

Notes from the Owners of Reliance

Welcome aboard Reliance! We believe she is the perfect boat for cruising Northwest waters. Here is a list of the primary reasons we chose the Hanse 415:

- 3 Cabins – The cabins are large and have great headroom.
- 2 Heads – One large Head with dedicated shower and forward head as well.
- Fast – Reliance has a large main and a Genoa that has positive roach with vertical battens. This gives more sail area, but still operates as any other roller furling sail. She also has a deep keel (6' 11") so she can handle more sail area.
- Ease of handling – Two can easily handle her with her with Lazy Jacks for the main, roller furling genoa, and everything including reefing lines led aft.
- Excellent electronics – B&G integrated system with SailSteer.
- Roomy Cockpit – 6 - 8 people can sit in the cockpit and not feel crowded.
- The folding transom provides for a very safe platform for entry and exit from the dinghy to keep you and your gear dry.



Reliance was placed as a brand new boat into the San Juan Sailing Fleet in June of 2016. We are so pleased with the quality of the build! We have found her to be comfortable inside and out and she is a fast boat for sailing in both light and heavy air. She also has a large 55 hp engine that will help you get home on time when the wind doesn't cooperate. We chartered at San Juan Sailing since 2009 and found the boat we wished to own. Our goal is to help others enjoy Reliance as much as we do!

Listed below are some tips on how to get the most out of Reliance and her equipment. We sincerely hope you have a great time. If you have questions or feedback we would love to hear from you.

Happy Sailing,
Don & Amy Policky

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Key to Markings: Throughout these notes we have use the following convention:

- **BOLD** – used for headings.
- Underlining – indicates the location of things.
- *Italics* – indicates important knowledge or data.

1. Vessel Information and Specifications

Vessel Information:

U.S. Customs Re-Entry Decal – Located on the aft side of the starboard helm binnacle.

Vessel Official Number - 1270078 (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). Vessel Name's number is located inside the starboard cockpit locker. 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	Fuel: 42 Gallons, single tank
LOA: 40' 8"	Water: 137 Gallons (2 tanks) Hot water: 11 Gallons
LWL: 37' 5"	Holding tanks: 9 Gallons each, forward and aft
Beam: 13' 8"	Refrigerator Main Compartment: 32" w x 13" d x 21" h
Draft: 6' 11"	Freezer Compartment: 12" w x 8" d x 3-1/2" h
Displacement: 19,621 lbs. (dry)	V-Berth: 6'-10" long, 6'-2" wide at shoulders, 2' at feet
Mast height above Water: 70'	Aft Staterooms: 6'-8" long, 5'-7" wide Queen is 5' Wide
(w/antenna)	

2. Nuances

There are a few things about Reliance 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.

NEW – USB and 12 V Power in Staterooms – We have added 2 USB ports and a 12V Power Port in each stateroom for your convenience. This allows you to keep your phone charging and still within easy reach during the night. The 12V power port will also allow the ability to plug in a CPAP or other machine during the night as well.



Bimini Connector Cloth while loading/unloading boat - For Easy loading and unloading of supplies to the cockpit, unzip and fold back the connector cloth between the bimini and dodger. This provides a nice opening for you to walk through while carrying items without having to bend down to get under the bimini connector. If you remove the connector cloth completely, please roll the cloth into a tube so that the large window does not get creased. It can be stowed over the top of the starboard cabinets in the salon when rolled.

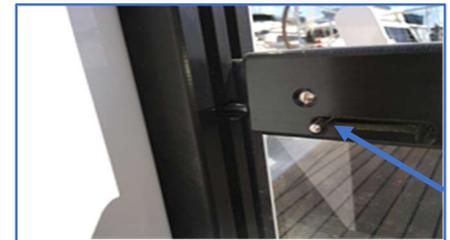


Fender Storage - For your convenience, the starboard lazarette is kept empty except for the emergency tiller. This is where we store the 3 large fenders while under way. We also usually put one of the remaining small fenders in the anchor locker, and the last small fender gets tied to the stern rail. There is room at the end of the fenders for the docklines as well.



Companionway Entry Latch and Hatch “Board”

Operation – Opening Reliance’s companionway vertical hatch “board” is unique and must be done carefully. The hatch board neatly lowers into a recess rather than pulling up and out which is typical of many boats. It is very important support the hatch board with one hand while opening the latch with the other to prevent the hatch board from free falling into the recess and breaking (watch your toes also). Note that the latch has a stiff spring inside and takes a little force to turn it clockwise to open.



The hatch board can be latched partially open at two places. The latches are on the inside of the hatch board. Be sure the rod is over and drops into the slot so the door doesn’t fall and break the glass under its own weight.

Salon Lighting Controller and other Cabin Light Switches – The salon lights are operated by an electronic controller located on the inboard end of the galley “L” cabinet. After turning on the “LIGHTS” breaker on the DC Panel at the navigation station, a quick press on the Power Button followed by a press the S1 button will turn on all lights at once (except galley lights). Pressing the S1 button a second time will turn them off. Press S2 to turn on the two galley lights.

There is also a single entry light switch located on the salon ceiling on the port side when standing at the bottom of the companionway stairs to provide light when you first enter the boat. The LIGHTS breaker on the DC panel does not need to be on.

The overhead lights in the staterooms and heads are switched on and off by pressing the light itself.



Mainsail – We find that when the breeze picks up to the point where reefing is necessary, at around 15 knots, we reef the main first and keep a full jib if conditions allow because the main is proportionally larger than the jib compared to most boats. This gives us the best sailing performance, especially upwind.

- Reliance does not use a traveler system for the mainsheet. Instead, the blocks are fixed to the cabin top. When sailing down wind, keep some tension on the vang in order to keep the boom from rising too much as you release the mainsheet to let the boom out. (Note that the boom vang is spring loaded and will drive the boom very high if the main sheet is loose, so always put the vang line around a winch prior to opening the vang clutch.

- Occasionally we find we need to adjust the two mainsheet leads because the mainsheet is double-ended; one end leads to the port side and the other leads to the starboard side so you can adjust mainsail trim from either side of the boat.
- When lowering the mainsail, we find it necessary to remove the bimini connector cloth so you can access the back portion of the sail and boom, including zipping the cover.

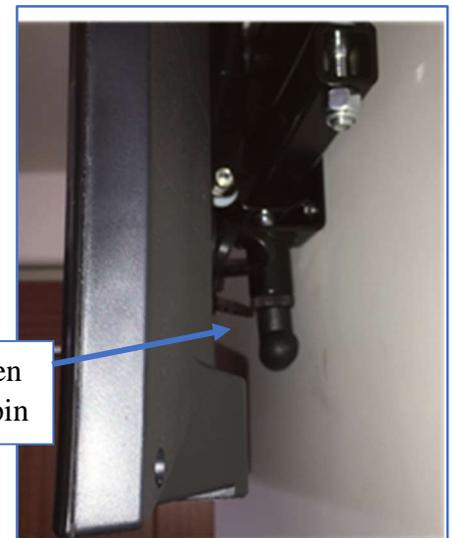


We have two different length winch handles on board. There is one longer, more powerful winch handle (shown) and two shorter winch handles. The longer handle is handy for raising the main, however as seen in the picture, it comes very close to the bimini frame, so you do have to watch your fingers in the pinch point. Please be careful if you use the longer winch handle to raise the main.

Salon Berth Conversion – The nav table lowers to create a single berth on the port side of the salon and the dinette seating area on the starboard side of the salon can be used for another single berth. Refer to Section 5 Berths for nav table berth conversion instructions and photos. Please note that the salon dinette table does not lower to convert to a double berth



TV Screen – Please use the locking pin on the arm behind the TV when not in use to secure the screen in place. Expensive damage can occur if not locked!!

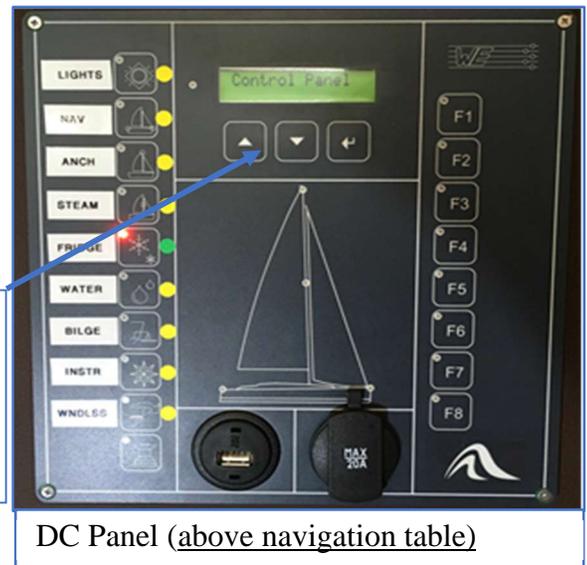


Tankage levels – The fuel and two potable water tank levels are all displayed in the same monitor. You just repeatedly press the up or down arrow button to switch between which level the gauge is reading.

The electrical voltage reading is no longer used and is not correct. Please see section 4 for the battery condition gauge.

Water Tank 1 is the Port side fill, for the tank under the V-berth and Water tank 2 is the Starboard tank under the Starboard dinette seating. Please note that water tank 2 never shows more than 75%, even when filled completely.

Press up or down arrows to scroll through water and diesel tank levels on screen above.



DC Panel (above navigation table)

If the screen on the DC Panel shows an alarm with an exclamation point to the right of a tank reading for example the tank may have been overfilled (eg. 100%!) You can reset the alarm by pressing and holding the return button for 5 seconds.

Also note that we have added a large accumulator tank that will allow you to wash your hands a couple times without the water pump coming on. This is especially nice at night when people are sleeping so the pump doesn't wake everyone up. Once the pump does come on, it may run for a few minutes while it re-pressurizes the accumulator tank even after the water is shut off.

Docking – Please note that Reliance is very quick and responsive to steering input at docking speeds. We recommend that as you approach a marina, you slow to 1 or 2 knots, and make a couple of sharp 90° turns to get a feel for the responsiveness. (Watch for traffic behind and around you when you do this)

Flares – The traditional pyrotechnic flares common on most boats have been replaced on Reliance by a single, Coast Guard approved, electronic signal device. You just twist the top lens to turn it on. This light is located in the upper cabinet above the nav station.

Portlight and Skylight Hatch Dogs (Latches) – The hatch dogs have a unique “cracked open” position that allows some ventilation while still being secured from opening. Look for the slot in the latch receiver block. Please make sure all hatch dogs are in the sealed closed position prior to getting underway or leaving the boat to keep water from entering the cabin.

3. Emergency/Safety Equipment (See **RED** items on Inventory Picture)

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

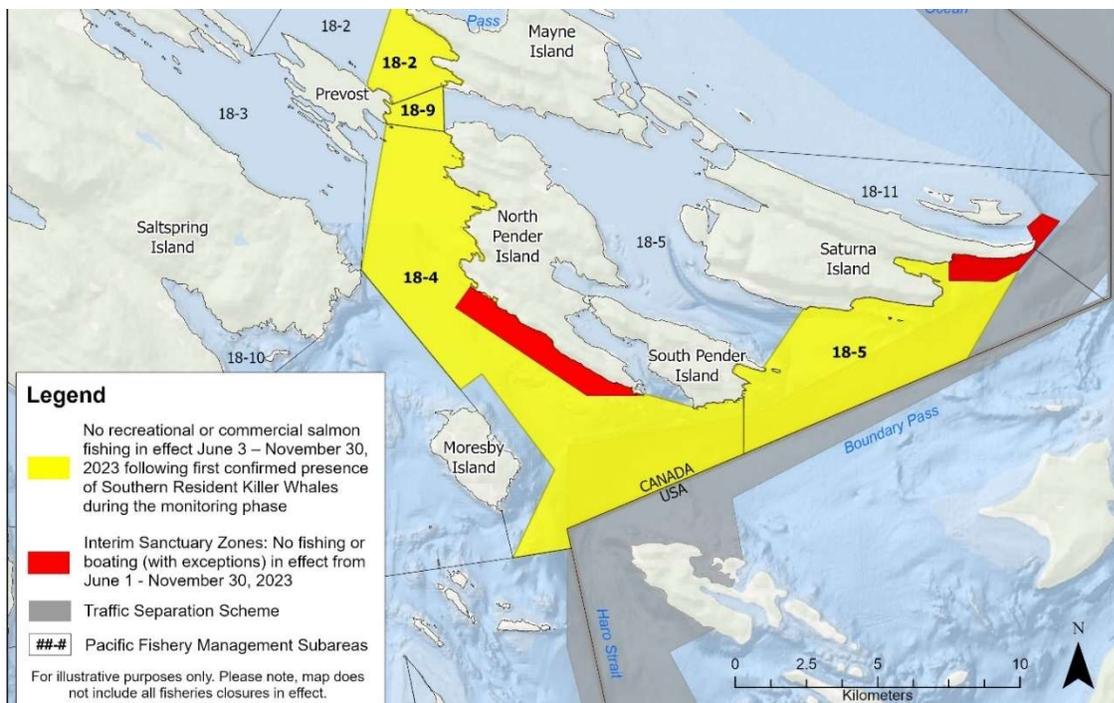
- Air horns – Salon port side fwd cabinet
- Bilge pump (manual) & handle – Cockpit at port helm
- Carbon monoxide detector – Port aft stateroom
- Emergency tiller – Starboard cockpit locker
- Fire extinguishers – Salon, starboard stateroom, V-berth

- First aid kit – Aft head vanity
- Flares – Salon port side fwd cabinet
- Flashlights – Nav table and top of companionway stairs
- Lifesling – Port stern pulpit
- PFDs - Starboard stateroom and V-berth
- Tapered plugs for through-hulls (seacocks) – Tied to each seacock – see Through-hull Diagram
- Tool kit and spares – Salon under port forward settee

4. Being Whale Wise

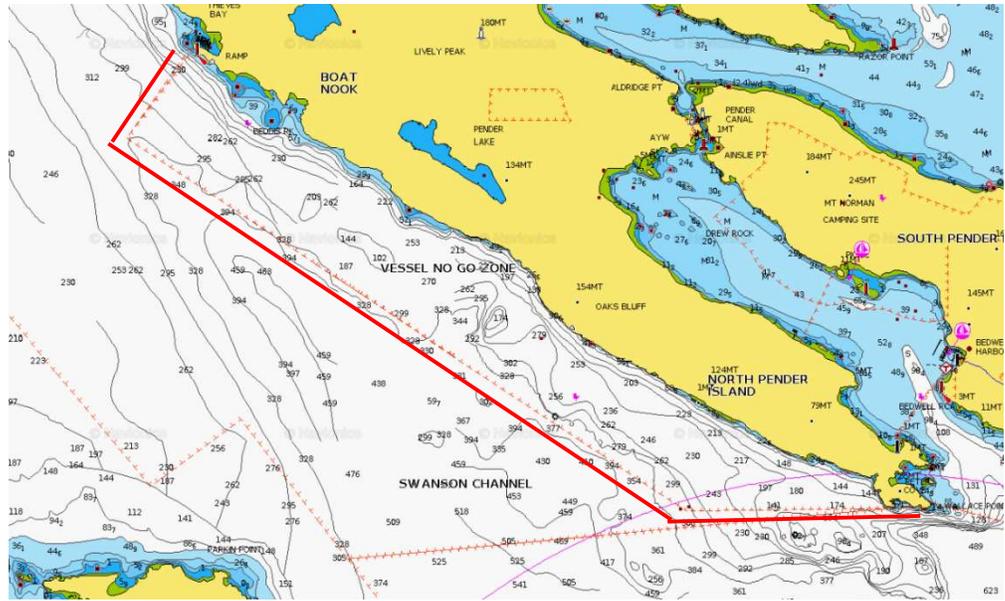
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to decrease human impact both the Canadian and US governments have implemented rules. We provided you a summary of these rules in the packet you receive when you arrived and there is more information in section 10 of the white reference book onboard Reliance. 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 Reliance's chart plotter. The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.

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



5. Anchors and Windlass

QUICK NOTES

- Windlass controller is in port forward salon cabinet.
- Windlass breaker on the DC panel at the nav station, only turn on when the engine is running.
- 250' chain marked with 1 piece of yellow line at 25' intervals and 2 pieces of yellow line side by side at 100' and 200'. At 250 feet of chain, it will switch to a 6 foot nylon line that connects to the boat for safety. The sign to the right is glued to the inside of the anchor locker door as a reminder.
- The windlass gypsy is not designed to hold the boat while anchored, so please use the double snubber lines attached to the single chain hook to hold the chain while anchored (see pictures and diagram on next page). Connect the chain hook to the chain just after it exits the bow roller, then lead the snubber lines outside the lifelines directly to the bow cleats on each side of the bow. Let the chain out after this until the snubber lines are taking the load and the chain is slack coming off the bow roller. Secure anchor with the interior snubber line located within the Anchor Locker. Please tie at the appropriate length to the interior cleat.
- When you pull the anchor back up, please stop when the anchor clears the water and pull the chain by hand to get the anchor into its final position on the bow roller. Once it is there, put the locking pin through the anchor and just slightly bump the windlass to pull in most of the slack chain, but do not pull the slack tight with the windlass. If you tighten the chain, the windlass can bend its shaft resulting in it not being available for your next anchorage.
- Turn ON the Anchor light overnight.



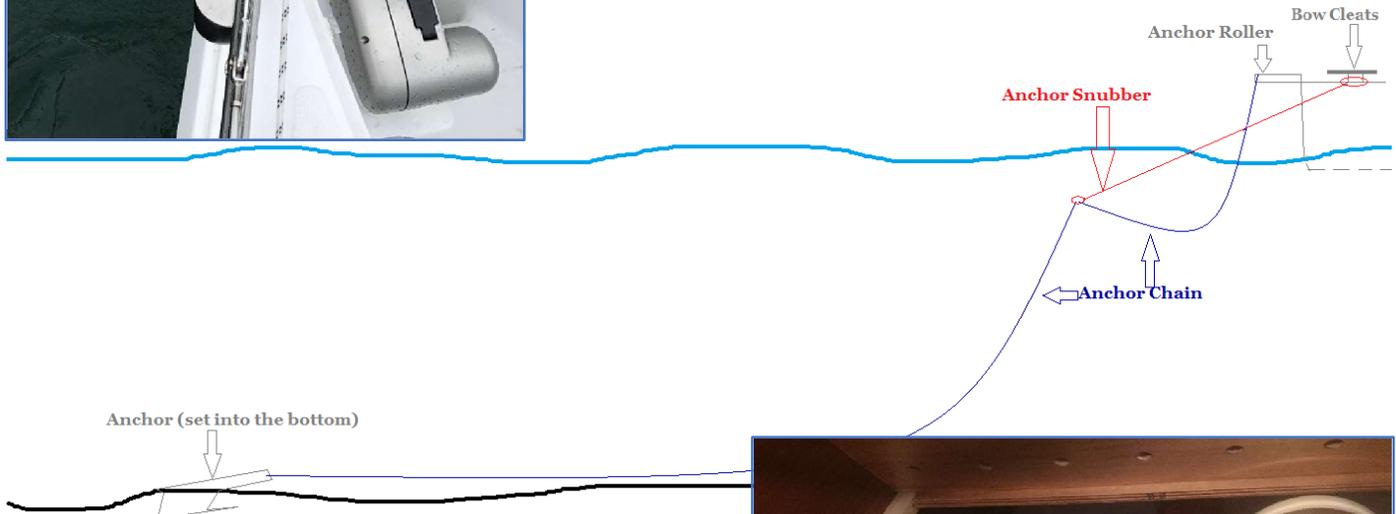
The scope normally used in the islands is 4 to 1, definitely not 7 to 1 (unless conditions call for it, i.e. sustained winds over 25 knots). Most of the anchorages are well protected and popular, so you will likely have someone anchored nearby. Most coves are 20'- 40' deep; so expect to pay out about 100'-180' of rode. After you have

paid out the suitable amount of rode, 1-2 minutes of idle reverse sets the anchor. Also, the tides can change water depth up to 12' in the San Juans so be aware of where you are in the cycle when choosing an anchorage and deciding how much rode to put out. *NOTE: When raising the anchor, as the rope to chain splice begins to go through the windlass, you will need to reach down below the windlass and pull gently on the rope to hold tension while the splice begins to enter the windlass gypsy. Once the chain enters the windlass gypsy, you can run the windlass as required.*

Proper use of the double snubber



Let the anchor out until the scope from above is about right, then attach one of the loops on the end of the snubber over the port or starboard bow cleat. Then, while standing down in the anchor well, reach out in front of the bow roller and slide the chain hook over the chain, run the other leg of the snubber line around the bow of the boat and drop the other loop over the opposite bow cleat. Once this is done, let out more chain until the snubber is taking all the tension as shown below. To the left is a picture showing the chain loose going into the water and the snubber taking the tension on the anchor to the bow cleats. The snubber is 15 feet long, so will add 15 feet to the amount of scope you have already let out.



Anchor (set into the bottom)

Secondary Anchor and stern tie line

The stern tie line and the secondary anchor are stored under the port stern berth. The anchor is in a red bag with the anchor rode in a black duffel, between the stern tie line and the hot water tank.

Before using this anchor, you must do some minor assembly. Open the red bag and follow the instructions on the inside of the bag. It is relatively simple and



should only take a few minutes before you are ready to use this as a stern anchor, or a second storm anchor set in a v from the bow with the primary anchor.

6. Barbecue

The stainless steel propane barbecue is mounted on the stern pulpit. There is a hose plumbed from the propane tank inside the propane locker to the BBQ. The solenoid valve switch (on the Trident controller at the Nav Station) does not need to be ON for gas to flow to the BBQ, however there is a manual valve in the propane locker that may need to be turned on to get gas to the BBQ control. The valve is on when the black handle is lined up with the pipe and off when 90° or perpendicular to the pipe. (See photo below). The red pushbutton ignitor can be inconsistent in a marine environment and sometimes does not work, so please use the long butane lighter from the galley to light the barbecue. Additionally, you need keep the propane valve control knob on the BBQ pushed in for 5 to 10 seconds before releasing it to allow the safety thermocouple to heat up and recognize that there is flame or the flame will go out.



BBQ isolation valve in Open Position, aligned with pipe.

7. Batteries & Charger/Inverter

QUICK NOTES

- Please keep batteries above 12.0v at all times.
- We check the house bank voltage first thing in the morning and just before retiring for the night, and if it is close to 12.0 volts, we charge the batteries with shore power or the engine. Typically, refrigeration can be kept on overnight, but if the battery voltage is below 12.3 volts, please turn the refrigeration breaker off on the DC panel for the night. Then you can charge the batteries first thing in the morning and turn the refrigeration back on. It will usually hold the cold for the night.
- To ensure batteries are charging when connected to shore power (see photos next page):
- At the Left AC panel, blue SHORE POWER breaker ON (UP position). NOTHING ELSE IS REQUIRED to ensure that the batteries are charging unless the switches on the panels have been changed. (see section 9 for AC Breaker Panels and follow the green / red codes)
- Verify that the Magnum Energy monitor shows “Charging” in display. If not, press the “Charger ON/OFF” button.
- When underway with engine power the batteries are automatically charging.
- At anchor, batteries can be charged with engine in neutral at 1200 RPM.
- At anchor, ONLY the 110V outlet AT THE NAV STATION can be energized with the inverter. Just push the “Inverter ON/OFF” button on the Magnum Energy monitor. When using the inverter, monitor battery voltage, as the inverter drains the batteries quickly. **NOTE:** The Magnum display will read “Searching” until you turn on the load that’s plugged into the outlet. Then the display will read “Inverting” and supply power to the outlet.

BATTERIES

Reliance has one 90Ah AGM start battery and two 165Ah house bank batteries on board. We have her wired for maximum convenience. These two battery systems are isolated from each other to prevent house use (lights, pumps, heater, etc.) from draining the start battery but note that the windlass motor is powered by the start

battery. The engine must be running while operating the windlass to protect the start battery from excessive drawdown.

House batteries voltage normally starts at 13.5 when fully charged. It will then drop to 12.45 and levels off for quite a while and then start dropping again. When it starts dropping this second time you have very little reserve left. *It is time to recharge when the voltage gets to 12 volts* – Please do not run the voltage below 12.0 – doing so damages the batteries.

CAUTION: Please *do not turn the battery switch in the starboard aft cabin to “off” while the engine is running!* This will blow the diodes on the alternator, and the batteries will no longer charge.

CHARGER/INVERTER

Reliance has been equipped with a state of the art Magnum Energy power management system which includes a charger and an inverter. The Magnum control panel and the two AC breaker panels are shown in the photos below.



Magnum Energy Control Panel (located above nav table)



Shore Power Breaker

Left AC Panel (located below nav table at floor level)



Right AC Panel (Located to right of Left AC panel)

8. Electrical Panels

QUICK NOTES

- The AC and DC panels use the following color dot convention:
 - Green – Always ON
 - Yellow – Turn on as needed
 - Red – Always OFF
- Location of main AC breaker...

- Location of main DC breaker...
- The “F” buttons on DC panel are not used.
- Salon cabin lights control panel on inboard end of galley “L” cabinet.

The electrical panels on Reliance are straight forward and clearly marked. When you leave the boat at the end of your trip the only 12V switch that needs to be left on is the refrigerator. On the 110V panel the Shore Power breaker needs to be ON (the outlets can be left on if desired) to enable the battery charger.

NOTE: To keep the system as automated as possible, the *RIGHT AC Panel should have the two Green dotted switches ON and the two Red dotted switches OFF*. The switch marked “Battery Charger” on this panel is no longer used.



DC Panel (above navigation table)

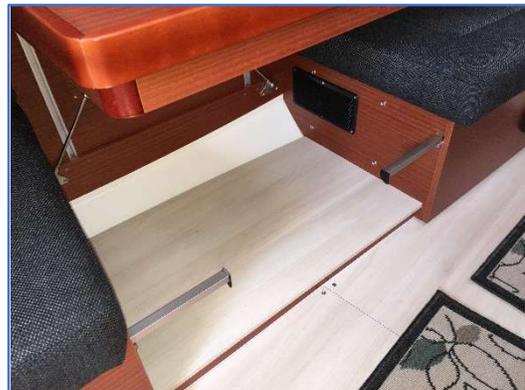
9. Berths

Reliance sleeps eight; two in the forward stateroom, two in each of the aft staterooms and two singles in the salon, one at the table, one at the convertible nav station. All three double berths are quite roomy, all of them larger than a queen bed.

The nav table lowers to create a single berth on the port side of the salon and the dinette seating area can be used for another single berth on the starboard side of the salon. The dinette table leaves can be lowered to create additional room for accessing the starboard side single berth. Note that the salon dinette table does not lower to convert to a double berth. It remains a single also.

Nav Table Berth Conversion Instructions: Please refer to photos below.

1. Extend the table supports located on the ends of the settee sections, inboard side. This is CRITICAL.
2. Carefully push down on the outboard end (nearest the wall) of the nav table while lightly holding the inboard end with your other hand to prevent the table from lowering too fast.



3. Fill the nav table space with the folding backrest cushion located at the aft end of the aft nav station settee. The folding backrest cushion on the forward end can be used as a backrest if you wish to use the entire length as additional seating.
4. You can remove the seat back cushions for extra room while sleeping.



10. Bilge Pumps

QUICK NOTES

- Primary bilge pump is automatic (always ON) with a float switch. Manual override switch for the primary pump located on the DC Panel – press and hold.
- Manual bilge pump is located at the aft end of the cockpit, inboard side of the port helm seat. Pump handle is integral with the cover plate.

11. Dinghy and Outboard

QUICK NOTES

- Tow dinghy without motor, short painter, tie off twice to mooring cleats, away from engine and heater exhausts.
- NOTE: The fuel cap tends not to vent and will create a vacuum that will prevent the engine from running. If the engine dies after a few minutes, loosen the fuel cap to let air into the tank, and don't tighten it up all the way. This should allow air in and keep the motor running. *Before tilting the motor, please tighten the cap so gasoline doesn't leak out.*
- In high winds towing from leeward side will help prevent flipping.
- Please keep the dinghy off rocks when beaching or shore combing.
- Motor stored on port side stern rail.
- Honda outboard is four-stroke, do not add oil to gas.

Reliance is equipped with a hard bottom dinghy and a 2 hp Honda out board motor. The dinghy is roomy (easily holds 4 adults) and the outboards are easy to operate. The dinghy tows with the least drag if brought close to the boat—two to three feet off the stern.

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

The outboard is a four stroke motor, so do not add oil to the gasoline mixture. San Juan Sailing will be sure you have a full spare gas can, which is normally in the dinghy. Also please do not cruise with the outboard on the dinghy as a large wake or gust of wind can overturn the dinghy. We also recommend taking the outboard off the dinghy at night and putting on the lock. When the lock is not in use, please attached it to the stern pulpit close to the mounting bracket.

Listed below are the operating instructions for the outboard:

Starting the Outboard

- a. Push the fuel valve lever (starboard aft corner of the outboard) aft to open.
- b. Pull out the choke switch (starboard forward corner of the outboard).
- c. Open the air vent on the top of the fuel cap by turning counter-clockwise.
- d. Make sure the black U-shaped kill clip (with the red lanyard) is clipped into the red shut-off knob (port forward corner of the outboard).
- e. Turn the handle throttle ¼ turn counter-clockwise to Start.
- f. Pull the starter cord until it starts (you shouldn't have to pull it more than 5 times).

While Running

- a. There is no transmission--just throttle up to go forward and throttle down to stop. If you want to go in reverse--just swivel the outboard around 180 degrees.
- b. If the engine dies while running, try loosening up the gas cap on the top. Sometimes the vent through the cap clogs, and keeps fuel from leaving the tank.

To Shut Off

- a. Shut the outboard off by pulling the red lanyard until the clip pops off and the engine will stop.
- b. To avoid prop damage, shut the outboard off and raise it out of the water before you reach the shore. Pull the outboard forward and out of the water until it clicks and stays in place.
- c. To put the outboard shaft back in the water, release the stainless steel lever on the starboard side of the shaft.

When Not in Use

- a. Put the outboard back on the outboard mount on the stern rail and tighten both braces.
- b. Pull the fuel valve lever forward to close and close the air vent on top of the fuel cap.
- c. Put the lock back on the motor.

Troubleshooting

If the engine won't start, review steps 1-6 above to make sure you've done all six steps. There is a spare spark plug and spark plug wrench in with the safety equipment in case you need them. A new spark plug solves myriad outboard problems. If you use the spare spark plug, notify your check-in skipper upon your return so a new one can be placed aboard for future guests. If the outboard is running and you're heading toward shore, and the engine suddenly quits, it's usually that someone has forgotten

to vent the fuel cap, or the fuel on/off switch on the starboard side of the engine at the base of the cover is set to the off position. If the engine is running fine but the propeller isn't moving, the shear pin is probably broken – just take the cotter pin out to remove the propeller and replace the broken shear pin (a spare pin is located forward of the shaft under the handle grip).

12. Dodger

QUICK NOTES

- The center window can be opened.
- Not designed to be lowered.
- Please do not remove the canvas or windows from the frame.
- Protect the plastic windows.

As with all dodgers, please be gentle. If the glass becomes spotted with salt please get a pot of fresh water from the galley sink and “flood” the salt crystals off the plastic. Our dodger has some very handy rails on the back and sides that make staying upright and onboard easier.

13. Bimini

QUICK NOTES

- For Easy loading and unloading of supplies to the cockpit, unzip and fold back the connector cloth between the bimini and dodger. This provides a nice opening for you to walk through while carrying items without having to bend down to get under the bimini connector.
- The connector cloth between the dodger and bimini frame is removable.
- Roll the connector cloth, please do not fold as this will crease the window.
- When raising or lowering the mainsail, please be sure to remove the connector cloth, as you will need to stand in that space to zip the mainsail cover closed and to pull the ends of the mainsail to allow proper stacking of the main.
- Please be careful when tightening the backstay. The block will come through the bimini “sock” that sticks above the bimini. This should be done slowly and may require your assistance in getting it through the end of the “sock”.
- Please do not attempt to fold the bimini. While it may appear to be foldable, it is currently not possible with the fittings on it at this time. We may make revisions in the future to allow this, but have not gotten it set up yet.

As with all boat fabric and plastic windows, please be gentle. If the glass becomes spotted with salt please get a pot of fresh water from the galley sink and “flood” the salt crystals off the plastic.

14. Electronics/Instruments

QUICK NOTES

- To fully open the cooler box lid in the cockpit table, the chart plotter needs to be tilted vertical or slightly aft. Release the tilt lock lever at the base of the plotter on the aft side.
- All instruments are powered by the INSTR breaker switch on the DC panel at the Nav. Station in the salon.

- Remove and store the instrument covers in the covered compartments on the cabin top next to the companionway under the dodger.
- If either plotter has a popup screen asking if you want to update the software, just hit “No”, and it won't pop up again until you turn the system on again. If this occurs, please notify SJS staff during the check-in at the end of your charter.
- Commonly used chart plotter selections are detailed below.

Chart Plotters

- *Reliance* is equipped with two B&G chartplotters – one in the cockpit between the helms and one at the Nav Station in the salon.
- Please refrain from changing settings beyond the typical functions like chart orientation, radar overlay, AIS overlay and range.

Commonly Used Chart Plotter Selections:

Finding the Navigational Chart: From the Home page screen (see photo upper right), touch the “Chart” icon. If not already on the Home page, touch the “Home Page” icon in the upper left of the LCD (see photo lower right) or press the “Home” button, upper right of the plotter face.

Zooming in and out: “Pinch” the screen with two fingers or rotate the black knob, upper right of the plotter face.

Returning the screen to the vessel's current location: Touch the “Clear Cursor” icon, lower right of the LCD.

Clearing Pre-existing Waypoints, Routes and Tracks:

- From the Chart page, touch the “Menu” icon, top right corner of the LCD.
- Touch “Find...”.
- The select Way Points, Routes or Tracks.
- Then touch “Delete All” at the bottom of the LCD.

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

- From the Chart page, touch the “Menu” icon, top right corner of the LCD.
- Touch “More Options...”.
- Touch “Orientation”.
- Select your preference.

Display Brightness:

- Quick press power button, lower left corner of plotter face.



- Touch “Brightness”. Slide bar to desired level.
- **NOTE: Return the brightness to high level before powering down the plotter. When left at a low level the display may not be visible when powering back up.**

Course over Ground (COG) Vector/Line: Ensure the COG line is always ON by default.

- From the Chart page, touch the “Menu” icon, top right corner of the LCD.
- Touch “Settings” icon, upper left on LCD.
- Touch “Chart”.
- Touch “Extension lines”.
- Check that the COG Line checkbox is 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.

- At the Home screen, look for the column of options on the right side of the LCD and select the desired split.

Radar Overlay:

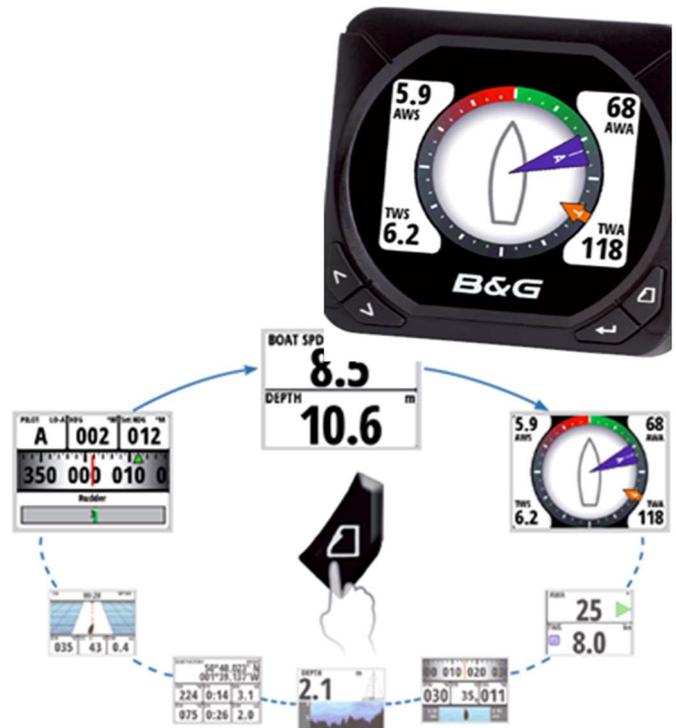
- From the Chart page, touch the “Menu” icon, top right corner of the LCD.
- Touch “Overlay (Radar)”.
- To turn ON or OFF the radar, quick press the power button and select Radar Transmit/Standby.

AIS Overlay & Targets: Always on.

Triton Displays

Reliance has two displays, one port and one starboard as seen from the helms. The displays can be independently cycled through 8 different screens using the “page button at the bottom right of the display. Screens are as follows:

- 1) Basic speed/depth;
- 2) Wind Composite;
- 3) Basic Wind/Speed;
- 4) Steering; D
- 5) Depth History;
- 6) GPS Data;
- 7) Highway;
- 8) Autopilot, when you engage the autopilot, the display will automatically switch to this screen.



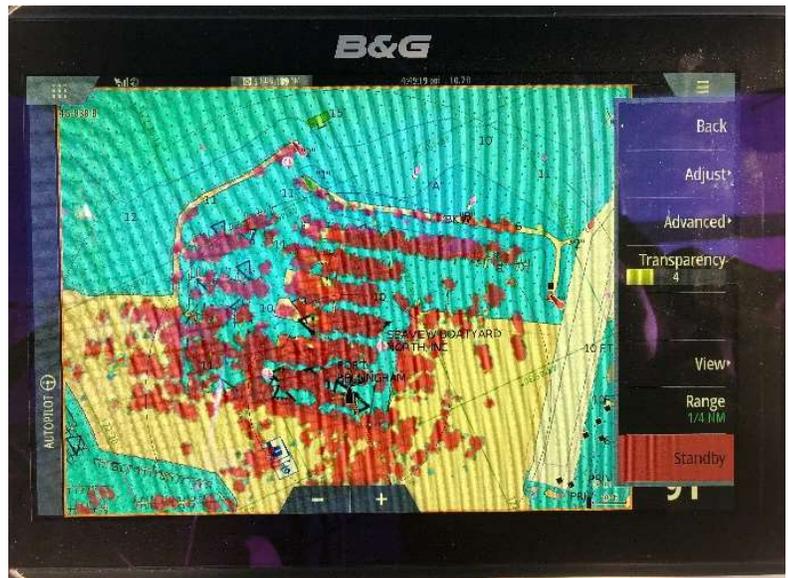
Phone or Tablet as Repeater Display

To use your phone or tablet as a repeater (View Only, no functionality) of the Chart Plotter Screen, Download the “GoFree Link” from the Android or Apple Store. Connect your device to “GoFreeWifi D140” wireless access point with the password “A4Z3YFA3” using all capital letters. Once the network is connected, open the “GoFree Link” app, allow it to recognize the wireless connection, and then after it pops up, select Zeus2 W12

and the chart plotter screen should show on your device. This app is designed for viewing of the screen only and does not allow chart plotter functionality from your device.

Radar Overlay

- To turn on the radar overlay and power up the transmitter, touch the **Menu** icon (top right of the screen).
- On the side bar menu, touch **Overlay – Radar – Radar Options – Transmit.**
- To turn off the overlay and power down the transmitter touch **Radar Options – Standby – Power off – Are you sure? - Yes.**



GPS at Navigation Station

We have added another GPS screen at the navigation station, in the cabinet just above the navigation table. Currently, the inside and outside screens will not pass waypoints and routes back and forth between them, but the inside screen will work very well for you as a repeater, or to check depth, windspeed, or to see the tide times, etc. without having to go outside. Very handy in the evening when you have already retired to a warm cabin and want to check something with the GPS. This screen is very much the same as the GPS screen outside and uses the same software except that it is a touch screen only, so you pinch to zoom on the chart, just like a tablet or smartphone. We have set the initial screen to provide wind course and depth information and data rather than a chart, but you can switch to a chart if you wish.



Autopilot Controller

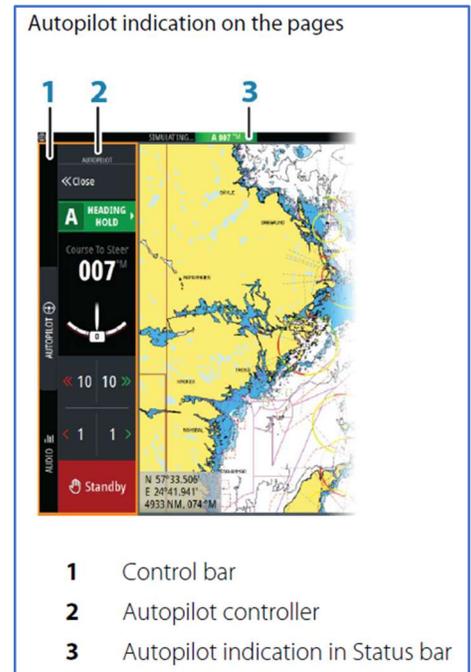
QUICK NOTES

- Note: when using the autopilot, ALWAYS have someone at the controls and watching for traffic and floating objects, CRAB POTS, logs, etc. When engaging, warn your crew and be prepared to disengage if the boat makes a sudden maneuver.
- To engage the autopilot, press “AUTO” one time
- To disengage the autopilot, press “STBY”



The autopilot controller that is on the starboard side of the vessel right next to the Triton Display. The control buttons are described below:

Keys	Function
	Mode: Changes the autopilot mode. When the autopilot's boat type is set to Sail and Auto mode is engaged, pressing the mode key will change the autopilot to Wind mode. If the autopilot is set for any other boat type and the autopilot is in Auto mode, pressing the mode key will enter the autopilot into NoDrift mode. For all boat types, when in Auto mode a long key press of the mode key will enter the autopilot into Navigation mode which will require confirmation via the display before it is engaged.
	STBY: Disengages the autopilot. Places the autopilot into Standby mode.
	Left 1: Adjust the set course or wind angle 1 degree / steer to Port in Non Follow Up mode (NFU). When pressed in Standby mode this will enter the autopilot into Non Follow Up mode.
	Right 1: Adjust the set course or wind angle 1 degree / steer to Starboard in Non Follow Up mode. When pressed in Standby mode this will enter the autopilot into Non Follow Up mode.
	Left 10: Adjust the set course or wind angle 10 degrees / steer to Port in Non Follow Up mode. When pressed in Standby mode this will enter the autopilot into Non Follow Up mode.
	Right 10: Adjust the set course or wind angle 10 degrees / steer to Starboard in Non Follow Up mode. When pressed in Standby mode this will enter the autopilot into Non Follow Up mode.
	Auto: Engage the autopilot / Acknowledge tack/gybe or navigation course change.



Alternatively, you can select the Autopilot on the far left edge of the GPS window to pull up the Autopilot Control Bar on the left side of the screen. It has the same controls as the controller, but makes the autopilot controls more accessible if you are keeping watch from the Port side of the boat.

VHF Radios

Highlights

- B&G VHF base unit located at the nav station in the salon.
- Standard Horizon handheld VHF stored at the nav station and is available as an emergency backup or ship-to-shore comms.
- 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 a working channel (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).



Details

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

- **Turning On and Off the radios** – Base unit: Wired directly to the bus bar so there's no breaker switch to turn on. Turn the Volume knob on the upper right of the unit. Handheld: Long press the power button, turn off by long pressing the power button.
- **Silencing a DSC Alarm** – When another boat (or the Coast Guard) sends out a DSC signal on a radio, it will activate an alarm on the radios of all boats in the area. To silence this alarm, press any key on the radio.
- **Changing from High to Low transmit power** – Press the H/L button on the base unit mic and on the handheld. The LCD display shows HI or LO. HI is 25W and LO is 1W. When channel 16 is selected, the unit will automatically switch to Hi power. On the handheld, make a long press of the OK / H/L button (in the center) to change power.
- **To quickly get to channel 16** – press the green 16/9 button on the base unit. A long press will take you to channel 9.
- **Accessing the weather channels** – Pressing the WX / NAV button will toggle between weather channels and normal channels.
- **Adjusting Volume and Squelch**
 - Base Unit: The upper right knob is the Volume and ON/OFF control. Lower right knob is the squelch.
 - On the handheld, press the VOL/SQL soft key to highlight the volume or squelch level displayed in the lower right of the LCD. Press the up/down arrows to adjust level.
- **Changing between USA, International & CANADA channel modes**
 - Open the main menu with a long press of the CALL / MENU button (lower right).
 - Select RADIO SETUP then UIC then USA, INT'L, or CANADA. The radios should be left in USA mode.
 - The lower right corner of the LCD shows the channel mode selected.
- **How to set up and use Dual Watch Channel Scanning**
 - Channel 16 is automatically included in the Dual Watch scan.
 - Dial-up the second channel you want to include in the scan. Leave the radio set to this channel.
 - To start scanning, press the SCAN button.
 - The display indicates the unit is scanning by “blinking” the displayed channel. When a transmission is received on either 16 or the channel you selected to scan, the radio will stop scanning at the channel received.



15. Engine and Operating Under Power

QUICK NOTES

- Our Maintenance Pros will check oil and coolant levels, belt tension and debris in raw water strainer weekly. Charter Guest is NOT required to perform these checks unless engine trouble alarm sounds. If on multiple week charter, then please check engine vitals weekly.
- Raw water strainer can be accessed from the port aft stateroom.
- Ignition at helm is keyless. Ignition anti-theft disconnect key located in starboard aft stateroom. *For use ONLY when the engine is not running.*
- Prop walk in reverse to starboard is minimal.
- Max RPM is 2,800, fast cruise is 2,400 economy cruise is 2,000 RPM.
- You should burn approximately 0.95 gal per hour at 2,200 RPM
- *If sailing, after turning off engine, place shift lever in REVERSE to ensure prop folds.*



Starting

- Turn on the anti-theft disconnect key located in the starboard aft stateroom.
- Make sure the gearshift is in neutral (approx. vertical).
- Press and release the ignition ON (ON/OFF) button and wait until the “beep” sounds (approx. 5 seconds). This is the warning sound you would hear if the engine overheats or if there is loss of oil pressure.
- After the “beep” Press and briefly hold the START button.
- After the engine starts, check for cooling water flowing out the exhaust.
- Please do not allow the engine to idle for extended periods as this will gunk up the cylinders. After starting, it is okay to depart from the dock or anchor at idle or low RPM (below 1,200 – 1,300). After 5 minutes underway at low RPM the engine is warmed up sufficiently to increase the load to cruising RPM if desired.*



Shut Down

- Allow engine to cool down for 5 minutes.
- Press and hold the STOP button until the engine dies and the tachometer needle goes to zero.
- Press the ignition OFF (ON/OFF) button once and wait to hear the vent fan stop running and see that the hour meter goes out.
- If leaving the boat, turn off the anti-theft disconnect key located in the starboard aft stateroom.

Engine Overheat – If the buzzer sounds while the engine is running, immediately check the digital readout on the engine control panel below the tachometer to see whether it is oil pressure or temperature that is the

problem. If oil pressure is low, shut down the engine, check the oil level, and contact San Juan Sailing. (We have never had an oil pressure problem and we hope you don't either). Most likely a buzzer means the engine has overheated. Check for water flowing out with the exhaust. If flowing, check the coolant level. If there is no water flow the water strainer is likely plugged. If something like eelgrass gets sucked into the engine cooling water intake, it jams the raw water strainer (located on the starboard side of the engine compartment). *The strainer has been installed above the waterline, so there is no need to shut off the raw water intake valve (located on the sail drive housing) prior to removing the lid to clear debris.* To clear it unscrew the top of the strainer and remove the eelgrass or other materials. *Replace the lid and O-ring and GENTLY hand tighten just enough to make an air seal.* If the engine overheats again upon restarting, check to be sure the O-ring is in place; if it draws air, it won't draw water. If still overheating, call San Juan Sailing for assistance. See section 7, Emergency Contacts, in the Charter Guest Reference Binder.

16. Entertainment Systems

TV/DVD Player – Open the face of the top Fusion player (the latch is on top, pivot face down), insert disc in slot. To eject disc, open face, press eject button on lower left corner. When you insert a DVD, it should automatically begin to play the DVD. Turn the TV on (it is 12 volt DC, so you do not need shore power or the inverter) and it should begin to show the DVD. NOTE: some DVD's cause the Fusion Stereo to request a password prior to playing. You will see a password request on the TV Screen above the word FUSION. Using the Stereo Remote, enter 0000 and hit the SEL button toward the top of the remote. Remember to point the remote at the stereo as you enter the password.



Media (smartphone) Player – Open the face of the lower Fusion player (the latch is on top, pivot face down), connect smartphone with USB cable (not provided).

TV Screen Latch – Please use the locking pin behind the TV when not in use to secure the screen in place. Expensive damage can occur if not locked!! (see page 3; TV Screen).

Fusion Entertainment System (located at nav station)

Fusion Operating Manual is located on shelf in front of the Fusion units.

17. Fuel Tanks and System

QUICK NOTES

- Refuel at one third (33%) full level.
- **NOTE:** Before filling the fuel tank, we always double check that we have opened the correct fill cap (Diesel). While filling, we listen closely and stop as soon we hear fuel gurgling through the fill pipe. It will foam out the vent if you go much further. Also, have one person monitoring the fuel gauge and call out when the level reaches 95% then again when full. If the fuel level goes over 100% then the gauge will show "100!" and hold that value until reset. Press and hold the return button for 5 seconds to reset.
- The engine fuel tank holds 42 gallons.

- The fuel gauge is located at the nav station in the DC panel. The fuel level, potable water tanks level and battery voltage are all displayed in the same monitor. You just repeatedly press the Up/Down arrow buttons to switch between what the gauge is reading.

18. Heads and Holding Tanks

QUICK NOTES

- Only what has been eaten goes in the toilet.
- Both toilets are electric Dometic Masterflush using fresh water for flushing.
- Aft head holding tank is not accessible to view the level and should be emptied daily.
- Forward head holding tank is visible behind access door in head to check level.

Please do not put anything in the toilet that has not been eaten. Experienced sailors deposit toilet paper in a wastebasket in Ziploc baggies, not down the toilet because paper tends to clog the hoses. The heads each have their own holding tank, the aft tank holds 9 gallons and the forward tank holds 9 gallons. *If you have four people on board and have 'normal' usage, the tanks will need to be emptied every day.*

San Juan Sailing staff will discuss holding tanks and pump outs on your arrival. Our one plea is this: please don't over fill the holding tank as leaking sewage is most unpleasant! Thank you.

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

Neither head holding tank has an electronic tank level monitor, instead you can visually check the level. The forward tank is located behind the access door above the toilet with the latch to open it at the top of the door. The aft tank is located in the shower behind the dark round plexiglass panels. You may be able to shine a flashlight through the bottom panel and see through the top panel, however this is unlikely. We find it best to plan to empty the tank daily, and if you feel the least amount of resistance when pumping the toilet to empty, stop, and do not pump any more until you have been able to empty the tank.

Flushing the toilets

- The WATER switch on the DC panel needs to be on.
- Refer to the photo on right of the flushing controller.
- Left hand rocker switch does a complete flush similar to a home toilet except that you control how long the flush goes.. Press and hold the bottom of the switch, and hold long enough for waste to evacuate the toilet then a few seconds more to clear the hose going into the holding tank.
- Use the right hand rocker switch to add water to the bowl (press and hold the top of the switch) or drain water from the bowl (press and hold the bottom of the switch).
- A reminder that you are using fresh water from your water tanks each time you flush a toilet so make sure to monitor the tank levels.
- Also, it's easy to quickly fill up a holding tank using an electric toilet so plan to pump out the tanks frequently during periods of high demand (ie. land facilities not available).



Emptying the Holding Tanks

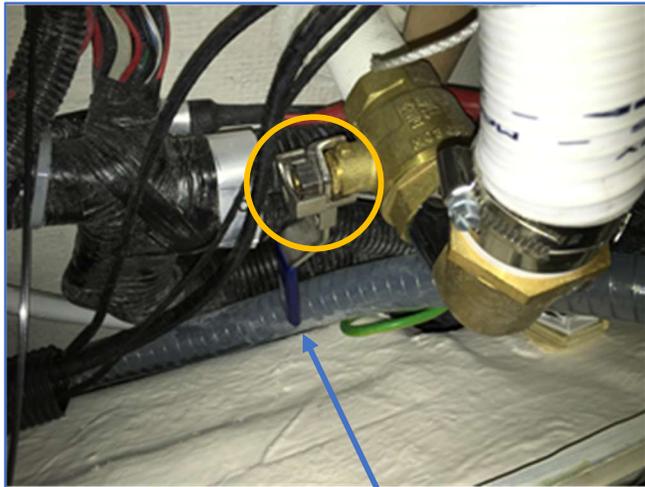
1. Pump out at a Shore Facility.
2. Where legal, discharge overboard:

Please note, 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).

Aft holding tank discharge seacock location under seat in shower (pictures below). The forward head discharge seacock is located in the cabinet beneath the sink. They MUST be closed between emptying, or the tank may plug with solids as the liquid will always be draining out. (not a super pleasant subject, but essential that we discuss it).



Waste discharge seacock under shower seat



Waste discharge Seacock handle (closed here)

*Note: The seacock handles have metal lock clips that need to slide outward away from the valve body in order to rotate the handle. This is necessary especially on the forward head, and less necessary on the aft head as gravity will tend to pull the clip down the handle away from the nut on the handle shaft nut (see circled area).

19. Heater

QUICK NOTES

- Webasto Diesel-Fired Forced Air System.
- The thermostat/controller is located at the nav station.
- Turn the system on by sliding the switch on the bottom left corner of the controller to Heat. The green light on the left side will glow.
- The LCD display shows the current ROOM temperature. Use the grey buttons to the right to select the desired temperature to heat (70 degrees is a good starting point).
- The system takes about 5 minutes to go through the startup sequence then will begin blowing warm air out of the vents in each cabin. Use the louvers on the vent outlets to control the amount of heat in each cabin.



- Turn the system off by sliding the bottom switch to Off. The system takes about 5 minutes to go through the shutdown sequence.
- We typically turn the heater off or down to 60 degrees in the evening before sleeping. If you are not on shore power and wish to leave the heater on at night, then be sure to check the house battery level is above 12.2V. Charge the batteries if needed or turn off the heater until you can (run the engine at cruise RPM or plug into shore power).

20. Refrigerator/Freezer

Can be accessed from the top or side as shown in the photo below. We have been surprised that we can fit much more food in here than we thought. Both open doors shown in the picture are refrigerator space. The freezer is a small slide in freezer beneath the counter behind the plastic fold down door.



21. Sails and Rigging

QUICK NOTES

- *After turning off engine, place shift lever in REVERSE to ensure prop folds.*
- Running rigging adjusts from the cockpit.
- Use *forward winches only* for jib sheets. Moving the jib sheets to the rear winch will cause the sheets to not have a fair lead and will damage the dodger frame or canvas.
- Reef early to keep Reliance sailing efficiently.
- Keep pressure on opposing line when adjusting sails.

Mainsail – One person should watch the leach to ensure it doesn't get caught in lazy jack lines during hoisting. Please be sure to remove the bimini connector cloth when lowering the mainsail so you can reach the back half of the boom to assist with flaking the sail and zipping the sail cover.

Headsail - Our genoa is a 106% and is roller furling. *Please keep moderate tension on the roller furling line when deploying the headsail to prevent a rat's nest on the drum and similar tension on the sheets when furling to prevent 'candy striping' of the furling sail. The sail has more sail area than a normal 106% genoa, as it has positive roach and uses vertical battens to keep the sail shape in light wind.*

22. Showers and Sump

Experienced cruisers know the sailor's shower: get wet, turn it off, soap up, rinse off. **CAUTION: THE ENGINE CAN HEAT THE WATER TO SCALDING TEMPERATURES!** Each shower has a sump pump

with a switch located in the shower area. *There are strainers located between the sumps and the pumps which need to get cleaned out every 4-5 showers (they quickly fill with hair and lint).*

There is also a shower fixture back at the swim platform (see photo in Section 22 Water). This is useful for washing off shoes after returning from the beach. This fixture is located on the transom to port of the aft storage locker.

Shower sumps can be used as a supplemental bilge pump in an emergency.

23. Stove and Oven

QUICK NOTES

- Propane tank locker located under the starboard helm seat.
- Solenoid switch located at the nav station – look for the Trident Marine L.P. Gas Control System.

The gimbaled propane stove has two burners and an oven. Propane is heavier than air and requires caution.

To light the burners, light the lighter and hold near the burner, then push in the knob and turn to the flame symbol. Once lit, wait 10 seconds to allow the emergency shut off to sense the heat and release the burner knob and turn to the desired level.

To light the oven, open the door, light the lighter and put through the round hole at the bottom front of the oven floor. Push in the knob and turn to the flame symbol. Once lit, wait 10 seconds to allow the emergency shut off to sense the heat and release the knob. Turn to the desired level. There is no thermostat for the oven, so we usually cook nearly on high and monitor the food.

If you open the lock to allow the stove to swing, please ensure that the lock isn't rubbing on the opposite cabinet and damaging the finish.

San Juan Sailing's staff fills the propane tank every 2 weeks. One tank normally lasts 4 weeks.

24. Water

QUICK NOTES

- The water pressure switch is located on the DC panel at the nav station. Please turn this off when on deck or away from the boat. Remember, if you can't hear the water pump (because the engine is running), it should be turned off unless you are using the water. You could burn up the water pump if air gets into the pump due to an empty or nearly empty tank or a broken line/loose hose fitting.
- Water tank selection valves are located under the forward stateroom berth, starboard side.
- Water fills are on the foredeck, port and starboard sides. We always double check to make sure the cap reads "Water" before we fill.
- REFILL before the tank gets to 25% full on the gauge. The water will slosh at or below 25% and allow the pump to pick up air and the pump will run continuously and burn out.
- Please note that the digital tank level gauge readout on the DC Panel may only show 75% full even when the water tanks are full. The same amount of water is available, you just don't see the gauge go over 75%. They are reasonably accurate when showing the 25% level though.
- **NOTE:** Occasionally the gauge on the DC panel will get "stuck" on one tank (usually because one of the water tanks is empty) and will need to be reset. To do this, first fill the empty tank then at the DC panel gauge, press and hold the Return button (right side of the up/down arrows) for 5 seconds. Should now be able to cycle through all tanks and the battery voltage.
- Key for water fill deck caps located in the chart table.

Water pressure – There is a good sized pressure accumulator tank that will allow you to wash your hands a couple times without the water pump coming on. This is especially nice at night when people are sleeping so the pump doesn't wake everyone up. Once the pump does come on, it may run for a few minutes while it re-pressurizes the accumulator tank even after the water is shut off at the faucet.

Water tanks – Reliance has two water tanks, both tank valves are located under the V-berth. Total capacity is 137 gal. We normally use one tank at a time. When the handle is horizontal, that tank is in use. Water Tank 1 is the Port side fill, for the tank under the V-berth and Water tank 2 is the Starboard tank under the Starboard dinette seating. Please note that water tank 2 never shows more than 75%, even when filled completely. You still have the full amount of water, it just stays at 75% longer rather than showing 100%.

There is a digital readout on the DC panel which indicates the tank levels. Again, fill the water tanks before they get down to 25%.



Water Tank Valves under starboard side of V-berth cushion.

Water Heater – The water is heated automatically when the engine runs under load (it takes about 45 minutes), running it at idle in the morning doesn't work, sorry. **CAUTION: THE ENGINE CAN HEAT THE WATER TO SCALDING TEMPERATURES!** The hot water is stored in the insulated six-gallon tank located under the port aft berth. It can also be heated electrically when shore power is available. The switch is located on the AC panel located under the nav table.

25. Stern Platform

QUICK NOTES

- The stern platform makes a great area to load and unload the dinghy.
- To lower the platform, unlock the bolt pins on the top, port and starboard corners (see photo on right of the port side corner).
- Use the block/tackle lines on each corner to ease the platform down to horizontal (see photo below). You will need push the top of the platform out past vertical to the point where gravity takes over. **Make sure you are holding the block/tackle lines so the platform doesn't free fall!**
- There are also fixed lines on each corner to hold the platform in the lowered position.



- Raise the platform with the block/tackle lines. Before locking the bolts, check that the fixed lines on each side are not sticking out the back or holding the platform away from the boat.
- Please do not lower the platform when under way or when too close to a dock when you are stern in at a slip.
- There is a ladder stored in the transom locker that fits into the holes centered on the platform when it is down. We think the water is too cold, but if you want to swim, it can be very handy. We have a safety line connecting the ladder to the boat, so if you drop it in the water you should be able to retrieve it.



Stern Platform Fresh Water Wash Down

Turning the knob pictured on the right will adjust the temperature, and pushing the knob down will open the valve to allow water to flow to the nozzle. Pushing the knob up will turn the water off. This water only flows with the fresh water pump turned on at the DC Panel.



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

Don & Amy Policky
