the same battery. Use them wisely and sparingly.

Always have someone at the helm when performing anchor maneuvers. Drive the boat to and from the anchor. Do not pull the boat to the anchor with the windlass. Use the bow thruster to help with maneuvers.

Let the anchor rest at each angle when raising or lowering. **The anchor weighs 45 lbs and can swing readily if precautions are not taken**. This allows the anchor to lower freely and not hit the boat.

When raising the anchor, the claw needs to face toward the boat to bring it onto the roller. The anchor has a swivel, which allows you to twist the anchor away from the boat or towards the boat, but you do have to reach over the prow to adjust the position of the anchor. The boat hook is a good tool to assist in positioning the anchor, especially during retrieval.

You should <u>never</u> have to adjust the windlass clutch. If you must, you can use a winch handle.

Lowering the anchor

Only use the boat hook to move the anchor away from the boat. DO NOT use the boat hook INSIDE the anchor locker.

1. At the navigation station, on the electrical panel, press the **Windlass** button.
   Top row, fourth button from the left.
   
2. Start the boat motor.
3. Idle at **1400RPM** to get the alternator to produce electricity.
4. Open the anchor locker.
   You should find the windlass controller already attached in the anchor locker.
5. Remove the red anchor tension line from the chain.
   NOTE: The anchor **WILL** swing when released from the roller. The anchor has many angles. We have found that stopping at each angle limits anchor swing and damage to the hull.
   Start slowly to ensure the anchor doesn't swing and the chain doesn't bind.
6. Press **Down** and let out only enough rode to release the anchor to the first bend.
7. Allow anchor to stop swinging.
8. Press **Down** again, stop at the next angle and wait for the swinging to stop before continuing to the next angle.
9. When the anchor is out of the roller, lower until it is in the water and stop.
10. Watch the anchor to identify current and boat movement.
11. Press **Down** again until the anchor hits bottom, and then continue to release a few more feet of chain.
12. Shift the boat into reverse and let out enough rode to properly anchor the boat based on the scope requirements for your depth, weather conditions, and tide. Typically, a 4:1 scope.
13. **Attach the bridle:**
    a. Run the loop ends around the outside of the boat and place the loops on to the boat cleats.
    b. Slot the chain through the bridle's anchor hook.

   c. Lower the chain and bridle into the water until it forms a V in front of the boat and the weight of the chain and anchor are on the bridle, not on the windlass.
   d. Let out enough chain so it is slack and the bridle carries the weight of the chain to protect the windlass while setting the anchor.
14. To set the anchor: Set boat in reverse at 2000RPM for approximately 5 seconds, then back to neutral.
15. Take a sighting of surroundings and confirm the anchor is not dragging and you have sufficient swing room.
16. Place the windlass controller back in its cradle.
17. Close and lock the anchor locker.
18. Turn off the windlass circuit breaker.
19. Turn off the boat motor.

Raising the anchor (Do not use the Windless to pull the boat to the anchor.)

1. On the electrical panel, press the windlass button.
   Top row, fourth button from the left.
   
2. Start the boat motor.
3. Idle at **1400RPM** to get the alternator to produce electricity.
4. Open the anchor locker.
   You should find the windlass controller already attached in the anchor locker.
5. On the windlass controller, press **Up** to get to the bridle hook.
6. Remove the bridle from the anchor chain and store the bridle.
7. On the windlass controller, press **Up** again, but stop often to prevent overrunning the chain and move the boat forward to release tension on the chain.
   If the tension is too much, the windlass will not pull up the chain and will simply spin.
   NOTE: Again, **do not use the windlass to move the boat to the anchor**. Based on your weather conditions, tides, and current drive the boat to the anchor.
8. When you can see the anchor, let it rest below the water surface to stop the swing and clean the anchor.
9. Press **Up** and just before the swivel enters the roller, stop until the anchor stops swinging. The boat hook may be useful.
10. Adjust the anchor so the claw faces the boat.
11. Press **Up** until the anchor is in place, slowly. Do not force the windlass to pull the chain taut.
12. Stow the windlass controller in its cradle in the anchor locker.
13. Use the red anchor tension line to pull the anchor in tight.

14. Tie the anchor tension line off ensuring the tension is on the line and not the chain.
15. Close and lock the anchor locker.
16. Turn off the windlass at the nav station.

6. Barbecue

The barbecue (BBQ) is a Magma propane stove with a large round party grill. It is attached to the aft port railing.

The BBQ propane tank rides on the rail beside the BBQ.

The ignitor does not currently work. We use a lighter from the galley.

To operate the BBQ:

1. Remove blue BBQ cover and stow.
2. Open the valve on the propane tank aft of the BBQ.
3. Adjust the BBQ control for flow for intensity.
   You should hear the fuel flowing now.
4. Use the lighter to light the grill.
5. When finished cooking, close the valve on the propane tank and the BBQ control.

With the lid on, the BBQ gets hot and cooks quickly, so tend your food often.

Please use the brush attached to the BBQ to clean the grates; this is most effective immediately after cooking when the grates are warm. As a courtesy to the next guest, be nice and wash the removable grates and provided cast iron griddle after using the BBQ for the last time.

7. Batteries and Charging

Fresh Aire has three sets of batteries:

1. 1 engine starter battery - under the steps (this one is isolated from # 2 & 3).
2. 1 windlass / bow thruster battery - under the forward berth.
3. 1 house bank - under the starboard settee forward of the nav station.

   The house bank consists of four lead acid 90-amp hour each, AGM deep cycle batteries. This gives a total capacity of 500-amp hours and a normal usable capacity of 250-amp hours.

Emergency panel switch connects house bank to the starter battery. This is in the event the start bank is dead. The switch is on the port side back wall of the engine compartment. Once the engine has started, turn the switch back to the off position and proceed with motoring.

NEVER drop the battery usage below 50% charge and below 11 volts. You never want to take common AGM deep cycle batteries to 0 volts as they will not recover.

Monitoring battery levels

A "smart" charging system supervises the battery charging and requires no user input. Solar augments this system. The engine drives a high capacity alternator (@ 12 volts) good for battery charging.

Fresh Aire utilizes 30 amp/120-volt shore power cable with an onboard 40-amp battery charger.

To check the overall battery voltage

1. Use the Mastervolt electrical panel on the right side of the nav station instrument panel. This device provides a granular view of the electrical aspects of the battery system.
2. Press the dark grey button, in the lower right twice to light the panel.
   The Mastervolt has a touch screen. If you touch the screen to light the panel, you will need to back out of whichever menu you entered.

If the service battery voltage drops to 11.8, please reduce battery use by turning off electrical appliances, including the refrigerator and freezer, until you can recharge the batteries.

You should try not to discharge below 12.0 volts before recharging the batteries. You can recharge batteries by (1) running the engine, (2) plugging into shore power, or (3) not using power and letting solar charge to 100%.

We recommend that you check the status of the batteries in the evening. If the service battery voltage is at or below 12.0 volts, please run the engine until the voltage reaches 12.5 volts.

8. Berths and Headroom

Fresh Aire is ideal for 6 people in three cabins. The forward bed is 6'4" long, 5'2" wide (at the head) and 2'1" wide (at the foot). The aft beds are each 6'6" long, 4'8" wide (at the head) and 3'8" wide (at the foot). All beds have a 4" foam cushion and a memory foam topper.

The headroom on Fresh Aire (taken centerline in the main salon) is 6'4". There is approximately 6'6" headroom in the standing area of the aft cabins and 6'4" headroom in the standing area of the forward cabin.

9. Bilge Pumps

For your own safety, do not store anything in the bilge pump area. This is one of the few places in the Owner's Manual where we wish to be emphatic. A shift in position by anything stored in the bilge pump area because of a boat maneuver (one as simple as coming about) could damage (a) the water level sensor which automatically activates the bilge pump, (b) the bilge pump or (c) both. Because of the delay in alerting you (or a later charter guest) to a major safety issue, this could alter a controllable leak to a catastrophic situation, endangering lives and potentially causing the loss of the vessel. **Please do not allow anyone on board to store anything in the bilge area**.

The circuit breaker switch for the bilge pump should always be on.

Top row, last button

Check the electronic bilge pump area every day! The bilge pump area is in front of the aft head door. Lifting the floorboard directly to the starboard of the door of the aft head provides access. Except in the event of a small amount of condensation, the bilge should always be completely dry.

If the bilge alarm sounds do NOT ignore it and do not place a cloth over the sensor in the bilge hold to keep it from sounding. It's either fresh water or salt water. We've had water in the bilge pump area twice. Once was due to a heavy rain. The other was a hose burst in the aft of the boat that flooded all bulkheads. It's a big deal when the alarm sounds.

When the bilge pump electric switch is on, the bilge pump operates automatically when the float switch in the bilge is triggered. Bilge pump operation is accompanied by an alarm. If the alarm goes off, please attempt to locate and stop the leak. If you cannot locate and stop a slow leak, please report the situation to San Juan Sailing on check-in. The bilge pump will shut off automatically when there is a very low level of water (approximately 1 ½ inches) in the bilge. Please contact San Juan Sailing (or the Maintenance Professional after hours/Sunday) if there is any substantial continuing water coming into the bilge.

Fresh Aire has two bilge pumps:

1. The **electric bilge pump** is wired to the breaker on the electrical panel.
2. The **manual emergency bilge pump** is behind and below the engine throttle and engine monitor panel on the starboard side.

To operate the manual emergency bilge pump

1. Open from top with both hands.
2. Push it back and forth. There is no emergency bilge pump handle; it is completely hand operated.

Note: The shower sump pumps are also effective water removal pumps in the event water is high enough to enter the shower compartments. Turn them on at the electrical panel, second button from the left in the second row.

Finally, there is a bucket in the port cockpit locker. Bail the water into the cockpit and it will drain off the boat.

10. Boat hook

Boat hook is attached to the bimini in the cockpit.

We use the boat hook to push the dingy from the boat when raising and lowering, grabbing buoys, and straightening the anchor when raising.

11. Davit, Dinghy, and Outboard

PLEASE see the Appendix for photos detailing how to tie the dinghy to the davit to prevent swinging and wear on the dinghy and the davit.

Put the dinghy drain plug in the dingy before lowering.

Start the outboard before exiting to ensure it works. The outboard is air cooled so you can do this while the dinghy is on the davit.

Turn the air valve at the top of the gas cap to ½ of the on position for best air flow into the tank. The ½ position actually provides more air than the ON position.

Do NOT remove the motor from the dinghy. The motor is locked to the dinghy. The dinghy rides on the davit with the motor in place.

The motor is in the operational position on the dinghy. Meaning, the propeller will be in the water when you lower the dinghy. If you want to use the dinghy with the oars, lift the motor to the up position.

Do not remove the chaps, which protect the dinghy from the sun and davit straps.

Operating the Davit

Before lowering the dinghy, BE SURE THE DINGHY DRAIN PLUG IS IN PLACE IN THE BOTTOM OF THE DINGHY.

Do not raise or lower the dinghy with the transom down.

We recommend you do not lower the transom with the dinghy on the davit. If you must lower the transom while the dinghy is on the davit watch out for the dinghy motor's propeller!

Davit dinghy tie-down - We use a common ratchet and strap system to secure the dinghy. See section 32. Appendix: Dinghy on Davit for strap operation instructions and pictures.

To release the dinghy from the davit

1. **BE SURE THE DINGHY DRAIN PLUG IS IN PLACE.**
2. Pull yellow painter line out of the dinghy with enough slack to tie off so the dinghy doesn't float away.
3. Release the ratchets on the dinghy securing straps just enough to loosen the straps.

Pull levers to release ratchet

Ratchet opened

Check out this video if you have not used ratchets like this before:
https://www.youtube.com/watch?v=yDf6j6RPVDM

4. Unhook the ratchets straps from the davit.
   DO NOT remove the actual ratchets from the straps.
5. On both sides of the davit, release the black lines from the stainless-steel cleats and black clam cleats.
6. Slowly lower dinghy.
7. Once in in the water, open Fresh Aire's transom.
   NOTE: Use the boat hook to push the dinghy from the boat while lowering transom.
8. Disconnect the davit pulley carabiners from the dinghy support cables. Leave the support cables attached to the dinghy.
9. We attach the davit line carabiners to the davit frame so they don't drag in the water.

To mount the dinghy to the davit

***See Appendix: Dinghy on the Davit for correct strap layout when securing the dinghy to the davit*.**

The dinghy and engine are heavy! It takes work to lift the boat from the water.

1. Turn the dinghy so the motor is on Fresh Aire's port side.
   The davit has a block and tackle (pulley) system to raise the dinghy. The starboard side of the davit has two pulleys versus three pulleys on the port side to handle the weight of the motor.

2. Attach the davit pulley carabiners to the dinghy support cables.
3. Close the transom before raising the dinghy.
4. Remove black lines from the black clam cleats and use them to raise the dinghy.
5. Cleat the lines to the davit's black clam cleats.
6. Place the ratchet securing straps across the dinghy and place the strap hooks into the roped loops.
7. Ratchet the straps to tighten them and prevent the dinghy from swinging on the davit while underway.

Gasoline for the Outboard

The Honda 2.3 four stroke air-cooled engine using straight gasoline and has an onboard gas tank. Please do not add any oil to the gasoline. The fill cap is at the top of the engine. As a courtesy, we have fuel in a red spare gasoline container tied into the dinghy.

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

Beaching the Dinghy

Please take special care when beaching the dinghy. Most of the beaches you land on are barnacle-covered with bottom-slicing rocks. Please review the section on beaching the dinghy in your Guest Charter Manual on the boat.

Owners Tip: We use crocs or old shoes to exit/enter the dinghy off the side into/out of the water. We find this an easy and effective way to avoid damage to the bottom of the dinghy. You can then change to other shoes and leave the crocs/booties in the dinghy while on land. Note that you can use the cockpit shower to wash off salt and sand when you return to the boat.

12. Dodger & Bimini

CAUTION: San Juan Sailing has found that most spray sunscreens react chemically with the clear vinyl. So please inform your crew to spray sunscreen downwind of the dodger and bimini windows. And please don't lean against the dodger and bimini windows with sunscreen on your back and shoulders. Once that chemical reaction takes place, the clear vinyl is ruined and must be replaced (at a cost of around $800).

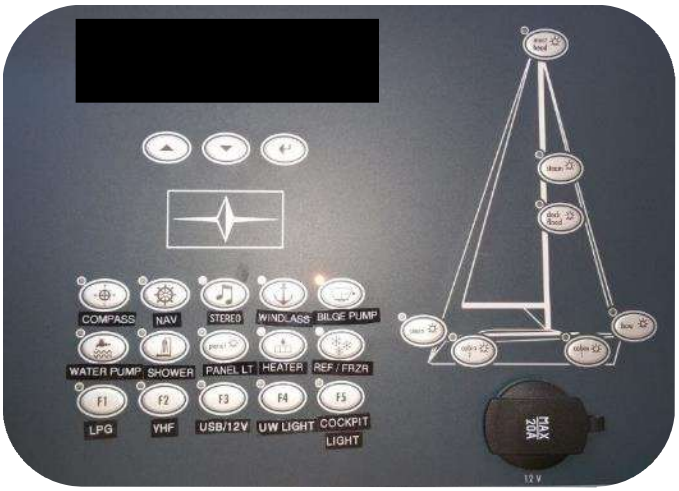
Please don't remove the dodger or the bimini. Every part is tightly fitted and difficult to put back in place. The dodger not only protects the crew from the weather when in the cockpit, but it has several stainless-steel grab handles for safety.

Removing the bimini can damage the solar panels. The solar panels are attached to the top of the bimini.

To clean, please use generous amounts of fresh water from a pan from the galley and "flood" the panels to dissolve the salt crystals away. Better yet, wait until you're at a dock where you can hose off the salt crystals. Please avoid directly touching the panel with a damp rag or sponge. When salt spray dries on the panel, tiny salt deposits are left behind and tend to obscure your vision. Salt does dissolve in water, but not as quickly as you might think. The salt crystals remain un-dissolved for several seconds. So, using a cloth or sponge on it is

like rubbing the vinyl with sand paper! If the dodger vinyl is really clear, you can thank previous guests for their care. We thank you too.

13. Electrical Control Panel (12-volt DC)



The 12-volt electrical control panel is on the nav station instrument board and controls the devices that run off the batteries.

Leave the bilge pump on all the time. If the alarm sounds and no water is in the bilge, the switch may be stuck in an open position. If you see water, let San Juan Sailing know.

The black tape at the top covers nonfunctioning water level and waste level alarms. See Water tanks and Monitor Holding Tanks for more information.

Turn the water pressure pump off while sailing or motoring unless someone is using water. The pump may continue to run and burn out if there is inadequate water in the tanks. You generally cannot hear the water pump from the cockpit. We suggest you turn on the water pressure system only when in use. You can, of course, leave it on at night if you wish, but it will cycle throughout the night.

The electrical panel has four sections:

1. Monitoring display (LCD)
2. Circuit Switches
3. Boat Lights
4. 12-V charger

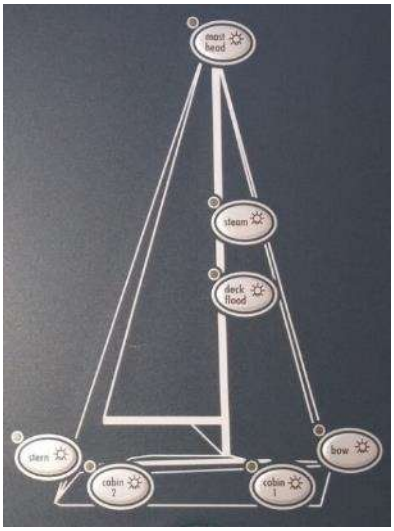
Circuit Switches

Circuit switch buttons are located below the LCD display and the Bavaria logo. Use these to turn on and off the specified electronics.

- **First row, left to right**: Cockpit compass light, all navigation instruments, Fusion entertainment system, windlass, and bilge pump
- **Second row, left to right**: Water pressure, shower sump pumps, electrical panel lights, Webasto heating system, refrigerator, and freezer
- **Third row, left to right**: (F1) propane delivery system, (F2) VHF, (F3) USB/12V outlets in berths, (F4) stern underwater light, (F5) cockpit floor lights and cockpit table lamp

Except for the bilge pump, we highly recommend turning off all circuit switches unless the specific equipment/item serviced by that electrical switch is in use, such as the refrigerator/freezer.

Boat Lights



The third section is the boat lights schematic containing the interior and exterior light switches.

Note that your contract with San Juan Sailing specifically prohibits travel at night. You should never be using the steaming, bow, or stern lights.

If any light on this panel blinks, a lightbulb is out. Only for this section. If this happens, let SJS know during check in.

The mast head/anchor light should be on at night whenever you moor at a buoy or anchor.

Cabin #1 is for the v-berth lights and #2 is for the main and aft cabins.

12-Volt Charger

At the bottom right of the panel is a 12-volt receptacle for charging 12-volt electrical devices, such as cell phones. A 12-volt adapter is in a cupboard above the nav station.

Each cabin also has a 12-volt outlet next to the USB outlets.

14. Electrical AC Circuit Breakers (AC)

Use the AC panel:

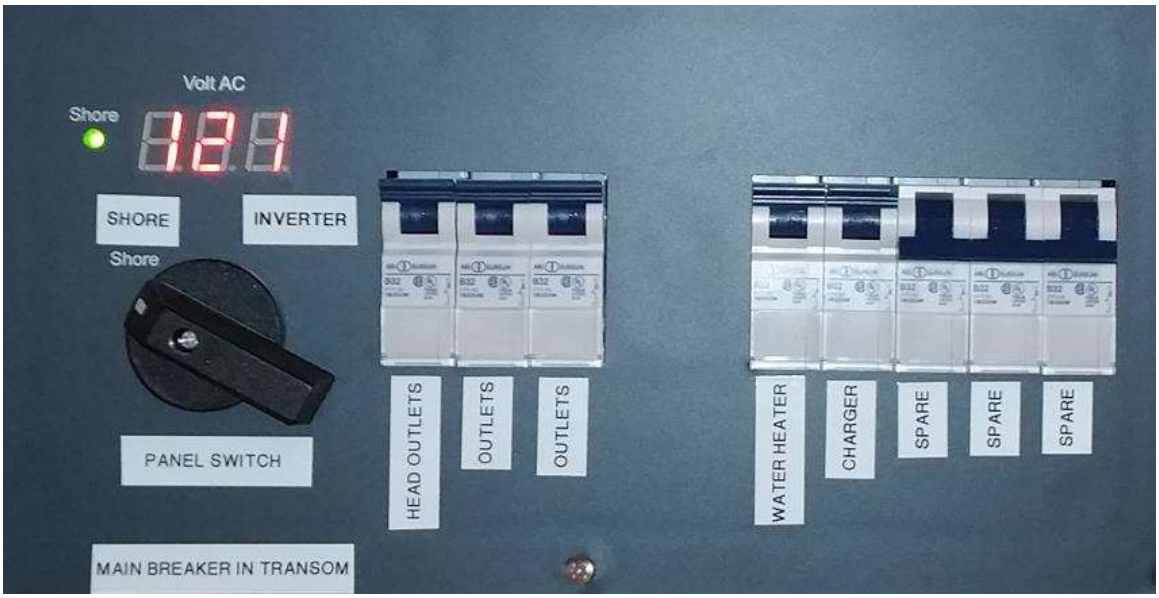
(a) while operating on shore power or

(b) while using the inverter to provide 120-volt alternating current to selected equipment (primarily the microwave) and to the outlets when the boat is not connected to shore power.

Devices that use the inverter (microwave, hot water heater, and anything plugged into an AC outlet) utilize a large draw on the house batteries and could reduce them to dangerous levels. We suggest using the inverter only for short periods of time and while the engine is idling at 1400 rpm.

The AC system utilizes a 120v 30-amp shore power connection, which feeds an onboard 40-amp 12-volt battery charger. This shore power connection is just in front of the Starboard Helm engine controls.

The AC electrical circuit breakers are underneath the nav station desk.



Panel Switches and breakers

AC Main Panel Switch: to switch from shore power to inverter

Left Side: Head Outlets, Outlets (powers the starboard aft berth 120V), Outlets (powers the rest of the boat 120V outlets, including microwave)

Right Side: Water Heater, Charger (main boat battery charger)

When attached to shore power, turn on the AC Main Switch/polarity fault switch to accept power from the shore power connection. Immediately switch it off if the polarity fault light comes on as this signals that the shore power is not correctly wired. Then also switch on the Charger and the AC devices and outlets you wish to use. We normally turn on the outlets and hot water heater.

Main Shore Power Circuit Breaker

If the main shore power circuit breaker trips and you are not immediately certain of the reason and cannot correct the problem, do not reset the breaker and attempt to use shore power as this presents an enormous risk of creating an electrical fire on the boat. Contact San Juan Sailing (or the Maintenance Professional on Sunday) immediately. They will tell you what steps to take in this situation. It may be necessary to dispatch an electrician to inspect the AC power system. For your information, the main shore power circuit breaker has never tripped; as the boat is essentially new and wired to ABYC standards, there is no reason this would happen, other than damage to the AC wiring. If it does trip, you should be very cautious.

The main shore power circuit breaker is on the interior of the hull space below the instruments next to the starboard steering wheel. You can access the breaker by removing the panel at the rear of the starboard aft berth or by removing the storage compartment behind the starboard steering wheel.

Using the Inverter

See 18. Inverter for full details.

15. Engine, Handling, and Fuel

Fresh Aire has a 40 HP Volvo Penta engine and a sail drive with a 3-blade foldable propeller.

All engine start-up controls are at the starboard helm.

(Economy Cruising RPM: 2200, Cruising RPM: 2550, Max RPM: 3000)

Starting the Engine

If control readings are dim, press and hold **Alarm/Dim** for at least 5 seconds or until appropriate setting is reached.

To start the engine:

1. **Place the control lever (gear shift) in Neutral!**
2. Press **ON**.
3. Press and hold **START** until engine engages.

Idling the Engine

You must idle the engine at 1400 RPMs to use the windlass, the inverter, or if you need to charge batteries.

You CANNOT just start the engine, then push the control lever forward for neutral. You must disconnect the gearshift function to increase RPMs using the Neutral button on the control lever.

To disconnect the gearshift function

1. Place the gear shift in Neutral and start the engine.
2. On the control lever depress and hold the neutral button (the center pivot point of the lever) while slowly moving lever forward until RPMs reach 1400.
   NOTE: Control lever has a few centimeters of gap before RPMs increase.
3. When RPMs reach 1400, release neutral button.
   Now you are in neutral.
   You can now run the windlass or charge batteries.

To disengage Neutral

1. Pull the gear shift straight up.

Proceeding in Forward/Reverse

To keep the transmission healthy, please remember to pause 1-2 seconds in the vertical neutral position when shifting from forward to reverse and vice versa.

Fresh Aire has a single throttle; engage forward gear by pushing ahead on the throttle or reverse gear by pulling back on the throttle. The further forward or back, the faster the engine speed.

Engine Shutdown

1. On the engine control panel, push the **Stop** button.
   The engine is off if the RPM gauge goes to zero.
2. Wait until the oil pressure monitor drops, then push the **On/Off** button.

The LCD display will go blank.

If you do not push the "on/off" button, the system will give an audible alarm after a few seconds or so.

If you turn the battery off when the engine is on, the engine will continue to run. Press the stop lever on the engine.

When sailing after engine shutdown, push the gear shift to reverse, then back to neutral to close the foldable prop. If you do not, you will hear the low hum of the open propeller spinning about.

Bow Thruster

Fresh Aire has a bow thruster, which makes docking and mooring maneuvers much easier.

YOU MUST RUN THE ENGINE TO OPERATE THE BOW THRUSTER. The bow thruster uses the same battery that powers the windlass. Because it draws a substantial amount of power, use in short bursts, please use the bow thruster only when the engine is running.

Have RPMs up to 1400, so the alternator is producing electricity.

When performing bow thruster maneuvers remember the boat's pivot point is the keel, which is dead center on the boat. Hence, the stern will move in the opposite direction from the bow.

The bow thruster is powerful, so it only takes a couple of seconds to get the boat moving in the desired direction. Short bursts of thruster work best.

To activate the bow thruster

The bow thruster controls are at the starboard helm.

1. With the engine running, on the bow thruster controller, push both **On** buttons at the same time for a couple of seconds.
2. A light indicates when the bow thruster is activated.

***To use the bow thr*uster:** Push on the arrow in the direction you wish the bow to move.

To turn off the bow thruster: The bow thruster turns off automatically if not used for 15 minutes.

Fuel Tank and Gauges

Fuel gauges on sailboats are notoriously inaccurate and Fresh Aire is no exception. It will stay on "F" (full) until about 30% of the available fuel is used. At ½ tank there is probably less than 25 gallons of fuel available. At a low fuel level (1/4 tank), the engine may suck air or sludge. When the fuel gauge reaches ½ tank, please refuel at the first opportunity.

Please do not let the fuel level fall below ¼ full; you are in danger of running out of fuel, which (in addition to requiring towing) can require extensive and expensive engine maintenance. Because the fuel gauge overstates the available fuel, we recommend refueling promptly after reaching the ½ tank mark.

Full fuel may still show below the Full fuel line.

Fresh Aire has a theoretical range under power of approximately 350 nautical miles (55 gallons x 1 gal per hour x 7 knots).

You can estimate how much fuel you will need to refill the fuel tank by noting the engine hours at the time you start your cruise. Engine values: ~ .8 gal/hr @ Economy Cruising 2200 RPM (6.9knots), ~ 1.1 gal/hr @ Cruising 2550 RPM (7.7 knots), ~ 2 gal/hr @ Max 3000 RPM (8.2 knots).

Keep in mind the Webasto cabin heater uses the same diesel as the engine.

Be extremely careful when filling the fuel tank. The fuel lines on sailboats are generally smaller than those on motor vessels. If you are filling the tank at the fuel station at Bay 3 in Bellingham Marina (where Fresh Aire is docked), the attendant will often turn down the pump rate. One can normally hear when the pitch of the noise going into the line changes and gets higher; unless you have created a surge in the line, this means the tank is full. To avoid a spill, please stop.

When filling, we recommend that one person stand at the vent with paper towels to catch any fuel that may exit through the vent.

The fuel fill line is on the starboard side of the stern.

The fuel vent is on the starboard side, about 4 feet from the stern. No wrench is needed.

Please fill slowly so that fuel does not come out of the fuel line or the vent. The fuel tends to bubble up and over the sides at the end.

Diesel fuel will stain fiber glass. Please use soapy water to clean up any fuel drips. Thank you.

San Juan Sailing requests that after you restart the engine and before leaving the fuel dock, check the fuel gauge. If the gauge is not on "F", stop the engine and add more fuel. That way, San Juan Sailing will not charge you a $50 fueling charge (plus the cost of fuel).

16. Entertainment Systems

Fresh Aire has a Fusion Sound System with interior cabin and cockpit speakers. She also has a separate television with DVD and USB input capabilities.

Fusion Sound System

To turn on the radio: On the Electrical System Control Panel, press the music button (top row, third from left).

The radio will eventually turn on but takes about 30 seconds to receive the signal from the electrical panel.

To change the volume

When the radio is first turned on, the interior AND cockpit speakers are turned up. Not a pleasant experience in a quiet cove.

1. On the radio, push the big button on the center of the dial.
   Two big columns will display (Interior and Cockpit).
2. Press the dial again to select **Interior** or **Cockpit** or both.

3. Once you have your option(s) selected, use the large dial to adjust the volume.
   The radio will automatically return to default radio station view after a few seconds of inactivity.

The radio accepts input from Bluetooth devices (i.e. phone) and is listed as Fresh Aire on your device.

The Fusion Sound System owner manuals are in the blue Bavaria bag. These manuals will guide you through other stereo functions such as Bluetooth connection.

TV (is not tied to the Fusion sound system)

The TV does not have any connection to a TV program supplier and is made available to play DVDs or other local input. There is a small selection of DVDs in one of the small cabinet above the settee forward of the NAV station.

The TV will also accept other sources, including a USB Player (USB2) and several types of cards (SD/MMC/MS), and HDMI. The system supports MPEG1 and MPEG2 video, WMA and MP3 audio and JPEG photos. A portion of the TV Instruction Manual is on the shelf in the nav area.

To operate the TV as a DVD player

1. On the TV press the **Power** button. The "AXESS" logo will come up on the screen.
2. Insert the DVD at the bottom right side of the TV, with the top of the DVD toward the bow and content side of the DVD toward the stern.
3. The DVD will automatically load.

To extract the DVD, press the **Open** button (left side of the far-left button on the top of the TV).

17. Hatches and portals

Fresh Aire has 8 overhead hatches and 7 portals that open and close.

Make sure all hatches and portals are locked watertight before sailing. The lines will catch on the hatches and rip them off. As stated in the Nuances, the hatches are expensive to purchase and install. This also prevents the next few charter guests from using the broken hatch until fixed.

Assign someone to walk through the boat to confirm hatches and portals are closed.

Step out on deck and confirm all hatches are closed.

Overhead Hatch locations:

- 1 above fwd berth
- 1 above fwd storage locker
- 1 in fwd head
- 3 in main saloon
- 1 above nav station
- 1 in aft head

Portal locations:

- 1 in galley (above stove)
- 1 in aft head (above sink)
- 1 above nav station
- 2 in each aft berth (on side and into cockpit)

REMEMBER: Lock them all watertight before sailing. We've already replaced three, so we cannot stress this enough.

18. Head & Holding Tanks

Fresh Aire has two 20 gallon holding tanks, one for each head and saltwater flush toilets.

Pumping the toilet puts everything into the holding tank behind the panel above the toilet.

Use the twist 'n' lock action safety handles to guard against flooding and waste backflow by locking the waste outlet valve shut.

Offshore sailors have a rule: "Never put anything down a marine toilet that hasn't been eaten first." And that includes feminine items. Offshore sailors do not put soiled products down a marine head. They deposit them in a receptacle with a liner bag. We and San Juan Sailing highly recommend you follow this procedure. Since implementing this recommendation, the fleet has had almost no incidents of plugged heads!

If the toilet pump starts to resist your flushing effort, don't force it! Exploding or leaking sewage is most unpleasant! Search out the problem and correct it.

Operating the manual flush toilets

Before use, ensure there is enough water in the bowl to prevent stuff from becoming compacted at the bottom of the bowl.

1. If the bowl is empty, move the **Flush Control Lever** to the **Open** (⇦) position and pump the handle up and down until the flushing pump is primed and water enters the bowl.
   Add enough water for comfort, but keep in mind, too much water can be precarious.
2. Then **Shut** (➡) the **Flush Control**.

After use, flush the toilet.

1. Keep the **Flush Control Shut** (➡) and pump until the bowl is empty.
2. Operate the pump with *long, smooth strokes* for efficient and easy operation.

3. When the bowl is empty, **Open** (⟸) the **Flush Control** again, and continue to pump until all waste has reached the holding tank (allow 7 complete up/down strokes minimum).
4. Then **Shut** (➡) the Flush Control and pump until the bowl is empty.

Always leave the bowl empty to minimize odor and spillage.

5. With the Flush Control knob set to **Shut** (➡) push down and turn to **Locked** position ( ).

Monitor Holding Tanks

Holding tank gauges on the Electrical Control Panel are not connected. Holding tank monitors are mounted on the front of the sink in each head.

To check aft holding tank levels:

1. On the **Electrical Control Panel**, select **Shower** to activate the shower pump.
2. In the aft head, on the front of the sink, press the small square button with 1, to show tank level.
3. Don't forget to turn off the shower pump.

The forward holding tank gauge is always active.

Empty Holding Tanks

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

NOTE: *Please keep in mind that it is illegal in the US to discharge holding tanks within 3 miles of the shoreline*.

Due to a recent boarding by the US Coast Guard, the head valves are zip tied closed to prevent discharge in open waters.

19. Heater

The diesel-fired Webasto cabin heater will make the interior "toasty" within 10-15 minutes. The heat is dry, comfortable, and on those rainy days or cool evenings, makes a huge difference in cruising comfort!

The heater control panel is on the starboard side of the saloon, in front of the Navigation Station.

The heater control consists of:

1. **Mode selector knob** - Low (Eco), medium (Normal), and high (Plus). We find medium to be adequate. There is also a blue fan only setting.
2. The white **ON / OFF button**.
3. **Temperature selector** - Normal operating temperatures are within the short-segmented line section.

Heater vents are in the salon and forward cabin.

To operate the heater

Operating the heater requires activating the relevant electrical switch AND the heater control power button.

1. On the **Electrical Control Panel**, push the heater switch on (second row, fourth from the left).

2. On the heater control panel, push the white power button.

The heater takes several minutes to "cycle up" and get hot before the fan starts blowing hot air. When the heater initially starts it will run at high speed. Once the setting temp is reached the high speed will reduce to keep the setting temp.

What's that ticking in the aft starboard berth? The heater has a dosing pump under the aft starboard bunk. You will hear it tick as the heater warms up. The ticking quiets once the heater is running.

To turn off the heater

1. On the heater control panel, push the white power button.
   The fan will continue to run for several minutes after you turn off the unit as the heater cycles down to cool.

20. Inverter

You can generate 120-volt AC power when not connected to shore power by using the inverter.

We suggest using the inverter only for short periods of time and preferably while the engine is idling at 1400 rpm. Devices that use the inverter (microwave, hot water heater, and anything plugged into an AC outlet) can utilize a large draw on the house batteries and can reduce them to dangerous levels.

To use the inverter

1. Turn on the boat motor and set to idle at 1400 RPM to help augment the battery draw.
   Review steps in the Idling the Engine in the Engine & Handling section.
2. Under the navigation table, on the **AC Circuit Breaker panel**, switch the big black **Panel Switch** to **Inverter**.
   NOTE: Ensure the switch is all the way to the right. The switch doesn't always click in place.

3. On the right of navigation station instrument panel, on the **Mastervolt** device screen, tap **Inverter**.
4. Tap **Inverter Standby** to take it out of standby and activate the inverter.
5. Under navigation station, on the **AC Circuit Breaker panel**, switch on the circuits you wish to use.
   If the microwave clock is on, the inverter is generating your AC current.
   NOTE: The hot water tank switch is usually on. Turn off this switch off if not using hot water to reduce draw. Please flip the switch back to On after you are off inverter.
6. When finished using the inverter, on the **AC Circuit Breaker panel**, switch the big black **Panel Switch** all the way back to the left on **Shore Power** and on the **Mastervolt** turn **Invertor** to **Standby**.
7. Turn off the boat engine.

NOTE: The Panel Switch should always be on Shore Power when not using the inverter.

21. Keel Depth

San Juan Sailing strongly recommends you maintain a minimum of 10'-12' under the boat at all times, both underway and at low tide on anchor. This means some popular sites, such as Fossil Bay on Sucia (buoys at 7-9 feet), are not accessible except at major positive tides.

Fresh Aire has a deep trapezoidal keel (which provides a major improvement in sailing performance relative to a shallow draft keel) and draws roughly 7'.

To avoid grounding, always take into account the often-significant tidal change while anchored.
Anchoring or taking a buoy in this Northwest cruising area is very different than doing so in the Caribbean; in the Caribbean you are OK with 3'-5' (sometimes even less) under the keel because there is almost no tidal change. Here, in the Pacific Northwest, the tides shift and significant variations in anchoring depths can occur. Check your low tides (in the onboard tide data books) when choosing an anchor/mooring location.

22. Lights

Fresh Aire is a fully LED equipped boat.

Interior Cabin Lights

Control the interior cabin lights on the Electrical Control Panel by pushing the **Cabin 1** and **Cabin 2** buttons on the **Boat Lights** display.

Cabin #1 is for the v-berth, salon and port aft cabin lights.
Cabin #2 is for the starboard aft cabin lights.

Cockpit Courtesy Lights

The cockpit blue floor lights are great for guiding your footsteps when boarding late at night or for some evening ambience.

To turn on the cockpit lights, on the **Electrical Control Panel**, press **F5 - Cockpit Lights** (bottom row, last button). This switch also activates the cockpit table lamp.

Cockpit Table Lamp

The cockpit table lamp is stored above the aft port berth doorway.

To turn on the cockpit table lamp, on the **Electrical Control Panel**, press **F5 - Cockpit Lights** (bottom row, last button).

Nav station light

The gooseneck nav station light has five settings: red, three levels of white, and off selected by touching the sensor button at the end of the lamp.

Underwater Lights

The white underwater lights provide dockside viewing of the marine life at night, if they are willing. We cannot guarantee the appearance of any creatures.

We recommend only using the underwater lights when on shore power. The underwater lights are LED, but because of their output wattage they place a heavy draw on the house batteries.

To turn on the underwater lights, on the **Electrical Control Panel**, press **F4 - UW Light** (bottom row, fourth from left).

23. Mastervolt system

Use the Mastervolt system to monitor the power status and turn the invertor on and off. You can also use the system to monitor power usage and battery charging.

To activate the Mastervolt press the grey button twice or touch the screen. The Mastervolt is always on so either choice requires another step.

If you touched the screen to activate and you didn't know which menu to enter you might have to back out of the system to the main menu.

If you pressed the grey button, you will need to press the button again to the turn the system back on.

To turn on the invertor you need to turn on the invertor under the nav station, then on the Mastervolt, press **Invertor**, then press **On**.

24. Navigation Instruments

Fresh Aire has a complete suite of Garmin instruments. The radar/chart plotter/GPS, depth sounder, wind instrument, and autopilot are all Garmin products. AIS (Automatic Identification System) is integrated into the chart plotter to enhance collision avoidance, especially with larger commercial vessels in low visibility.

The Garmin chart plotter and GMI instruments are by the helm.

A Garmin display unit is available at the navigation station. A nice addition so you don't have to go outside for wind and depth information.

Initiating the Navigation Instruments

To activate the instruments

1. On the **Electrical Control Panel**, press the **Nav** button (first row, second from left).

2. On the chart plotter in the cockpit, on the center console between the helm wheels, press the **Power** button to activate the instruments.

Depth Sounder

We never enter anchorage in less than 7 feet of depth. The transducer for the digital depth sounder is on the bottom of the hull. We consider 7 feet as the draw depth. KNOW YOUR TIDES, especially extreme low tides.

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

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

Chart Plotter

Fresh Aire is equipped with a color Garmin 820 GPS Map chart plotter. The chart plotter is generally used without the radar to minimize battery drain. It is not a touch screen.

The Garmin chart plotter owner manuals are in the blue Bavaria bag. These manuals will guide you through other navigation chart settings and information.

Although sophisticated and highly reliable, chart plotters are fallible. If the instruments lose connection with one or more GPS satellites, the chart plotter may show the boat in an erroneous position, often significantly displaced from your actual condition. ALWAYS REFERENCE YOUR PAPER CHARTS.

You can try to reset this by turning off the chart plotter and the instrument circuit breaker, and then turning them back on.

To access charts

1. After powering up the navigation instruments, the chart plotter **Home** page will display.
   You can always return to the Home page by pressing the **Home** button to the right of the screen.
2. On the chart plotter **Home** page, press **Navigation**.
3. On the **Navigation** page, press **Charts**.
4. Press the **+** and **-** keys to zoom in and out.

Boat Position

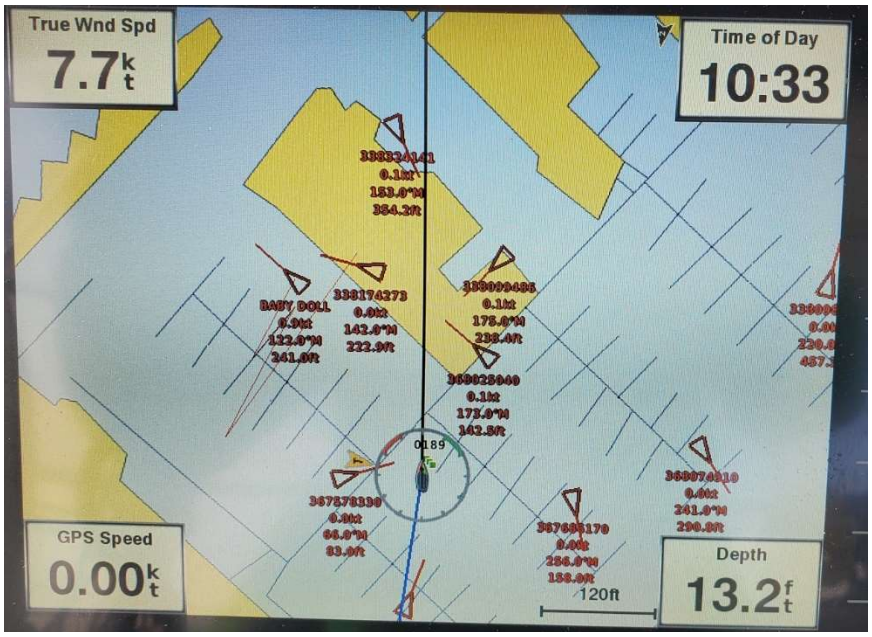
In an emergency you may need to identify your boat position. If you make an emergency call ("Pan, Pan, Pan" or "Mayday") either U S Coast Guard Sector Puget Sound or Victoria Coast Guard Radio will respond. After asking if you need assistance and the nature of your emergency, the responding agency will immediately ask you for your position (longitude and latitude).

To Identify boat position

1. On the chart plotter **Home** page, press **Gauges**.
2. On the **Gauges** page, press **Numbers**.

The Simrad (VHF) at the nav station also shows longitude and latitude position.

Main monitor setup



- Top Left – True Wind Speed
- Top Right - Time of Day
- Bottom Left – GPS Speed
- Bottom Right – Depth

Main monitor setup steps

1. With **Chart 1** on the screen, press the **Menu** button.
2. Select **Chart Setup**.
3. Select **Overlay Numbers**.
4. Select **Edit Layout - Layout 2**.
5. Use the arrows on the BIG button on the nav device to select the square you want.
6. With the chosen button highlighted, press the **Select** button on the nav device.
7. Select your options from the menus.
8. When finished, press the **Menu** button on the nav system.

Showing lines (tide direction, sailing angle,

- Black line – Course over ground (direction of movement)
- Blue line – Tide direction
- Red line – Heading line (direction of the bow)

Course over ground (Black line)

1. With the **Navigation Chart** on the screen, press the **Menu** button.
2. Select **Sailing**.
3. Select **Laylines**.
4. Select **Display**.
5. Select **Vessel**.
6. Select **Show**.
7. Select **Detail** – Set to **Normal**.
   We leave length at 1nm.

Heading Line (Red line)

1. With the **Navigation Chart** on the screen, press the **Menu** button.
2. Select **Chart Setup**.
3. Select **Chart appearance**.
4. Select **Heading Line**.
5. Select **Distance**.
6. Adjust length as needed. We set to 1.0nm.

Tide direction (Blue line)

1. With the **Navigation Chart** on the screen, press the **Menu** button.
2. Select **Chart Setup**.
3. Select **Tides & Currents**.
4. Select **Tides & Curr**.

5. Select **On**.

Orientation – Course

1. With the **Navigation Chart** on the screen, press the **Menu** button.
2. Select **Chart Setup**.
3. Select **Chart Appearance**.
4. Select **Orientation**.
5. Select **Course Up**.

Adjust dimming

1. Press the **Home** button.
2. On the **Home** screen (displays Home in the upper left corner), select **Settings**.
3. Select **System**.
4. Select **Display**.
5. Select **Backlight** and adjust as needed.
6. When finished, press the **Home** button on the nav device.

Compass tape

1. With the **Navigation Chart** on the screen, press the **Menu** button on the nav device.
2. Select **Chart Setup**.
3. Select **Overlay Numbers**.
4. Select **Compass Tape**.

Adjust dimming on side panels

NOTE: If the screen is too dim, the numbers in parentheses indicate how many times to press the button.

1. Press middle long button for the **Menu**.
2. Press the right long button to scroll down to **Setup** (2 times).
3. Press the middle long button to **Select**.
4. Press the right long button to scroll down to **Display** (3 times).
5. Press the middle long button to **Select**.
6. Press the right long button to scroll down to **Display** (2 times).
7. Press the middle long button to **Select**.
8. Press left long button to increase backlight.
9. Press right long button to dim backlight.
10. Press the middle long button for **Done**.
11. Press left long button to **Back** out of the menu system.

Man Over Board

The chart plotter includes a Man Over Board (MOB) button (at the bottom of the Home page) that will record the boat's location with a MOB icon. The chart plotter then provides course and distance to return to that location.

Radar

Fresh Aire is equipped with the Garmin model GMR 18HD radar.

To activate the radar

1. On the chart plotter **Home** page, press the **Radar** button.
2. On the **Radar** screen, press **Cruising** for full screen radar.
3. When the **Ready to Transmit** message appears, press the **Menu** button, and then the **Transmit** button. It takes a few seconds for the radar to spin up and the radar screen to populate with the radar scan.

To see radar overlaid on the navigation chart

1. With the radar scan operating, on the **Radar** screen, press the **Overlay** button.
2. To place the navigation chart and the radar chart side-by-side, on the Radar page, press the **Combination** button.
3. Page down and select **Combination 2 (Navigation Chart and Radar)**.

AIS

To assist you in collision avoidance at all times, Fresh Aire is equipped with AIS (Automatic Identification System) transmitter and receiver. AIS is an automatic tracking system used on ships and by vessel traffic services for identifying and tracking vessels. It provides traffic information and collision avoidance information in real-time.

AIS is required to be used by (1) all sea-voyaging ships with a gross tonnage of 300 gross tons or more and (2) all passenger ships. Most commercial vessels are equipped with AIS. Larger recreational vessels often have AIS; smaller boats, such as recreational fishing boats, generally do not have a broadcast AIS installation (but may be able to receive AIS signals).

On Fresh Aire AIS is integrated into the chart plotter. The chart plotter will automatically display vessels broadcasting AIS signals if those vessels approach your course. The chart plotter will display the vessel name and its position, course and speed. The display projects the vessels course and may indicate a danger of collision.

Knotmeter

Speed is indicated in knots or nautical miles per hour. (For comparison, 7 knots is approximately 8 mph.)

If the digital knotmeter shows a reading of "0.00" while underway, the paddlewheel in the transducer is most likely clogged with a piece of eelgrass. Sometimes it will float off overnight. You can also try removing it by traveling for a short distance in reverse.

The chart plotter also displays speed through water information from the knotmeter and speed over ground (SOG) as determined by the GPS.

25. Propane

Fresh Aire has two propane tanks. The larger tank is in the port stern propane locker and is used for the galley stove and oven. The smaller tank is mounted on the port stern rail and is used for the barbecue.

While the propane tanks normally last for 4 weeks or more, San Juan Sailing's staff checks the tanks before every charter and fills them if necessary, so you will have plenty for your cruise.

Propane is a hazardous gas and requires caution. For your safety, please follow the appropriate procedures when turning on the stove, oven, or BBQ.

Connecting to the Propane Supply

To operate the stove or oven, you must turn the propane on or off at four points:

1. The faucet-like hand valve at the tank.
2. A valve under the stove at the forward edge of the storage cabinet. This is typically always on.
3. The circuit breaker on the electrical control panel (third row, first button).
4. The solenoid switch at the aft end of the galley.

To operate the stove or oven, you must turn on all four points.

To turn on the propane

1. Make sure all stove control knobs on the stove are in the "off" position.
2. Turn the faucet-like hand valve at the propane tank all the way open.
3. Check to see that the shut-off valve in the cabinet under the stove is on (handle in the vertical position).
4. On the **Electrical Control Panel**, press the **LPG** button (third row, first button).
5. A green light on the electric solenoid switch at the aft end of the galley will blink indicating the system is testing for the presence of propane.
6. After the light turns a solid green, on the solenoid switch push the **ON** button.

When finished using the propane, use the **LPG** button on the Electrical Control Panel to turn off the solenoid.

26. Refrigerator/Freezer

Fresh Aire has a port wall access refrigerator and a small top access freezer under the aft settee seat.

We recommend leaving the refrigerator and freezer switch on at all times to preserve food safely and maximum freshness. We generally keep the refrigerator at the "5" cold setting and run the refrigerator and freezer all the time, which causes a draw on the batteries, but the solar power generally augments this during the day. You can keep the refrigerator on during the night, but keep in mind this will cause a draw on the batteries and the noise may disturb you.

The temperature thermostat control dial (with 1 through 7, 7 being coldest and will probably freeze your lettuce) is inside the refrigerator on the forward right edge.

Refrigerator

Please open the refrigerator door slowly. Do not force it open or it will break.

Fresh Aire's refrigerator has one large box at the bottom and three shelves. The dimensions are: 19 ¼ inches width x 18 inches high and 17 inches deep.

There is a small freezer compartment in the refrigerator. This freezer is 4 ½" high, 16 ¾" wide and 7 ½" deep.

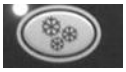
Freezer

The freezer is in the settee directly across from the aft head door. This freezer is 9" high, 10" wide and 16" deep.

You can turn off the freezer using a switch behind the settee cushion forward of the navigation station. Remove the back cushion and look to the right.

The freezer has a temperature control at the back left of the unit. We set to a positive temperature if not using to reduce power. Otherwise, we find **0** to be a perfect setting.

To turn on the refrigerator and freezer



On the Electrical Control Panel, press the **REF / FRZR** button (second row, last button).

27. Sails

Fresh Aire sails best (fastest and most comfortably) when sailed relatively flat, heeling 5-15 degrees leeward depending on wind conditions. She is a fast boat and an easy vessel to sail, yet she is versatile enough that experienced sailors can challenge themselves with different sail configurations.

We suggest that all deploying and furling operations take place on a starboard tack. Having the sails on the port side of the boat means the sail can deploy and furl more smoothly.

When hoisting sails, we recommend unfurling the jib first. We find the jib easier to deploy than the main and enough sail to have up while we identify what the boat can and cannot do under the current wind conditions. Fresh Aire actually sails easily with just a jib, getting up to 6-7+ knots in favorable winds.

Once you feel comfortable with the jib, we recommend letting out the mainsail. With an in-mast rig, in normal conditions, the mast bows slightly aft at the top. By deploying the headsail first, the pressure of the wind in that sail tends to straighten up the mast making it more "plumb." This makes it easier for the main to deploy from within the mast.

Reef early and often. **When sailing in winds above 15-17 knots, reefing the Main first for safety is best.** Full sails can generally be carried up to wind velocity of 15-17 knots depending on wave action. Because the boat sails well with just a jib, you can use just the headsail in heavy winds.

Mainsail Ratchet

Fresh Aire has a mainsail furling ratchet on the mast to furl and unfurl the mainsail.

The ratchet has two settings: Ratchet and Free-Wheeling. We've identified these with a red mark for ratchet and a green mark for free-wheeling.

When unfurling the sail:

1. Set the **outhaul ratchet** to **Free-wheeling**.
2. Pull out the mainsail with the **Outhaul**.
   If set to **Ratchet** and you try to unfurl the sail with the Outhaul, you will jam the sail in the mast and may break the rigging.

If you are having difficulty deploying the mainsail, you can use the blue Unfurl line on the portside to rotate the sail in the mast and ASSIST the Outhaul.

You'll have to set the outhaul ratchet to Ratchet when limiting the amount of mainsail deployed. In free-wheeling mode, if the wind catches, the sail can fly out of the mast. Freewheeling works if deploying the full sail.

Fresh Aire easily does ~6+kts with just the jib under 16+knts of wind and runs flatter providing better control. Just be careful of the funnel effect that can happen as the wind rushes between islands.

Mainsail

The mainsail on Fresh Aire uses twin main sheets *(red on port tack and green on starboard)* **without a traveler to control the boom**. This is a common European rigging. The halyards are preset and only adjusted by the Maintenance Professional.

If you're in high wind (20+ knots) conditions, you may prefer to deploy the mainsail head-to-wind instead. This releases tension on the sails.

Be conservative with the amount of sail you deploy in high winds. If you've been too conservative, you can easily deploy more sail area in both the main and headsail while you're sailing.

1. When dealing with high winds, *partially* deploy the main sail first so it's in effect "reefed."
2. Once deployed, fall off to a close reach and begin sailing…just like you would on a vessel with a conventional main.
3. If comfortable, deploy the headsail, in minimal reefed amounts.

28. Shore Power

When connecting the boat to shore power, always connect the electrical cord to the boat first, and then to the shore power. If connecting to shore power first, you now have a live wire that if dropped in the water can be electrically dangerous.

Fresh Aire accepts 30-amp shore power.

- The yellow electrical cord is in the starboard cockpit locker or starboard stern deep locker.
- There is also a 25' yellow extension cord if the primary cord is too short located under the forward settee seat.

To safely connect to shore power

1. Attach the electrical cord to the input plug on the boat (next to the starboard steering wheel below the instruments).
2. On the shore power box, *we highly recommend turning the breaker to off before attaching the shore power*.
3. Attach electrical cable to shore power.
4. If you switched the breaker in the shore power box off, turn it on now.
5. On the boat, a blue light on the power plug confirms power is reaching the plug.
6. Under the navigation table, turn the **Panel Switch** to **Shore Power**.

29. Shower

Experienced cruisers know the sailor's shower: get wet, turn off the water, soap up, rinse off.

To operate the shower

1. On the Electrical Control Panel, press the **Shower** button to activate the sump pump (second row, second button).

2. In the aft head, swing the shower door so it covers the vanity.

3. When finished showering, you can use the squeegee, typically hanging at the cockpit door, to sweep the water down the sump pump.
4. Wait until the shower basin is empty of water, then on the Electrical Control Panel, press the **Shower** button to deactivate the system.

On warm, sunny days, an alternative to the below deck showers is the swim platform shower (with hot and cold water) on the port side aft of the propane locker. This is also a good way to rinse off salt after swimming or dirt after going ashore.

30. Solar

Fresh Aire is equipped with solar power. The system includes three solar panels attached to the bimini. In 2019 we added a single panel to the top of the davit adding more wattage to the collection. The solar panels now have a capacity of over 500 watts.

Solar Panels

The three solar panels above the bimini are zipped into the top of the bimini and require no maintenance, but do require special care regarding the bimini.

- Don't let the boom rest on the bimini. This will damage the solar panels.
- Don't let anything hit the bimini. This can happen when trying to snug up the boom.
- Be careful of the four black cloth covered solar power cables attached to the bimini. **These are not handholds.** We tried to tuck them away, so you don't grab them while moving about.

The solar panel on the davit is up and out of the way. You should never need to interact with it.

- Please don't hang on the solar panel or davit.
- Don't add any other items to the davit. This added weight may cause damage.

Solar Power Charger

The solar power charger is a smart charger that charges all the batteries.

The solar charger will switch to standby automatically when completely charged or when insufficient sunlight is available (like at night, during a solar eclipse, end of the world).

The solar panel will not go to standby when motoring.

The solar panels will still provide some charge during cloudy days, even when shadowed by the mainsail or boom.

31. Spares and Tools

Fresh Aire is equipped with engine and general spares in plastic containers under the settee seat at the forward end of the main cabin.

Tool kits are also under the forward settee in the main cabin.

See the list of engine and general spares and tools in the inventory.

32. Stove/Oven/Microwave

NOTE: The Stove control knob metal facing does get very hot when oven and burners are lit! Please use caution when touching knobs and watch young children and babies in the galley.

The microwave can run on shore power or inverter, but will make a big draw on the batteries when using the inverter. Idle the boat motor @ 1400 while using the inverter

Stove

The gimbaled propane stove has two burners and an oven. If you are cooking underway, we suggest you gimbal the stove by pushing the rod under the oven door to the left, so it is not inserted in the hole in the cabinet (forward). Then if the boat heels, pots and pans will not readily slide off the stove.

Also, for added security, use the fiddles that hold the pots/pans on the burners. They are in a storage container in the lower far right cupboard in the galley.

When cooking at a dock or in a quiet anchorage, lock the stove in position by pushing the rod under the stove to the right and into the hole in the cabinet (forward). That way, if someone leans on the stove or grabs the oven handle, it won't tip and spill pots/pans on the cook top.

To light the stove:

1. Connect to the propane supply (see directions section 20. Propane).
2. On the wall above the microwave, be sure the two green lights are on to confirm the solenoid is active.
3. Push in the stove control knob and turn left to high. Left knob is left burner.
4. While pressing in the knob, light a match or butane lighter and place to burner.
5. The burner should light immediately.
6. Hold the knob in for 5 seconds (warming a thermal couple) and release.
7. You may then operate the knob like a normal stove.

Check burners when first lighting them. We have encountered issues with the burners spontaneously extinguishing when first lit.

When finished with the stove:

1. Turn off the burner(s).
2. On the electrical panel, press the **LPG** button to deactivate the electrical service to the propane system.

In regards to turning off the propane daily. Typically, what little propane remains in the line from the tank to the galley is insignificant, and even if this tiny amount of propane were to leak into the cabin, it would not cause a problem.

Oven

To light the oven:

1. Connect to the propane supply.
2. Push and hold in the far-right oven control knob and turn it to the left.
3. While still pressing in the oven knob, light a match or butane lighter and place into the hole at the front center of the oven.
4. Hold the knob while lighting until the flame lights.
   The oven may not light immediately if it is not primed.
5. Hold the knob in for 5 seconds (warming a thermal couple) and release.
6. You may then operate the knob like a normal oven.

Microwave

We highly recommend you run the microwave on shore power. A microwave draws a lot of power and is operated using the AC 120-volt electrical system on the boat. Though the inverter will run the microwave, this will cause a terrible drain on the house batteries, requiring running the engine to recharge the batteries. Even running on the boat motor is not sufficient.

The Bosch microwave operates at a lower power level than American microwaves, thus requiring longer cooking times.

Running the microwave

1. On the Electrical AC Circuit Breakers panel under the navigation station, turn on the second Outlets circuit breaker.
2. On the microwave, push the large circular button directly under the LED display so it is out.
   The clock should be on.
3. To select a power setting push one of the power buttons: 90,180,360,600 or 800 watts.
   In our experience, the well-worn 800-watt button is closest to the power of the normal American microwave.
4. Set the cook time by turning the large button clockwise to the desired amount of time.
5. Press Start.
6. Pressing Stop returns the LED to clock time.

NOTE: The microwave is a nag and when finished cooking, it will beep and beep and beep and beep until **you** manually turn it off. No auto-off on the beeps.

33. Table (in the Main Saloon)

The main salon table opens to comfortably seat six people.

The table does NOT convert to a bed.

The table is NOT a cutting board. Please use the provided plastic and wooden cutting boards when working at the table.

The table is not heat resistant. Use the provided hot pads.

To enlarge the table:

1. Pull down the knob on the forward edge of the bottom of the table and slide the table leaves aft.

2. Pull up and fold over the table leaf support bar (it has a black strip of material on the top when folded over).

3. Unfold the table leaf.

To close the table, reverse the procedure.

34. Water & Tanks

Water tanks

Fresh Aire has two water tanks, holding a total of 95 gallons.

The forward tank under the bed in the forward berth holds 40 gallons.
The aft tank under the bed in the port berth holds 55 gallons.

The water tank selection valve, is found in the aft head, under the sink, on the forward wall. You will need a flashlight to see the valve.

Forward water tank – on the left

Aft water tank – on the right

Turn knob to the right to open the valve.

Turn knob to the left to close the valve.

You can isolate the tanks or split to draw from both tanks. Note that the forward tank sits higher than the aft tank, so if both tanks are open, the forward tank will empty first.

Fresh Aire sails best with a full forward water tank. She likes to slice through the water so keeping a full forward tank keeps her nose deeper into the water, reducing the bounce in heavy seas.

Water conservation is, of course, a cruising skill. State parks have no pressurized water to refill tanks, but all points of civilization do. We suggest refilling the tanks whenever possible.

Water pressure

Always turn off the water pump when motoring or sailing. Should one of the tanks run dry, the water pump could burn out as it tries in vain to pump water to build pressure (and you would likely not hear the pump running continuously over the sound of motoring or sailing).

To use any of the faucets in the boat you must activate the fresh water pump.

1. On the **Electrical Control Panel**, press the **Water Pump** button (second row, first button).

2. When finished using the water, press the **Water Pump** button to turn off the pump.

Checking water level

The water level gauges on the Electrical Control Panel do not function correctly. We are investigating how to remedy this situation.

Fill water tanks before leaving dock. Do not trust previous guests or cleaning crew to top off the tanks.

Hot Water

Hot water is stored in a six-gallon hot water container under the aft starboard bunk.

You can heat water while motoring, on shore power, or by heating in the teapot on the stove.

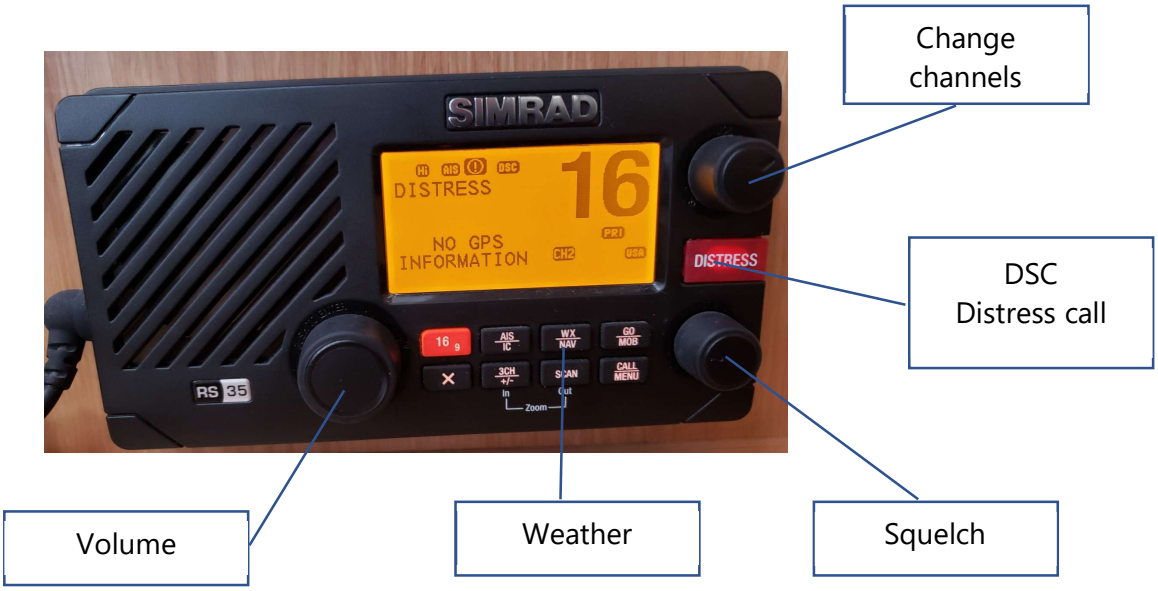
CAUTION: The engine heats water to scalding temperatures! Please test the temperature of the water to be certain it is appropriate.

Be Aware that using the inverter to heat water takes a large draw on the house batteries. We recommend not using the inverter to heat water. Instead idle the boat engine at 1400 RPMs to heat the water instead of using the inverter. It takes about 30 minutes of running the engine under load (1100-1400RPMs) to get the water hot.

Do not heat the hot water using the inverter when not running the motor. The water actually heats faster with the motor than the inverter. Also, the electric hot water heater is a significant drain on the house batteries. If not on shore power and you use the inverter to power the hot water tank, run the motor!

When on shore power, heat the water by turning the water heater switch on the Electrical AC Circuit Breaker Panel to the "on" position. It takes about an hour to heat the water on shore power.

35. VHF Radio



To turn on the VHF radio

1. On the Electrical Control Panel, push the **VHF** button (third row, second from the left).
2. Remove the Simrad cover from the VHF radio.

Monitoring the Hailing/Distress Channel

Please monitor **channel 16** (the hailing and distress channel) during your cruise. You may save a vessel or a life. You may hail vessels on channel 16, but after establishing contact on channel 16, ask the skipper of the other boat to switch to working channels 78, 79 or 80.

Weather

You should listen to the weather reports in the morning before you head out and ½ hour before reaching your destination. This is generally a light wind region in the summer, but weather changes can be sudden. Listen for the "inland waters of western Washington" and the "northern inland waters," which cover the San Juan Islands and the Canadian Gulf Islands.

To listen to the weather reports

1. On the **VHF** radio, push the **WX** button.
2. On the left of the device, turn the black knob to scan the weather channels for the one with the best reception (channel 4 or 7 in our experience).

DSC Signal

This radio receives DSC (Digital Select Calling) distress signals, which start with a long series of what can only be described as shrieks. The location of the vessel sending the DSC distress signal will display on the chart plotter. This will likely be followed by a message from either US Coast Guard or Victoria Coast Guard radio; this may alert you to the opportunity of being of assistance to another mariner.

To place a Distress call

1. Lift the red cover door then press and release **DISTRESS** to show the DISTRESS menu.
2. Select the category you want to transmit.
3. Hold down **DISTRESS** for about 3 seconds to transmit.

NOTE: The **DISTRESS** key can also be held down continuously to transmit an "undefined" category Distress call.

Remote Access Microphone (RAM)

The VHF remote access microphone (RAM) bracket is in the cockpit, starboard side, aft of the engine controls. This bracket also charges the RAM.

The RAM cannot control the base unit volume. You must do this on the VHF radio at the nav station.

If you would like to review VHF radio protocol and procedures, please see the section in the onboard Charter Guest Manual.


AIS/intercomm
Power button
Weather
SIMRAD
OK
SCAN
CALL MENU


Distress key
Volume control
Push to talk
SIMRAD

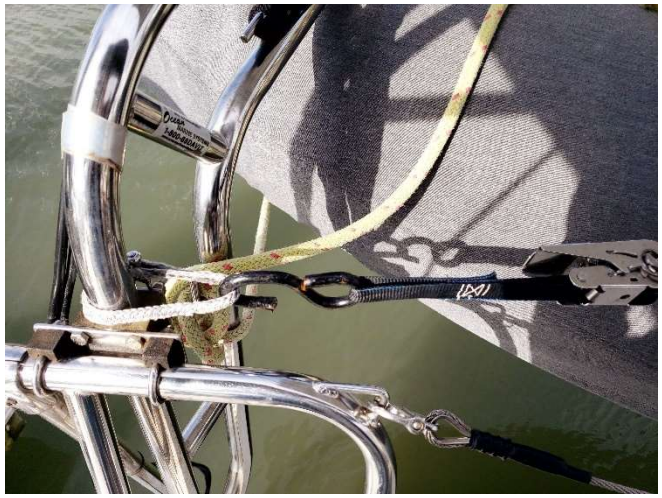
Handheld Unit

Fresh Aire has a handheld VHF radio in the nav station cupboard. We use this to communicate back to the boat when ashore, communicate helm to bow when anchoring, and it serves as an emergency backup in case the primary VHF fails.

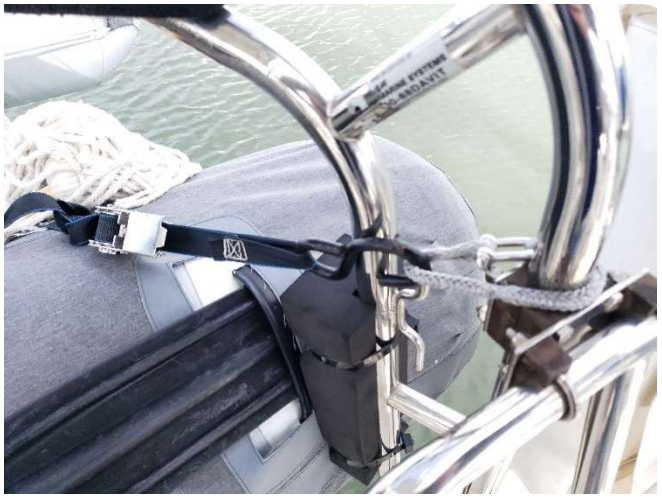
This handheld device does not have the same range as the main VHF radio because the antenna is closer to the ground, but it works well in above situations.

36. Appendix: Dinghy on Davit

Starboard cable runs ACROSS dinghy: from davit stay to dinghy hook. Note port cable hooked there also.



Starboard strap

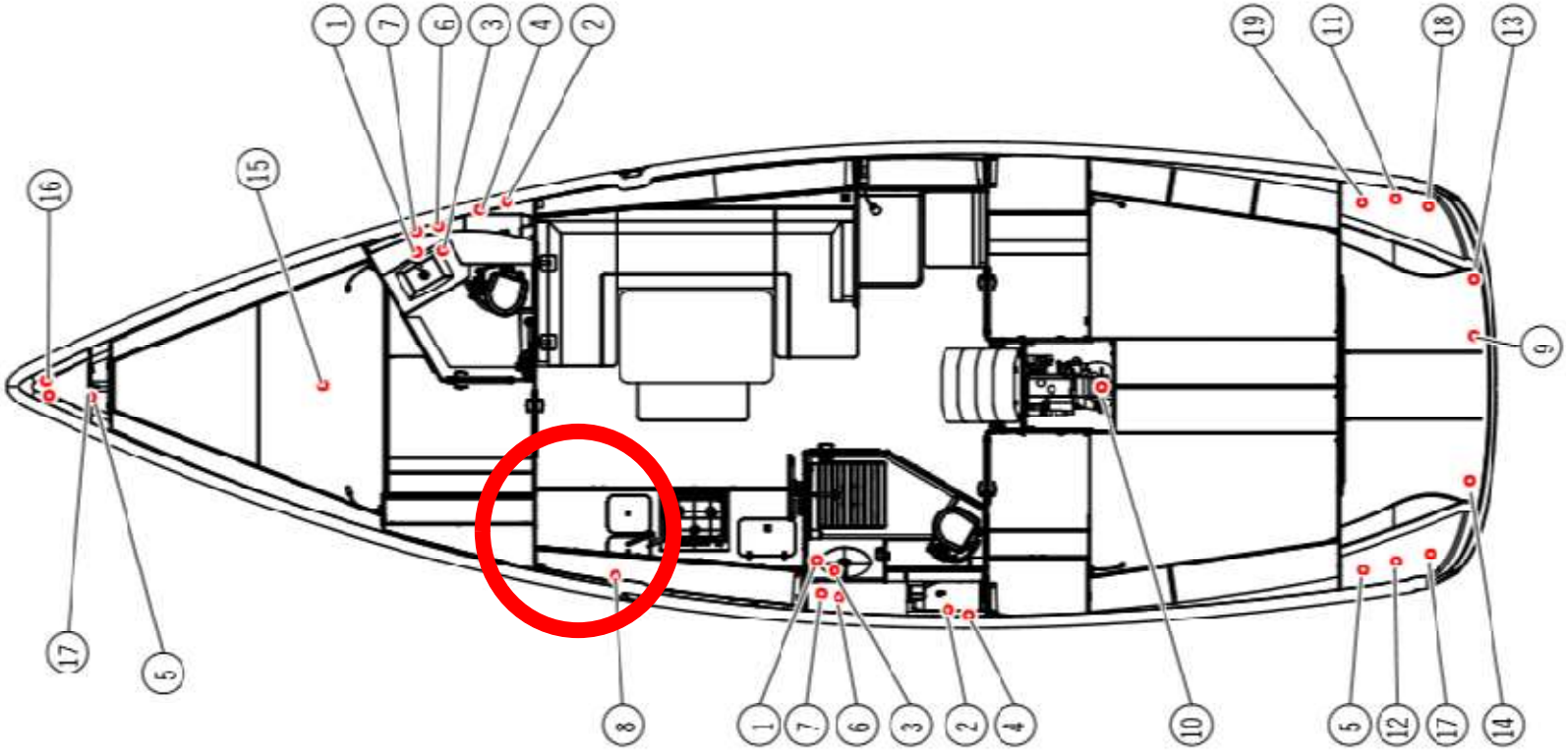


Port strap

Dinghy connection

Important: NOTICE the space between dinghy & forward strap to prevent chafing.

37. Appendix: Through Hulls



	Description		Description		Description		
1	Intake flushing water toilet	**6**	Discharge sink	**11**	Discharge Heater	**16**	Drain anchor locker
2	Deck suction black water	**7**	Discharge head/shower	**12**	Discharge engine	**17**	Filler fitting fresh water
3	Discharge black water tank	**8**	Discharge sump of galley sink	**13**	Discharge manual bilge pump	**18**	Filler fitting diesel
4	Vent black water tank	**9**	Discharge el. bilge pump	**14**	Drain gas box	**19**	Vent diesel tank
5	Vent fresh water tank	**10**	Saildrive	**15**	Log/echosounder		