



# Operating Manual for the Que Sara 1997 / 5788 Bayliner

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## OPERATIONS MANUAL

We hope you have a very enjoyable and safe trip aboard the Que Sara and at your destinations. This manual is provided to assist you in operating the boat and all the systems aboard. **Please take time to review this manual thoroughly. Be sure to contact your Checkout Captain to verify information and/or ask any questions.**

The ultimate responsibility for the safety of crew and vessel is with the person who charters the boat. The chartering Captain has represented that his/her experience, judgment, and skills are adequate to overcome any errors and/or omissions in this manual and checkout procedures.

This manual provides information necessary for an experienced boater to operate the systems and equipment on Que Sara. This is not a training manual and assumes that the reader has sufficient experience with similar yachts and systems.

Safety is a top priority. All procedures should be clearly understood before proceeding. Safety cannot be completely managed by procedures alone and requires experience and common sense to be achieved.

This manual does not include navigational, weather assessment, or boat handling skill instructions.

As the Captain, you are responsible for the safety of all crew members and the yacht. It is the Captain's responsibility to understand all instruction and information provided in this manual. If there are any questions about this manual or if any scenario that this manual does not cover, please call Anacortes Yacht Charters at 1- 800-233-3004, for assistance.

### IMPORTANT POINTS:

Safety is the most important item in all of the following information and safety considerations will be emphasized. Plan ahead and review procedures to prevent accidents. Make sure your crew is prepared to assist as needed by training them beforehand. Inform all onboard how better to assist you and what is expected from them. This is especially important when readying the ship for voyage, for docking, and for anchoring. Almost anything done without preparation can be high risk for accidents, so take your time, train your crew before they have to perform, and let everyone enjoy the fun!

Please read this complete manual thoroughly and ask AYC about anything that is not clear or that may be missing. Taking the time to read this manual completely will save you time, money, and risk of injury when arrive on holiday.

## 1. PRE-START CHECK LIST

Before you operate the vessel for the day, do an inspection of the mechanical systems and the engine room. Any problem is much easier and safer to fix while securely tied up at dock, or at anchor, than it is while adrift.

### A. MAIN ENGINE CHECKOUT ( pre start)

- 1) With a flashlight, enter engine room from the aft deck . The entry is located under the stair to the bridge hatch on the aft deck. Lift the stairs to gain access to the room. Engine room light is located on the left sidewall as you enter.

**CAUTION: WHEN REPLACING HATCH DO NOT LET IT SLAM SHUT.**

- 2) Check oil level in main engines once weekly. Dipsticks are down low near center of engines facing centerline of boat. Oil level should be between the full and add marks. If below the add mark add oil until it gets between the full and add mark. In between weekly oil quantity checks - check below engine for oil leakage. If substantial oil leakage is found check quantity.
- 3) Check fresh water coolant (orange) level in inboard radiator caps on the engines. They are located inboard of each engine.. when cold only a small amount is visible above the screen , they will have much more in them when engine is warm and the coolant expands.
- 4) Check for water in the bilges, There should be no more than 1 inch or less in the aft portion of the aft lazette area (or under the bedroom hallway). There should not be any in the engine room proper, if so manually turn on bilge pump to pump out).  
**Check general condition of all belts, hoses and fuel lines.**
- 5) Verify through-hull valves for each engine and the generator are open.
- 6) Check sea strainers inboard of each engine for obvious obstructions like seaweed or plastic. There are sea strainers for the engines (2),water maker (1), and generator (1) swim step live well (1)  
To Clean Sea Strainers: Close thru hull valve for sea strainer raw water intake, and disassemble sea strainer and clean basket. Re-assemble sea strainer, open thru hull and make sure there are no leaks.

- 7) Inspect the Racor fuel filters and make sure they are clear and do not have water or debris accumulated in the bottom by shining the flashlight through the filter housing towards yourself. There are 2 filters per engine. If water is present, it may be drained out through the valve on the bottom of the filter housing. **BE SURE TO HAVE A CONTAINER READY AND PLACE AN ABSORBENT PAD UNDERNEATH TO CATCH ANY WATER AND FUEL!** Clean up any spilled fuel immediately. Make sure the valve is closed and not dripping.
- 8) Check transmission fluid levels weekly. Dip sticks are on the inboard side of each transmission. Re-insert dipsticks and make sure they are firmly in place.
- 9) Look for anything else that looks out of place, loose, disconnected, or broken. There should not be any fluids under the engines and the drip pads should be mostly clean. If you notice any significant fluid, identify the source and cleanup then notify AYC.

AFTER STARTING the engines and generator, check immediately for water flow out of all exhausts. If no water is flowing out of an exhaust within a few seconds, shut down the engine. Recheck the sea strainer to make sure it has picked up a prime and does not have mostly air in the sea strainer. If not, the raw water pump may have a weak impeller. Please contact AYC.

## B. GENERATOR CHECKOUT

The generator should be checked prior to running the first time and then once a week thereafter

Open the center panel on the aft deck to gain access to the lazarette. Remove the aft panel of the generator sound shield by unscrewing fasteners on top, a half turn, and pull the panel free.

- 1) Check oil - dipstick is down low on generator engine starboard side.
- 2) Check fresh water coolant in the expansion tank of the generator. Trace the overflow tube from the generator to the expansion tank to locate it. Add distilled water if needed.
- 3) Check generator sea strainer for obvious obstructions. Also make sure the through hull valve is open. Open is the normal position. Do not run the generator with this closed or it will fail the raw water impeller.
- 4) Re-attach sound shield and snugly tighten fastener screws.

## C. BATTERY CHECK

Check batteries once weekly. Check water level in starting batteries, house batteries and generator battery. All battery exterior surfaces should be dry and free of corrosion. All wire terminals should be tightly fastened. If there is significant corrosion or evidence of failing wires, please notify AYC.

- 1) Use rubber gloves to prevent acid burns on your hands. Wash the gloves with soap and water when done to prevent acid getting on other objects.
- 2) For all batteries that need water, **add distilled water only** (USE BATTERY FILLER ONLY) until the water comes up to touch the bottom of the split ring. Wipe up all excess water that spills with paper towel and make sure to dispose of the paper towel in a plastic bag.
- 3) All batteries are in the lazarette. The **house** batteries are 8 golf cart style 6 volt batteries (two per battery box) located on the starboard side of the lazarette. The engine starter batteries are 2 @ 8D : 12 volt per engine with those for the starboard engine on the starboard side and two located on the port side for the port engine and generator in the lazarette.

The flybridge dingy davit draws 12volts off the outboard 8D on the port battery bank and has a safety manual disconnect switch just forward of that battery. There is also a 105 Volt snap breaker (red Button) located forward of the bulkhead adjacent to that battery, visible under the Webasto heater near the hull from the engine room side.

- 4) The generator uses the port side engine start batteries.

NOTE: the inverter system will charge the house batteries. A separate battery charger charges the start batteries.

## D. STARTING and STOPPING MAIN ENGINES

After your engine room check, you are ready to start main engines.

**NOTE: the KEYS are used to turn on the starter motors and start the engines and also to stop the engines.** Start the engines by turning each key clockwise. Stop the engines by turning key counterclockwise.

Note: Diesel engines run by compression of the fuel not by a spark plug. When you engage the ignition switches, you are engaging the starter motor and are turning on a fuel valve which allows the engine be started and to run. They will continue to run until fuel

is shut off. When the ignition switches are turned off they release a magneto ( magnetic switch) which closes off the fuel supply which in turn kills the engines.

If engines have been off for over 8 hours, make sure they run for at least 5 minutes and that the temperature gauges show at least 140 before going over 1000 RPM. Running underway with cold engines can more than double fuel consumption and can cause engine failure.

**Make sure engine power levers are in neutral before starting.** Note: Engines will not start while if power levers are in gear!

Turn on ignition key(s).

#### A . ALARMS:

Loud buzzing alarms will sound when the keys are turned on : this is normal, these alarms indicate that the alarm system is working . They are monitoring low oil pressure at this point. You should hear these whenever the key is turned on and for the first 5 seconds or so when the engines first start running.

They will also sound when the engines are running if coolant temperature exceeds a safe operating temperature, and the alarms receive signals from one of several sensors at different locations on the engine.

If you hear these alarms when the engine is running beyond the first several seconds or underway, there is probably an emergency situation and the engines should be dropped to an idle for 10 to 15 seconds while you observe the dash gauges for oil pressure and temperature condition. If you observe low oil pressure, shut down the affected engine immediately.

If you observe excessive temperature, first allow the engines to idle for around 10 seconds, if the alarm stops or if the temperature is dropping, continue running until the alarm stops.. A slow drop usually indicates a blockage of the water intake or if the alarms occur only at higher cruising speed it could also indicate an excessive load on the propeller.

If however, no temperature progress is observed, you need to shut down the engine as the alarm could be coming from one of several engine conditions, such as failure of a water pump or belt, failed impellor in the pump, an extremely low oil condition or other problems.

If this occurs you need investigate the possible conditions and call AYC and or the Owner for instructions, prior to restarting the engine.

## B. START ENGINES:

- 1) turn ignition key fully to the right engine should start in 5 seconds or less.  
Repeat for second engine.
- 2) Let the engines warm up.
- 3) Voltmeter gauge will read 26-28 volts.
- 4) Oil pressure will read around 50 psi or above for cold engines. Warm engines will read in the 30's when idling but should never be at zero for a running engine.
- 5) Engine temperature should rise to operating temperature of 160-180 degrees in about 5 minutes at idle. Keep engine RPM below 1000 until temperature is at least 140.

EMERGENCY STARTING: If starting batteries are run down and will not start engines or generator use the emergency battery parallel switch in the pilothouse helm to connect the start batteries to the house batteries giving them a boost and start the generator. This switch is adjacent the start switches on the left.

## C. ENGINE SLOWDOWN AND SHUTDOWN

- 1) **VERY IMPORTANT:** When running at cruising speeds, avoid suddenly dropping engine speed to idle. Gradually reduce speed over a minute or more. Rapid changes in RPM can cause rapid temperature changes in the engine and exhaust system which can cause engine or exhaust heat-stress cracks and/or breakdowns.

Then let engines idle for at least 5 minutes to cool down the turbos and fully lubricate the engine. Do not shut the main engines down immediately after running at cruising speeds. Cooling down will also help to avoid coolant boil-over and vapor locks in the fuel line due to overheating.

- 2) To turn off each engine, turn off the respective key



## ELECTRICAL SYSTEMS:

### A. 120 @ 240 VOLT SYSTEM : power sources and discussion

120 Volt electricity is used to run TV/VCRs, Convenience Outlets Microwave and one of the two 24 volt Battery Chargers , etc.

The 240 volt circuits run the Cooktop/ Oven Washer/ Dryer / Water maker and The other of the two 24 volt Battery Chargers

- The 120 volt system breakers are in the cabinet in the pilot house helm on the Starboard side aft of the pilothouse door. The 110 volt breakers are located at the base of the panel, directly below the 240 volt breakers.
- Breaker switches for shore power or Ship (generator power) are located in this panel in the center just under the Voltage Meter. The breaker switch is set up with a slide cover so that only one source can be used at a time.
- 240 volt power can be obtained from two sources.
  1. Shore power 50 amp plug
  2. Shore power from two 30amp plugs using the Y adapter( must be 120/240 volts shore power with each 30 amps sourced from a different leg of the 240V service)
  3. generator

120 volt power can be obtained from three sources.

1. Leg one of a 240 service (50 AMP Shore power)
2. Leg two of the 240 volt service (50 AMP Shore power)
3. Both legs as single source 120 volts when the 50 amp to 30 amp single adapter is used .
4. Both legs as separate 120 volt sources when the 2@30 amp to 50 amp “Y” adapter is used
5. Inverter ( feeds both of the two120v panel areas) but none of the 240 panel area is available

There are 2 sections of the 120 volt panel area , the upper section draws power from the second leg of the 240 current and the lower section from the other.

Note: When using the Y- 2@30 amp to 50 amp adapter ( when no 240/120 50 amp shore power is available) each 30 amp leg must be from a different leg of a 240volt dock wiring system which will give you a 240 volt source. When the single 30 amp to 50 amp adapter is used both sections of the 120 volt panel are active but with only 30 amps.

NOTE: When 240 volt power is supplied from shore power from a 50 amp connection or 2@30 amps feeds as described above, or from the generator, the remote inverter panel on the left of the AC Panel sidewall will indicate good power source when the two green indicator lights are on, one solid and one blinking. Also the inverter orange light to the left will come on for a few seconds and then automatically it will switch to the right top under "bulk" this indicates that the inverter charging system is active. When the inverter sees full charge the light will drop to the lower "float" position and turn green. The two green lights should always be on when a power source is supplied by one 50 amp cord including when using adapters

If a red error light appears or if only the orange inverter light is still on you are not getting an AC power source nor is the charging system active, and batteries will run down. Check for the proper position of the panel breakers, the shore power connection and or pedestal breaker on the dock and be sure the digital readout setting is on "Set Inverter, and the source indicator (small underline indication) is set to float. This needs attention and resolution before moving on to other activities. Hopefully this will not occur but if so refer to the race(Zantrax) manual overhead in the pilot house or the abbreviated copy on the actual inverter in the engine room. Occasionally the remote inverter panel is illegible and you will need to go to the main inverter control panel (identical appearance) on the face of the inverter in the engine room to make settings if needed.

NOTE: when operating on inverter power only you should see only the orange inverter light on. If there are no lights on, there is no AC power available on the boat.

**IF ADJUSTING THE INVERTER SETTINGS IS REQUIRED, CALL AYC OR THE OWNER FOR TROUBLE SHOOTING HELP!**

## B. SHORE POWER : GENERAL

Important!! Make sure you read this section and understand it completely!

Special Considerations: Care should be taken not to exceed the shore power available. This vessel's potential to consume electricity will exceed the dock's capacity to provide it unless you are connected to 50 Amp power. (Very rare for transient moorage)

Note that most shore power you connect to will be 120V 20, 30 or 50Amp. If 50 Amp power is not available a pigtail is on board to use (2) 30 Amp connections into a 50 Amp connector. If two 30 Amp dock connections are not available another adapter is available to go from the single 30Amp shore power to a 50 Amp ships connector.

The 100' 50 amp shore power cord is on an electrically operated cord ( Glendenning reel system)located on the cockpit side of the transom and can be accessed from below the teak half table. Remove the chrome cover for the electric cord the move 3 position switch to the "out" position. The electric cord will begin to reel out onto into the cockpit. Once enough cord has been reeled out to allow it to be connected to the shore power receptacle turn the reel switch to the stop position.

To stow the electric cord simply reverse the operation using the retract side on the reel switch. Once fully retracted the reel will automatically stop but you need to return the switch to the center " off" position when done.

Be extra careful to be sure the chrome lid does not drop onto the cord while retrieving as it will jam and can damage the system. Feed the cord into the opening rather than letting the cord pull itself in. NEVER ALLOW THE PUG END OF THE CHORD TO FALL INTO THE SALTWATER! This will cause corrosion and future failure. If it should accidentally fall in the saltwater, flush with fresh water immediately before stowing.

NOTE: You cannot use all 120 circuits and electrical items with only one 30 amp source. ( watts = volts x amps, IE: 30 amps at 110 volts = 3300 watts) It may pop the shore power circuit breaker. Check the ammeter on the power panel to see how much power you are using or simply do a quick calculation of the loads you want to access. You may have to alternate between electric cook-top, water heater, and battery chargers in order to avoid popping the shore power breaker. Priority should always be given to the inverter which will charge all the batteries.

## C. GENERATOR STARTING AND USE

When shore power is unavailable, the generator can fully power the boat. It is a good idea to run the generator every day that you have not been connected to shore power to recharge all the batteries. Monitor the battery voltage levels to determine how long to run the generator. The generator may be operated while underway or at anchor. Make sure water is coming out of the generator exhaust under the starboard side of the boarding step before using while underway. When using while anchoring be sure you are not over eel grass or other debris which might get drawn into the intake and stop water flow during operation. Monitor this process frequently during this use.

Access the main Power Panel:

1. To start generator simply press the pre-heat switch for 5 seconds and while continuing to press the pre-heat switch, engage the generator start switch in the AC electric cabinet. Keep the start switch depressed until the generator starts and the generator panel instruments light up and the oil pressure indicator rises.) Listen for the generator engine noise. Once the generator starts, release both the pre-heat switch and the Generator switch (spring loaded)
2. Next, Move the 240 volt breaker slide over the shore power breaker and engage the Generator 240 volt Breaker ( left side of the primary power source diagram). This will put the generator online.
3. Never run generator for less than 30 minutes from a cold start.
4. To turn off generator, simply turn start/stop switch to the stop position (left). This will automatically shut down the generator.

## D. INVERTER – 4000 Watt 110v Power

**NOTE:** The inverter system is setup to be totally automatic and should not need any changes to the settings. 120 volt power can be provided by the inverter which uses 24 volt battery power to make 120 volt AC current. 120 volt power is very limited with the inverter because it comes from a limited source. You cannot run high use devices like space heaters, hair dryers, waffle irons, at the same time or for any combined length of time. It will drain the batteries to the point of inverter shutdown.

The inverter's best use is to provide low wattage, or intermittent 120 volt power during an evening to save the generator from constant short start-ups and shut downs.

When the boat is on shore power or has the generator running, the inverter becomes a battery charger for the house battery banks.

The remote switch and indicator panel for the inverter is located to the left of the electrical panel console. **NO SETTINGS SHOULD BE CHANGED ON THE INVERTER CONTROL PANEL.**

To operate the inverter:

1. Turn on the breaker on the 120 volt panel.
2. The inverter is operated by the remote panel to the top right of the electrical panel.(or on the face of the inverter in the engine room)  
The inverter can be in standby or off for 120 volt power. The charger can be selected on or off. Typically the inverter is off and the charger is on. The proper setting is "SRC" (search) and the inverter will automatically change from inverting to shore power/ generator power when available.
3. The inverter will power the 120v AC outlets, ice maker, refrigerator and the microwave etc. (see AC panel)
4. Be careful on entering the engine room not to turn inverter switch off (located near the bottom of the DC Battery switch panel and located where it can be hit accidentally with your leg.

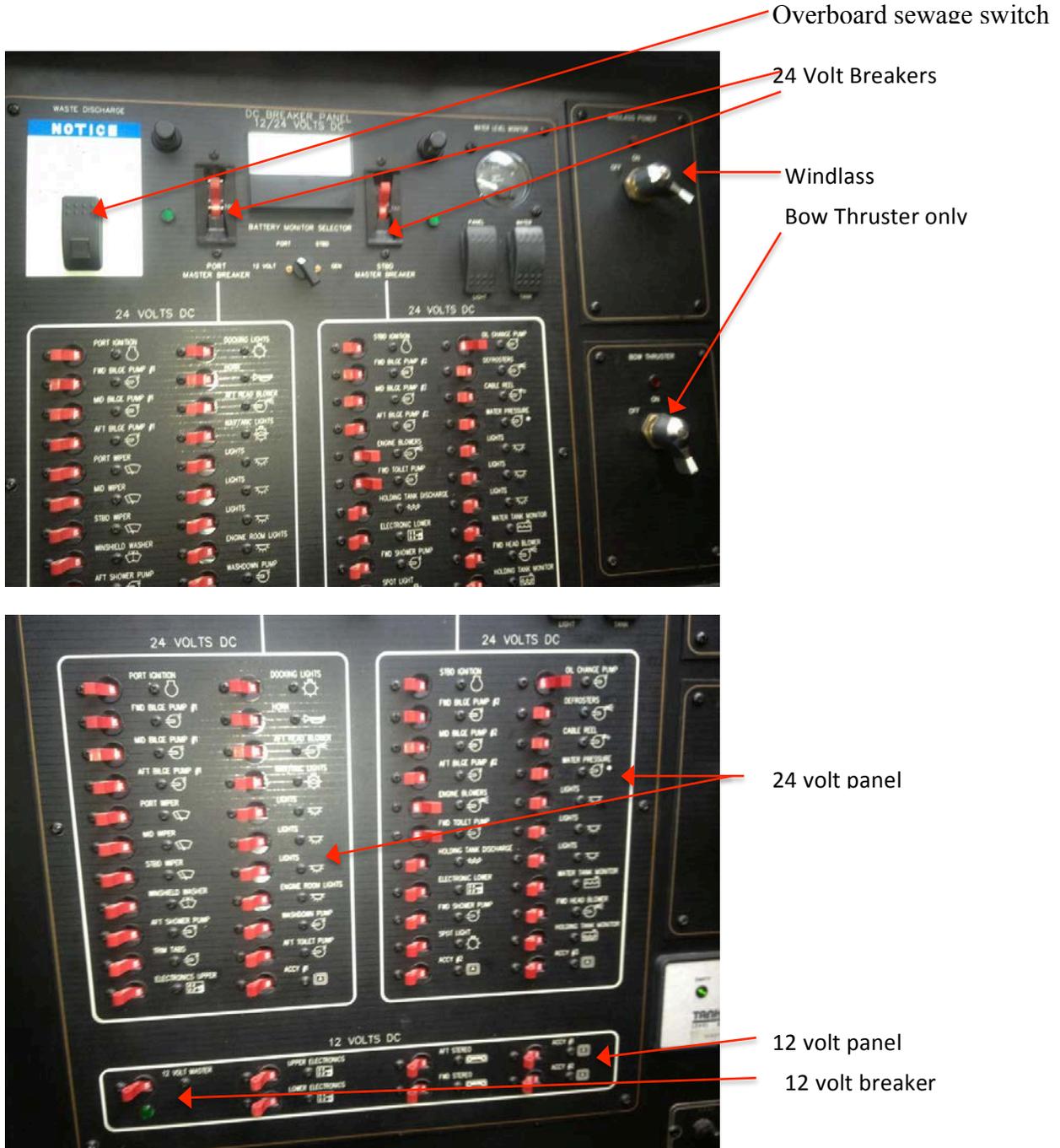
## E. ELECTRIC WATER HEATER

The electric water heater runs off of the 120 volt system. The circuit breaker is on the 120 volt panel. **VERY IMPORTANT:** Do not use the electric water heater if the water tanks are very low or if they run dry. The electric element may burn up if the tank has no water.

Turn off when conserving battery power (inverter mode when at anchor or no AC sources active) The water heater is also heated by the engines.

## F. 24 VOLT SYSTEM

The 24-volt system runs the electrical systems necessary to operate the vessel. Bilge pumps, water pumps, electric toilets, navigation lights, house lights, electronics, etc. are 24 volt systems.



24 Volt Battery power panel

## DC PANEL OPERATION

- Turn on all 24V breakers.  
For safety, Windlass Control breaker should be OFF except when using the windlass.  
Holding Tank Pump and Raw Water Wash down Pump should be OFF.

NOTE: all bilge pump breakers should be ON and switches should be set to automatic all the time.

The 24-volt circuit breakers are located on the top of the DC panel. Only use the light you need. There are sufficient lights and other 24-volt devices to drain the house batteries of power if they were all left on overnight.

## G. BATTERY SWITCHES

The battery switches are located in the engine room on the aft bulkhead immediately to the left as you enter the engine room. These are normally left in the 'On ' position.



## H. BATTERY CHARGER

There is a separate battery charger for the engine start batteries. No intervention is required. The charger works when plugged into shore power or the generator is on line.

## I. DEAD BATTERIES

In case batteries are drained to the point they will not start engines, start the generator and run for at least one hour before attempting to start engines again. If the generator will not start try using the battery emergency boost switch located on the engine start panel next to the engine start switches. Have one person push that switch while another pushes the generator start switch.



## MARINE HEADS AND HOLDING TANK

This vessel has two heads, each with an electric toilet. It has one holding tank with a capacity indicator in the 24 volt cabinet.



## THE VACU-FLUSH HEADS

These premium heads are easy to use, odor free, and very reliable. They work with two separate vacuum pumps and vacuum accumulator tanks. A vacuum is maintained in the tank until the head is used, when the waste matter in the bowl is sucked out of the head by the vacuum, then it is pumped through the system by the head pump, which then also pumps up a vacuum again. Note that it is this rush of the head's contents caused by the accumulated vacuum that is important to the head's operation! This sudden rush causes any solid material in the waste stream to be shattered as it passes through the specially-shaped orifice in the bottom of the head. For this reason, proper head operation requires that the head pedal not be held down for long periods of time.

The head uses about a half pint of fresh water from the ship's supply with each flush. The head is operated by a the pedal to the left of the head base (as you face the head), and operation is as follows:

## TOILET OPERATION

- 1) Before using the head if the waste will be solid, lift the pedal to add water to the bowl;
- 2) Use the head;
- 3) Step on the pedal just long enough to hear the "whoosh" as the head is evacuated and a small amount of water rinses the bowl - - - about five seconds!
- 4) Releasing the pedal, if you wish to flush again, wait at least twenty seconds or so (until you hear the head pump stop) before flushing again.

As the pedal is released, the ball-valve at the bottom of the head seals it so that the vacuum can be pumped up, the pump will then stop, and the head is again ready for use. If the head pump runs often or steadily between flushes, it is likely that the seal at the

bottom of the bowl did not seal completely: you can tell if there is no water in the bowl. The solution is usually simple: Flush the head again and make sure the pedal comes all the way up when you remove your foot from it; then make sure the water doesn't leak out.

**Only things which were eaten or drunk, or the toilet paper supplied with the boat, should be put in the heads! Facial tissues, tampons, and other foreign matter will clog the system. If these heads are used properly, they are quite reliable. Failures are virtually always due to mis-use! When it comes to tissue, usually "four squares is enough!"**

If the toilet bowl becomes clogged from too much paper try one again to flush but **DO NOT HOLD THE PEDAL DOWN CONTINUOUSLY!!** The toilet bowl fills with water whenever the pedal is depressed. If there is a clog, IE the waste will not suck through the small opening, you will have to follow the procedure as follows. IF YOU HOLD THE PEDAL CONTINUOUSLY and let the bowl fill with water you cannot work on the issue any longer without the water spilling onto the floor.

If there is a clog that won't suck through after one additional attempt, find a small object such as a coat hanger wire or the handle end of the toilet brush and use it to gently push the obstruction through the small opening (visible only when the pedal is depressed and the white cover is retracted) at the very bottom (in the black plastic). However you need to act quickly and cannot have the bowl already full if this is to be attempted.

If the obstruction does not suck through quickly stop and release the pedal to cut off the water flow. If the obstruction is other than the permitted waste and paper type do not push it through!! The problems magnify if the improper waste passes through and jams the system further along in the pumps!

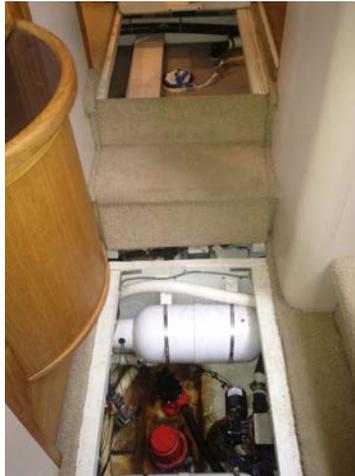
Procedure 2: a). Turn off the main vessel water pressure and toilet pumps switches on the DC Panel. B). open faucets and tub cold water valves and let the water pressure in the boat drop completely and no more water comes out the faucets etc. c). close these faucets and tub valves. d). You now can depress the foot pedal without more water entering the bowl and this gives you time to work the problem without chance of spillover.

If the obstruction is from excess permitted (supplied) toilet paper you can continue to try and gently push it through while hold the pedal down and exposing the bottom (black area) of the bowl below the white rotating lower bowl door. But if the clog is from improper waste it must be removed (if possible without damage to the plastic components, Try making a small hook from a straightened coat hanger and pull it up into the bowl and remove it. If this cannot be done, you will need to cease use of the toilet and seek help from the Owner or AYC. If this is necessary you can turn on the water pressure and other switches on the DC panel, but do not depress the foot pedal again until this problem has been resolved.

If the clog was from the AYC provided toilet paper , it will dissolve when wet and the clog might release later (if you have not already filled the bowl to the overflow point) If you have purchased other paper, waiting will not help.

In US. Waters, the Coast Guard Rules require that the valves be “secured” in the holding tank position to assure that all effluent will be kept aboard in the tank. However the Coast Guard has allowed adequate warning and electronic disabling( as on the Ques Sara to satisfy this requirement ,Therefore the Y Valve (to the right of the holding tank below the companionway floor) should be left to the overboard position.

The Holding tank is below the companionway (hallway, Sole ) floor below the removal carpeted floor panels. These panels also give access to the pumping system , the washdown pump and two bilge pumps.. Que Sara is equipped with holding tank indicators on the DC Panel.



A deck plates on the starboard side deck allow pumping both the holding tanks at a shore-side waste pumpout station. A mobile service is available through the marinas at Friday Harbor and Roche Harbor .

To pump the tanks overboard,( Only in Canadian Water , pursuant to regulations) .T here is a macerator pump switch located in the upper left of the DC Panel. It must be held down for the pumping to proceed.

Turn “on” the “Waste Pump” breaker in the DC panel by the salon-pilothouse steps. Operate the switch by the valve to run the pump until the tank is empty. Do not let the pump run dry: It will be damaged! The effluent passes through a the hose and pipe aft to the pump and thru-hull valve.

When you are done, turn off the pilothouse DC panel “Waste Pump” breaker .

**IMPORTANT:** You must be mindful of the extent of your crew’s use of the holding

tank. Do not rely only on the holding tank warning light located in each head. A tank quantity indicator is located in the 24 volt circuit breaker cabinet on the starboard side of the helm console. This gauge will also give the fresh water quantity level. Just push the quantity button until it reads for the appropriate tank you wish to check.

**NEVER allow the holding tank to overflow. It is possible to break a hose, clog the overflow vent, or burst the tank if it is used when it is full. The result is an indescribable unpleasant catastrophe for the whole crew and a costly repair bill.**

As note before , Pumping out the holding tank is done one of two ways. There is a deck pump out port on the starboard side (at about the mid salon) for use with marina pump out stations. Also, the boat is equipped with a macerator overboard pump. The contents of the holding tank can be pumped overboard with the macerator pump in appropriate areas. (NOTE: Anchorages and harbors are never legal/appropriate places.)

To operate macerator:

1. Turn on macerator circuit breaker on the 24 volt panel at the lower left corner of the panel as you are looking at it.
2. Insure the macerator thru hull valve is open. This is located below the sole on the starboard side of the hanging locker in the master stateroom. Open is the normal position for this thru hull valve.
3. Listen carefully for macerator's operation. While pumping monitor the tank quantity indicator. Make sure you are viewing the correct tank (not the fresh water indication). You will notice the quantity going down very slowly. When the tank is empty the pitch of the motor will change and you may hear air bubbles coming out on the hull. When pitch of motor changes (or before), discontinue operation.
4. NEVER run macerator for lengthy periods when holding tank is empty. This will prevent pump burnout. (There is a spare macerator pump in the spares kit.)

## TUB, SHOWER AND SUMPS

The tub shower and single shower each have a sump pump that is activated by a float switch. This requires the 24 volt circuit breaker to be on. If the shower is used without the circuit breaker, the shower water will end up in the bilges and be pumped out by the bilge pumps. Shower water in the bilges can get smelly, so please make sure the sump pumps are used.

Each head has an exhaust fan. Do not leave running for long periods of time to avoid excessive battery drain if you are not using shore power.

## GALLEY

### A. STOVE TOP

The stove top is powered by the breaker on the 240 volt panel. You must have at least 30 amp shore power and limited other 110v use, or the generator running to operate the stove top. Boiling water for crab can be done on the stove top but is very slow. For filling the crab pot - you may wish to assist the stove top by adding boiling water from the electric tea pot.

### B. CONVECTION MICROWAVE

The convection microwave is connected to the power inverter.

Do not use the microwave for extended cooking while on power inverter. Any convection cooking more than 15 minutes should be done while connected to shore power or running generator, otherwise, you may run down the inverter batteries.

Coffee maker, toaster, and other electrical appliances may be plugged into the power outlets in the galley that are powered by the battery inverter. **Use care when using multiple devices simultaneously** as the breaker may pop or inverter power may turn off due to over loading the circuit. **THESE APPLIANCES ARE STOWED BELOW THE COUNTER ACCESS PANEL TO THE LEFT OF THE COOKTOP**

Galley Crew Note: The coffee maker uses One heaping tablespoon of coffee for each 2 cups of water shown on the coffee maker for “Seattle Standard Coffee”; moderately heavy coffee.

The sink does not have a garbage disposal. do not put coffee grounds down the drain. Doing so will clog the overboard drain. Note the sink discharges directly into the water. All waste should go into Trash compactor bags , properly installed in the Trash Compactor. Or in garbage bags to be disposed of at marinas.

## REFRIGERATORS, FREEZER AND ICE MAKERS

Galley: This refrigerator freezer is 110 volt only and runs off the shore power, generator, or inverter powered by the house batteries. The refrigerator will take 8-12 hours to fully cool down when first turned on. However it is normally on prior to the commencement of charter. If on the hook and using inverter power it is standard procedure to turn off the inverter prior to going to sleep to protect the batteries. Or turn off the heavy loads (refrig, Refridge CB., Water Heater, Battery charges, ice maker, and Sat Dish (in salon cabinet)) The refrigerator/freezer will remain cold during the night. Remember to turn on the refrigerators or the inverter in the morning or the generator (necessary for hot water for showers)

Flybridge: There is an under counter style mini fridge / icemaker under the sink counter. There also is a box freezer located to the right of the counter )under the black canvas cover. Both are controlled by one breaker in the AC Panel “refrigerator CB” next to the refrigerator breaker.

Main Salon: An under counter Ice maker is located near the bar sink .

### Bar B Q Grill

A Bar BQ grill is located on the starboard rail of the flybridge your use. The regulator is attached . Use the bottled gas provided By AYC at checkout.

## MARINE DIESEL FURNACE

The heating system is a Hydronic system which uses a Webasto Furnace to heat coolant which is then pumped throughout the Que Sara to small fan/coil units in various rooms and fan coil units connected by hose to small flush vents ( such as bathrooms etc.)

There is a digital thermostat in the main salon and Master suite. The other two staterooms each have a rotary style thermostat.

The furnace can be turned on by simply lifting the pilot house switch to the up position and a green light will indicate it is on, It is located below and to the right of the computer keyboard and mouse and above the “NEVER TO BE USED “trolling valves.

Webasto Furnace Switch



The Pilothouse fan coil unit is located under the bridge and supplies heated air to the window defrosters which can also be operated as just fans using the 3 way manual switch above the Furnace switch

The Furnace itself is located in the engine room on the port side behind and beyond the port engine. It exhaust out the port side of the aft portion of the vessel. Be sure no ropes fenders or obstacles are near the exhaust when operating the furnace as it is very hot.

The system works as follows. When the furnace switch is turned on the furnace fires up and heats a reservoir of coolant to a prescribed temp. It thereafter turns off and on as required to maintain that temp. When there is a call for heat from any of the thermostats or pilothouse manual switch, a circulating pump the heated coolant through the boat in a continuous loop. Each fan coil unit turns on when a thermostat calls for heat and air is blown over the (radiator) coils into the room, supplying heated air until the thermostat is satisfied. When the system is switched off the internal furnace fan will continue to run until the unit cools down.

## ELECTRONICS: NAVIGATION EQUIPMENT, RADIOS & RADAR

### Overview

The boat is equipped with extensive electronic equipment, including VHF radios, two radars, two plotters with GPS receivers, two depth sounders, and an autopilot.

The DC power supply for this equipment is controlled by a single electronics master circuit breaker in the bottom right corner of the DC power panel. Each unit then has its own power switch.

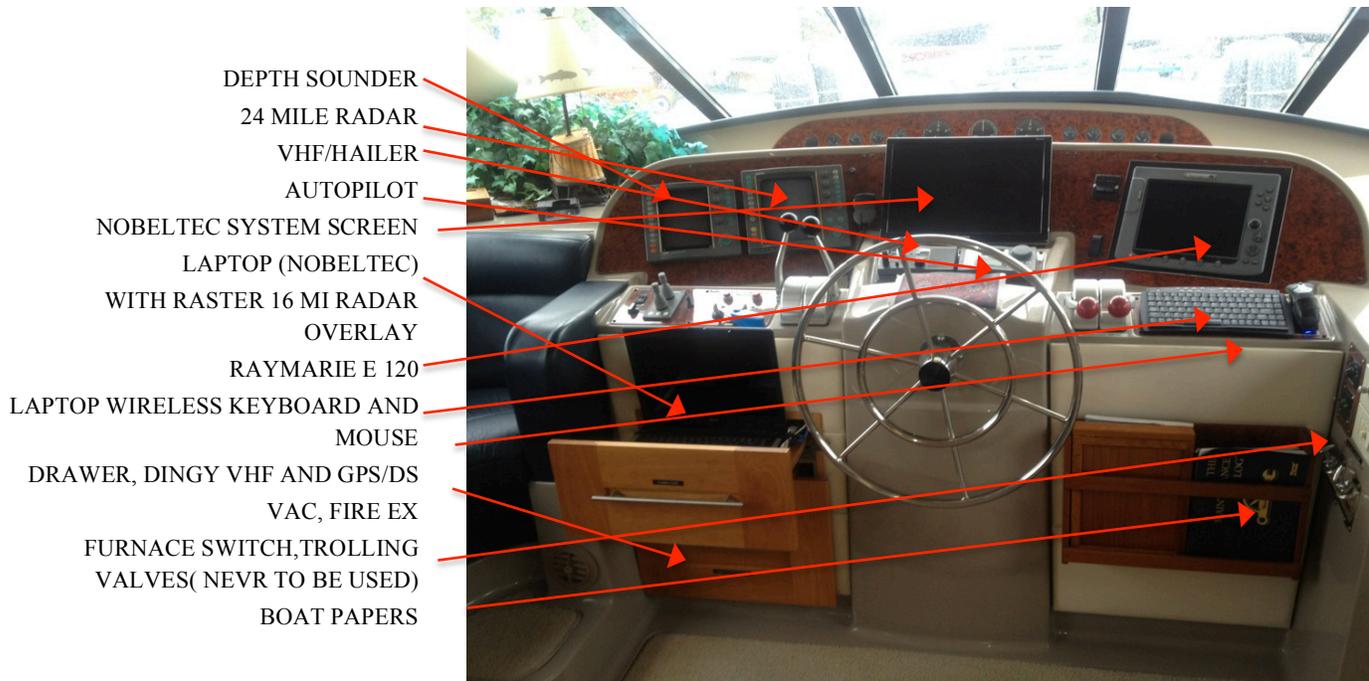
This manual does not attempt to provide operating instructions for any of the electronic equipment. Instead, you are referred to the equipment's own manuals kept in the pilothouse overhead cabinet

### VHF Radios

The VHF radios' controls are at both helm stations, in the salon and on the flying bridge. The radios are designed for easy access to Channel 16, which is the hailing and emergency channel in the Northwest. Other buttons allow you to select different channels, weather channels, high and low power, and US/International operation. Your checkout skipper and/or the radio's own instructions will quickly familiarize you with basic operation.

Be sure to re-check the squelch each time you turn it on.

### PILOTHOUSE EQUIPMENT LAYOUT



- OVERHEAD SWITCHES  
(bilge pumps, anchor light, windshield wipers ,etc)
- GUAGES
- WOOD BOX/IGNITION KEYS
- CORNER SEAT/FLARES SHIPS BELL
- TEAK BOX/ POWER ADAPTERS,ROPES
- TABLE SEATING  
(Owners compartment under cushions)
- OVERHEAD CABINET /MANUALS
- KEYBOARD & MOUSE
- TRIM TABS
- GPS SELECTOR FOR AUTOPILOT



The QUE SARA is equipped with two radar units one is a stand alone and one is incorporated into the Nobeltec software and displayed as an overlay on the Chartplotter. These can be used, combined with the electronic chart units, for operation in restricted visibility, with the radar primarily serving as a device for collision avoidance while the chart unit provides position.

Proper and safe use of a ship's radar requires lots of practice and careful study. While you are using the boat, you can have the radar on as much as you like to get used to the way it displays images, but for detailed operating instructions we refer you to the radar's own complete manual and details bottom of next page.

Note that charterer's insurance DOES NOT PERMIT OPERATION OF THE VESSEL IN RESTRICTED VISIBILITY. You should confine your use of the radar to familiarization and training only in weather with good visibility.

**NOTE: RADAR IS NOT A SUBSTITUTE FOR VISIBILITY AND CANNOT DISPLAY ALL OBSTACLES OR DANGERS.** (Example: it is impossible for radar to see the cable between a tug and its tow, or realize that that is the situation without visible clues.) Only use radar for supplemental information or when seeking shelter if caught in fog.

**REMEMBER: THE ELECTRONIC CHARTING SYSTEM IS NOT A SUBSTITUTE FOR CAREFUL STUDY OF TRADITIONAL PAPER CHARTS.** You are required by maritime law to use your paper charts for navigation information, especially since electronic chart technology does not always permit full cartographic details to show, especially underwater hazards. The electronic charts are for convenience only!

Note: Northwest waters are rocky and depths change rapidly. You should be especially careful to study your charts, and then check them often whenever running in lesser depths, so that you don't hit a rock! Just as our islands "pop up" to heights of 50, 100, or even thousands of feet in a very small distance, so do rocky obstacles underwater! Also remember the 15ft tidal swing in depth, rocks tha may have been 16 ft under water may at some point in time be merely 3 ft under the surface( Que Sara draws 5.5ft).

#### NOBELTEC NAVIGATION SYSTEM:

The first of the two Navigation systems is Nobeltec software installed on an Aspire laptop located in the top drawer adjacent to the wheel in the pilothouse. Attached to the computer are USB connections for the GPS receiver and a dongle for the wireless mouse. Also available to this system is the small dome 16 mile radar unit located on the flybridge Arch. The laptop is connected to the screen in the center of the pilothouse equipment display. The remote screen located on the flybridge mirrors what is on the main screen.

To operate this system you need to start up the laptop (allow 3 to 4 minutes, It is a Windows PC of course) push the lowest button on the side of the scree ( lights up blue) and if the laptop is up and running you will be asked for a password, there is none so just hit the return key and then you will see the windows start page. Select and load the Nobeltec software and answer all the prompts ( you may or may erase old tracks or not if you wish to see other users tracks).

Operate the program intuitively or ask for instruction. Occasionally the laptop will lose GPS signal and you will need to run the GPS setup wizard under the options menu. If that does not work , you can try unplugging the USB GPS connection or restarting the Nobeltec software . On rare occasions you may need to re-boot.

The Raster color radar over lay is available by turning on the radar dome switch on the left side under the depth sounder, tselect the radr menue to be active and select transmit , once it has warmed up the overlay should appear .

#### RAYMARINE GPS CHARTPLOTTER:

A second independent (redundant) navigation system is provided by the Raymarine E120 on the right side of the console. The manual is located in the overhead cabinet above the table seating. This will provide an independent Plotter offer redundant verification of your course. Cycle through the “PAGE” setting to view various screen options, including the two color video cameras , one covering the engine room and one looking aft through the cockpit. Selections within a page are made by the buttons below the screen. When using a dual image selection you switch between the screens by pushing the “ active” button on the right side , The red outline indicates what section is active and can be adjusted.

SPEED IN KNOTS ( Speed over Ground) This information is available on each of the chartplotter screens and is the most accurate method of determining your speed.

#### DEPTH SOUNDERS:

The Que Sara is equipped with a color depth sounder in the pilothouse and a black and white unit on the flybridge. Occasionally it has been reported that the flybridge unit is not working or is reading intermittently. If this occurs wiggle and push in hard, the two connectors on the rear of the unit which occasionally loosen from the vibrations.

#### RAYTHEON RADAR:

This is an older unit but provides 24 mile range and is very accurate when adjusted correctly. Once turned on it will take 4 to 5 minutes to warm up before it will respond to the “Transmit” button.

#### RATHEON AUTOPILOT:

The boat is equipped with a Raytheon “Raypilot” Autopilot. The primary control is at the lower helm. A second smaller remote control is at the upper helm on the port side of the console. Although rudder indicators are at both helms in the instrument panels turned on by a switch on the electronics panel, the autopilot also has a rudder display at each location, but for it to work, the autopilot must be on.

Here is the function of each button:



Basic operation is simple:

**ONLY USE THE AUTOPILOT FOR STEERING AND COURSE CONTROL DO NOT USE WAYPOINT FUNCTIONS!**

- 1) To turn on the unit, push the “Stby” button to be in the “standby” mode. The unit will display its present heading. **The autopilot should be in standby mode when underway as the default mode.**
- 2) To engage the autopilot, push “auto “ Button you can now steer the boat by rotating the dial. Also it will maintain whatever course direction you set.
- 3) To disengage the pilot, push “Stby”, the unit returns to “Standby”.
- 4) **Pressing the standby button return manual steering control to the wheel**

**ALWAYS MAINTAIN A CAREFUL LOOKOUT WHEN USING THE AUTOPILOT!** It is an aid to comfortable cruising, not a replacement for an aware, diligent helmsperson! Remember, you can disengage it quickly at any time simply by pushing “Standby”!

The switch (breaker ) for turning the autopilot on or off is in the engine room on the lower left side of the battery switch panel at the base of the stair.

Please refer to the Raymarine Operator’s Guide for more details.

## BOW AND STERN THRUSTERS

The Que Sara is equipped with bow and stern thrusters. A thruster control station is located at both helms. There is a separate Joy stick for the bow and the stern thrusters. Thrusters use a great deal of current and the load is heavy. They should not be used for continuous operation longer than 30 seconds at a time. They are protected by an internal overheat disconnect switch to protect the motors. If held on to long they will overheat and shut down and will not be available until they have cooled sufficiently for the switches to reset, probably 5 minutes or more. Therefore do not use thrusters for primary controls but to assist in maneuvering, to trim or adjust and or when moving sideways away from or towards a dock.

### REMOTE CONTROL SPOTLIGHT (Inoperative)

Turn on the switch located on the control panel. Use the joy stick to move the light up, down, left or right.

### HAILER

The Hailer is built into the Raymarine radio at the lower helm. To activate push the function button followed by the hailer button. To return to radio repeat the steps by pushing the function button followed by the hailer button.

**WATER MAKER** If you wish to use the water maker please contact the owner or AYC before use.

### SPARE PROPS:

There are temporary spare props in the Port Lazerette However If it becomes necessary to replace a prop contact The Owner Anacortes Yacht Charters to coordinate.

### ENCLOSED BIMINI:

The enclosed bimini is not designed to be taken down and must be left up. The front rigid polycarbonate screen has a center panel which can be opened by zipping up the side (almost to the top), pulling it back and clipping it up the three overhead fasteners.

The rear and side curtains may be rolled up and secure with the traps and snaps attached to each. They should not be removed as they are very easily scratched or creased. The curtains should only be cleaned with the provided spray cleaner and microfiber cloths located under the flybridge sink.

## GENERAL VESSEL OPERATION

Always operate the vessel from the helm station that provides sufficient visibility given your course, speed, and sea conditions. During docking maneuvers that may require backing, always operate from fly bridge as there is little visibility astern from the pilot house. It is best to center the wheel and use only the engines to maneuver the boat backwards at very slow speeds. It is extremely important that the trim tabs be in the full up position (bow-up) whenever the boat is maneuvered for docking.

When using engines for steerage, avoid using engines simultaneously in opposite directions. Although effective, it puts more strain on the drive train than using one engine at a time. You can almost always attain the desired results by alternate use of engines or alternating directions on a single engine

When in a harbor or when docking, use only one engine at a time, alternating between each as needed , The QUE SARA has large 32” props WHICH WILL PUSH THE VESSEL AT 7 KNOTS with both engines engaged. Always put one engine in gear and then take it out and observe what effect that had on the vessel before moving to the next engagement of an engine, this will help you learn the boat and also saty out of trouble.

If you find yourself in a situation in which you are not certain of what to do, or if a maneuvering command does not do what you thought it would do Bring the vessel to a compete stop, stop the motion of vessel and re-group and start over. . The Que Sara weighs around 70,000 lbs fully loaded and “ motion can cause great damage in tight quarters.

## WINDLASS AND ANCHOR

The anchor windlass uses a large amount of electrical power (90-120 amps). It is always best to have main engines running when operating the windlass so you retain control of the boat and minimize battery drain.

**NOTE: The Windlass is a powerful machine and can be dangerous to use. Make sure all crew operating the windlass have been trained how to operate it and to keep hands, fingers, feet and clothing out of harm’s way.**

Windlass controls are at the flybridge helm and at the windlass. Controls at the flybridge helm may be used if a second person is positioned on the deck to monitor the setting and conditions. The windlass can also be run from the deck. It is highly recommended the windlass is controlled from the deck in order to manage the angle of retrieval (always vertical retrieval) and to make sure the anchor does not swing into the boat.



Foot switches for the windlass are on the port side of the bow.

## SETTING ANCHOR

**CREW NOTE:** The skipper will signal when to drop the anchor. Make sure the chain dog is clear to allow the chain out. Open the deck switch cover with the arrow pointing forward. Start with a few taps on the windlass deck switch to let the anchor roll off slowly and without suddenly dropping. Once the anchor is hanging vertical, you can step on the deck switch and release as much chain as the skipper requests.

Anchoring safely requires two persons, one at the helm maneuvering the boat and one on the bow operating the anchor. Putting the bow of the boat over the spot where the anchor is to be placed after checking the depth on the depth sounder, the windlass foot-switches are used to lower the anchor slowly toward (but not onto) the bottom, by watching the chain markings. The anchor chain is marked every 50 feet.

When the anchor is about to reach bottom, the boat is backed away by putting the engines into reverse for 5 seconds: Eddies from the chain indicate motion. Resume lowering the anchor while drifting backwards (watch the eddies and add another burst or reverse if necessary!) until the desired amount of chain is out. Stop paying out chain. Engage reverse for five seconds at a time until the chain starts to pull straight off the bow toward the anchor. A straight chain indicates a “set” anchor!

**NEVER** pull on the chain for more than five seconds, and never at any engine RPM other than idle! Putting the boat’s weight plus its horsepower on the chain forcefully even at idle will bend the anchor and/or damage the mooring gear!

If while checking the set, the chain rumbles and clunks, and seems to release in bursts, it means you're anchoring on a rocky bottom and the anchor is not holding. Be patient: It may not set on the first try, and you'll have to repeat the process sometimes to get a good "bight" on the bottom

Chain Marking:

- a). Yellow = anchor at 50' below waterline.
- b). Red at 100 , Blue at 150 FT and
- c). Green at 200 ft ,
- d). 6 Black draw ties in a row are attached to the chain at 220 ft ( just before the chain changes to the 250 ft of nylon rope).

## ANCHORING

Anchoring can be accomplished safely with a minimum of fuss if you are prepared. Or, if you are not ready, it can be stressful and dangerous for you or the boat.

Before attempting to anchor, select an anchorage with a soft bottom such as sand, mud, or gravel, if possible. Look at the charts and cruising guides for tips on good locations. Then, choose the spot in the anchorage where you have room to “swing” on the anchor without disturbing other boats. Remember, responsibility for leaving room goes to each successive boat to arrive, for the first boat has priority in the anchorage!

Here in the Northwest, because of the deep waters, all-chain rodes and small bays, we anchor a little differently than in the Gulf of Mexico or Caribbean, for example. First, except in severe weather we use anchor chain scopes of only 4-to-1 or 5-to-1. For example, in water that is 40 feet at high tide in the typical anchorage, we might use 160 feet of chain unless the weather was to be gale force or greater winds.

Second, because of the small bays and steep bottoms, we often rig a shore line from the stern of the boat to shore. The best example of this would be at Todd Inlet at Butchart Gardens. Here is a bay that can accommodate 8 - 10 boats, yet it is only about 150' wide and 200' long! Boats attach their bows to the mooring buoys or, in a few cases, anchor; and then their sterns are secured to rings provided in the steep cliffs overlooking the bay. Boats are thus perhaps only 15-20' apart, side to side.

Third, boats often will “raft” side by side in busy marinas, although this is not too common.

Fourth, courteous boaters will call vessels coming into busy bays and offer to let them raft to the same buoy, if signs on the buoys do not limit usage to only one boat depending upon length.

## CHECKLISTS & MANEUVERING SUGGESTIONS

### SHORE LINES

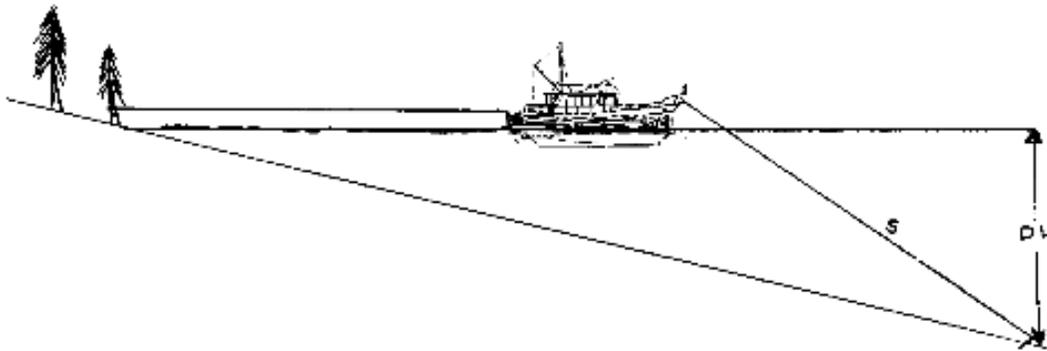
When a shore line is required, anchors are set 75 - 100 feet from shore, with the boat backing toward shore during anchor-setting. The stern line is put around a tree, and brought back to the boat.

During this process, be sure to keep clear of rocks near the shore, and allow for our Northwest tides, occasionally twelve feet, and sometimes 20 feet when further north! Check the present tide, and high and low tides before beginning anchoring: No sense anchoring in 15 feet of water if you're at the "top" of a 15 foot tide!

To get to the shore, you will need to have a dinghy down, and then have your mate keep the boat's stern toward shore with short bursts of reverse gear. Sometimes a helpful boater already anchored will help you by taking your line to shore for you with his dinghy, a neat "good deed" that you might reciprocate. We've met some nice boaters this way!

The shore line is in the lazarette, and is long enough to usually allow taking it to a tree, around it, and back to the boat so you don't have to go ashore to untie when leaving. With a crew member keeping the boat in position, take the dinghy to shore pulling the end of the shore line with you. Pass it around a tree, and pull it back to the boat if you can, since then to get away in the morning all you have to do is release the bitter end from the boat, and pull it aboard. Pull the line tight, as long as you've got over 100' total of line out: There is plenty of sag/stretch, and we want to keep the boat in its area! If necessary, put a crab pot float or fender on the line to warn others it's there!

Here is a sketch of a properly anchored boat with a shore line (in this drawing, S=Scope, which should be at least 4 x DL, the Depth at Low Tide):



When setting the anchor let out 50ft more than you have determined you will need, set the anchor backing up slowly until it grabs, then set it with one engine in reverse. If it holds, return to neutral and take up the extra 50 ft of chain.

When selecting an anchoring location check the depth in all areas you expect the boat to swing (360°), then look up the current depth on a tide chart and calculate the depth you are at at high and low tides to determine the adequacy of you selection. Also be aware of the location and potential swing of other vessels anchoring I the area. All rope anchoring will swing at full length but in light wind or still conditions you will probably swing over the end of the chain where it hits the bottom not the anchor, this affects how the boats will reposition over the night. Remember ,first boat to anchor has right of way over subsequent anchorings.

1. Make sure the crew setting anchor has been trained in using the windlass and anchor and knows what you expect them to do.
2. Turn on the windlass breaker which is in the lower right hand portion of the DC panel located in the stairway to the lower level bedrooms.

3. Always use proper anchoring procedures when anchoring. (See Chapman's)
4. Bring boat to complete stop before lowering anchor.
5. Pay out sufficient scope before setting anchor. **ALLOW FOR HIGH WINDS DURING THE NIGHT.** There is only enough anchor chain (400') to anchor in 80' of water or less with a 5:1 scope. Know how much the tide will change while anchored. **CAUTION:** Review the copy of Chapman's onboard if you need to review the correct anchor setting procedure or the amount of scope to use. Be Safe! Drifting in the middle of the night is unpleasant at best and always very dangerous.
6. Be sure you do not allow QUE SARA to ride at anchor directly against the windlass. Properly snub the anchor rope using a snap ring and line attached to the deck cleats.
7. Monitor the vessel's position periodically after setting anchor to see that the anchor remains set. This is important because both the wind and currents change constantly.
8. **NOTE:** If snubbing line is not used on the anchor chain, it will make a snapping noise when winds swing the boat. If anchoring on a rocky bottom, the noise from the chain dragging across the rocks when the current or wind shifts will magnify and the sound will follow the chain into the boat (These will be heard mostly in the middle of the night when it is dark and cold and wet on the bow) Insert a snap-ring in a chain link and run a line through the snap-ring and take pressure off of the chain by securing the line to the forward cleats.

## WEIGHING ANCHOR

**CREW NOTE:** You will be signaling the skipper which direction to move in order to retrieve the anchor. The objective is to always have the chain vertical when retrieving. NEVER allow the boat to run over the chain, or pull the boat with the windlass.

**Do not force a stuck anchor with the windlass. It will pop the breaker or damage the windlass.** If the windlass strains or stalls, wait ten seconds and try again. Often this will let the anchor pull free. If this does not work, notify the skipper. Consult Chapman's for suggestions.

Stop the chain when the anchor is within 3 feet of the roller. Turn the anchor so the point is towards the bow. Very briefly tap the deck switch until the anchor slowly comes up over the roller and snugly back against the roller. Make sure the chain is snug but not stiff and tight. secure with a safety line and hook.

1. Make sure the crew weighing anchor has been trained in using the windlass and knows what you expect them to do.
2. Always start main engines before you begin to weigh anchor. Do not pull the boat with the windlass – this could cause the windlass to fail and require manual (read painful) retrieval. Keep the chain vertical when raising the anchor. This will minimize windlass strain and anchor swinging.
3. Care should be taken that anchor does not swing into bow.
4. Stop the windlass when the anchor shank reaches the roller. Make sure the anchor is

aligned to have the points down. Carefully raise the anchor shank over the roller until the chain is snug.

5. When finished with windlass, turn off breaker at panel.

## HOISTING DINGHY ON AND OFF QUE SARA

This section also applies in most part to hoisting any dinghy to or from the fly bridge. Hoist operation requires 2 people to safely manage the operation.

- The Davit hoist is heavy machinery and is inherently dangerous. All precautions must be followed to avoid serious damage and/or injury.
- Make sure your crew knows exactly what you want them to do and not to do before you start!
- Never allow passengers to be in the Dinghy when it is being hoisted or lowered.
- Never allow anybody to be directly underneath the Dinghy when it is being hoisted or lowered.
- Only use the hoist in calm water and calm winds. DO NOT hoist the Dinghy up or down while QUE SARA is rocking.

## OFF-LOADING DINGHY

### Preparation

1. Get the davit control out of storage area located under the sink in the fly bridge area.
2. Connect controls wire cable to the connector on aft side of the davit arm and screw to base using 1/4 turn.
3. Remove the four tie down straps from the dinghy (2 aft 2 fwd)
4. Verify that the dinghy lifting harness is connected, free, and ready for hoisting. Remove any twists before proceeding.
5. Make sure a stern and bow line are available for the crew to guide the dinghy during transit.
6. position the dinghy engine to a  $\frac{3}{4}$  down position
7. Make sure all harness cables are free and connectors locked closed.
8. On the port side of QUE SARA make sure the two small white fenders are in position to fend off the dinghy when it is in the water.
9. Be sure the drain plug is screwed in tight on the stern of the dingy
10. Position the boom arm up so that the cable is centered over the dingy with a slight favor to the right (when facing from the outboard end) to allow for bending when the load is applied. The goal is to be centered on the chucks when lifting.

Note : you will want the (hydraulic control) boom set in this up position before re loading the dingy to best position it over the chucks.

### Off-Loading

1. Push davit cable control button to allow the lifting hook to be released from the keeper bunjie and un hook. Un zip the rear curtains to allow for the swing of the Davit Arm.
2. Hydraulically raise the boom enough to swing out from the curtains and clear the outboard motor.
3. Position the boom arm up so that the cable is centered over the dingy with a slight favor to the right (when facing from the outboard end) to allow for bending when the load is applied. The goal is to be centered on the chucks when lifting.
4. Position the davit arm to where the hoist cable is over Dinghy lift ring. Have someone hold onto the weight until it can be attached to the lifting harness. Be careful weight does not swing into people or dinghy.
5. Lower CABLE OUT until hook can be attached to the harness lift ring. Attach the hook to the ring and between the two rear cables. All 3 cables should slide to the bottom of the ring before hoisting. Adjust cable position before lifting
6. Insure tie down straps securing the dinghy to the cradle have been removed.
7. Attach a line to the bow and stern of the dinghy and hand the free ends to an assistant on the upper deck of QUE SARA. Remind the person to stay clear! The crew will use the lines to guide the dinghy's descent and to tie the dinghy when it gets to the water.
8. Make sure the cable remains vertical while lifting the dinghy. Adjust the davit boom arm up/down (hydraulic) to put the cable in vertical position.
9. Once aligned, push the davit control button to lift the dinghy 2-3 inches to verify the cable is in the right position. When properly aligned, continue to raise the dinghy using the davit control buttons until it is free of the cradle.
10. When free, the dinghy should ride approximately level. ( if not there might be water in the bottom which needs to be drained)
11. Continue to raise the dinghy until it is clear of the cradle. Raise to the highest position possible but do not let the weight or cable stop to reach the upper pulley.
12. Rotate the davit arm outboard (to port), being careful to keep the prop and skag from hitting the supports on the aft portion of the deck, until the dinghy is parallel to the starboard side of QUE SARA. IF the dinghy starts to swing, stop it using the bow and stern lines until it is steady. Note : as the dinghy moves to the side of the Que Sara it will cause a slight list to the port which in turn will make the dingy and boom want to swing out. Be sure to hold the stern dingy rope sufficiently to

- not let this happen freely but rather pay out the line slowly.
13. Using the davit control buttons let the cable out. Be careful that the dinghy is clear of QUE SARA's railing. At that point, continue to lower the dinghy to the water.
  14. Once the dinghy is on the water, have your crew tie it to QUE SARA and make sure fenders are between the Whaler and QUE SARA.
  15. Lower the cable until your assistant can release the harness from the hoist cable. IMMEDIATELY raise the hoist CABLE IN until the cable weight is within 3 feet of the boom. Do not let the cable and weight swing free. The cable, boat, or crew, can be damaged by it swinging. Rotate the davit inboard to its original stored position. Re-attach the hook to the hook keeper. Be sure never to allow the retrieval of the hook end without the weight applied as the line may tangle on the spool.

To operate the dinghy, see Starting the Motor below.

## RE-LOADING DINGHY TO THE FLYBRIDGE

No heavy gear or people should be in the dinghy when it is being moved on or off QUE SARA. Excess gear could overload the hoist or cause failure.

**The hoist is heavy machinery and is inherently dangerous. All precautions must be followed to avoid damage and/or serious injury. Make sure your crew knows exactly what you want them to do and not to do before you start loading!**

**Never allow passengers to be in the dinghy when it is being hoisted.**

**Never allow anybody to be directly underneath the dinghy when it is being hoisted.**

**Only use the hoist in calm water. DO NOT hoist the dinghy up or down while QUE SARA is rocking to prevent collision with QUE SARA or crew.**

### Preparation

1. Remove all loose gear from the dinghy
2. Tie the dinghy to QUE SARA's starboard side with the bow of the dinghy facing towards the stern of QUE SARA.
3. Attach the harness. Make sure all 3 cables are running free and all connectors are closed.

4. Raise the outboard motor to a position between fully up and fully down to allow the prop and skag to clear the aft deck when rotating it back onto QUE SARA.
5. Locate your crew to hookup the hoist cable hook to the dinghy.

## Loading

1. Release the Hoist cable from the keeper.
2. Follow the steps in off loading the dingy to center the boom over the centerline of the chucks before swinging it over the side to retrieve the dingy.
3. Rotate the davit arm outboard until it is over the dinghy lift ring.
4. Lower the CABLE OUT and adjust the davit arm to enable the hook to be connected to the dinghy directly below the boom tip.
5. Connect the cable hook to the top of the harness fitting. This will lift the ring up and slide all 3 attached cables to the bottom of the ring.
6. Raise hoist cable until harness cables are taut. Adjust the cables on the hoist ring so the cables are all on the bottom of the ring and together. Verify all cables are free. Assistant holds the bow and stern lines in order to guide the dinghy during on-loading process. Untie all lines attaching the dinghy to QUE SARA.
7. Raise the hoist cable until the dinghy is out of the water. The dinghy should ride level or you will not be able to proceed.
8. Raise the dinghy until the dinghy is as high as the cradle. Your assistant should fend off the whaler as needed. The cable should be raised to the highest position possible without letting the weight to hit the top pulley. At that point, your assistant should swing the dinghy into position to go on the cradle
9. Rotate until the dinghy is positioned on the cradle. Lower the cable as necessary to align the dinghy with the cradle. Be sure the engine will not touch the deck when the dinghy is lowered.
10. Lower the dinghy until the harness is slack enough to remove the cable hook. Remove the hook and hold onto the hook while rotating the hoist back to its storage position
11. Strap down the dinghy securely even for a short transit! Remember, it is can slide off the deck and cradle if not secure.
12. Return the davit arm and cable back to its stowed position. Only put enough pressure on the hook with CABLE IN to keep the weight from rocking.
13. Remove the hoist controller cable and put the control back in the storage cabinet.

## OPERATING THE DINGHY

Before taking off:

1. Make sure each passenger has a lifejacket available on the dinghy. By Washington State law, Kids under age 12 must be wearing their lifejackets at all times when in the dinghy.
2. Check level of gas in gas tank.
3. Secure all loose baggage, charts, clothing. The wind pattern underway will suck most light objects out of the boat.
4. Make sure all lines are secured in a way to keep them from falling overboard and getting into the prop. Especially the bow and stern line.
5. Make sure the motor is lowered and pointed straight back.
6. The motor is an electric start. Push the key in while turning to the start position to activate the choke. Typically the engine will die after the first start.
7. Make sure all passengers are sitting down before getting underway.
8. Pull all fenders into the boat.
9. Even if you are in familiar waters, keep your eye on the chart. There are many unmarked rocks and reefs in the northwest waters

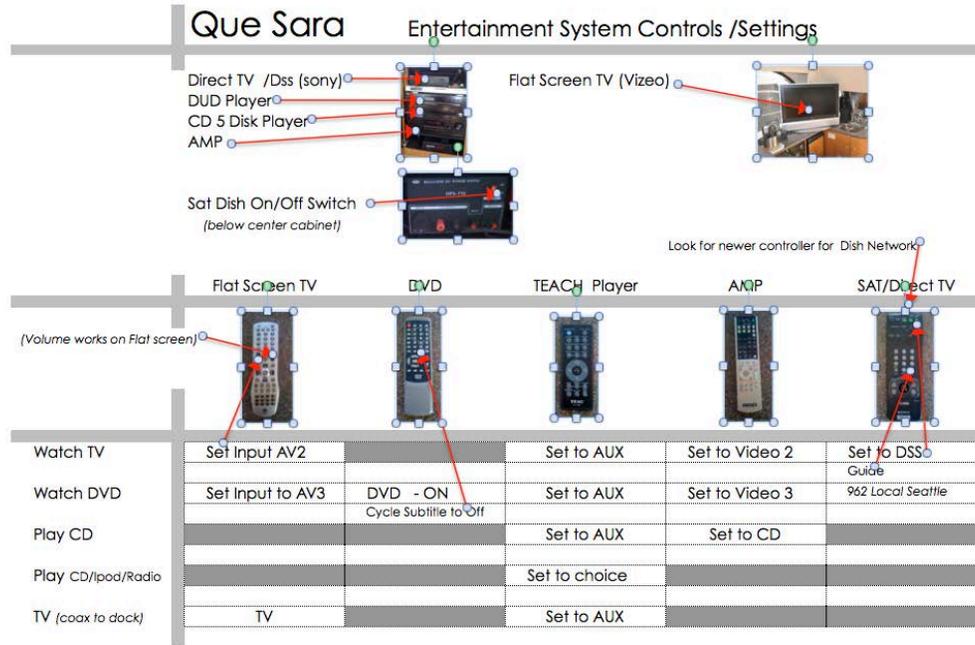
## VIKING LIFE RAFT

The QUE SARA has a Viking 6 man emergency life raft canister mounted on the flybridge rail next to the life ring. It should never be used for pleasure or fun. It is a one time use item which after deployment is lost and replacement is expensive. Instructions for deployment are on the canister but should never be used unless the vessel is sinking and you are in a full mayday situation.

## TV/VCR

The Que Sara is equipped with a TRAC VISION mobile dome for moving reception of Direct TV Cable Service ( basic Seattle channels provided) for your enjoyment. To use ,turn on the TV with the TV remote control. Then turn on the satellite dish switch located in the salon wood cabinet near the floor( red lit switch) Use the Sat remote to select channels, guides, etc.. The tv can also play DVD in the CD/ DVD player. Insert the DVD and press play then on the TV remote push the TV/Video button to select the input source. The CD/DVD player also has a remote and is the control for the surround sound system. (see controller diagram below)

The master stateroom also has a tv. Which is only connected to a DVD player.



## SALON COFFE TABLE ADJUSTMENT

The coffee table in the main salon can be raised and lowered to make it suitable for an additional dining area. The rocker switch on cabinet on the kitchen side of the salon ( between the two counters. This is a gear driven mechanism. **DON NOT SIT OR STAND ON THE TABLE OR LET CHILDREN RIDE UP AND DOWN,** It will break ( and has) with this type of use.

## STACKED WASHER/DRYER

Instructions for using the washer/dryer are in a pocket on the inside the hallway door which opens to give access to the equipment. This is also where the washer soap is stored. Running the washer/dryer requires 50 amp shore power or running the generator. It works well so long as it is not overloaded. The dryer vents to the outside.

Please read the instructions before use as the ASKO equipment is a bit tricky to operate but works great if worked properly. As with all dryers remove lit from the screen after each use.



# QueSara: 5788 Bayliner

## Additional Specifications: Description of Vessel



### Dimensions

LOA: 57' Beam: 17'4" Displacement (Loaded): 70,000 lbs.  
Draft: 4'11"

### Engines

Engine(s): Twin Engine(s) HP: 600 diesel :  
Engine Model: D2866LE401  
Cruising Speed: 18 knots Max Speed: 20 knots

### Propellers

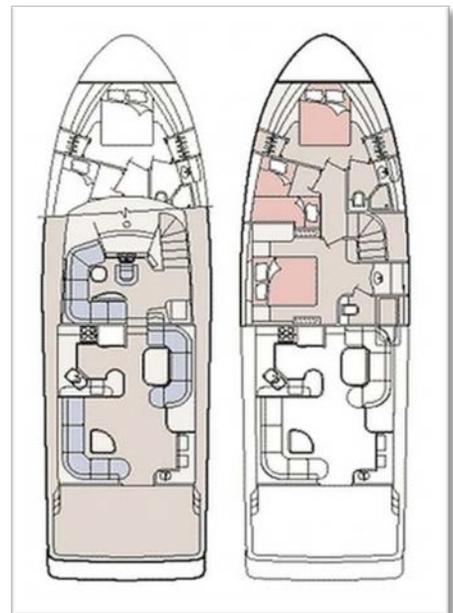
2@ 32x34 four bladed Bronze

### Tankage

Fuel: 800gal  
Fuel Consumption: Low 7gph, High: 40gph. Average: total  
fuel by hours used on trip( hrs meters ) Trip average 20gph  
Water: 226gal  
Holding: 76gal

### Misc. Equipment

Anchor: 60# ss plow with 150ft 3/" chain and 150Ft 3/4" rode (spare 35# danforth)  
Bilge pumps-four 2,200 GPH & two 1,250 GPH  
15 kW Westerbeke Generator w/soundshield



Electrical bonding system w/sacrificial anode  
Glendinning Cablemaster with 100ft 50 amp 120/240 V power chord  
30 Amp chord and adapters.  
4kW Inverter /charger  
(1) 80amp & (1) 40amp 24V battery chargers plus inverter charging  
Navigation lights  
Ignition engine alarms for engine overheat and low oil pressure condition.  
Halon engine room automatic Fire suppression system  
Oil change system  
Foredeck sun lounge  
Anti fouling bottom paint  
Central vacuum system  
Diesel Furnace / Hydronic Heating system with individual room with fan coil heat exchangers  
and thermostats  
20GPH HRO watermaker  
Bow and Stern Thrusters  
Spare props  
6 inflatable life vests under main salon seat cushions  
8 pfd under flybridge seat cushions  
Stainless propane portable BBQ  
Foredeck fender racks for four fenders  
Two aft deck fenders  
Foredeck lounge cushion



**Sleeping Accommodations:**

The QueSara Sleeps up to 6 guests in three double staterooms and two enclosed heads with overflow capacity in main salon and pilothouse



### **Master Stateroom**

Mid-ships Master Stateroom w/ Island Queen Berth

Abundance of built-in locker & drawer Storage

Cedar lined hanging lockers

Vanity w/mirrored cabinet & molded sink

Private head /vacu-flush toilets and large tub/shower.

Dedicated entertainment Cabinet with 19" HD Sony Bravia LCD flat screen and DVD

AM/FM/CD system

Night stands w/two drawers

Corian counter tops



### **Forward VIP Guest stateroom**

Centerline Queen Berth

Built-in Locker & Drawer Storage

Dual Opening Overhead Skylight Hatches

Privacy Door Aft & Private Entrance to second head with shower



**Guest Stateroom:**

Two single berths at right angles with clothes locker and drawers  
Hall access to 2<sup>nd</sup> head/shower.



**Hallway:**

Over Under electric Asko clothes washer and dryer





**Pilothouse:** (dual/Redundant gps navigation and Radar

- 1) Complete instrumentation and Ignition switches.
- 2) Hidden Acer Laptop with Nobeltec 9 Navigation software, w/ dedicated GPS,
- 3) 19" Hi-definition monitor (Nobeltec) (17" remote Monitor on flybridge helm.)
- 4) Sitex Radar with chart overlay capability on Nobeltec system
- 5) Wireless keyboard and mouse (may be moved between LH and FB)
- 6) Second Radar System , Ratheon R41 raster Radar
- 7) Raytheon E120 Chartplotter with dedicated GPS/ Navionics platinum Card
- 8) Raypilot 650 Autopilot at both stations w remote
- 9) Color monitoring cameras for E120 in engine room and aft cockpit.
- 10) Raytheon v850 Depth sounder, FB: Raytheon L750 Raydata Depth/speed
- 11) Ritchie 6" Compass flush mounted/illuminated
- 12) VHF with hailer
- 13) Bow Thruster & Stern thruster Toggle controls
- 14) Port and Starboard Trolling Valves
- 15) Hynautic dual station hydraulic engine and steering controls
- 16) 3Way toggle for hydronic diesel furnace system
- 17) Remote Jabsco searchlight
- 18) Trim tabs
- 19) Battery level indicators
- 20) 110v220 control panel/Trace 4000W Inverter Panel
- 21) 12/24v control panels (left side of stair to bedrooms)



L-Lounge w/ adjustable table

Cabinet Storage for Boat manuals/ Boat papers

Power chord adapters

Under-cusion spare parts storage and emergency flares, ships bell

Custom cherry paneling and first nation/ native american artifacts

Teak stairs to enclosed flybridge



### **Flybridge**

- 1) Complete instrumentation and ignition switches
- 2) Raytheon L750 Raydata Depth/speed
- 3) Bow Thruster & Stern thruster Toggle controls
- 4) 17" remote Monitor from Acer/Nobeltec nav system
- 5) Dual station Hynautic hydraulic engine and steering controls
- 6) Autopilot remote
- 7) Ritchie 6" Compass flush mounted
- 8) Jabsco Remote searchlight
- 9) Lewmar windlass controls
- 10) Trim tab controls
- 11) Radar Arch extension with TracVision 6 Mobil Television dome ,2 radar domes , 2GPS antennas and two VHF antennas
- 12) AM/FM/CD Stereo system

Full flybridge enclosure covering lounge seating and pilot station with lexan front curtains

Two plush adjustable helm chairs

U-Line Refrigerator /Icemaker

30" Freezer

Wet bar w/Pressurized water system

Radar Arch w/recessed lighting & speakers

Roskelley Olsson Dinghy Davit with amsteel rigging

Inflatable: 13'6 center console Zodiac RIB with 50hp Honda four stroke /depth/gps navigation

Viking mounted container, auto inflating 4 man emergency survival life raft



### **Galley**

Double stainless steel sinks with pullout faucet

Frigidare 12.6 cubic foot refrigerator/freezer  
Whirlpool Microwave oven  
U-Line icemaker (salon)  
Creda Electric Stove/Oven  
Frigidare Dishwasher  
Broan trash compactor  
Corian counter tops  
Coffee Maker  
Panninni Press  
Dishes, silverware , pots and pans



### Salon

#### Salon

Corian counter tops  
L-Lounge seating (six)  
HiLo cocktail/dining table w/2 stool/footrests  
Entertainment center with CD/DVD  
TracVision 6 mobile Satellite with direct-TV service  
32" Vizio HD Flat screen TV  
life vests and flare kit under L-Lounge cushions



### **Dinette**

U shaped dinette with Corian table seats 6



### **Aft Cockpit**

Stair to bridge

Stair to engine room

Transom shower

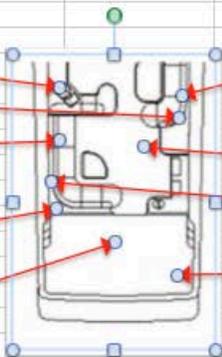
Transom doors-port and starboard

Swim step live fishwell

Fender stowage

Stern Mounted US Flag

## APPENDIX A VISUAL EQUIPMENT LOCATOR

QUE SARA	Stateroom Level	
		<p style="text-align: right;"><i>Under guest bedroom floor</i> Bow Thruster access</p> <p style="text-align: right;"><i>Under stairway/access from Master entertainment Cabinet</i> Owners storage Aft Shower sump Holding Tank Filters</p> <p style="text-align: right;"><i>Under Hallway Floor</i> Holding tanks Overboard Pumps Vacuflush Tanks and Pumps Thru Hulls Forward Bilge pumps</p> <p style="text-align: right;"><i>Below &amp; Behind master toilet room</i> Potable water tanks Water Heater Potable water Pump</p>
Forward Guest Stateroom		
Bath 2		
Mid Guest Stateroom		
<i>Lower Hallway</i> Washer Dryer		
Master stateroom Entertainment Center 2		
<i>Master Bedroom aft Closet</i> Fire Extinguisher		
<b>Flybridge Level</b>		
Enclosed Bimini		<p style="text-align: right;">refrigerator/ icemaker Center sink cleaning supplies 110 Volt power supply</p> <p style="text-align: right;">8 Life jackets in bags coffee table 2 deck chairs Kayak storage stair to aft cockpit</p>
Second pilot station wetbar		
<i>Under Guest seating</i> 4 Ski type life Jackets Dingy cover Downriggers Play rafts		
Crane Zodiac Tender w/50hp Honda 4 stroke		



## PROBLEM SOLVING

### 1. ANCHOR CHAIN WON'T COME OUT OF CHAIN LOCKER

2. The anchor chain is continuous, secured at both ends, and cannot tangle. But sometimes a pile of chain will fall over, and one loop of chain will fall through another loop. Usually you can clear this by grasping the chain where it exits the hawse pipe from the chain locker with your hands, and pulling it up or down to "jiggle" the loop out of the chain; you may have to retrieve some chain to do this, in order to have enough slack to jiggle it! It is rare when this will not clear the jam. The other solution: go below and clear the tangle in the chain locker. Caution: Turn off the windlass breaker to protect your hands when manhandling chain!

### 3. ANCHOR FOULED, CAN'T RAISE IT

4. This can happen if you "pull the boat to the anchor" with the windlass. You should move the boat under power until it is over the anchor, or, even better, slightly ahead of it before hauling. Usually this will clear it. Otherwise, take a line and form a fixed, loose loop around the chain. Weight the loop, and lower it down the line until it reaches the bottom, sliding down the chain. Then, using the dinghy, take the line forward past the anchor so that you can pull the anchor out, opposite the direction its flukes are pointing. This should help you to pull the anchor free.

### 5. ANCHOR WINDLASS WON'T TURN

6. If the motor isn't running, is the circuit breaker by the lower helm on? If the motor is running Use the anchor windlass handle in the deck box where the washdown pump is located. Windlasses are equipped with a shear pin to protect them: if you sheared the pin, you will have to haul the anchor by hand using the emergency handle.
7. If the windlass motor is running but the chain wheel is not turning, check the clutch:

### 8. BATTERIES (HOUSE) KEEP RUNNING DOWN

9. Have you run the engines enough? Is something left on (like the engine room or mast lights, too many electronics, etc.) that is too great a load for the time you were not charging? Are you using the inverter for big jobs? Use the stove or shore power. Have you had the inverter on whenever plugged in to shore power? You must, for the house batteries to charge!

### 10. ENGINE OVERHEATS

11. Is the drive belt for the water pump intact? Spare belts are in the engine room spares kit. Is the sea strainer or intakes clogged? Is the impeller shot? If sea strainer is clear and belt is good, this is likely. Call a AYC, Do not run engine if it overheats!

### 12. ENGINE WON'T START

13. If starter does not turn, is transmission in neutral? Try jiggling shift lever while pushing

start button. Check battery, battery switches. Try starting with battery switch set to "both". IS the ignition breaker on in the 24 Volt panel in the stairway to the cabins

14. 5.1 - What to Do If
15. Starter turns, assume fuel problem: did you bump a fuel valve on the manifold at back of engine room? Make sure all open, if one was closed, re-prime engine or call a mechanic if you can't do this Remember, both engines each have their own battery banks engine has its own battery banks!
16. FOG DELAYS RETURN
17. Call AYC by telephone or VHF marine operator and advise for instructions.
18. HEAD WON'T FLUSH
19. Is breaker on? Turn it on. Have you over-filled the holding tank? Pump it to allow more effluent to enter it. See the "Heads" section of this manual. If all else fails, just use only the other head.
20. HIT A FISH NET
21. Engines in Neutral: don't try to back off, you may foul the net more. Try pulling the boat back with the dinghy & outboard. Get assistance from the fisherman. You are responsible for damage you cause to a net!
22. HIT A LOG OR ROCK See EMERGENCY PROCEDURES, next chapter.
23. PROPELLER FOULED OR DAMAGED
24. Best thing: Have the prop checked by a diver or dive it yourself if able. Check for vibration. Try turning shaft by hand in engine room, both should be turn-able with engine in neutral. Is shaft noisy, or does it load engine? Do not use that side or call Vessel Assist. See emergency procedures, next chapter.
25. WATER (FRESH) WON'T FLOW
26. Is there water in the tank? Is F.W. Pump breaker on? If capable, check pressure switch on pump.
27. 5.2 - What to Do If
28. Section 6: Emergency Procedures Protect your lives first!
29. Put on life jackets Contact the Coast Guard with an emergency "MAYDAY" call. If adrift, prepare to anchor to keep the boat from drifting into danger. If the boat is really sinking, consider "beaching it" if necessary.
30. Launch the dinghy and prepare to board if necessary. If an engine is available and you have time, mount the outboard engine and load its fuel tanks. Take a handheld VHF

radio, if available. Be sure to wear life jackets!

31. Then, worry about the boat!
32. In a true emergency, you certainly are authorized to call for immediate commercial assistance as minimally required to assure the safety of you and the boat.
33. It is not an emergency, however, if neither you nor the boat are at risk. For all non-emergency assistance or mechanical repairs done by others, Anacortes Yacht Charters MUST give prior approval for you to be reimbursed!
34. If you think it may not be an emergency:
35. If you have any concern about your long-term safety, contact the Coast Guard, either normally or using an urgent "PAN" call. Tell them that you are calling to advise them about your situation, so they can keep in touch.
36. Be sure that the status and safety of the boat and crew is someone's responsibility while you sort out the boat's problem. For example, delegate your mate to keep a watch for hazards, or to operate the boat on course slowly while you deal with the difficulty.
37. Here is a checklist for solving the problem: (A) Isolate it;
38. (B) Get the manuals; © Get parts; (D) If necessary, call Anacortes Yacht Charters for help.
39. Over the years, most problems with charter boats are caused by misuse! Holding tanks overflow because they aren't checked; heads clog because foreign matter (especially facial tissues and tampons) are put in them; engines fail because they run out of fuel, then must be "purged" to re-start. Use the boat carefully, and you'll avoid these
40. Emergency Procedures
41. problems.
42. Almost all problems that are not operator-caused, i.e., that are boat deficiencies, are caused by pumps that fail, hoses and belts that break, and seawater strainers that get clogged. Generally, these problems are annoyances, and usually they are inconvenient, but they still can happen. Try to stay calm, collected, and be a professional by dealing with the problem in a businesslike, calm way. It will make everyone's day a better one!
43. Hitting a Log, Rock, or Debris ----- Please Don't!
44. Hitting a log is a real risk in our Northern waters because logging, and "log rafts," are such a big part of our commerce.
45. If you hit a log:

Did you put a hole in the boat? Idle the engines, then think: usually, you can tell just by where the noise of the hit came from. Check the bilges (don't forget the lazarette area,

where the rudder posts are) after putting the engines into idle and/or neutral, if necessary. If you did "hole" the boat, go immediately to the "If an Emergency" on the preceding pages.

46. If no hole, and still idling, is the boat vibrating? If "yes," put each engine into neutral in turn, identify and shut down the offender. Then continue on one engine. Call Anacortes Yacht Charters after you reach the closest safe harbor. If no vibration at idle, slowly accelerate one engine at a time. Is there vibration on either? If "yes," run at idle or on only the good engine, to reach a close, safe harbor. Then contact Anacortes Yacht Charters. With a twin-screw boat, the damaged running gear can't be used after hitting an object. However, if while under way on one engine the other engine's propeller shaft rotates by itself because of water passing over it's propellor, then you must let the unused engine idle in neutral so that its transmission has lubrication, and the cutless bearings on the damaged shaft are lubricated. This is still true whether the boat has dripless shaft seals or a standard shaft "log". When running on one engine with the other idling as required, be sure that the idling engine is pumping water through its exhaust pipe.
47. If there is no vibration on either engine, you probably did no running gear damage. Congratulations! Our diver will check your vessel's bottom upon your return, just as after every charter.