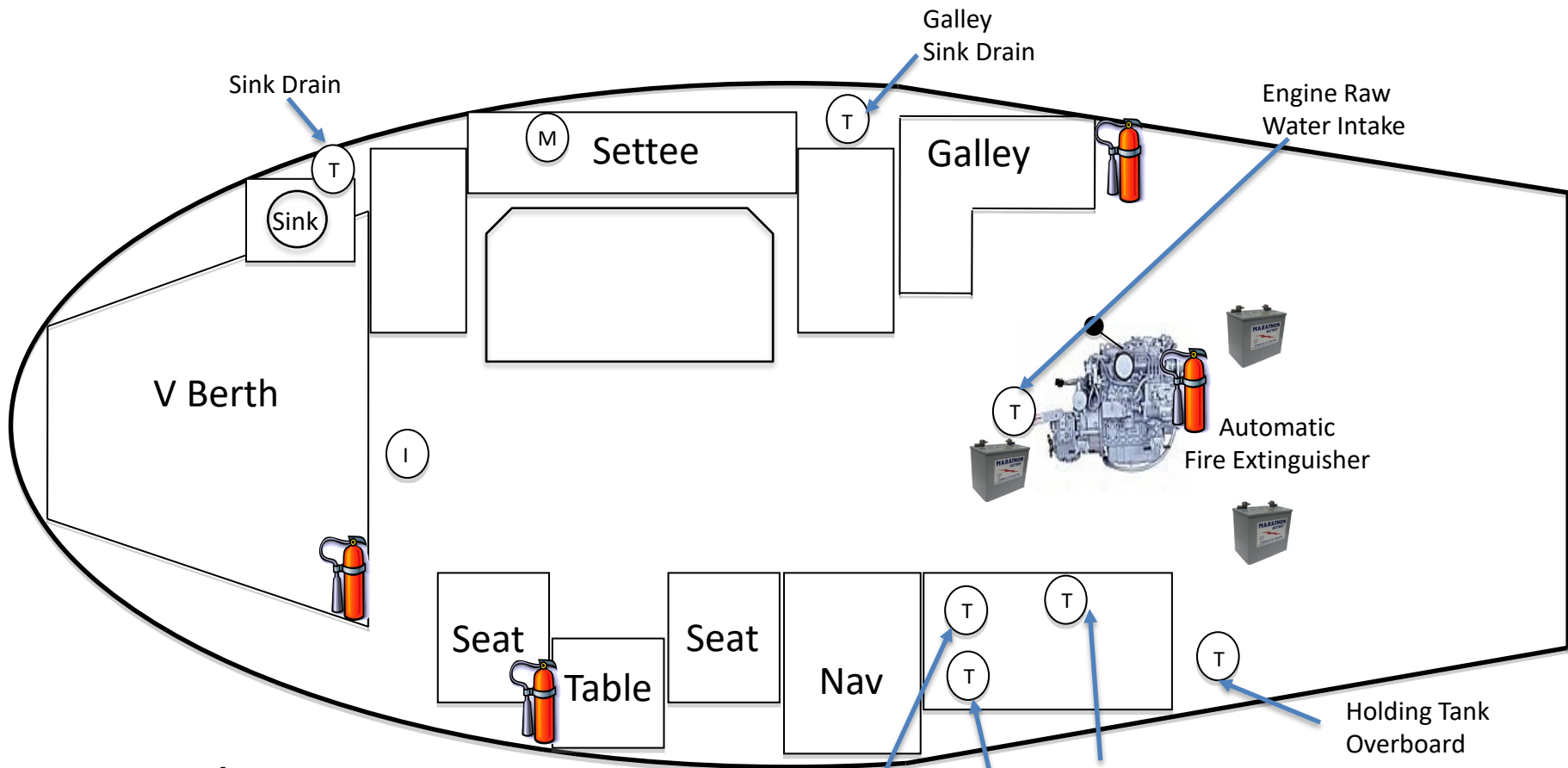












4002 Bear Boat Jeanneau 40.3

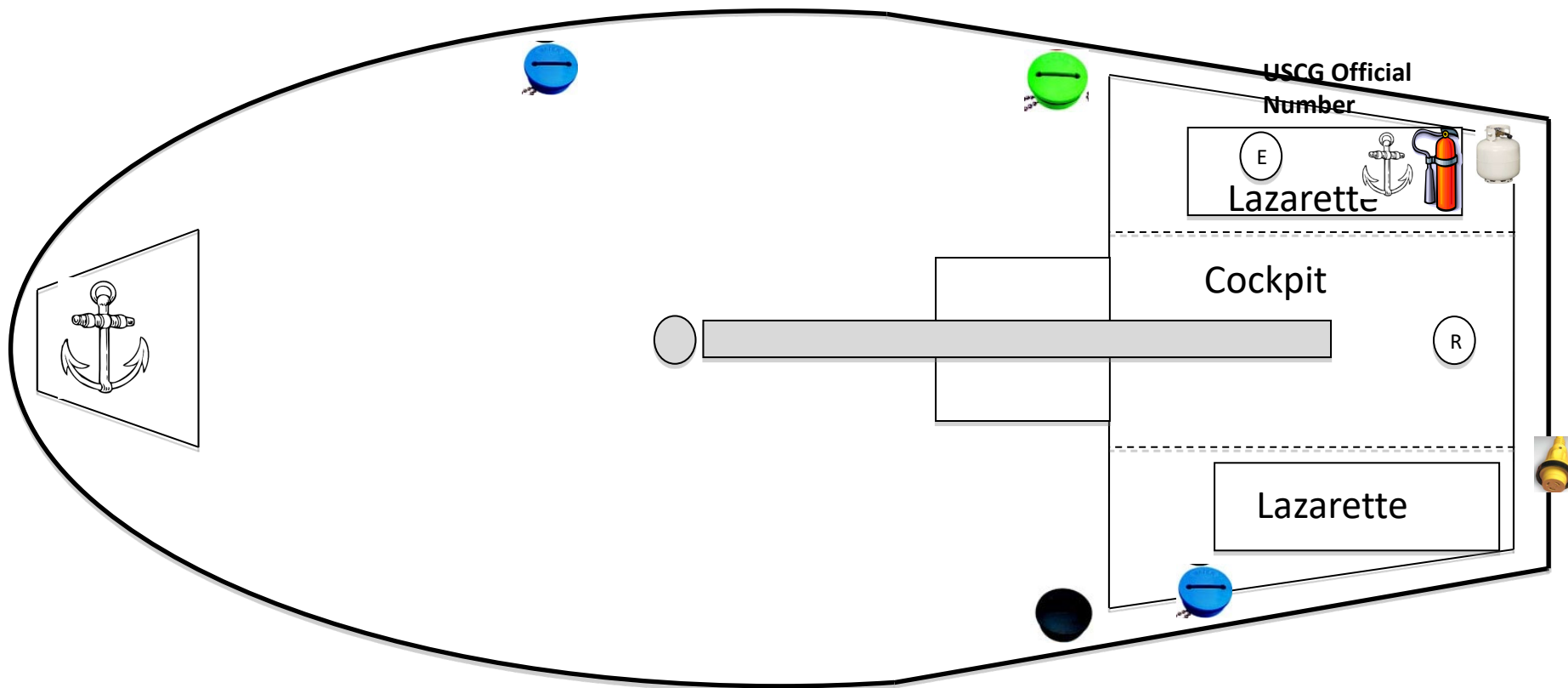


Legend

-  Engine
-  Oil Dipstick
-  Emergency Tiller
-  Battery Switch
-  (R) Oil Fill
-  (T) Thru Hull With Seacock
-  Battery(ies)
-  (I) Instrument Thru Hulls
-  (M) Water tanks manifold
-  Fire Extinguisher

Notes

4002 *Bear Boat* Jeanneau 40.3




Legend


(R) Rudderpost

 AC Power cord

 Anchor


(E) Emergency Tiller


 Deck Fill – Diesel

 Deck Fill – Waste

 Engine Kill

 Deck Fill – Water

 Propane / CNG

 Engine Start

4001 Bear Boat Jeanneau 40.3 Notes

4002 – BearBoat 2005 Jeanneau 40.3

<p>Documentation</p>	<p>BearBoat is a USCG documented vessel, bearing the Official Number 1174284. The Official Number is displayed in the starboard cockpit lazarette.</p> <ul style="list-style-type: none"> • Discharge of Oil Prohibited <ul style="list-style-type: none"> ○ Located on the companionway ladder and in the starboard lazarette. • MARPOL Garbage Dumping Restriction <ul style="list-style-type: none"> ○ Located on the cabiner door in galley and in the starboard lazarette. • Waste Management Plan is not required; however, one can be found in the Bearboat boat book.
<p>Engine</p>	<p>Engine type: Yanmar 4JH4E Working RPM 2200 MAX RPM 3000 (Emergency only) 3 blade folding prop.</p> <p>Easy access to the engine oil dipstick is available through a hatch starboard side of engine compartment that is found in the aft stateroom.</p> <p>The companionway step left up from the bottom to check the belt tension and the coolant levels.</p> <p>The stuffing box is located under the aft stateroom mattress.</p> <p>Engine hours are displayed on a on Raymarine MFD by selecting Dashbaord display.</p>
<p>Fuel Gauge</p>	<p>The fuel gauge is found on the “dash board” located to starboard of the helm seat. To check, pull the “ignition switch” knob out, then hold down the switch found under the gauge.</p> <p>The tank holds 36 gallons of fuel when full.</p>
<p>Engine Start Up and Shut Down</p>	<p>Start Up</p> <ul style="list-style-type: none"> • The gauge/switch dash board is located to starboard of the helm seat. • The motor does not have glow plugs, and does not require a pre-heat. • There is no key switch. Pull the knob above the shut off to “turn the boat on”. • To start, push the start button. • Once started, the exhaust expels coolant to starboard, near the transom. The coolant exhaust is easily seen from within the cockpit.

4002 – BearBoat 2005 Jeanneau 40.3

	<p>Transmission & Prop Walk</p> <ul style="list-style-type: none"> • There is a single lever controlling shifting and throttle. To bypass the transmission, push and hold the black button at the base of the lever while throttling up or down. • Prop walk is to port. <p>Shut Down</p> <ul style="list-style-type: none"> • Shut down is accomplished by pushing the stop button on the dashboard. Push silver knob to turn the power off.
<p>Electrical System</p>	<p>AC</p> <ul style="list-style-type: none"> • AC enters the boat on the port side of the transom. There is an AC breaker located in the aft port Lazarette. • When securing the boat, leave the AC Main switch (breaker) in the on position. This switch is marked with a green dot. • Always verify that the inverter is off when disconnected from shore power unless the motor is running. • Turn the AC Main switch to the off position prior to disconnecting shore power. <p>DC</p> <ul style="list-style-type: none"> • The bilge switch on panel remains on. <p>Inverter</p> <ul style="list-style-type: none"> • There is a 2000W inverter with an integrated 100A battery charger in the port “garage” located thru the hatch in the head/shower. The inverter / charger is set to automatically charge the batteries when shore power is present. There is a shore power GFCI breaker on the boat in the port lazarette. Shore power indicator lights are at the nav station panel. If you have normal shore power and the charger is operating, you will see 2 red lights on for Shore Power and Inverter and three vertical green lights on the galvanic isolator panel. The AC plugs are connected to a relay in the Inverter and then to the AC Outlet breaker on the breaker panel. On shore power, the AC Outlet breaker turns on the outlets. At sea, the Inverter needs to be turned on in order for the breaker to provide power to the outlets. The electric water heater will only operate on shore power. <p>After returning to the dock, when leaving the boat, shore power & inverter lights on.</p> <p>House and Ground battery handles (located behind the cabin steps) must be left in the “on” position (horizontal). Engine battery switch turned off.</p>

4002 – BearBoat 2005 Jeanneau 40.3

<p>Thru Hulls</p>	<p>There is one instrument thru hull, and seven thru hulls with sea cocks fitted.</p> <ul style="list-style-type: none"> • The instrument thru hull is located in floor in forward cabin • There is one thru hull to drain the v-berth sink, located in a cabinet on the starboard side of the v-berth. • The galley sink is drained via a thru hull located under starboard settee cushion. • There are three thru hulls located in a cabinet in the head. <ul style="list-style-type: none"> ○ Head intake ○ Shower sump drain ○ Sink drain • Holding tank overboard discharge located in cabinet aft of head • The engine raw water thru hull is found under the floor forward of the companionway ladder, directly forward of the engine.
<p>Head(s)</p>	<p>BearBoat is set up with a single head, located amidships to port. The head is easily operated using fresh water from the shower outlet just above it.</p>
<p>Fresh Water System</p>	<p>There are two fresh water tanks (40 gallons). A gauge above the refrigerator in the galley allows checking of water levels. The “Water Pressure” switch on the DC Panel must be on to energize the gauge. The manifold to switch tanks is located behind the starboard settee.</p>
<p>Anchor and Ground Tackle</p>	<p>Primary Anchor</p> <ul style="list-style-type: none"> • There is a plow anchor mounted in a bow roller as the primary anchor. This anchor is set up with a chain and nylon line rode. <p>Secondary Anchor</p> <ul style="list-style-type: none"> • The secondary anchor is stowed in the starboard lazarette, along with a combination chain/nylon line rode. <p>Kellet/Sentinel</p> <ul style="list-style-type: none"> • There is a kellet stowed in the starboard lazarette. <p>Windlass</p> <ul style="list-style-type: none"> • The primary anchor is deployed and retrieved using a windlass. Windlass breaker located below battery switches.
<p>Draft / keel type</p>	<p>BearBoat draws 6.6’ and has a bulb keel.</p>
<p>Refrigeration</p>	<p>There is a combined refrigerator/icebox. The refrigerator is turned on using a switch found on the DC panel.</p> <p>Water is drained from the unit directly to the bilge. There are no valves or thru hulls to open.</p>

4002 – BearBoat 2005 Jeanneau 40.3

<p>Stove</p>	<p>There is a propane operated, gimbaled, two burner stove with oven on Bear Boat.</p> <p>One propane tank is found in a propane locker in the starboard side cockpit lazarette.</p> <p>The solenoid switch is a single switch at the navigation station, below the radios and is labeled “Gas Control.”</p>
<p>Barbeque</p>	<p>There is no barbeque on BearBoat. You may check one out from the office, providing your own small green propane canister.</p>
<p>Microwave</p>	<p>There is no microwave oven.</p>
<p>Running Rigging</p>	<p>Mainsail</p> <ul style="list-style-type: none"> • BearBoat is rigged with a stack pack with lazy jacks to facilitate flaking of the mainsail. • The mainsail is set up with two reefs. <ul style="list-style-type: none"> ○ The clew line reefs run through clutches on the starboard side of the companionway. ○ The tacks are secured with dog legs at the gooseneck. <p>Jib</p> <ul style="list-style-type: none"> • BearBoat is rigged with a roller furling jib.

S/V Bear Boat (2005 Jeanneau 40.3) Operations Manual

Updated Sep 2020
Engine / Drive Train

Engine Start / Stop switch – there is no key for the engine, just a silver push/pull on/off switch and next to it a momentary switch to operate the starter. Pull the silver switch out, then press down on the black rubber coated starter switch. To stop the engine, push and **hold** the black round rubber button that says STOP until the motor stops. DO NOT push the silver switch in to the off position while the motor is running – you will potentially fry a very expensive alternator.

Engine RPM / hours – the Yanmar tach in the instrument panel doesn't operate for engine hours and it shows an incorrect RPM. Instead, the engine is equipped with a "black box" that takes engine data (RPM, hours, oil pressure, water temp) and puts that data on the instrument data backbone (NMEA2000 / SeaTalk ng) and displays that data either on i70s instrument at the starboard helm, or on a data page on either the cockpit or nav station chartplotter.

Fuel gauge and tank – the fuel gauge will only display fuel level with the engine switch on and the black switch below the gauged pushed down. The fuel tank has a stated capacity of 36 gallons. The fuel tank and fuel shutoff valve are located under the starboard side of the aft berth.

Fuel filter – there is a Racor 500 turbine style water separator and fuel filter located under the aft berth behind the motor near the shaft seal. The filter is a 20 micron filter. There are spares in the engine spares kit in the aft cabin closet. The secondary fuel filter is a 10 micron Yanmar filter (black and looks like an oil filter) located at the front of the engine. Spares are located in the engine spares box in the aft cabin closet.

Folding Prop – the boat is equipped with a Gori 20", 3 blade folding propeller. The prop has a 14 pitch in forward and a 17 pitch in reverse. The blades fold into a streamlined shape to cut down on resistance in the water, increasing boat speed by 0.25-0.5 kts compared to a fixed prop. The larger "bite" in reverse helps eliminate prop walk, although there is still some noticeable prop walk to port. It is about 20% of what you will find with a fixed 3 blade prop. Because the blades rotate almost 360 degrees between forward and reverse, you need to shift at idle and pause a moment between forward – neutral – reverse in order to avoid damaging the blades and rubber stops for the blades. No hard and fast shifts between forward and reverse!

There is an "overdrive" mode for the prop that will cause the blades to stay in the 17 pitch mode in forward. This significantly improves fuel economy in part throttle operations and is useful for long stretches of motoring in flat seas. To get to overdrive, you go into reverse and while the boat is still moving backwards thru the water, go into forward. The water moving from the stern to the bow keeps the blades locked open in the reverse position and over pitches the prop. This is naturally occur as you back out of the slip and then go to forward in the fairway. In overdrive, you can cruise at a fast idle and achieve 5 kts through the water. The maximum achievable RPM in overdrive is 1800 RPM, but anything over 1650-1700 RPM is just wasting fuel. The boat motored for days coming back from Hawaii at 6.5 kts burning about 0.8 gal/hr, or roughly 8 nm/gallon.

Once you are underway under sail and you turn the motor off, move the transmission lever to reverse and pause, then forward and pause, then put it in neutral. Moving to reverse then forward will cause the prop shaft to stop spinning and will cause the blades to fold.

Line Cutter - there is a line cutter on the prop shaft just in front of the prop and just behind the strut. The line cutter is basically a spinning razor blade, so be aware of that if you are messing around near the propeller or trying to dislodge a line wrapped on the shaft or prop.

Hull / Keel / Ground tackle

The underbody of the boat is a modified racing design with a very flat forward entry, a shallow body, and a wide and nearly flat exit. The boat carries a lot of its beam near the stern – not as extreme as modern race designs, but still with a broad beam at the stern. In following seas, the stern can get pushed around by waves.

There is a very large spade rudder – approx. 5 ft tall and 18 inches wide – so the boat is very responsive to rudder movement. If you have to muscle the wheel, you have too much sail up. The wheel should feel light and responsive. The boat sails best at 10-12% of heel. Any more heel than that and you are overpowered.

The keel is a modified and flattened bulb keel at the bottom of a thin fin. There is an 18 in bulb overhang in front of the fin keel and a 2 ft overhang at the rear of the keel fin. If you wrap a line or chain around the keel, you cannot free it like you would with a fin keel by just letting the line or chain go slack so it slides off. The line will not slide off the keel over the large bulb – you need to unwrap it from the keel. Also, if you run aground in the mud, the large bulb keel has the potential to get you firmly stuck. Do not try to power thru the mud because you get bury that bulb into the mud and get really stuck.

Anchors – there are two anchors on the boat. The primary anchor in the forward anchor locker is a Delta plow style anchor with an anchor swivel, 100 ft of chain and 125 feet line rode. The windless breaker should be kept off except when operating the windless. The breaker is located below the battery switches in the aft cabin. The windless is connected to the house battery bank and it can operate without the engine running even though it is not recommended. There are 2 windless controls – one forward in the anchor locker and another at the helm in the port side lazarette.

A secondary Fortress style anchor with chain and rode is located in a mesh carry bag in the starboard cockpit locker. That anchor has 45 ft of chain and 100 ft of rode.

There is (was?) 200 ft of 3/8" line in the starboard cockpit locker that can be used as a doubled back stern mooring line for the buoys at Angel Island Ayala Cove.

Sails

Main Sail - The main sail is a fully battened main with a very slight roach and has 3 reef points, 2 of which are rigged. The 3rd reef point is for winds greater than 35 kts and so it is not rigged. The sail rides on stainless steel slides in a plastic track of UHMW-PE, a fancy name for strong and slippery plastic. The track is self-lubricating and any external lubricant like WD40, McLube, etc will clog up the track and increase the friction. The track just needs to be occasionally flushed with fresh water.

The sail cover for the main is a permanently installed cover with integrated jacklines and should not be removed or adjusted. There is an integrated zipper and control line on the port side of the sail cover. To raise the main head directly into the wind and open the cover by using the control line to fully open the zipper. Don't force the zipper or the sail - look for what's causing the binding and fix it. If there is pressure when raising the main, check that the reef lines, boom vang and main sheet are loose. Make sure that a batten isn't stuck on a jackline – this is a common issue if you aren't headed directly into the wind.

To lower and stow the main, I recommend releasing the top forward corner on the starboard side of the sail cover and let it hang. There are foldable mast steps on each side of the mast that will let you reach that top corner. Then head into the wind and drop the halyard. The sail will drop between the lazy jacks and should mostly drop inside the open sail cover. Starting at the rear (leech) of the sail, put the sail and reef lines inside the cover and pull the zipper forward while making sure the sail is completely below the zippered top of the cover. No need to flake the sail – it will stack somewhat naturally in the cover. Move forward, packing the sail into the cover and pulling the zipper forward as you go. Don't force the zipper – if it binds look and find out why it's binding. As you get near the mast and the luff, you may need to pull the sail down into the cover. Place the top corner of the cover back on the hook and finish packing the sail and zipping up the cover. I usually place the slack main halyard under the small jackline cleat on the port side of the boom to keep it away from the mast.

Headsails – there are 4 different furling headsails for the boat – a #4 (80% OYRA offshore heavy weather) jib, a #3 (100 ish%) jib, a #2 (125%) genoa with a foam luff to enable reefing to about 110%, and a #2 high clew jib top or “yankee” genoa that is primarily for power reaching. Based on the season, the most appropriate headsail will be on the boat. Because of some odd history about the way the sails were purchased, the #4 and #2 jib top furl in the opposite direction of the #3 and the #2. So if you change the headsails, you need to change which way the furling wraps on the drum. Also, the #4 is set up so that the jib sheets go between the shrouds and all the other sails have the sheets outside the shrouds. The furling drum line is small diameter spectra and something else will break before it does.

One other note on the headsails – sometimes the jib sheet(s) get caught on the windless drum, so don't use the winch to force the lazy sheet during a tack until you check that the sheet isn't caught on the windless or something on the foredeck.

Cockpit

Helms and rudder – the wheels are connected together with a single cable that goes to the quadrant at the top of the rudder. This means that if a passenger is looking for a hand hold and grabs the wheel, the boat will turn. Or if the wheel won't move, check that nothing is stuck on the other wheel. One possible thing that has come up in the past is a winch handle in the pocket near the wheels may get stuck in the spoke of the wheel and lock the wheel from turning one way.

The emergency tiller is located under the starboard cockpit locker. If you lose the steering cable, the autopilot can be used to steer the boat since it is independently attached to the quadrant and doesn't use the steering cables of wheels.

There is a separate carbon emergency rudder and mount for the boat. If you wish to use it for teaching purposes, contact me.

Instruments – there are 2 programable Raymarine i70s displays at the port and starboard helms that among other things can display engine data, AIS data, normal speed, depth, wind info as well as optimized sailing displays. There is an i70p autopilot control, hardwired remote VHF mic, and engine controls at the starboard helm. The chartplotter on the cockpit table provides full navigation and radar functionality and is connected to and shares data with the nav station chartplotter. The nav station chartplotter is the master unit and must be powered on for instrument data, radar and chart data to be available. The radar can be operated from either chartplotter. Raymarine vector and raster charts are loaded for the Western US and Pacific, including Hawaii.

Electrical / Charging / Inverter

Batteries – the boat has four (4) Odyssey AGM Group 31 100Ahr batteries for the house bank and a dedicated Odyssey AGM isolated engine start battery. The batteries were new in Spring 2016. The house batteries are located on the port and starboard side of the engine – 2 under the forward part of the starboard berth and 2 on the port side with one accessible from the starboard berth and the other accessible thru the hatch in the shower/head. The start battery is located in front of the engine. There are battery disconnect switches located in the aft cabin above the engine. Normal operation is for the House and Ground switches to be left on in the horizontal position at all times. The Engine battery switch should be turned off in the vertical position when leaving the boat.

There are 240Ahrs of usable capacity in the house bank. At the nav station, there is a Victron shunt based battery monitor on the house bank that is good for measuring current flow into and out of the battery. For state of charge, the Balmar SmartGauge is a much better indicator of capacity. Do not run the house batteries below 40% capacity as indicated on the Balmar SmartGauge.

Inverter / Charger – there is a 2000W inverter with an integrated 100A battery charger in the port “garage” located thru the hatch in the head/shower. The inverter / charger is set to automatically charge the batteries when shore power is present. There is a shore power GFCI breaker on the boat in the port lazarette. Shore power indicator lights are at the nav station panel. If you have normal shore power and the charger is operating, you will see 2 red lights on for Shore Power and Inverter and three vertical green lights on the galvanic isolator panel. The AC plugs are connected to a relay in the Inverter and then to the AC Outlet breaker on the breaker panel. On shore power, the AC Outlet breaker turns on the outlets. At sea, the Inverter needs to be turned on in order for the breaker to provide power to the outlets. The electric water heater will only operate on shore power.

Alternator – there is a 160A alternator with external regulator that charges the house bank. The regulator is set to only operate in low amperage mode (float) by default. If you are going to be away from shore power overnight or longer and need to charge the house bank, you need to push the “Force to Float” button on the regulator so the red LED in the button is off. The regulator is located in the engine compartment on the starboard side above the water strainer and up behind a white cover plate. This will cause the full output of the alternator to be available for battery charging. The alternator can charge the house bank from 50% (200Ahr) to 80% (320Ahr) in about 45 minutes with the engine running at least at 1500 RPM. If you are just charging the batteries and not motoring, turn off the engine once you reach 80% charged. Going from 80% to 100% takes several hours and should not be done unless you are also motoring. The batteries will get charged back up to 100% when the boat is on shore power.

12V outlets / USB charging – there is a dedicated 25A breaker below the nav station chartplotter for the 12V and USB charging outlets located in the forward and aft cabins and the nav station and main salon. Each out pair (std 12V and dual USB) can generally be used in lieu of running the invert and then powering an AC adapter to charge phones and computers. The 12V outlet in the electrical panel and at the cockpit table are the only outlets operated by the breaker in the electrical panel.

Cabin / Below decks

Cabin Lights – the overhead lights in the main cabin are all LED lights with very low power draw. There is a red courtesy light under the port settee to provide night lighting for the main cabin. There is a dimmer in the cabinet just in front of the nav station that controls a dimmable LED strip uplight in the coving below the windows. Cabin lights in the head and forward and aft cabins are individually controlled by small switches on each light. The tubular white accent lights near the port lights in the main cabin, in the forward cabin above the sink and in the head above the sink are halogen lamps that draw lots of power and generate heat – just so you know.

Converting the table to a berth – to convert the salon table to a berth; 1) lift up on the table – you may need to wiggle it a bit – and pull up the table, 2) remove the aluminum legs and store them in the port side cubby above the forward berth, 3) lift up the forward and aft seat cushions, 4) insert the teak rails from the port side cubby above the forward berth into the slots under the seat cushions, 5) center and set the table on top of and between the teak rails, 6) place the center 2 cushions on top of the table and secure the Velcro strip under the starboard seat cushions, and 7) replace the forward and aft seat cushions.

Water manifold and tanks – there are two 40 gallon domestic water tanks located under the forward and aft berths. There is a water manifold / tank selector valve assembly located behind the starboard back seat cushion at the salon table. Next to the manifold is a pump strainer that should be periodically checked and cleaned. The domestic water pump and pressure accumulator are located just aft on the manifold. ALL water from the tanks flows through a large carbon filter located behind the settee cushion above the water heater.

Bilge Pumps – there is a bilge pump and strainer located near the water pressure pump. This pump is a 3 gpm diaphragm pump that draws water from the bilge and pumps it overboard thru a fitting aft on the starboard side of the boat near the stern. There is a 10 gpm manual bilge pump located at the port helm. There is a 12 gpm portable bilge pump mounted to the underside of a floorboard forward of the nav station. There is an 80 gpm electric crash pump located in the bottom of the aft cabin closet. That pump plugs into the jack opposite the closet on the side of the engine cover. The breaker next to the switch powers the pump.

Instruments / Electronics

Raymarine Instruments – There are 2 Axiom chartplotters, a Raymarine Digital Radar, an AIS transceiver integrated on the instrument buss, a Raymarine Evo (5 axis) autopilot, and Raymarine i70s instruments. See the links below for detailed operations manuals for these products.

VHF DSC / MMSI – the VHF radio and the charterplotter are integrated so that VHF DSC calling is functioning in the radio. The MMSI number for Bear Boat is 367472150.

ICOM SSB – the Icom SSB is connected direct to the positive bus and has a dedicated breaker. The ground strap that is normally attached to the keel has been disconnected. I have a KISS counterpoise if SSB operation is desired.

VHF / Hailer / Fog Horn – the Icom M502 VHF radio has a hailer function as well as an integrated automatic fog horn. There is no horn on the mast as it was a casualty of the 2018 Pacific Cup. To activate the foghorn, press and hold the H/L and HAIL keys. Use the Dial knob to select correct foghorn pattern (Sail, Underway, Stop, Tow) and push the DIAL*Enter knob to activate the foghorn. Push H/L and HAIL again to turn off the foghorn.

Links to Manuals

Xantrex SW2012 Inverter / Charger

[http://www.xantrex.com/documents/Inverter-Chargers/Freedom-SW-NewGen/97-0019-01-01_Rev-F\(artwork\).pdf](http://www.xantrex.com/documents/Inverter-Chargers/Freedom-SW-NewGen/97-0019-01-01_Rev-F(artwork).pdf)

Xantrex System Control Panel

[http://www.xantrex.com/documents/Accessories/System-Control-Panel/Xanbus%20SCP%20Owners%20Guide\(97-0022-01-01_Rev-A\)-FINAL%20\(1\).pdf](http://www.xantrex.com/documents/Accessories/System-Control-Panel/Xanbus%20SCP%20Owners%20Guide(97-0022-01-01_Rev-A)-FINAL%20(1).pdf)

Xantrex DuoCharge battery charger

[http://www.xantrex.com/documents/Accessories/Auxiliary-Battery-Charger/Echo-charge-OwnerGuide\(445-0204-01-01\).pdf](http://www.xantrex.com/documents/Accessories/Auxiliary-Battery-Charger/Echo-charge-OwnerGuide(445-0204-01-01).pdf)

Icom M502 VHF radio

<http://www.icomamerica.com/en/downloads/DownloadDocument.aspx?Document=90>

Raymarine Manuals – e95 display, Digital Radome, i70s instrument, EVO autopilot, Lighthouse AXIOM mfd software manual

<http://www.raymarine.com/display/?id=10125>

Mack Sails Mack-Pack (main sail)

<http://macksails.com/mack-pack/>