

## Notes from the Owners of *At Last*

*2017 Jeanneau 419 Sun Odyssey*

### **New for 2024:**

- **Bow wash-down pump**
- **Wi-Fi hotspot connected to T-Mobile**
- **Adjustable lazy jacks**

Dear Friends,

Welcome aboard *At Last*!

*At Last* is a 2017 Jeanneau 419 Sun Odyssey sailing yacht. We purchased her in June 2022, and are her second owners. She was with her first owner in Vancouver, BC, where she was meticulously cared for and loved. We hope that you love her as much as we do and take good care of her while on your San Juan Sailing adventures.

Before placing *At Last* in charter with San Juan Sailing, we were ourselves charter guests of theirs. We have been in your shoes, so to speak. We think *At Last* is the perfect boat for our large family, and we hope her ample room below deck is perfect for your family, too.

Please take some time to read these notes and use it as a reference guide throughout your charter cruise. Should there be more information that you need, *At Last* keeps her manuals onboard for all her installed systems. They are kept in bench forward of the nav desk.

Please ask San Juan Sailing's staff any question that you have during your orientation, or any time during your cruise. You may also contact us, the Owners, at any time at 206-304-6817 (texts are fine, if not urgent). Our contact information is also inside the guestbook cover.

As you are sailing, if you can think of anything...anything at all...that would make *At Last* more enjoyable for you, please let us know through San Juan Sailing or by email at [DLPMiller@gmail.com](mailto:DLPMiller@gmail.com).

Fair winds and following seas!

Sincerely,

Drew & Deedee Miller

*At Last*



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# 1. Specifications and Vessel Information

## Vessel Information

### U.S. Customs Re-Entry Decal

The U.S. Customs re-entry decal is located on the aft face of the starboard helm binnacle.

### Vessel Official Number

At Last's Coast Guard vessel number (VIN) is 1327763 (the same number shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). The vessel number is affixed to the hull beneath the salon cabin floor in the center bilge hatch.

### Coast Guard Boarding Document

Refer to the Charter Guest Reference Manual (white binder), Section 5 documentation to learn about Coast Guard boarding. This documentation explains what to expect if you are boarded by the Coast Guard and where to find the information and equipment they may ask to see as part of their safety inspection.

## Specifications

<b>Year:</b>	2017	<b>Engine:</b>	Yanmar 4JH45
<b>Make/Model:</b>	Jeanneau 419 Sun Odyssey	<b>Fuel:</b>	52 US gal.
<b>LOA:</b>	41' 10"	<b>Water (2):</b>	87 US gal., 52 US gal.
<b>Beam:</b>	13' 1"	<b>Holding (2):</b>	21 US gal. (each)
<b>Draft:</b>	7' 1"	<b>Heads (2):</b>	Manual flush
<b>Displacement:</b>	17,328 lbs. (dry)	<b>Electronics:</b>	AIS transceiver, autopilot, chart plotter, depth sounder, knot meter, radar, VHF
<b>Staterooms:</b>	3 double berths		
<b>Forward Stateroom:</b>	Headroom: 6' 1"		
<b>Port Aft Stateroom:</b>	Headroom: 6' 1"		
<b>Starboard Aft Stateroom</b>	Headroom: 6' 1"		
<b>Salon:</b>	Headroom: 6' 4"		

## 2. Nuances & Noteworthy

There are a few things about *At Last* that are not 'typical' or are otherwise noteworthy. These are 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.

### No Smoking

Please, no smoking or vaping aboard *At Last*. We appreciate your care and concern for passengers with sensitive respiratory systems. Thank you!

### Guest Book

Please sign our guest book! It will be in the navigation station desk or in the cabinet above it.

### DC Voltage Alarm

The Victron inverter/charger sometimes sends a higher DC voltage when charging or equalizing the house batteries that will cause an alarm to go off on the DC panel. As long as the house battery voltage is no more than 15.9V on the DC panel you can ignore this alarm. The Blue Sea battery monitor below the panel is the better way to monitor the batteries and will alarm if there is a real problem.



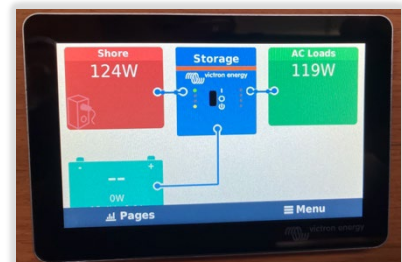
This alarm has been muted (i.e. should not make any sound), but in case a previous guest has unmuted it, you can mute by pressing the white button in the middle of the selector, then selecting the alarm bell item, and then muting it.

### Plumb Bow

The Jeanneau 419 has a plumb bow that requires additional care when lowering and raising the anchor. "Hanging" the anchor while moving will strike and chip the bow, so please only lower the anchor while the boat is stationary. Lowering and raising the nested anchor off and on the roller by hand—*wearing gloves for safety*—before switching to the electric windlass also helps avoid damage to the bow and bowsprit.

### Inverter & Battery Charger Touch Panel

*At Last* uses a Victron Energy power management system that includes a battery charger and inverter. The system is controlled via the touch panel at the nav desk (pictured right).



When not on shore power and not actively using the inverter, please ensure the inverter is in CHARGER ONLY mode (see the Batteries/Charging/Inverter section for switch instructions).

**No Fender Step At Shrouds**

The shrouds on *At Last* are too far inboard to make boarding and departing at the shrouds with a fender step safe or prudent. For this reason, there is no fender step set up at the shrouds and we recommend stepping of at the gates during docking.

**AC Outlets Master Switch**

There is an AC outlets master switch located below the nav station desk. All of the vessel's AC outlets are controlled by this switch. If you find the AC outlets are not working, check this switch.

**USB Port in Nav Station Not a Charger**

The USB port in the nav station is not a charger, but rather is an input for the Fusion stereo.

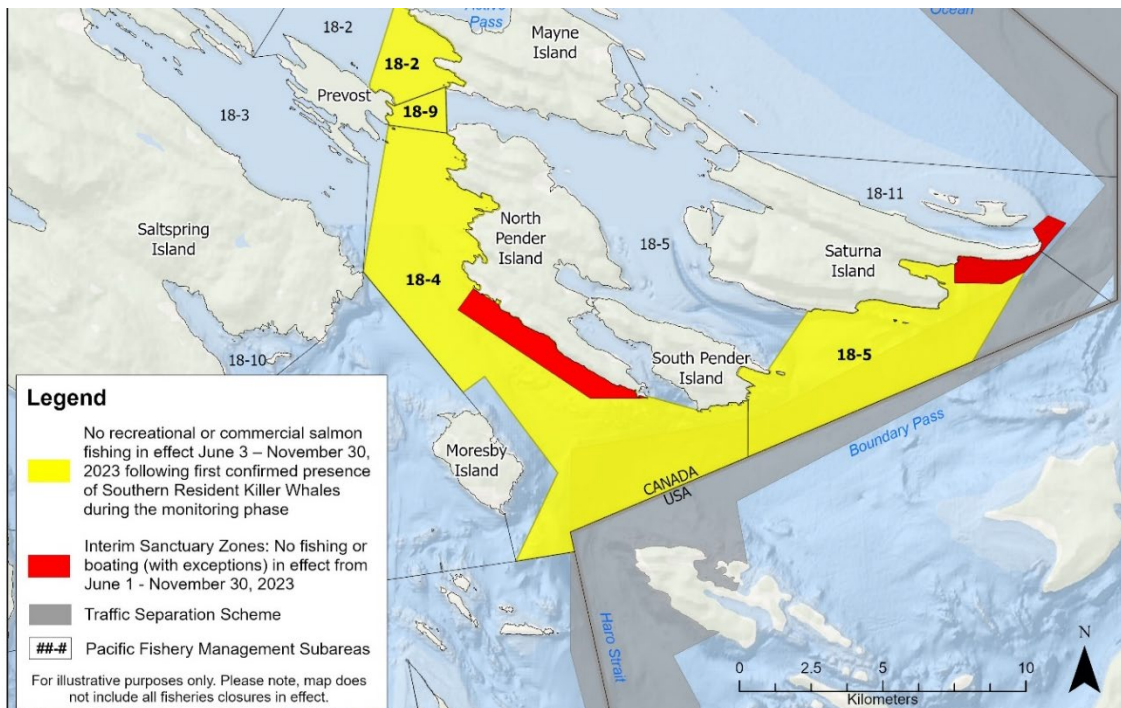
**Freezer Walls**

The freezer, while small, is very strong and anything touching the sides or top of the freezer's interior walls will freeze. Take caution if chilling canned beverages or other expanding liquids to not let them touch the interior top or sides of the freezer.

### 3. Being Whale Wise

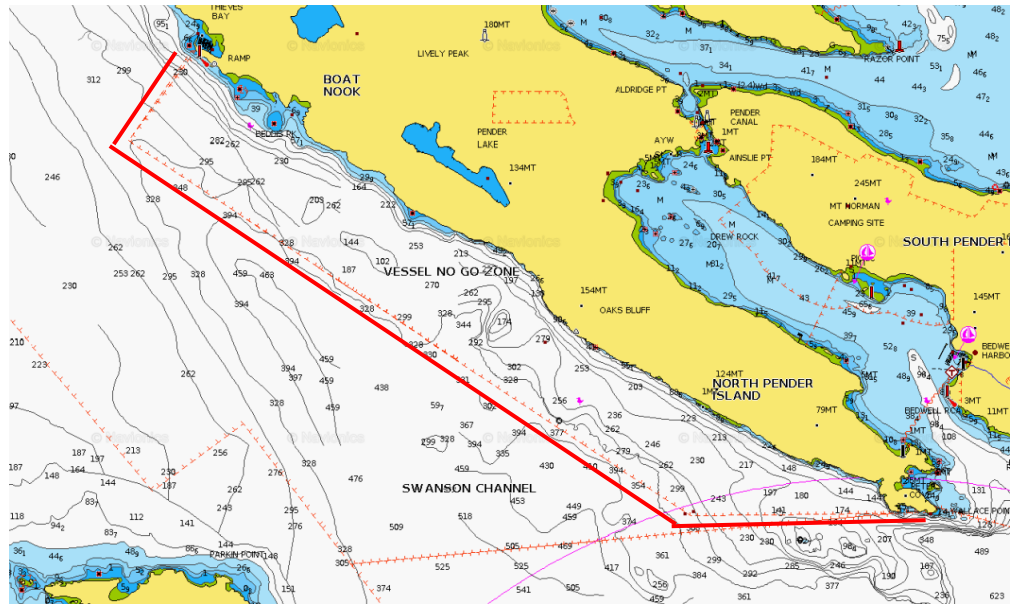
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to 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 At Last. 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 At Last'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

You are unlikely to need many of these but must know their location.

### Boarding Ladders (2)

(#1) A boarding ladder is built into the stern swim platform and is accessible only when the swim platform has been lowered; (#2) an emergency boarding ladder is in a pouch affixed to the port stern rail within reach from the water.

### Bilge Pump (Manual) and Handle

The manual bilge pump is located on the bottom of the port helm binnacle facing inboard. The pump handle is clipped on the aft wall inside the port cockpit locker. Note: if water rises above floorboards, can use shower sump pumps also in emergency.

### Bilge Pump (Electric)

The electric bilge pump is controlled from the electrical panel in the cabin on the starboard side; it should be left in the "AUTO" position.

### Carbon Monoxide Detectors (4)

One below the sink in the galley and one in each stateroom.

### Cockpit Cushions (4)

Stowed in forward stateroom on the floor between the berth and the head. In case of COB, throw anything that floats, quickly.

### Emergency Tiller

T-shaped pipe in port cockpit locker.

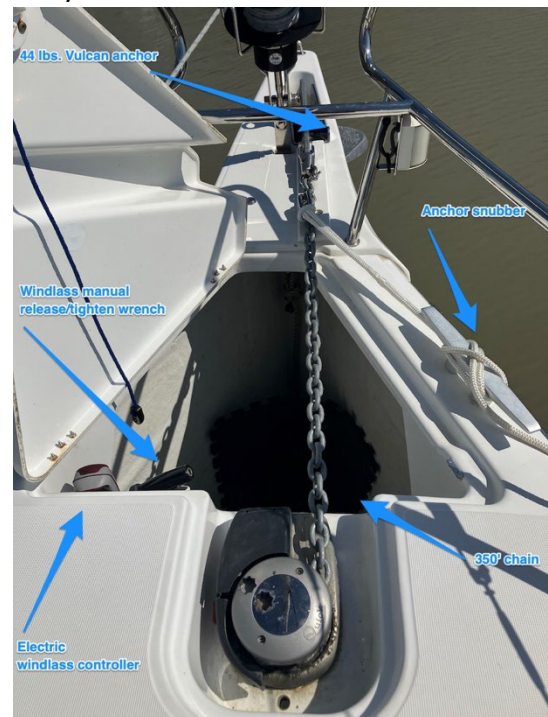
<b>Fire Extinguishers (3)</b>	(#1) In dinette wine cabinet; (#2) in starboard aft stateroom behind door; (#3) in port aft stateroom behind the door.
<b>First Aid Kit</b>	In salon head vanity cabinet.
<b>Flare (Electronic) and Folded Plastic Distress Flag</b>	Under-seat storage forward of the nav desk, in an orange mesh bag.
<b>Flares (Pyrotechnic) (3)</b>	Under-seat storage forward of the nav desk, in an orange mesh bag, inside an orange pouch.
<b>Flashlight</b>	Inside the navigation station desk.
<b>Horn, Handheld (2)</b>	Cabinet above the nav station desk.
<b>Lifesling</b>	Port stern pulpit. Please review the illustrations on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.
<b>PFDs (6 Inflatable, 2 Foam Vests)</b>	Located in the stateroom hanging lockers. NSO: please check for "green" visible at bottom of clear canister before each cruise. That verifies the auto-inflate function when immersed. We always wear these when working the deck and often in the cockpit.
<b>Plug, Tapered</b>	Universal foam orange StaPlug located under-seat storage forward of the nav desk, in orange mesh bag.
<b>Propane Detector</b>	The propane detector and solenoid switch are mounted below the sink in the galley.
<b>Spotlight, Handheld</b>	Under-seat storage forward of the nav desk, in blue bag.
<b>Tools &amp; Spares</b>	Tools and spares are in the under-seat storage below the inboard forward dinette cushion. Tools are in a gray plastic toolbox and a canvas tool bag. Spares are in the green plastic totes.
<b>Windlass Clutch Release/Tighten Wrench</b>	Bow anchor locker, in a white plastic holder.
<b>VHF Radios</b>	Channel 16. VHF base unit is at nav station and a remote access unit on chart plotter helm. A handheld VHF is in the nav station desk.



## 5. Anchors and Windlass

### Highlights

- Hand-held windlass controller is in the anchor locker
- Windlass breaker switch is in starboard aft berth
- Engine should always be running while operating the windlass
- Chain length markings: 350' of chain marked with 1 piece of yellow line at 25' intervals and 2 pieces of yellow line side by side at 100' and 200'. The placard shown on 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 snubber with chain hook to hold the chain while anchored
- Please avoid chipping the bow or bowsprit with the anchor by using caution and slowly raising/lowering the anchor when it is out of the water
- Turn ON the Anchor light overnight; the breaker switch is labeled and located on the DC panel at the nav station.
- Secondary anchor is stowed in the starboard cockpit locker.
- There is a raw water wash down pump and spigot in the bow anchor locker. The cabin lights breaker must be on for the pump to function. Water can then be controlled by the valve on the spigot. We recommend you bring the hose and spray nozzle from the cockpit to clean the chain and anchor as you retrieve it.



### Details

#### Main Anchor

The main anchor is a 44 lbs. Vulcan mounted on the bow, with 350' 3/8" chain marked with 1 piece of yellow line at 25' intervals and 2 pieces of yellow line side by side at 100' and 200'.

#### Anchor Snubber

We use the snubber shown in the photo above for both nested anchor underway and when the anchor is deployed. If heavy wind is forecast, we use the heavier anchor bridle located in the starboard cockpit locker (in the blue bag).

### Secondary Anchor

A heavy duty but lightweight aluminum Fortress anchor is stowed in the starboard cockpit locker, with 50' 3/8" chain and 250' rode in orange basket.

### To Deploy Anchor

- 1) We check tide tables to determine current water level and amount of drop while anchored.
- 2) Weather (Ch. 4, "Northern Inland Waters," or Ch. 7) helps select a safe anchorage.
- 3) The windlass circuit breaker is in the starboard aft stateroom below the berth. The engine should always be running while operating the windlass.
- 4) Normal for the islands is a 4 to 1 scope, bow to bottom (add 5 feet to depth sounder reading: 4' freeboard and 1' for transducer below waterline). In San Juans, anchorages are often about 25' bow to bottom, so we often deploy about 100' chain—hence the 10' marker at 100'.
- 5) To avoid hitting the hull when initially lowering the anchor, we do the following to prevent the anchor from swinging as it travels over the roller: Push the anchor forward keeping the shank *level* before gradually allowing the shank to rise as we ease it forward slowly into the hanging position (no swing!).
- 6) Lower the anchor to approximately the number of feet on the depth sounder so the anchor is on the bottom by depressing the down switch.
- 7) A signal to the helmsman prompts reverse at idle speed while deploying rode to the desired scope.
- 8) We then allow the anchor to set and to stop the boat while it continues in reverse, idle speed. We then line up objects on shore to determine if we are holding, staying in reverse at idle for about one minute.
- 9) Finally, we reset the snubber.
- 10) Then ease the windlass so it is not under strain.
- 11) If stronger winds are forecast, we test with RPM at half the projected windspeed (1,000 rpm for winds to 20 knots; 1,500 rpm for 30 knots, etc), *after* setting snubber. (We check movement shoreside, not the significant prop current going by the chain.)
- 12) In storm conditions (or storm forecast), you can increase scope if there is adequate room to leeward.
- 13) The secondary anchor is available for additional holding power if a storm is anticipated, but best if set before the storm hits.
- 14) If anchored in a small cove, you may wish to deploy a line ashore. 600' floating polypropylene on a reel resides in the port cockpit locker. Lower swim step; use the mop handle fully extended as an axle through the reel; set mop handle on helm seats. Deploy the line with the dinghy while the spool unwinds. If sufficient length, bring the line around a secure shore object and back to the boat to a transom cleat for ease of retrieval.

### To Retrieve the Anchor

- 1) Start the engine, given that the windlass draws from the engine start battery.
- 2) Depress "up" switch, always assuring the chain is vertical during retrieval—this avoids either towing the boat or dragging the chain against the hull. Into a breeze, we engage forward gear as needed, but exercise care that we don't overstand and drag the chain against the hull.
- 3) A mountain on chain under the windlass can jam it and in rare cases cause a wild gravity runout of rode. If that happens, stand clear for safety. We avoid that chain "mountain" by "lifting" the chain forward in the well as it is retrieved, using the boat hook. We grab the chain with the boat hook and pull it forward as another crew feeds it by pressing the "up" switch, 2'-3' at a time. Important for the initial chain retrieved. Last 50' can stack under windlass ok.
- 4) As the length of rode remaining approaches the water depth, the sound of the windlass laboring alerts us to immediately stop. Sometimes a brief pause will cause the anchor to break free, given the 90 degree angle of pull. A brief tap on the button, if laboring, says to break out the anchor with the engine in idle forward, not with the windlass.
- 5) To nest the anchor without chipping the hull, the anchor may need to be swiveled. We use the windlass to bring the anchor shank up and over the bow roller in one continuous motion, then nest the anchor by hand.
- 6) After nesting, with a slight *slack in the chain*; we secure the anchor once again with the light snubber on the windlass-mounted cleat. As noted, the chain is only "unsnubbed" when it is moving in or out.
- 7) Windlass breaker normally remains "on". Good in case of emergency deployment.

## 6. Barbecue

### Highlights

- BBQ shut-off valve is in the propane tank locker (under the starboard-side helm seat); look for yellow handle
- BBQ propane hose is not plumbed through the solenoid valve, so no need to turn it on
- Manually light using the small hole on the left side of the grill
- Please close the shut-off valve when not actively using the BBQ; this is an important safety precaution!
- Please clean the grill when finished cooking

## Details

### To Operate

- Turn on the BBQ propane hose shut-off valve located in the propane tank locker (located in the cockpit floor between the helms). It has a yellow handle.
- Grab a BBQ lighter from the galley and insert the end into the small hole on the left side of the BBQ below the grill until ½" from the burner. Light the BBQ lighter.
- Depress and turn the regulator on the right side of the BBQ to the "High" position.
- As a courtesy to the next charter guest, please clean the BBQ grill with the wire brush.
- Turn off the regulator and shut-off valve when done cooking. Regulators often malfunction and don't close properly so it's important to turn off the shut-off valve too.



## 7. Batteries/Charging/Inverter

### Highlights

- Keep the inverter/charger in the CHARGER ONLY mode when not actively using the inverter (e.g. when on shore power or when not on shore power but not using AC outlets).
- Turn the inverter/charger to ON when not on shore power and needing to use AC outlets, but be careful not use too much batter when the inverter is on.
- Please keep all battery groups above 12.2V, always. For the house battery group, 12.8V is fully charged (with all loads turned OFF – including the fridge and when not charging). For the engine and bow thruster battery groups, fully charged is just over 13V.
- When charging, DC voltage will read above 13V for the engine and bow thruster battery groups, and above 14V for the house battery group.
- Ensure batteries are charging when connected to shore power – see details below in the Battery Charging section.
- When underway, the engine is automatically charging all three battery groups.
- At anchor, there is no generator on board but the house battery bank is ample enough to handle normal DC loads including lights, the fridge, diesel cabin heater and entertainment systems.
- Caution is needed when inverting and using 120V AC power. High wattage items like the microwave oven, the water heater, hair dryers and electric heaters will rapidly drain the house batteries. Even while using lower wattage items like phone or computer chargers, carefully monitor the batteries.

## Details

### Batteries

At Last has the following battery groups on board:

- Engine (single group 24 AGM battery)
- House (Domestic) (4 AGM batteries, providing 420-amp hours)
- Bow thruster

All batteries are charged automatically when connected to shore power with BLUE DOT breakers ON or while the engine is running.

### Battery Disconnect Switches

- The battery disconnect rotary dial switches are located on the forward face of the starboard aft berth.
- The house battery switch should remain in the ON position. The engine battery switch may be turned to the OFF position when leaving the boat for an extended period to disable the engine being started, as there is no ignition key.
- If the engine won't start or the start battery is slow cranking then contact the SJS office.

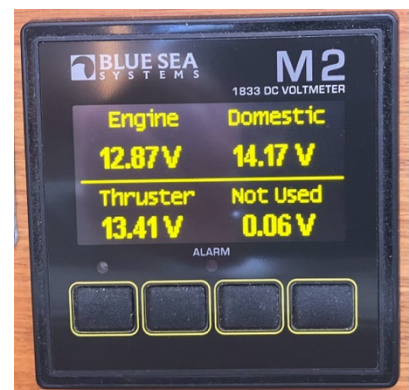
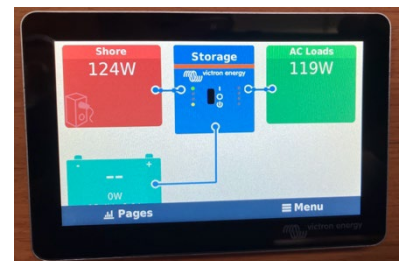


### Charger/Inverter

At Last has been equipped with a Victron Energy power management system which includes a charger and an inverter. The touch control panel (pictured right) is located at the nav desk.

### Charging – Shore Power

- Connect the 30Amp shore power cord to the shore power receptacle on the port transom.
- Ensure the shore power breakers in the lazarette are ON.
- Ensure the digital “switch” on the touch panel is set to CHARGER ONLY (see Inverter subsection below for instructions).
- Flip ON the BATTERY CHARGER breaker on the AC panel.
- You can validate charging by checking the DC voltage for each battery group on the Blue Sea M2 monitor at the nav desk (pictured above). The engine and thruster battery groups should be above 13V, and the house battery group should be above 14V.



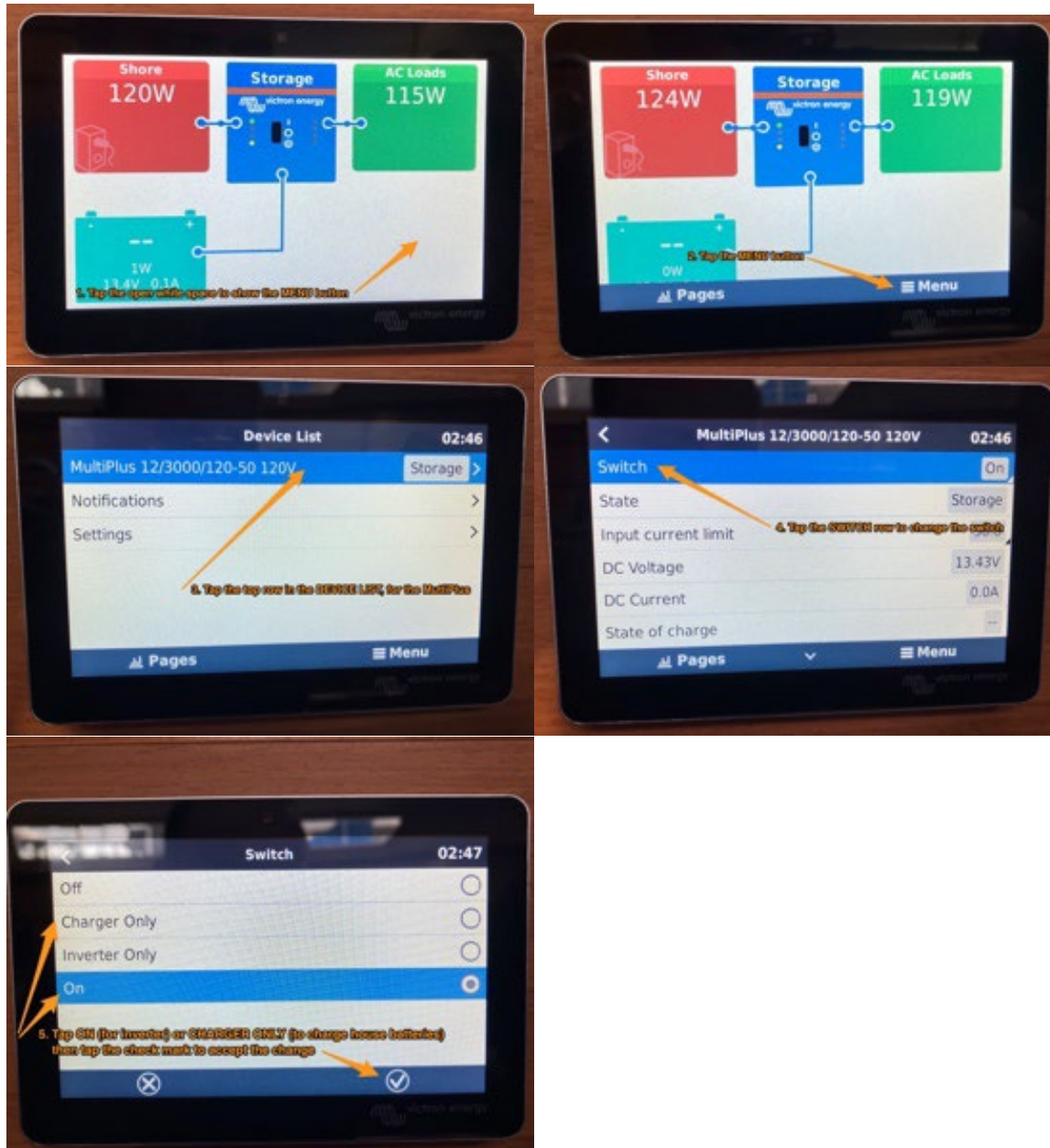
## Charging – Engine

- All three battery groups are automatically being charged when the engine is running.

## Inverter

- If 120V power is needed for low wattage devices when shore power is not available, the inverter can be turned ON (see instructions below)
- The inverter powers all breakers on the AC panel, including WATER HEATER, BATTERY CHARGER, AC PLUGS, and the MICROWAVE OVEN (because it is connected to an AC plug). **You should only toggle ON the WATER HEATER and BATTERY CHARGER when connected to shore power.**
- To change the digital “switch” for the inverter (e.g., to turn it ON or to set it to CHARGER ONLY):
  1. On the main screen, tap the white space to bring up the MENU button. If the touch panel is not currently on the main screen, swipe left or right near the top of the panel.
  2. Tap the MENU button
  3. Tap the top row in the DEVICE LIST, for the MultiPlus 12/3000/120-50 120V
  4. Tap the SWITCH row to bring up the list of digital switch “position”.
  5. Tap the selection the position: ON for inverter, or CHARGER ONLY to allow charging the house battery. Then tap the checkmark to accept the change. **When not on shore power, we recommended you keep the switch CHARGER ONLY (see the Batteries/Charging/Inverter section for switch instructions) and only change to ON when you actively need the inverter for 120V AC. It should be switched ON when connected to shore power.**





### Bow Thruster Batteries

The bow thruster has its own battery group and battery switch, located in the forward cabin under the berth. Under normal circumstances you don't need to do anything with this system. See Section 9, Bow Thruster, below for detailed description of using the bow thruster and how to reset if the primary circuit breaker trips.

## 8. Berths and Bedding

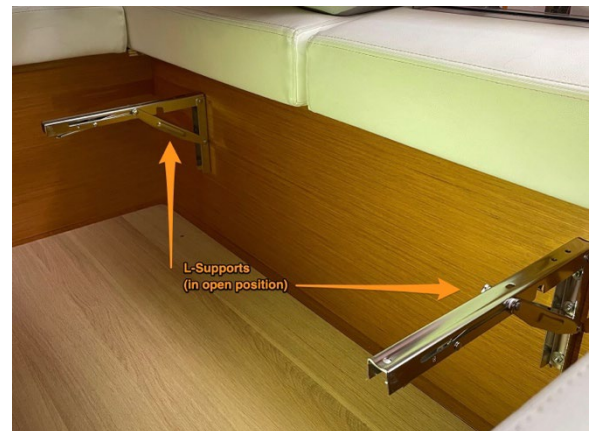
At Last has three cabins. Each aft cabin has a queen bed, hanging locker, and storage areas. There are ample sources of lighting in each berth, with a master switch near the door on the ceiling and individual

controls for reading lights. All hatches come equipped with sliding pull-out covers and sliding pull-out screens. In the salon, you'll find a grey round vent button on the hatch cover. Push this button up to help reduce condensation in the cabin when the hatch is closed.

The forward cabin has a V-berth, hanging locker, and storage areas. The starboard cabin has its own door to the aft head for additional privacy and convenience.

The settee in the main salon converts into a full-size bed:

- Unfold the salon table; remove the settee cushions.
- There are 2 L supports under the table. Set in a 90degree position, they'll "click"
- The beverage cabinet has 2 rope pull-handle release
- One person will manage the table, and the other pulls the releases
- After they pop, the table can be lowered until it meets the supports. Sometimes it needs to be gently wiggled.
- To raise the table, reverse this process.
- Be sure to lower the L supports as they stick out



## 9. Bilge Pumps

### Highlights

- Emergency Bilge Pump (manually operated): Located facing inboard on the bottom of the port helm binnacle. Handle is clipped on the aft wall inside the starboard cockpit locker. Note: if water rises above floorboards, can use shower sump pumps also in emergency.
- Electric Bilge Pump: Has an automatic float switch.
- Please visually inspect the bilge each day, which is accessed by lifting the floorboard in front of the main salon table. The intake tube is at the lowest point in the bilge.

### Details

- Emergency Hand Bilge Pump – This hand operated pump is located facing inboard on the bottom of the port helm binnacle. The bilge pump handle is clipped on the aft wall inside the starboard cockpit locker.
- Electric Bilge Pump – Has an automatic float switch. Note: the circuit breaker labeled “Bilge pump” *must be on “Automatic” at all times* for the float switch to work (marked by “double green” dots).



Note: in emergencies, the shower sump pumps can be turned on if water rises into the heads.

## 10. Bow Thruster

### Highlights

- *At Last* is equipped with a 65 kilogram-force bow thruster.
- Turn on the bow thruster controller at the starboard helm by pressing the red and green buttons simultaneously. The control unit will sound a single beep and illuminate the green light in the red button to indicate it is on and enabled.
- Use minimal, short bursts no longer than 5 seconds at a time. Continual use will overheat the thruster and it will shut itself off for 10 to 15 minutes.
- Most vessel maneuvering should be done using the engine and rudder. The thruster is meant to be used for small corrections during your final approach into a slip or for emergency situations to keep from hitting another vessel, dock, or other hazard.
- The dedicated thruster battery is charged when the engine is running or when the vessel is connected to shore power with the "BATTERY CHARGER" breaker "ON".

### Details

*At Last* is equipped with a Quick BTQ1806512 65 KGF-force bow thruster that was installed at the factory before the boat was initially delivered in 2017. It can be accessed beneath the forward berth, but you are unlikely to need to access it. Operational manuals for both the motor and the control unit are available at <https://svatlast.com/links/bow-thruster>.

Use with caution! The bow thruster is very powerful, designed to push into a strong sidewind. It will rotate the boat on its keel and can swing the stern sharply into a dock. Please position crew with a fender between the stern and the dock when departing and arriving until you get a feel for it.

The bow thruster control unit is located at the starboard helm just forward of the wheel. Turn the bow thruster on and enable its use by pressing and holding both the red and green buttons for 1 full second or longer. The unit will make a single beeping noise and the green light inside the red button will illuminate, indicating the bow thruster is on and ready.

Press the red, port-side button to move the bow to port. Press the green, starboard-side button to move the bow to starboard. Press these buttons no longer than 5 seconds at a time, in a series of short bursts. Continual use of the bow thruster will cause it to overheat, which will then cause it to shut down to avoid damage. Once overheated, the bow thruster will not turn back on until cool, which takes 10 to 15 minutes. More than 30 seconds of cumulative use over a few minutes will typically lead to overheating.



Most of the vessel maneuvering should be done using the engine and rudder. The thruster is meant to be used for small corrections during your final approach into a slip or for emergency situations to prevent hitting another vessel, dock, or other hazard.

The bow thruster will shut itself off after 30 minutes of inactivity. It may also be shut off by pressing and holding both buttons. Either way, it will sound two beeps when it shuts off.

The bow thruster has a dedicated battery beneath the forward berth. This battery is charged when the engine is running or when the vessel is connected to shore power with the "BATTERY CHARGER" breaker "ON". Overuse will deplete its battery.

There is no circuit breaker for the bow thruster. There are in-line fuses on the motor beneath the forward berth. Spare fuses are attached but are unlikely to be needed.

## 11. Dinghy and Outboard

### Highlights

- *At Last* is paired with a 9' 1" aluminum hull Oxvean dinghy and a 2.3hp Honda outboard motor.
- Tow the dinghy 6' off the stern using the starboard cleat (away from the post-side diesel exhaust). Use a proper cleat hitch and for peace of mind tie off the painter's bitter end to base of the stern pulpit. In very rough conditions, towing the dinghy from the low side makes it unlikely the dinghy will flip in the wind and waves.
- Please don't tow with outboard attached to dinghy or leave on the dinghy overnight.
- Dinghy air pump is stowed in starboard cockpit locker and patch kit is stowed with the spares.
- The 2.3hp Honda outboard is air cooled 4-stroke and takes straight gasoline.
- The spare 1 gallon red gas can is filled 2/3 full (for expansion in hot weather) by our staff. We will top it off when you return the boat, no charge. We stow it in the dinghy, tied to the transom. For safety, please *never* store gasoline in a compartment on board *At Last*.

### Details

#### Towing the Dinghy

Always remove the outboard motor dinghy before towing. We leave the red spare gas can for the outboard engine in the dinghy, tied off to the transom. Towing works best when the dinghy is brought close to the boat with 4-5 feet of painter line between the stern and the towing bridle of the dinghy. This lifts the bow out of the water and reduces drag. To keep the dinghy away from engine exhaust, tie the painter off at the starboard stern cleat with a standard cleat knot, then attach the bitter end to the stern rail using a rolling hitch or similar secure knot.

OPERATING TIP: Leave the self-bailing valve (located in the stern) open when towing to let any accumulated water drain out. Close it when ready to use the dinghy.

### Preparing the Outboard

1. Unlock the outboard (combination is listed on your charter packet) and reattach the lock nearby on the stern rail.
2. Carefully loosen the mounting screws on the outboard bracket keeping one hand on the outboard handle at all times or tie the motor off to a dock line attached to At Last. We actually witnessed a crew member allowing an outboard to flip off the rail and quickly sink into 30 feet of water!
3. Transferring the outboard to the dinghy is best accomplished by having one crew member in the dinghy to receive the outboard from another crew member on deck, rather than a single crew member trying to get off the boat and onto the dinghy with outboard in hand. Although the outboard is relatively light, it should be handled carefully.

### Starting the Outboard

1. Open the fuel valve by pushing the fuel valve lever (starboard aft corner of the outboard) aft to the ON position.
2. Pull the choke all the way out (starboard forward corner of the outboard).
3. Open the air vent on the top of the fuel cap (top of outboard) by turning the indicator half way between ON and OFF. We have discovered that turning the indicator all the way to ON will sometimes cause the valve to close.
4. Make sure the black U-shaped kill clip (attached to the red or gray lanyard) is clipped into the red shut-off knob (port forward corner of the outboard).
5. Turn the throttle handle to the start position. There is a friction thumb screw that can be tightened to hold the throttle in the start position.
6. **NOTE:** The motor has a centrifugal clutch (no gear shift) – the propeller will spin when the RPM is above idle. Please make sure the dinghy is securely tied to [vessel name] as the dinghy will surge forward when the motor first starts up at the starting RPM then will stop when you turn the throttle back to idle RPM after warmed up (about 10 seconds).
7. Pull the starter cord quickly then repeat a few times if needed until the motor starts. (You shouldn't have to pull it more than 5 times.)
8. Slowly push the choke back in shortly after the engine starts (after about 5 or 10 seconds). If the motor starts to run rough then ease the choke back out for another 5 seconds and then try pushing back in. Turn the throttle back to idle.

### While Outboard Is Running

1. Keep the red lanyard kill clip connected to your belt or PFD while operating.
2. The motor has a centrifugal clutch (no gear shift) – the propeller will spin when the RPM is above idle - 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 and throttle up.

3. Note that you will only have steerage when the propeller is driving the boat (throttle above idle RPM).

### **Arriving at the Beach**

1. Before you hit the beach and while still in a few feet of water, stop the motor by pushing in the red shut-off knob (where the kill clip is clipped in) or just pull the red lanyard until the clip pops off. Close the fuel valve and vent lever (the motor will leak fuel when tilted if these are not closed. Also, the carburetor will be flooded making it hard to restart the motor).
2. Tilt the motor out of the water by pulling the motor head forward until it stops – you should here a “click” as the tilt support locks in place. Note that the motor is held in the lowered position by friction from a large rubber clip that grips the shaft. Very little force is needed to pull the motor shaft out of the clip.
3. To tilt the outboard back in the water, first pull on the motor head slightly to take the strain off the tilt lock then release the tilt lock by lifting up the black handled lever below the motor head on the starboard side of the shaft.
4. Please do not drag the dinghy up the beach over sharp rocks and barnacles.
5. Secure the painter to ensure the dinghy doesn't float away on a rising tide.

### **When The Outboard Is Not In Use**

1. Put the outboard back on the outboard mount on At Last's stern rail and tighten both bracket screws.
2. Put the combination lock back on the bracket screws.
3. Close the fuel valve and fuel cap vent.

### **Outboard Troubleshooting**

- If the motor won't start, review steps 1-8 above to make sure you've correctly done all 8 steps.
- A faulty Spark Plug is often the problem. There is a blue “Honda Outboard Tools” kit containing a spare spark plug and spark plug wrench in the engine spares. 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 motor is running fine and suddenly quits then it is often because the fuel cap vent is closed.
- If the motor is running fine but the propeller won't spin with the RPM above idle then the shear pin is probably broken. Put the motor back on the stern rail bracket, take the cotter pin out to remove the propeller and replace the broken shear pin. A spare pin is located the forward underside the motor head.

### **Inflating the Dinghy**

If the dinghy needs inflation, a hand pump is in the starboard cockpit lazarette. The dinghy has three (3) baffles, each with an inflation valve located on the inside of the boat. Insert the appropriate inflation nozzle onto the valve and give a ¼ turn to lock it in place before pumping.

If you need to make a repair, the repair kit and instructions can be found in the tools and spare parts storage compartment located under the aft inboard dinette seat.

## 12. Dodger and Bimini

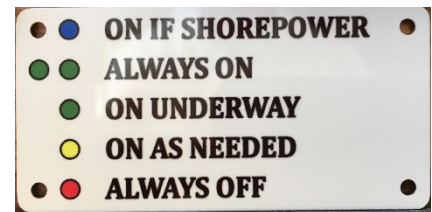
### Highlights

- Dodger-to-bimini overhead connector piece can be removed (un-zipped). The dodger and bimini stay in place. Please store the connector piece in the starboard cockpit locker while removed.
- Tip: If there is early morning dew fogging the dodger glass, or salt crystals from spray, rinse off with a pan of fresh water from the galley (salt crystals may need a second splash). *Avoid wiping.*
- If you or your guests use *aerosol sunscreen*, please apply well away from the dodger. Sunscreen will destroy the glass. (San Juan Sailing replaced two panels destroyed by sunscreen.)

## 13. Electrical

### Highlights

- The AC and DC panel breakers use the color dot convention shown on right:
- AC and DC panels and breakers are at the nav station.
- Primary shore power breaker is in the lazarette.
- The “AC PLUGS” and “WATER HEATER” breakers on the AC panel are powered by shore power.



### Switches and Controls on the Electrical Panel

The electrical panel is in the main salon on the port side. Here are some things to note:

- **Shore Power:** All the AC controls are along the left side of the panel. There is no “master switch” to turn on AC power; when you connect and disconnect shore power, AC is simply ON or OFF. When the AC is ON, a red LED light is illuminated in the upper left-hand corner of the panel. Please ensure that the switches for the AC items (water heater, battery charger, AC plugs) are turned OFF before connecting or disconnecting shore power.
- **Water Heater:** Activate the electric hot water heater when you are on shore power if you need more hot water (when the engine is running it heats the water).



- **Battery Charger:** Turn ON the battery charger switch whenever you are connected to shore power. It must be “ON” to charge the batteries while on shore power.
- **AC Plugs:** Activate this switch to turn ON the AC electrical outlets located throughout the boat, run the microwave oven, operate the TV/DVD-Blu-ray entertainment system, etc. NOTE: there is a master switch for the AC outlets under the Nav table. Make sure it is “ON” for the outlets to work.
- **Bilge Pump:** Always leave the bilge pump setting in “Auto.” Test the pump daily by switching to manual and listening for the pump to run, then return it to the “Auto” setting.
- **Water Pump:** If you don't hear the pump start when you turn it ON at the panel, it means that the system is at working pressure – you should hear the pump start again after you use some fresh water. Note that the marine toilets use raw water and do not impact the fresh water supply. Showers and sinks in the heads use the fresh water supply, as does the cockpit shower.

OPERATING TIP: When underway and if no one is below decks, we turn the water pump OFF.

- **Cabin Lights:** This switch turns ON/OFF DC power to the LED lights located throughout the boat. It must be “ON” before you can turn on any lights on the boat.
- **Fridge Unit:** We usually leave the fridge switch “ON” whenever we're on the boat. If the house battery charge level drops to near 12V and you aren't planning to run the engine/ connect to shore power, turn the fridge off. Your provisions will stay cold overnight.
- **Navigation Instruments:** Turn this switch “ON” to activate the B&G electronics, instrumentation, and multi-function display in the cockpit. This switch also provides power for the radar, depth sounder and knot meter.
- **Anchor, Steaming and Deck Flood Lights:** When anchored or mooring, turn on the Anchor Light at dusk (located at the top of the mast). When motoring at night, turn on the mast-mounted Steaming Light. Turn on the deck Flood Light if you must go forward on deck at night.
- **Circular toggle switch and LED display:** Cycle through this multi-function controller to display the fuel gauge, water gauges (Tank 1 - Aft and Tank 2 - Forward) and battery levels (Domestic and Engine) in the LED display panel. The accuracy of the fuel and water gauges can get questionable when they drop to ¼ full – at ¼ full it's time to find the fuel dock!

## 14. Electronics & Instruments

### Chartplotter

- *At Last* is equipped with a Raymarine Axiom 2 Pro S 12 chartplotter located in the cockpit at the aft end of the cockpit table between the two helms. It is mounted in a swivel case that can be oriented to whatever direction is needed.
- The “NAV. INSTRUMENTS” breaker on the DC panel must be in the “ON” position to use the chartplotter.

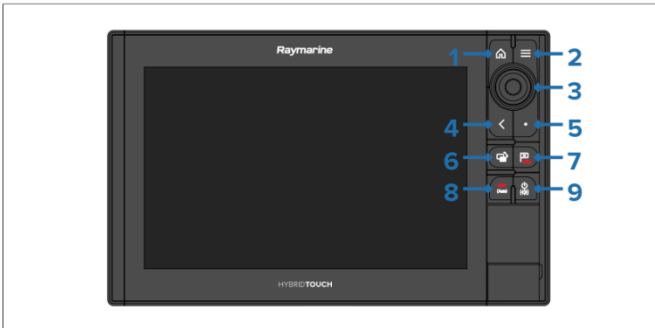
- The chartplotter can be used either by touching the screen or by using the physical controls on the right of the unit.
- When the chart plotter is first turned on it will display a disclaimer page; touch “ACCEPT”.
- The Axiom 2 Pro S is a multi-function device with several different apps: a Chart app, a Radar app, and others. You will most frequently use the Chart app and will use the Radar app as needed.

**Common Operations**

Listed below are the common chartplotter operations you will need to do and how to do them. You may also scan the QR code to view the full chartplotter operational manual for help with other operations.

**Axiom® Pro controls**

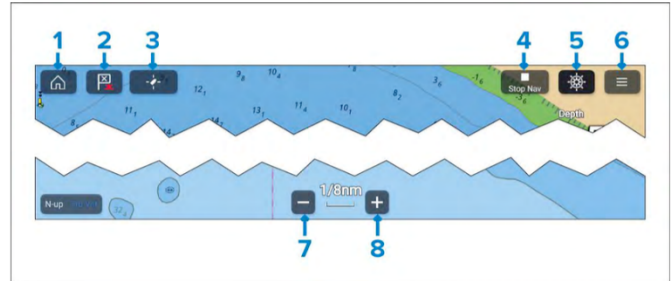
Axiom® Pro includes both a touchscreen and physical buttons that can be used to control the display. The details below describe the buttons and their functions.



1. [Home] — Press to show the Homescreen.
2. [Menu] — Press to open or close menus.
3. [Uni-controller] — The Uni-controller consists of a center [OK] button, [Directional] controls and a [Rotary] knob.
4. [Back] — Press to return to the previous menu or dialog.
5. [User configurable keys] — Press and hold the button to assign a function. Press the button to perform the assigned function.
6. [Switch active] — Press momentarily to switch the active pane in a splitscreen page. A long press expands the selected pane.
7. [Waypoint / MOB] — Press momentarily to place a waypoint at your vessel's location. A long press activates the Man overboard (MOB) alarm.
8. [Pilot] — Press momentarily to show or hide the Pilot sidebar. A long press engages the autopilot in locked heading mode, or disengages an active autopilot.
9. [Power] — Press to switch on the display. When the display is switched on, pressing this button opens the Shortcuts page.

**Chart app onscreen controls**

Onscreen controls are available which are overlaid in fixed positions onscreen.



1. **Home** — Select to return to the Homescreen.
2. **Waypoint / MOB** — Select to place a waypoint at your vessel's location, or press and hold to activate Man overboard (MOB) alarm.
3. **Find vessel** — Select to center the vessel icon on the screen. Only displayed when the vessel is not centred.
4. **Stop Nav** — Select to end active navigation (i.e.; goto or route follow). Only shown during active navigation.
5. **Pilot** — Select to open the Pilot sidebar. Only displayed when autopilot integration is enabled.
6. **Menu** — Select to open the Chart app menu.

**Finding the Navigational Chart**

On the home screen: (#1) Tap “Chart” to open the Chart app. You may instead choose a combination that has Chart, such as “Chart/Radar”.

On the Chart app: (#1) Tap the “Menu icon” (three stacked horizontal bars), (#2) then tap “Mode” on the “CHART” menu that appears, and (#3) then tap “NAVIGATE” on the “Select Mode” panel that appears.

**Zooming In & Out**

On the Chart app: (#1) Tap either the “Range out” icon (minus sign) or “Range in” icon (plus sign) located at the bottom center of the screen to zoom the view out and in, respectively.

Alternatively, rotate the “Uni-controller’s” rotary knob on the physical controls to zoom in and out.

**Returning the screen to the vessel’s current location**

On the Chart app: (#1) Tap the “Find vessel” icon (a boat at the center of four short lines in each cardinal direction) to center the screen on the vessel.

Note that this icon is only displayed when the screen is not already centered on the vessel.

**Clearing pre-existing waypoints, routes, & tracks**

The Axiom 2 Pro S unfortunately does not provide a way to delete all user data, such as waypoints, routes, and tracks at once. Each of these are managed separately.

**Deleting all waypoints**, on the Chart app: (#1) Tap the “Menu icon” (three stacked horizontal bars), (#2) then tap “Waypoints, routes, tracks” on the “CHART” menu that appears, and (#3) then tap “Waypoints” on the panel that appears. Next, (#4) tap “Delete,” (#5) then tap “Delete All,” (#6) then tap “Yes” to confirm.

**Deleting routes**, on the Chart app: (#1) Tap the “Menu icon” (three stacked horizontal bars), (#2) then tap “Waypoints, routes, tracks” on the “CHART” menu that appears, and (#3) then tap “Routes” on the panel that appears. Next, (#4) tap the route name from the “Routes” list you wish to delete, and then tap “Delete”. You must delete each route individually.

**Deleting tracks**, on the Chart app: (#1) Tap the “Menu icon” (three stacked horizontal bars), (#2) then tap “Waypoints, routes, tracks” on the “CHART” menu that appears, and (#3) then tap “Tracks” on the panel that appears. Next, (#4) tap the track name from the “Tracks list” you wish to delete, and then tap “Delete”. You must delete each track individually.

**Change chart orientation**

On the Chart app: (#1) Tap the “Menu icon” (three stacked horizontal bars), (#2) then tap the “Settings icon” (three gears) on the bottom of the “CHART” menu that appears. Next, (#3) in the “Settings” page, tap “View & Motion” to (#4) change either the chart motion mode, chart orientation, or both.



**Change display brightness**

(#1) Press the physical power button (while the Axiom 2 Pro S is already on) to bring up the "Shortcuts" menu, then (#2) slide the "Display brightness" with your finger to adjust the brightness. Automatic brightness can also be toggled on or off here.

**Display course over ground (COG) vector/line**

On the Chart app: (#1) Tap and hold the vessel icon to bring up the "vessel details" pop-over, then (#2) check the "COG" checkbox to display the course over ground (COG) vector line. You may also check or uncheck the "Heading" vector line here. You might also want to verify that "Use SOG for hdg vector length" is checked in the advanced settings menu (by clicking "Menu", then the "Settings icon", then "Advanced").

**Manage AIS overlay & targets**

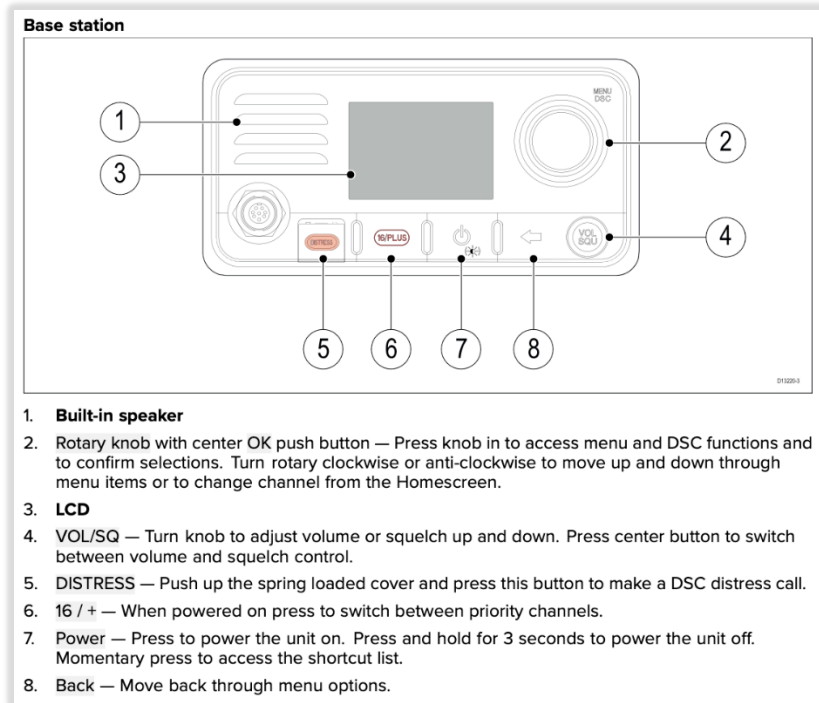
On the Chart app: (#1) Tap the "Menu icon" (three stacked horizontal bars), (#2) then tap "Targets", and (#3) then tap "AIS Settings". Next, (#4) check or uncheck "Show AIS targets in chart" or change other AIS overlay settings.

**VHF Radio**

- *At Last* is equipped with a Raymarine Ray63 VHF radio base station inside the salon below the electrical panel, along with a wired handset (model A80289) in the cockpit mounted on the chartplotter case to the port side.
- The VHF radio base station must be on for the AIS transceiver to send and receive data.
- A wireless, handheld Icom M37 VHF radio is in the navigation station desk. It is available to take and use on the dinghy and when ashore. It is rechargeable using the micro-USB adapter also located in the navigation station desk.

**Common Operations**

Listed below are some common VHF radio operations and how to do them. You may also scan the QR code below to view the full VHF radio operational manual for help with other operations.



**Turning on and off the radios**

Base station: Press the power button to turn the base station on. Press and hold the button for 3 seconds to turn the base station off.

Cockpit remote handset: Turn on the base station before turning on the remote handset. Press the power button to turn the handset on. Press and hold the button for 3 seconds to turn the handset off.

**Silencing a DSC alarm**

When the DSC button on a radio is pressed by another boat (or the Coast Guard) it sounds an alarm on all boats in the area.

The base station and cockpit handset will display information about a distress call on their LCD screens. To silence this alarm without replying, select the “Ignore” option using the rotary push knob (or the “Up”, “Down”, and “OK” buttons on the cockpit handset). If the radio is already on channel 16, there will not be an “Ignore” option; you can simply not respond. Note that if the “Auto channel change” option is enabled the radio will automatically change to channel 16 after 10 seconds.

**Changing between high & low transmit power**

Press the “HI/LO” button on either the base station handset or cockpit handset to switch between low (1W) and high (25W) transmit power.

**Quickly going to channel 16**

Pressing the "16/+" button on the base station or either handset will change the channel to 16. If the current channel is already 16, it will change the channel to 09.

**Accessing the weather channels (WX)**

From base station: Push in the rotary knob to show the menu on the LCD screen, then rotate the knob to select "Weather Mode" and push the knob in again to go to the weather home screen.

From cockpit handset: Press "OK" button to show the menu on the LCD screen, then use the "Down" arrow button to select "Weather Mode" and press "OK" again to go to the weather home screen.

Once on the weather home screen you can change the current weather channel as you would normally change channels. To exit the weather home screen, the "Back" arrow button on the base station or cockpit handset.

**Adjusting volume and squelch**

From the base station: Press the "VOL/SQ" knob to toggle from setting squelch to volume. Turn the same knob to adjust either.

From the cockpit handset: Press the "VOL/SQ" button to toggle from setting squelch to volume. Press the left and right arrows to decrease and increase either, respectively.

**Changing between international & US channels**

From base station: Push in the rotary knob to show the menu on the LCD screen, then rotate the knob to select "Set-up" and push the knob in again, then repeat for "Channel set-up," then repeat for "Frequency band," and finally repeat for the frequency band you want to use: "International," "USA," or "Canada."

From cockpit handset: Press the "OK" button to show the menu on the LCD screen, then use the "Down" arrow button to select "Set-up" and press "OK" again, then repeat for "Channel set-up," then repeat for "Frequency band," and finally repeat for the frequency band you want to use: "International," "USA," or "Canada."

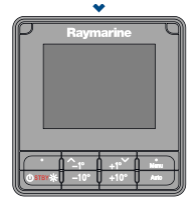
**How to set up and use Channel Scanning**

To set up the channels to be scanned press the Scan soft key, then use the large knob to select the channel to be saved and press the Save soft key. Repeat this for all channels desired. Pressing the Save button on a channel already saved will remove it from the saved list. Saved channels have a \* on the screen when they are selected.

To start scanning press the Saved soft key. To get back to where the Scan soft key is on the screen press the Clear button. To restart scanning after transmitting it is necessary to press the Scan and then Saved soft keys again.

## Autopilot

- Raymarine EV-2 autopilot computer
- To engage the autopilot, press "AUTO" one time on the Raymarine P70s at the port helm
- To disengage the autopilot, press "STBY"



## AIS (Automatic Identification System)

- At Last transmits her position and data via an AIS signal as well as receives AIS signals from other vessels equipped with AIS transmitters (Commercial vessels are required to have AIS, recreational vessels are optional).
- The VHF base unit radio must be ON to send and receive AIS data. The chart plotter is tied to the VHF radio or AIS Unit and shows the positions of vessels with AIS as triangles. Make sure the AIS overlay is turned ON in the settings menu. Add details here about how to turn the AIS overlay ON/OFF.
- AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.
- AIS requires each vessel to have a 9-digit MMSI (Maritime Mobile Service Identity) number to transmit position and data. At Last's MMSI number is 316033885.
- AIS vessels appear on the chart plotter screen as triangles (must have AIS overlay turned ON – see above Highlights for how-to). The triangle points in the direction that the vessel is moving and if you touch the screen over the triangle the system will give you additional information (such as name, size, speed, bearing, etc.) about the vessel. The system also transmits this same type of information about Vessel name to other vessels with AIS.
- The AIS is an added safety feature which allows large commercial vessels to easily see you and your direction/speed. They may try to contact you via VHF channel 16 to verify your course intent. In addition, AIS allows San Juan Sailing/Yachting to provide faster assistance in case of unplanned maintenance issues as well as alert San Juan Sailing/Yachting of Vessel name's return approach. Vessels with AIS can be viewed in real-time through mobile device apps and websites like [www.marinetraffic.com](http://www.marinetraffic.com) that will reveal vessel name, course, speed, track, and other information.

## 15. Mobile Wi-Fi Hotspot

### Highlights

- At Last is equipped with a mobile Wi-Fi hotspot connected to T-Mobile.
- The hotspot is located above the settee on the starboard side near the outlets and heater control. Please leave it connected to the USB outlet and the outlet turned on so its battery stays charged.

- The connection information, including password, can be found on the display. If the display is not on, press the power button (but do not hold the power button—that will turn it off).
- The hotspot is not yet connected to an external antenna (this is coming soon!), but we have found that we have good signal and good download and upload speeds through the sailing area.

## 16. Engine

### Highlights

- Yanmar 45hp 4-cylinder diesel with sail drive that will provide many hours of cruising pleasure.
- The sail drive helps eliminate shaft vibration, noise, and alignment problems. Under engine power, you will find *At Last* to be quiet, balanced, maneuverable, and powerful.
- Maximum RPM is 3900. Cruising RPM is 2000-2500. Idle is around 900 RPM. It's okay and in fact preferred to vary engine speed as you cruise. Please try not to exceed the cruising RPM range.

### Details

#### Inspecting the Engine

Engine access is provided by lifting the companionway stairs, which operate on hydraulic lifts – there are no latches, just lift it up, push it down. Side access is provided via hatches in the aft cabins.

We recommend performing the following inspections each morning before getting underway:

- Lift the companionway steps to access the engine compartment. *Look around and below* the engine for any signs of oil or other fluid leaks.
- *Check the coolant level.* Anywhere between the two lines (high and low) on the overflow reservoir is where you want to be.
- *Inspect the raw water strainer for debris.* In case of an engine overheat alarm, check for eelgrass clogging the strainer. Unscrew the top of the strainer, clean out any debris, then replace it.

For longer charters (> 7 days), check the oil level once a week. The dipstick is on the starboard side of the engine and can be accessed from the starboard cabin (look down and to your left). If you need to add oil, there is spare oil stored in the engine compartment. There are two (2) oil filler caps, one on top of the engine and one on the left side near the dipstick. Do not overfill, add no more than a cup at a time and re-check the oil level.

The fuel filter is on the left (starboard) side at the front of engine. On the right as you look at engine is the water pump and the blue water lines that pump water from the tanks to the sinks and showers.

## Starting the Engine

This is a keyless start system. The main battery engine switch, located in the aft port cabin, must be in the “ON” position to start the engine. When docked in a marina, or leaving the boat for an extended period, switch the engine battery switch to “OFF” and lock the companionway hatch.



1. Ensure that the throttle/gearshift is in neutral.

OPERATING TIP: In colder weather or when you want to run the engine at a higher idle speed (e.g., to charge batteries), depress the red button at the base of the throttle and push the throttle slightly forward. This disengages the transmission and allows the engine to run at a higher idle RPM. We recommend targeting 1000-1200 RPM for warm-up and battery charging.

2. Tap the bottom “POWER” button once to turn on the ignition – do not hold the button or it will turn the ignition off. Red lights will illuminate on the tachometer dial.
3. Press top “START” button, which will start the engine.
4. Listen/look for water discharging from the aft starboard end of the hull. If water is not in the exhaust immediately shut the engine down and contact SJS.

OPERATING TIP: Allow 5-10 minutes of warm up before placing a load on the engine. It stresses a diesel engine to be placed under load when cold. Conversely, allowing a diesel engine to idle too long will cause carbon build-up.

## Running the Engine

- Engage forward or reverse gear by moving the transmission directly from Neutral to Idle-Forward or Idle-Reverse (the transmission will click into each setting), pause momentarily, then move the throttle forward/backward smoothly to your desired RPM setting. Engaging the transmission in jerky incremental steps can slip the clutch, causing damage over time.
- To keep the transmission “healthy” when shifting from forward to reverse and vice-versa, pause ~2 seconds in the 12 o'clock neutral position (say “one and two and”) before shifting gears.
- An economical cruising speed of 5-7 knots is achieved at 2000-2600 RPM, which uses about 0.5-1.2 gallons of diesel per hour. Please do not exceed 3000 RPM: it’s hard on the engine and fuel consumption goes way up with very little increase in speed. We recommend keeping the engine speed under 2600 RPM for most operating conditions.
- To avoid sucking in air or sludge when the fuel level approaches  $\frac{1}{4}$  of a tank, refuel when the fuel drops below  $\frac{1}{2}$  full and before it reaches  $\frac{1}{4}$  full. The tank holds 53 gallons, so topping up at about 25 gallons is a reasonable exercise and doesn’t take too long.

## Shutting Down the Engine

1. Allow the engine to idle for a few minutes in neutral to cool down.
2. Press the middle “OFF” button, which will stop the engine.

3. After engine stops press the bottom "POWER" button and hold for a second until you no longer hear the ventilation fan in the engine compartment. The red lights on the tachometer will turn off. If the bottom power button is not turned off, an alarm will sound periodically.

SAFETY REMINDER – Never stop the engine by turning off the battery switch. Doing so will seriously damage the diodes on the alternator and the batteries will no longer charge.

### **Boat Handling with the Engine**

At Last has a large deep rudder and a deep 7'1" keel, At Last is keenly responsive and able to turn in a narrow radius..

San Juan Sailing offers free handling instruction before you leave for your charter if you'd like to practice with At Last or just bone up on your boat handling skills. Spending 30-60 minutes practicing getting in and out of the Bellingham marina can be a great experience.

### **Forward**

Because the sail drive/propeller is almost directly below the engine, the wash from the prop takes a moment to reach the rudder; anticipate this delay when maneuvering in tight spaces. A short burst of throttle will direct water at the rudder, which if already turned, will result in a short, sharp turn with little forward movement – a strategy that can be handy when turning in confined spaces.

### **Reverse**

Prop walk is minimal to starboard in reverse. Driving in reverse is a pleasure. Grip the wheel firmly when in reverse: water pressure on the aft edge of the rudder can push the rudder over to one side, which is hard on the steering mechanism (and your arms).

### **Docking**

Unless there are high winds, we typically motor in the marina in Idle-Forward, which will produce a boat speed of about 2 knots. About 4 slips from our target dock, we shift to neutral and glide in. Use the engine to stop the boat at the dock, and don't shut down the engine until the vessel is secured at the dock.

SAFETY REMINDER: It's difficult for people holding lines on the dock to stop the momentum of a heavy cruising sailboat. It's also a bad idea to use dock lines on a cleat to stop movement; this can result in a sudden swing of the boat and damage to cleats, boat, and/or dock. And please, no crew should jump to the dock. If you can't step off calmly, back-up and try again.

When coming into our docks in strong winds, or if you'd just like a little assistance on arrival, hail "San Juan Sailing" on VHF Channel 80. They'll be glad to offer some coaching and/or catch your lines. In fact, most marinas in the Islands will help you if you hail them and ask for assistance. Asking for docking assistance is a sign of smart seamanship.

SAFETY REMINDER –Whenever you are departing or arriving at the dock have a crew member designated as the "roving fender" team mate. If you are going to accidentally "touch" a boat or other object, lower the fender to the point of contact.

### **Using the Bow Thruster**

The bow thruster allows you to control bow alignment using short bursts when docking or departing (see Bow Thruster section in these notes for details).

### **Troubleshooting Engine Problems**

Yanmar engines are incredibly durable and you shouldn't have any problems on your voyage. Nevertheless, there are a few things to watch out for.

#### **Engine Overheating**

If the engine overheat buzzer sounds while the engine is running, it's usually no more serious than eelgrass plugging up the raw water strainer. The solution to this problem is prevention – keep an eye out for eelgrass mats, especially along those “soapy” looking tide and eddy lines in the water, and don't run over it. When eelgrass gets sucked into the engine cooling water intake, it collects in the raw water strainer.

To clear eelgrass from the raw water strainer, stop the engine, twist off the clear screw-top and extract the eelgrass. Replace the lid and tighten by turning it clockwise until the lid is seated firmly on the rubber gasket. Don't over tighten as the lid can crack. Make sure the lid's threads are not crossed as this can give the appearance of a tightened lid but the gasket won't seal. Then restart the engine.

If after restarting the engine it overheats again, check the seal between the strainer, the rubber gasket, and the lid. If the strainer is drawing air, it won't draw water. If needed, open and then retighten the lid on the strainer and check to make sure the rubber gasket is in place in the lid (and not lying in the bilge.)

If the above steps fail to solve the problem, call San Juan Sailing for assistance.

#### **Loss of Oil Pressure or Coolant**

If the engine loses oil pressure, the warning buzzer will sound and the oil icon warning light on the tachometer will light up, so check which light is showing red. If it's the oil light, shut down the engine, check the oil level, and contact San Juan Sailing.

The alarm buzzer is more likely to indicate engine overheating, and the temperature icon light will light up. Before you shut down the engine, check for water gurgling out the exhaust. If you have a “wet exhaust,” check the coolant level in the overflow reservoir bottle. If none is seen, add enough to reach the top-level line on the bottle. After the engine cools down, remove the cap on the engine block and add coolant. And check the bilge for a light green liquid (coolant). If coolant is found in the bilge, call San Juan Sailing immediately.

If the coolant reservoir bottle is full, check to see if the engine threw a belt. Without a belt on the raw water pump, the coolant won't circulate and cool the engine. Replacement belts are in the engine spares kit. One other possibility is that the impeller in the raw water pump has failed. While they are replaced each spring with a new one, it's still possible that a hard object may be drawn in and break off an impeller blade. A replacement impeller is found with the engine spares. Call San Juan Sailing if you suspect you have an impeller problem.

OPERATING TIP: Bottom line – you're on vacation! If the engine is giving you problems, call SJS for assistance. They have repair teams in the Islands to assist you.



## 17. Entertainment Systems

### Highlights

- **FUSION audio system:** AM/FM radio, wired and wireless (Bluetooth) connections for audio players (e.g., iPod). Speakers are in the main cabin and in the cockpit. The audio system can be controlled from the FUSION unit in the main cabin.

### Details

At Last is equipped with a FUSION marine entertainment system. Speakers for the FUSION system are in the main cabin and in the cockpit.

#### FUSION Audio System

The FUSION unit is located next to the VHF radio near the Nav station. The system includes AM/FM radio, VHF audio (to monitor radio transmissions using the cabin and cockpit speakers) and wired (USB) and wireless (Bluetooth) connections for audio sources such as iPods.

OPERATING TIP: If using Bluetooth to connect an audio source, the FUSION unit will appear as MS-205 in the list of available BT connections shown on your device.

To connect an iPod or other portable music player using the USB port, unscrew the cap from the USB connector to the right of the FUSION unit and plug in your device using your own cable. Use the menu on the front panel of the FUSION unit to select your audio source.

## 18. Fuel

### Highlights

- The diesel fuel tank holds 52 U.S. gallons (200 liters).
- A fuel gauge is located at the nav station and at the starboard helm. The ignition must be on to read the fuel level.
- Refuel when gauge reads  $\frac{1}{2}$  or less.
- Fuel deck fill is on the port deck, near the stern.
- In nominal conditions, the engine consumes 1.2 gallons per hour at 2600 rpm.
- A fuel cutoff valve is located on the fuel line on top of the fuel tank under the aft port berth. The access panel is labeled.

## Details

### Fueling

Please fill very carefully because it is difficult to tell when the tank is full. You'll need to put your ear to the tank, not fill "too fast", and be prepared to stop immediately when the pitch rises.

There are rubber fueling gloves in the port cockpit locker. The fuel dock attendant should provide absorbent pads upon request. Before fueling, we build a fuel absorbent dam in case of overfill (reaching for the pads after the spill is too late).

## 19. Heads and Holding Tanks

### Highlights

- Only what has been eaten goes in the toilet.
- The toilets are traditional Jabsco manual flush systems using seawater.
- The toilet discharge hoses do NOT have Y-valves. When you flush the toilet, it goes directly into the holding tanks.
- The holding tanks do not have a level gauge but can be checked visually by removing the panel above the toilet and looking for the level. A flashlight can help to see the level better.
- Holding tanks are 21 gallons each and should be emptied every second day.
- The holding tank overboard discharge seacocks have large red "T" handles and are located inside the cabinet of each head.

### Details

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 21 gallon holding tank. If you have four people on board and have 'normal' usage, the tanks will need to be emptied every second 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.

### Head Toilets

- The head toilets are traditional Jabsco manual flush systems using seawater. The seawater suction seacocks for the heads are located under the sink cabinets.
- 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.

- To check the level of the holding tanks simply open the locker above the head and visually determine the tank level, using a flashlight if necessary. **Empty the holding tank when it is  $\frac{3}{4}$  full or before.**

### Emptying the Holding Tanks

1. Deck Pumpout
2. Overboard Discharge (where legal)
  1. Deck Pumpout

The holding tanks can be pumped out via the labeled deck fills. After pumping out the holding tanks, please refill each tank with about 5 gallons of fresh water through the deck fitting to rinse, and then pumpout again. This will help keep the waste system smelling fresh! Thank you!

2. Overboard Discharge (**where legal**)

The holding tanks are gravity drain, there is no macerator pump. They will normally drain in less than a minute (you may hear them finish with a 'whoosh' if the engine is not running). Open the large red-handled seacocks located inside the cabinet of each head. Please make sure you close the seacock after the tank empties. If left open, then every time the toilet is flushed it will flow straight overboard!

## 20. Heaters (Cabin)

### Highlights

- Webasto forced air, set thermostat by pushing power button, which will turn green, twisting the dial to select temperature, and then pushing in on the dial to set the temperature.
- If power button is green the heater is running; if white, will shut off after a delay
- Not efficient to run all night, noise wakes light sleepers
- Auxiliary portable electric for use on shore power



### Details

The Webasto thermostatically controlled forced air heating system draws from the main diesel fuel tank. In our waters, we use the heater on cool evenings or to take the chill off in the morning.

The thermostat, black, is above the dinette facing forward. To turn it on, press the power button once which will turn it green. Select your desired temperature using the wheel dial and press it to confirm. To turn the heater off, press the power button again, which will turn it white and show the menu. The thermostat will stay illuminated for a few minutes before turning itself off.

We normally turn off the heater at night, both to sleep cool and to avoid the clicking sound of its electric fuel pump.

There is an electric space heater for marina use on shore power. It is normally stowed in the cabinet below the forward stateroom hanging locker.

## 21. Lighting

### Highlights

- Flip on the CABIN LIGHTS breaker on the DC panel at the nav station.
- Salon light switches are located on the ceiling, they are large white toggle buttons.
- Stateroom light switches have a white toggle button in the ceiling for the primary lights, and secondary lights have their own switches.
- Head light switches are on each individual light.

## 22. Propane

### Highlights

- Solenoid valve switch is mounted in the galley below the sink
- Two 2.5 gallon aluminum propane (LPG) tanks
- For safety, turn off the solenoid switch after stove use

### Details

We have two aluminum 2.5 gallon propane tanks under the port helm seat, vented to the outside for safety. The San Juan Sailing staff weighs these tanks weekly to assure that you don't run out. If one tank empties, there is a spare for your convenience.

Troubleshooting: If the stove won't start check:

- Propane tank valve is full open
- Solenoid switch is on
- Stove knob is first pushed in, then left to the "ignite" position and after flame, is held until the thermocouple heats.



If BBQ doesn't start check:

- Shut-off valve near propane tank is open (parallel to hose)
- Regulator on the BBQ is pushed in and turned to the “High” position before igniting.

Caution: propane is heavier than air. If leak is detected, extinguish all flames and open all hatches.

## 23. Refrigeration and Freezer

### Highlights

- The ideal thermostat setting is the fifth spot on the dial (clockwise starting from 12 o'clock, marked with a green dot) located at the top back of the fridge.
- Circuit breaker/switches are located on the DC panel in the nav station. They are always ON unless the house batteries do not have sufficient power (below 12.2V).
- Check to be sure there is sufficient battery power to operate the refrigeration equipment all night. Usually there is.

## 24. Sails and Rigging

### Highlights

- Fully-battened main, 107% furling jib
- All lines led aft to the cockpit
- “German-style” double mainsheet led to each helm
- Single line reefing from cockpit with two reefing positions

### Details

#### Mainsail

We have a “stack pack” zipped sail bag and lazy jack system. No need to adjust the lazy jacks...just unzip and hoist!

To hoist:

- a) The main halyard is normally stowed on a pad eye on the port deck. Unzip enough of the sail bag to attach the halyard to the mainsail. Make sure the halyard is on the correct side of the spreaders and has a clear path up the mast.
- b) Open the clutches for boom vang and the two reef lines (unless you are reefing).
- c) With the boom cover top unzipped and the mainsail *directly* into the wind (any wind in the sail makes hoisting and lowering difficult!), crew at the mast pulls down on the main halyard while a second takes up slack through the closed clutch in the cockpit. When hoisting gets hard, (normally about 80% up) crew #1 pulls the halyard horizontally out—like a bow string, with

cockpit crew quickly taking up slack on each release. Do this repeatedly to raise as high as possible, normally about 95%.

- d) Run the halyard to the starboard cabin top winch with a turn around the port power winch (as a fair lead) and use winch handle to tension the halyard until fully made.
- e) Adjust boom vang and take in slack in reef lines (if needed)

Alternatively, the cabin top power winch can be used on slow speed to raise the main without crew forward, using it very carefully not to overpower and break anything if there is a snag.

### Reefing

- a) Two large reefs are pre-rigged.
- b) Release the mainsail halyard and ease while tension the single line reef moderately, then release the mainsheet and boom vang. Now fully tension the reef line until the new clew is close to the boom. Then re-tension the mainsail halyard, mainsheet, and vang. (Using this method raises the boom sufficiently above the dodger.)
- c) Note: tuck the extra mainsail foot if you like, but please don't bother with reef ties, which in our experience easily tear sails.

### Jib

Please do not adjust the luff tension. The primary sheet winches for the 107% jib (Harken roller furling) are two speed Harken 46s.

## 25. Showers and Sumps

### Highlights

- Separate shower stall forward.
- Aft head shower.
- Transom shower.
- Shower sump pump circuit breakers at nav station, switches in showers, no sump or float switches.

### Details

The toggle operates the sump pump in the forward separate shower.

The aft shower is incorporated into the aft head. The sink faucet extends to become the shower head. Depress the top of the shower head for spray. Again, toggle operated sump.

The transom shower features both hot and cold water. To operate, pull the T handle toward you. That brings water to the shower head. Turn the T handle left or right to adjust temperature. Depress the spring loaded top of the shower head for spray.

Note: shower sumps can become emergency bilge pumps if water rises to that level.

## 26. Spares and Tools

Common spares: Under-seat storage below the inboard forward dinette cushion. Spares are in green plastic totes.

Heavy Duty spares: Under forward stateroom mattress, forward end.

Tools: Under-seat storage below the inboard forward dinette cushion. There is a gray plastic toolbox and a canvas tool bag.

## 27. Storage

The amount of storage is one of the appealing factors of the Jeanneau 419 SO. We found these of greatest use:

Food:

- a) Under-seat storage beneath the forward nav station cushion.
- b) Salon dinette. While some of the under-seat storage is used for the tanks and spares, much is open and available for food storage.
- c) Above galley counter cabinets. We store quite a bit of food in the cabinets above the stove and refrigerator in the open spaces.
- d) Floor. The floor compartment between the galley and salon head is lined for storage.

Clothes: Each stateroom has a hanging locker and drawers that we find more than adequate.

Tools: Under the forward nav seat.

Fenders: We store them in the lazarette. A fifth light orange fender is ideal for the "rover" or when backed into a slip.

Dock Lines: In the starboard cockpit locker.

Cooking utensils: In the forward galley under-counter cabinet.

## 28. Stove/Oven and Microwave

### Highlights

- 2 burners, depress knob, turn left, use spark button
- Solenoid valve switch is mounted in galley under the sink
- Stove off, then solenoid off
- Microwave on shore power only

## Details

The two-burner gimbaled propane stove must have the propane solenoid switch on to operate (mounted below the sink).

We suggest that whenever you turn off the stove burner, you shut off the propane solenoid, which, for safety, shuts off the propane flow in the cockpit.

To light a stove burner, depress the knob, turn ¼ turn to the left and light with the spark button. Note you don't need a flame, just the spark. Hold for a few seconds to heat the safety "thermocouple", then release. Turn the knob to the left, counterclockwise, to go from "high" to "simmer".

To light the oven, set the knob to the desired temperature. Open the oven door. While kneeling, depress the blue cylindrical button on the stove panel. This bypasses the thermocouple and allows propane to flow to the oven burner. Ignite the burner with the spark button. Keep the blue button depressed for about 30 seconds before slowly releasing, watching the pilot to make sure it remains lit.

The microwave requires shore power and the "AC plugs" breaker must be on.

## 29. Water

### Highlights

- There are two water tanks: 52 U.S. gallons (aft) and U.S. 87 gallons (forward).
- The water tank selection valves are located behind the dinette seat back cushions, along the starboard wall (pictured right).
- The water tank deck fills are forward, one on the port side and one starboard.
- An in-line water filter yields bottled water quality in the galley using the separate, filtered water faucet adjacent to the main faucet.

### Details

One of the water tanks (87 U.S. gallons) is under the forward berth and the other (52 U.S. gallons) is under the starboard aft berth.

The water tank selection valves are behind the dinette seat back cushions along the starboard wall, below the storage cabinets. Typically, only one valve is opened at a time, to make it easy to monitor use and forecast when topping off (at fuel docks or marinas) is needed.

Hot water is produced by two methods:

- *Engine*: Running the engine under significant load (e.g. at cruising RPMs or above) will heat the water in the hot water tank. It takes about an hour heat the extra-large 12 gallon tank. Running the engine at idle won't heat the water.





- *Shore Power:* When connected to shore power, turn on the “WATER HEATER” breaker “ON” on the AC panel. Note that we do not recommend turning this on when using the inverter because it will rapidly drain the house batteries.

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