OPERATIONS MANUAL

Voyager

Welcome aboard!

We are happy you have chosen “Voyager” for your vacation. We hope that you enjoy your experiences on her as much as we have! We are sure you will enjoy cruising the lovely islands of the Pacific Northwest.

Many are puzzled as to where the keyhole is to unlock the salon door (including one of the owners the first time he had to do it). It is on the forward side of the door jam of the aft starboard salon door; see picture….

We trust this manual will help you become familiar with the boat. If you have questions about the boat or about places to visit, please do not hesitate to ask the AYC staff.

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1 BOAT OPERATION

1.1 Engine Inspection

Remember your **"WOBBS"** every morning: **W**ater (Coolant), **O**il, **B**ilges (Inspect and Pump-out), **B**elts and **S**ea Strainer.

Check the level of COOLANT in the expansion tanks. Check the level of OIL in each engine by checking your dipsticks located on interior side of each engine. They near the stringers one third of the way back from the front of the engine. The starboard dipstick full line is a scrap on the dipstick with the add line being the standard full line. The port dipstick uses the standard markings. There are disposable gloves under the helm seat in the salon.) The oil should be between full and add lines on each dipstick. It is only necessary to add oil when the oil level is more than halfway to the "add" lines. **DO NOT OVERFILL OIL!** It is easiest to use the oil fills near the stringers on the interior side of the engines.

To fill oil (use the 15-40 oil), remove the fill cap by grabbing it and turning it counter clockwise. There is an orange funnel starboard side in the engine room. You will find filling is easier with partially full jugs of oil. After filling make sure you tighten the fill caps back up. Please use a paper towel (There are rolls of the blue shop towels in the engine room.) or oil rag to check the oil, not the dish towels! Make sure you wipe up any drips with a paper towel and dry the funnel. Leave a paper towel on the funnel's tip to catch any runoff.

Check the transmission and genset oil after checking the engine oil. The transmission dipsticks are at the forward end of the transmission. The transmission's level is meant to be checked when the engine is running. For simplicity you can check them cold but expect the levels to be at or above the two 'L's of "FULL". The oil in the transmission should be almost clear. If a transmission is low or discolored (it should normally be clear) then contact AYC for instructions. Please use the 40w oil (DELO 100) for the transmissions. The genset dipstick is the black knob on the amidships side of the genset. Follow the instructions on the case cover to remove the front panel. It should be at the full mark. Use the 15-40 oil to fill, if needed.

Check the general condition of the BELTS and HOSES.

For the following: Thru hulls valves are at the front and back of the sea chest in front of the starboard engine. The forward one is the port engine. They are normally left in the open position and should be left that way during your trip. The sea strainers are forward of each engine. Both are forward of their respective engines and on their starboard side. The port one is under the floor in front of the engine. The floor panels can be just lifted out by lifting them straight up. Start with the one closest to the front of the engine.. The generator thru hull is behind the starboard engine at the corner of the tank – it probably has an absorb sitting on it.

Ensure the valve on each RAW WATER THRU-HULL is in the **'open'** position (lever in-line with valve). Observe the glass of each RAW WATER STRAINER for debris by shining a light through it. If necessary, contact the AYC service team for direction on cleaning the strainers.

1.2 Start-Up

Before starting the engines, do your inspection. The engines turned on using their keys at the lower helm station. Turning the engines "on", one click clockwise of the key, makes the gauges light up and the digital screen come on. From this state they can be started at either helm. At the lower helm turn the key a little further until you hear the engine turn over. On the flybridge press the start switch at the top of the helm station. They engines normally catch within a second of them turning over.

WARNINGS: After starting an engine watch the oil pressure to make sure it comes up. If the pressure is not up within ten seconds immediately turn the engine off! Do not restart the engine until the problem is isolated and corrected. Contact AYC Service for help.

Voyager has house, start and thruster batteries. The battery switches are remotely operated from above the lower helm station. The "House" battery switch enables Voyager to access the house battery bank. The start battery bank is made available to its primary consumers via the "Port", "Starboard" and "Generator" switches. There is no battery switch for the thruster battery bank. In general, there is no need to alter battery switch settings during your use of Voyager but if you do use the remote switches on the lower helm station. Do NOT turn off the house battery bank without explicit directions from AYC as it will impact bilge pumps. See Picture:

The first bank of batteries supports the anchor winch, starting the main engines and generator. There is a switch for each engine and the genset for access to the "start" bank. The start bank is two group 32 12-volt AGM sealed (they do not require maintenance) batteries.

The second bank is for all the rest (non-thruster) of Voyager's electrical systems and is called the "house" bank. The davit, inverter, water pressure, lights, and electronics run off this bank. The house bank is six 6-volt "golf cart" batteries. The batteries are sealed AGM, so they do not require maintenance. There is a single switch to enable the house bank.

The third bank supports the thruster and is two group 32 12-volt AGM sealed batteries (they do not require maintenance) batteries. These batteries are in a wood box forward of the starboard engine.

Generally, all switches should be left ON. THE HOUSE BATTERY SHOULD ALWAYS BE LEFT ON TO MAKE SURE THE BILGE PUMPS ARE POWERED. (Work is slowly proceeding to remove this requirement.)

The house and start batteries are located amidships in the engine room (between the generator and hot water tank(under a cedar cover. The individual panels of the cover are removeable. If you remove the frame for the house and start batteries, then make sure when you replace it to adjust the cables at the side so they fit in the slots and the frame sits solidly on the tops of the batteries. When the cover is properly in place you can sit on it without concern. If the start battery is dead, then you can join the house and start battery banks in parallel via a bypass switch on the aft side of the post holding the hot water tank. In the on position, it will connect both battery banks together to start the generator or the starboard engine. **Make sure you do not leave the bypass on for a significant amount of time.** (Switch it back after the starboard engine is started and idling.) If you ever need to use the bypass the next thing you should do is charge the batteries with starboard main engine or the generator and battery charger.

For reference the starboard engine charges the start battery bank (120-amp alternator) and the port engine charges the house battery bank (120-amp alternator). *If you are trying to use a main engine to charge the batteries make sure the engine is running at a high enough RPM to make that work.* There are ammeter gauges to show alternator AND charger output per bank. The alternator ammeter is to the starboard side of the lower helm The ammeter shows two readings. It always shows the port engine (house bank) but the second reading is determined by the switch to its left. With the switch to the ammeter will show starboard alternator out amps. With the switch to port the ammeter shows amps flowing from the start bank to thruster bank. This can happen due to the alternator or the charger. See picture:

The battery charge ammeters are above the forward stairs in the salon, see picture:

The thruster battery is charged either by the battery charger or by the starboard engine only after the start battery is fully charged. The current thruster battery voltage is to the starboard of the lower helm, see picture:

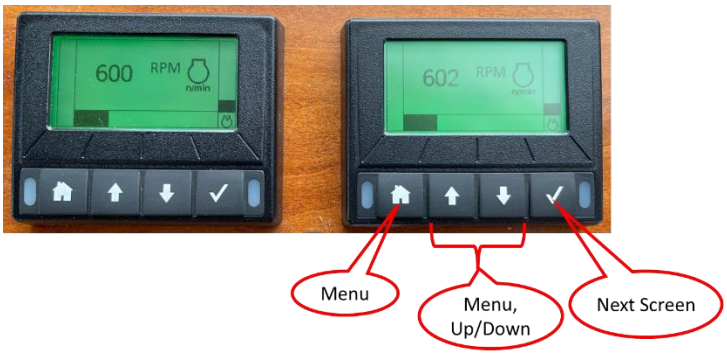
1.2.1 *Starting and Stopping the Engines*

The engines are usually started (and stopped) at the lower helm station. Follow these steps to complete starting and warming the engines up:

1. Make sure the gear shifts are in neutral for both engines.
2. Always start the starboard engine first as it charges the “start” battery bank.
3. To enable power to an engine its key at the lower helm must be turned to the “on” position. To do this rotate the clockwise one click. The keys are kept in the ignition switches so do not remove them. If the gauges do not light up, then check the battery switches above the lower helm. The picture below shows the port engine started and the starboard engine digital gauge starting up. The engine can stay in the “on but not started” state for several minutes without issue.

4. Turn the ignition key clockwise further to engage the starter. You do not need to push the throttle to get the engines to "catch". When the engine "catches" release the key. If you want to start the engine from the fly bridge that is also possible by turning the key on the lower helm and then using the start rocker switch on the flybridge helm (see last picture).
    a) In general, the Voyager's John Deere engines do not require much cranking independent of whether they are hot or cold. Note they have no glow plug.
    b) **If the alarm fires after starting the engine immediately stop the engine and investigate!**
5. If cold, warm the engines for at least 2 minutes at idle or about 1000 RPM.
6. <u>Check</u> the following after starting the engines:
    a) Check oil pressure to make sure they are as expected. The normal cruising values, for each gauge are provided on a label next to the gauge. At idle the oil pressure is typically about 50 PSI.
    b) Check to make sure the engine is producing water out the exhaust at the stern. It will be an intermittent flow at the idle speed with spurts every 10 seconds or so. Pictures of the two helm layouts are below:

7. The picture below shows the digital displays present at each helm. They contain all the information that is present on the analog displays and more. The figure below gives a basic introduction to the display. I suggest you press the "next screen" button and see the available information. The two lights at the outer sides fo the buttons are warning and error lights. If they appear immediately call AYC Service.



8. Verify all portholes are closed and tightened – particularly the forward ones. Wet bunks at not fun to sleep in…
9. After the two minute warm up period you can bring the engines to idle and leave.
10. Either develop the habit of disconnecting the shore power before the engines are started or during the warmup period. It will avoid damage to the boat or dock and significant embarrassment. ALWAYS MAKE SURE YOU WRAP THE SHORE POWER CORD AROUND A RAILING AND THE POST ON THE DOCK.
11. Raising the dinghy during the warmup period can also be a good idea as it allows the batteries to be charged while it is done. The davit is connected to the house battery, so the port engine must be running (at 1000 RPMs) to charge the battery the davit uses.

Note: There are labels on the gauge panels with the normal readings.

Note: Voltage gauges are present at each helm but represent healthy as a range. Under normal circumstances they will be at about 12 o'clock. Consult the alternator out ammeter for specific readings on their behavior..

Note: If oil pressure is low, shut down engine, and inspect engine compartment and look for possible cause (for example, loss of oil.) Seek help by calling AYC.

Caution: If an engine is overheating or there is lack of raw water expelled in the engine exhaust, stop the engine immediately. Recheck the raw water-cooling system to ensure the seacock is 'open' (handle in-line with valve). Next, check the raw water strainer for debris. Close the appropriate seacock, remove the strainer, clean, re-assemble, and reopen the raw water intake valve (seacock). The engine sea strainers are cleaned by loosing the two wing nuts on the top of the unit and flipping the cover away. Restart the engine and recheck water flow from the exhaust. If water is not flowing properly, the RAW WATER PUMP may need to be serviced. Seek help by calling AYC.

1.3 Turning on the Electronics

To turn on the electronics turn on the following breakers behind the door in the forward port corner of the salon (all of these switches are on the middle row of the 12 volt part of the panel):

- Main GPS
- Small GPS
- Salon Stereo
- F/B Stereo
- Salon VHF
- F/B VHF
- CB Radio (if you want)
- AIS

After turning on the circuit breakers the following device switches may need to be turned on.

1. Power switch on one of the larger (GPSmap xsv) chart plotters. Turning either the upper or lower unit on will turn on both units. It needs to be pushed and held for several seconds.
2. Power switch on the GPSmap 1040xs (smaller chart plotter) on the fly bridge. It needs to be pushed and held for several seconds.
3. Power switch on the lower VHF radio is the volume switch, push it.
4. Power switch on the fly bridge VHF radio is the 16/9 red button, push it.
5. Autopilot display heads are turned on by pressing the power switch. This is not normally required.
6. Rudder indicator display on the flybridge will normally come on by itself. If needed press the power switch.

The electronics are left installed on the bridge during the season, so no hooking and unhooking each night is required. PLEASE keep the electronic covers in a safe place **near the device**. The fly bridge ones can be kept behind their devices against the Plexiglas. See picture below for how to stack all the starboard side covers together in an organized way. Do not put them under the flybridge counter.

Please put the covers back when you are done running for the day as continuous direct sunlight on the screens is not good for them.

NOTE: Both helm panels are finished wood that can be damaged by extensive sun. Clothe covers are provided to protect them when they are not in use. Please cover them when you are not underway.

1.4 Enclosure

The flybridge is a great place for the helmsman to see the water and the rest of the folks to enjoy the scenery of the San Juan Islands and surrounding areas. The skipper chair behind the helm will allow the helmsman to sit in comfort and get a great view forward. Typically, people want to “permanently” open the center forward panel and the aft panel to the stairs.

To open the stairs panel unzip it and go into the flybridge. From the inside flip up about the first foot of the panel and roll it toward the top. When it is at the top take the straps that hang down on the inside and snap them at the top on the outside.

To open the forward center panel, unzip both sides of the panel and push the middle out while pulling the bottom in. When you have it past the helm chair take the center bottom part of the door and clip it to the ceiling of the enclosure. At the back of the Enclosure are two straps with hooks. Hook them into the two snap holes at each side of the center panel. Next tighten the straps. This keeps the panel taunt so it doesn't unnecessary sag. (see picture)

NEVER REMOVE ANY BIMINI PANELS. If necessary, the two side panels can be rolled up.

Warning: If you are going downwind and the wind is the right speed you might smell exhaust on the flybridge. This is rare but if it happens it can typically be resolved by putting down the aft panel (often without even zipping it).

Warning: Never leave a panel unzipped and thrashing in the wind for a long time. It will damage the panel.

1.5 Engine Shutdown

Before shutting down, allow the engines 'idle' for about 5 minutes to cool them gradually and uniformly. The time spent preparing to dock and docking the boat is usually sufficient. To stop the engines, perform the following steps:

1. Ensure each GEARSHIFT is in the 'neutral' position and each THROTTLE is in the 'idle' position.
2. At the lower helm turn off the engine by turning the key to off (counterclockwise). This both stops the engine and turns off power to its computer. At the flybridge helm you can stop the engine with the stop button, but you still have to go to the lower helm and turn off power to its computer by turning the key counterclockwise. If the green backlight on the gauges is gone the power is off to the engine.
3. It is not necessary to alter any battery switches.

1.6 Before Getting Underway

DISCONNECT the shore power cord (see 120-Volt next page).

NOTE: Doing this before starting engines will avoid embarrassment and damage!

1.6.1 Departure Checklist:

1. Close the **PORTHOLES**, WINDOWS, and FORWARD HATCH.
2. Make sure the synchronizer switch is in the off position at BOTH helms.
3. Find the appropriate chart and understand the path you plan to take.
4. Turn on both VHFs and other navigation electronics (both GPS systems). See above.
5. Turn on the horn.
6. Make sure the VHF radios are set to channel 16.
7. Adjust your electronics to the settings you prefer.
8. ASSIGN crew members their various positions.
9. Make sure the dinghy is strapped down, with white towels under the cranks.
10. Make sure all standing items are put in a secure place to prevent them from falling.
11. Make sure all TVs are snapped into place.
12. Remove any heavy items on the table since it makes it unstable.
13. Make sure the dishes and other items in the galley are appropriately positioned should you hit a bad wake.
14. Check the rest of the boat for any items that might fall if the boat rolls. Even on the smoothest days a wake could cause an unexpected motion.
15. Once outside the marina, idle the engines while crew brings in fenders and lines. The fenders go in the holders on the aft starboard corner of the upper deck (by the barbeque). Flip down the walkway and release the lifelines to access that area. The last fenders get tied by the barbeque or put in dinghy. Note: Alternatively, you can leave most of the fenders in place but flipped up on deck. You are encouraged to remove the one or two fenders that impact access from the salon to the fly bridge and aft deck.

1.7 Cruising

All close quarters maneuvering should always take place at the upper (fly bridge) helm. If you have an extra hand, you might station them at the foot of the fly bridge stairs. They can relay directions to crew on the aft deck and call out distance to any docks or boats astern of you. If the forward and aft panels on the enclosure are down then it will be difficult for you and the crew to communicate unless you have someone to relay commands.

Note: Six comfortable inflatable life jackets are provided in the aft stateroom closet. We suggest people that are moving around underway consider wearing these for additional safety. (We have found it to be a good habit to put them on before leaving the dock.)

1.7.1 *When Underway*

Please consider the following when underway as these tips are likely to ensure that you and Voyager have a safe journey.

1. Take the dock step with you as you may find in convenient at the stops along the way. It is recommended to keep the step near the life ring at the stern. (Be aware that higher winds can move the step when on the dock.)
2. Always have at least one or two people watching the water looking for logs and crab pots. Hitting either creates an unpleasant experience for both you and Voyager.
3. **The autopilot can make traveling more relaxing, but it is still necessary to watch the water for debris and look for other boat traffic.**
4. It is typically a good idea to assign someone to periodically look behind you for overtaking traffic. If a boat overtakes Voyager and leaves a large wake your passengers will probably appreciate it if you at least partially turn into the wake.
5. The two GPSs on the fly bridge can be used to get different views of the area around the boat. (Typically, one will be more zoomed in than the other.)
6. Always pay attention to the depth. Voyager draws a healthy amount of water (4' 9").
7. Never leave the helm even when the autopilot is in use.
8. Due to issues in placement of the autopilot's compass the autopilot's compass reading may not agree with the heading on the GPSs. The heading line is approximated based ongoing GPS readings. When Voyager is in experiencing waves the GPS readings result in a less accurate heading line.

1.7.2 Engaging the Gearshifts and Other Useful Information

Ensure the throttles are in the 'idle' (all the way aft) position before engaging the gearshifts to avoid transmission damage. Cruising speed is between 1700 to a maximum of 2000 RPMS. Consult the following table and use the Synchronizer to keep the engines running at the same RPM while cruising. (Do not use the synchronizer when maneuvering.)

RPMs	Approximate Speed (kph)	Fuel Consumption (gph)
1800	8.0	7
2000	8.6	9.6

As seen by the two datapoints provided the hull speed of Voyager is around 8 knots. Trying to go much above that comes at a significant fuel cost. The digital gauge will provide fuel consumption at the speed you decide to pick but to get total consumption you must look at the gph of both engines. The port engine is using the secondary torque converter to turn the propeller in the opposite direction and requires additional horsepower.

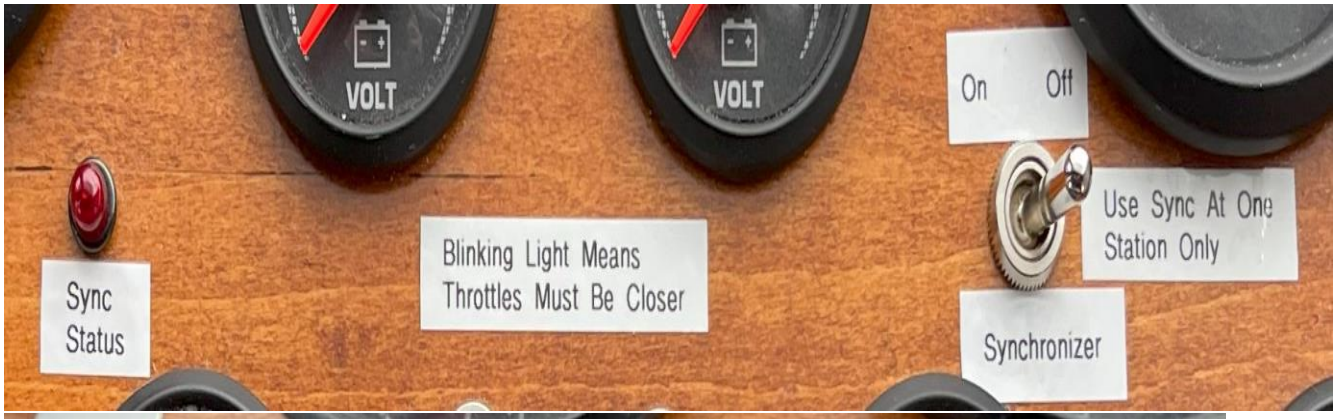
Using the Engine Synchronizer

NOTE: Only use the Synchronizer when cruising; not when maneuvering.

NOTE: The Synchronizer feature is a property of the engine's computer but has no concept of multiple helm stations. It must be disabled AT THE SAME HELM STATION WHERE IT WAS ENABLED.

Engaging:

1. Make sure the "Sync Status" is off at the helm station you plan to use.
2. Move the throttles to the approximate RPMS you want. Focus on the starboard RPMs as it is the master in this arrangement.
3. Turn the "Synchronizer" switch to "On" by moving the switch to port.
4. If the "Sync Status" light does not come on or is blinking the two throttles are not close enough for the mechanism to activate. Adjust the port throttle to get it closer to the starboard's RPMs.
5. WARNING: If you are adjusting the throttles and they end up too far apart for the engine to keep enforcing the synchronization you can be surprised by the port engine dropping (slowing) back to its actual throttle value versus the synchronized throttle value. This is normal and is resolved by bringing the port RPMs closer to that of the starboard engine.



Disengaging:

1. Turn the "Synchronizer" switch to the off position.
2. Warning: Doing this when at higher RPMs may surprise you with a sudden change in the port engine's RPMs.

Note: Slowing the engine can cause the synchronizer to stop controlling the port engine's throttle or it may not. You should turn the synchronizer off before doing any maneuvering as it could surprise you. If you slow for a log while cruising then you can leave it on and just push the throttles back to their cruising speed when you are ready.

Fly Bridge Instruments

The following pictures are of the upper helm station.

When the engines are warm, the gauges have the following readings:

Gauge	**Cruising Reading**
Water Temperature	About 165
Oil Pressure	About 65
Voltage	About Twelve o'clock

Engine oil pressure will vary based one RPM and the reading provided is specifically for cruising speed. Engine oil pressures vary based on the temperature of the oil so that it might be higher earlier in the trip and lower after a long cruising day. Anything above 50 is ok.

1.8 Docking

NOTE: Make sure you have the fenders down prior to docking.

NOTE: Turn off the Synchronizer before docking.

NOTE: Turn on the thruster by pressing the two "On" buttons on the control at the same time. I often do a quick test to verify everything is enabled just before I do my final approach.

During docking, use the FLYBRIDGE HELM for greater visibility to the stern. If you have enough hands a person at the stern can help with calling out distances. **Have your crew make ready the lines and fenders and give clear instructions on how you will be docking.** Often your crew will need to step off from the swim step with the stern line. Alternately they may decide to step off from the center gate area. Another crew member will need to be at the bow or mid-ships to hand over the lines.

At idle the rudder can still be effective at steering Voyager. When close to the dock you can use the two engines to maneuver Voyager. Normally when using the engines and shifters to maneuver the boat you would put the helm amidships (center it) – this is a good practice. However, if you wish to spin the boat a specific direction then turning the helm that direction will make the engines' efforts more effective. The rudder indicator on the fly bridge or in the lower right corner of the lower chartplotter will aid you in understanding the current angle of the rudder. It is also shown on the autopilot's control heads.

1.9 Fueling Up

ALWAYS USE CAUTION WHEN PUTTING WATER OR FUEL IN VOYAGER SO YOU DO NOT PUT THE WRONG LIQUID IN THE WRONG PLACE!!!!!

Voyager has FOUR fuel tanks and only two are in use. The two in use have filler caps amidships that are painted GREEN and labeled.

Even though Voyager is only using two of her four tanks she still has significant range. The capacity of the two tanks in use is 600 gallons (i.e. there are two 300-gallon tanks). The two fueling caps on the aft deck are for the tanks that are not in use. Please do not fill or try to use the aft two tanks. *The fuel filler caps say diesel on the cap and fitting.* They are right next to the filler caps to the two water tanks so pay attention! The overflows for the two tanks are forward of the fill caps. On the side away from the dock you can use a "absorb" on a dock pole to cover the overflow during filling.

To fill the tanks, open the filler caps located on either the port or starboard walkway with a deck fitting key. The key can be found in the tray to the port of the salon TV. A couple of styles are available – any available key should work. You are encouraged to only open one at a time. *Diesel has an odor that lasts for a while on your hands so disposable gloves are encouraged.* (Disposable gloves are available under the lower helm seat.)

MAKE SURE YOU HAVE THE RIGHT FUEL! DIESEL! DIESEL! DIESEL! MAKE SURE IT IS GOING INTO THE RIGHT DECK FILL!

DOUBLE-CHECK!

Before pumping, have oil/fuel absorbs handy to soak up spilled fuel. You should have a rough idea of the number of gallons you will need based on a rough estimate of time spent traveling. Have someone read out the pump display as you are filling to keep track of when to listen more closely to fill noises.

Note: One suggestion is to station one crew in the engine room looking at the sight gauges connected by phone to a second person (and second phone) running the fuel fill hose. With this model stop when the fuel gets to the top of the clear tubing.

Place the DIESEL nozzle into the tank opening, pump slowly and evenly, and note the sound of the fuel flow. If you put an absorb over the nozzle as you fill; do not block air flow. Pumping too fast may not allow enough time for air to escape, which may result in spouting from the tank opening. As the tank fills, the sound will rise in pitch or gurgle. Pay attention to the TANK OVERFLOW VENT on the outside of the hull near the tank opening. Understand where the overflow is because spillage may result in a nasty fine from law enforcement. *You are strongly encouraged to have a crew member holding an absorb below the vent. (Do not cover it as that prevents air from escaping and forces fuel onto the deck.*) The sound changes to indicate that the tank is nearly full. Top off carefully and be prepared to catch spilled fuel.

Replace each tank cap. Turn on blower before starting engines. Caution -- Clean up splatter and spillage immediately for environmental and health reasons. Thoroughly wash hands with soap and water.

2 BOAT ELECTRICAL

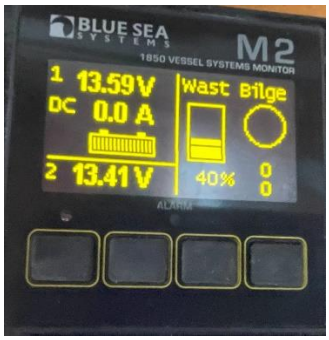
The electrical system is divided into two distribution systems: 120-volt AC and 12-volt DC. Both systems are housed behind the door in the forward port corner of the salon. For the most part the 120-volt AC systems are the upper part of the panel and the 12-volt systems are the lower three rows of breakers. The 12-volt battery switches are not located behind the door but instead are above the lower helm (below the Garmin autopilot display.)

The above picture is the breaker distribution panel behind the door in the forward, port corner of the salon. The top set of controls are for 120-volt along with the first row of breakers. **The red breakers should not be touched.** The breakers to the port of the red breakers control systems that are not on the inverter. The ones to starboard are supported by the inverter.

The bottom three rows of breakers are for 12-volt systems. The top row is generally lights on the boat. The middle row generally has all the breakers that need to be turned on and off when you are or are not underway; things like radios and chartplotters. The bottom row is miscellaneous systems. For the most part, the only breakers you will change during the trip are in the middle row.

When not connected to shore power or running the generator, batteries are providing all power. Therefore, monitor the use of onboard electricity carefully with the vessel system monitor above the lower helm station. It has voltage readings for both battery banks. You should always turn off electrical devices and lights when they are not needed.

The voltage readings for the house, start and thruster battery banks are available from OLED displays above the forward stairs and to the starboard of the lower helm, see pictures:



The M2 Vessel System Monitor also shows battery voltages but currently its primary function is to provide waste tank and main engine room bilge pump monitoring. You should focus on the OLED monitors for battery voltages. The ammeters shown above can be used to monitor the output of the battery charger. I use them as a key for when to turn off the generator. (Normally I want to see the house ammeter near or under 20 amps as a trigger to shut off the generator.)

2.1 120-Volt AC System

SHORE POWER (or generator) supports all AC equipment and receptacles on board, as well as the battery charger and hot water tank. (The hot water tank is also heated by the main engines, 120 volts and the boiler.)

2.1.1 *Power Consumption Management*

Voyager's 120-volt system is a 30-amp system and may not support doing everything you want at any instant in time. This means that you may need to sequence particular needs over time. For example, starting the generator just before dinner and running the microwave, hot water tank and high demand battery charging may exceed the 30-amp limits. The current voltage and consumption can be monitored with the meter in the upper right corner of the breaker panel. It can monitor current voltage and amps currently being consumed. It also shows AC frequency. Use the black buttons to move between display values.

2.1.2 *Getting Connected to Shore Power*

Note: The boat side of the power cord can be plugged into a socket on either side of the salon. The connector is covered by a chrome cover just above the deck. When you switch outlets make sure to screw on the cover on the unused socket.

The rules for connecting shore power are:

1. Plug the 30-amp power cord into the boat (it is usually kept connected to the boat).
   a Voyager has two shore power input receptacles, one on each side of the salon. The one in use must be explicitly selected using the "Input Receptacle Selector" in the breaker panel at forward port corner of the salon.

b NOTE: Each *Input Receptacle* has its own 30-amp circuit breaker in the engine room. If Voyager's usage is more than 30-amps then they may fault and need to be reset. The port breaker is mounted on the port side behind the engine room entrance and the isolation transformer. The starboard breaker is above the thruster batteries on forward bulkhead.

2. Turn off the ship's 120-volt power.
3. Turn off the dock's breaker.
4. Connect the cord to the dock. Make sure that the cord is wrapped around some post on the boat to protect the boat connection. Check the power rating/plug size of the nearest dock receptacle (that is 50-amp, 30-amp, 20-amp, or 15-amp). If necessary, add a CORD ADAPTER. The cord adapters are in the port deck box in front of forward salon windows – by the hatch.
5. Turn on the dock's breaker.
6. Turn on the ship's shore power switch.

The specific details are listed below but this order guarantee's that no damage is done in the process ☺.

At the ELECTRICAL PANEL, turn the big dial switch at the top of the panel to "Shore". The "Power Available" LED should be green before doing so.

If you use the generator then its circuit breaker is above the batteries on the aft bulkhead. Sitting on the batteries is common and can result in the generator's brokers' tripping the breaker.

On the breaker panel in the salon the top row of circuit breakers is 120-volt. At the start of the trip turn on the appropriate breakers including, refrigerators, inverter, battery charger and outlets. Most of the time the normal breakers are left on so no special action is required. Be thoughtful about the load you put on the system. If the load exceeds 30 amps, you will pop your breakers. If this occurs, wait to turn on one of your systems (i.e. water heater) until your amperage use drops. Normally the battery charger, water heater and outlet breakers are left on as they can all be sustained with 30-amps. Only if you use multiple high load devices into the outlets (i.e. toaster, coffee maker and microwave) should a problem develop.

If you want to check the current amp consumption you can use the meter in the salon breaker panel – top port corner. To do so press the arrow key until you see the amperage reading.

<u>To make sure the shore power is properly turned on verify that the battery charger is running.</u> This can be done by looking at the remote-control unit for the charger. It is the blue display above the salon VHF radio.

If there are no ‘amps” displayed, then check the circuit breakers for “12v Charger”. See picture below:

NOTE: The microwave and outlets will have no power if the inverter is turned off. See below to turn it on. The outlets that are GFCI have a small green light in one corner when they are providing power (not blown). If they are blown, it typically takes a pencil erasure to push the reset button in far enough to reset them.

2.1.3 Inverter Power

The vessel is equipped with a 3000-watt inverter. It will provide 120-volt power to Voyager’ outlets when no other 120-volt source is available. It does this automatically using a transfer switch. For the transfer switch to function properly all outlets are connected through the inverter. If you turn off the inverter, then the outlets on board will have no power because the transfer switch will be disabled.

Warning: The inverter always runs off “House” battery. Pay attention to the house battery status when making use of the inverter’s capabilities.

Warning: The inverter will power the 120-volt lights if they are turned on. This is not recommended as it is less efficient than using 12-volt lights.

Warning: The inverter can cause significant battery drain, if improperly used. Do not try to use it to run the appliances for any amount of time when at anchor. It is appropriate to power the appliances when the engine is running as the engines will maintain the charge on the batteries and it saves running the generator while underway.

Warning: Computer chargers and other electronic chargers will draw battery power whenever plugged in – independent of whether the device is attached. The inverter is there to charge electronics but the chargers should be unplugged when the device is fully charged.

The inverter itself is mounted on the aft bulkhead behind the generator and port engine. There are four switches that control the inverter. *You should not need to alter any of them and only change them if directed to do so by an AYC service person.* They are:

1. Source switch is a 12-volt switch under the generator that controls the input voltage to the inverter. It should always be in the “ON” position.
2. Unit Power switch is a push button switch on the remote of the inverter. The remote is built into the panel on the port side of the engine above the forward part of the engine. It can power the unit on and off. Next to the unit power switch is a display that reads the source voltage the inverter is seeing when powered on. Occasionally, if the inverter is overloaded, the inverter will crash and need to be restarted. Typically you only need to press the power switch on the inverter. If that does not work then: turn off the source switch mentioned above and then press the unit power switch, if needed.

3. Inverter Circuit Breaker in the main electrical panel is the 120-volt input to the inverter's transfer switch. Turning this off when running the generator or connected to shore power will force the inverter to power the outlets. Avoid doing this since it is hard on the batteries and the battery charger as you will be immediately charging the batteries to replace the power used in the outlets.

Information on these switches is provided only for your education. Do not try to change any of them without getting advice from the AYC service staff.

2.1.4 Generator

To start your GENERATOR, first check that your generator's fluids are topped off and the raw water intake is open. Checks on the generator are only required once a week. The intake value is behind the starboard engine by the corner of the tank. The generator controls are located port side of the forward end of the main salon. This is the auxiliary control panel that provides convenient access to start the generator. (Please note the total hours reading on this panel is not correct. The correct reading is on the main panel on the aft bulkhead in the engine room.) The generator console looks as follows:

Use the following steps to start the generator:

1. Make sure the "GENSET" battery switch is on. It is located above the lower helm.
2. Press and Hold the preheat switch – the upper part of port switch – on for no more than 10-15 seconds (5 to 8 seconds in the summer). The lights on the gauges should turn red or Step 1 was incorrectly performed.
3. While holding down the preheat switch push the start switch. The start switch is the upper part of the starboard switch. The "start" switch has a light in the button.
4. When the engine starts immediately release the "start" switch. Hold the "preheat" switch for another 5-10 seconds. Note: Do not excessively crank the generator. If you do this then stop trying to start the generator for at least 30 minutes.
5. Check to make sure you see or hear water coming out the exhaust. The exhaust is aft on the starboard side.
6. After 5 - 10 minutes of no load you can add load to the generator by turning the 120-volt selector switch shown below to "generator".

Use the following steps to stop the generator:

1. Take off the load by turning the main AC distribution switch to “OFF”.
2. Run the generator for 5 minutes after removing load to let it cool down.
3. Kill the generator by pressing stop switch down until the generator stops.

2.2 House (12-volt) System

Voyager has six large 6-volt “golf cart” batteries to support 12-volt DC power. The six batteries are paired into three 12-volt sets and those sets are connected in parallel to make the House bank of batteries. The arrangement creates a large house bank for the 12-volt system. However, it can be run down and will make your vacation less pleasant if you do not pay proper attention to its charge levels throughout your vacation. (**Note:** The farther you run it down the longer the recharge time will be. ☺)

The house battery is turned on and off with a remote battery switch that is located above the lower helm station under the Garmin autopilot display. The following picture shows the switches with the House and other battery switches on.

You turn a switch on/off by sliding the black cover and pressing the red button underneath. You should hear a pop when it turns on or off. *DO NOT touch any of the battery switches in the engine room without contacting AYC Service.*

WARNING: Bilge and shower sump pumps are connected to the house battery system and will be off if you turn the house bank off. ***Always leave the house bank on*.**

Primarily, you will be turning on the breakers for your lights (most light breakers are just left on), water pressure, electronics, etc. The breaker panel has several extra breakers present in the panel that are marked “Spare” to avoid any confusion. You are encouraged to turn off the electronics when not in use, particularly when the boat is at anchor. Don’t turn the battery switches.

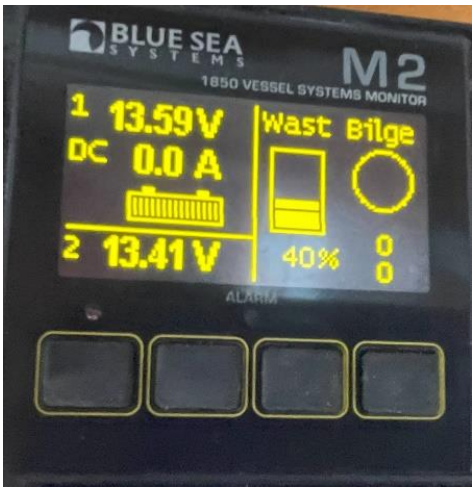
NOTE: PLEASE turn off the water pressure breaker when you have completed your trip or are off the boat or more than 6 hours.

2.3 Tracking Battery and Tank Status

The HOUSE BATTERY BANK provides power for all DC systems, except the thruster, engines, generator and anchor winch. When disconnected from shore power (or when the generator is not running), all 12-volt load (usage) drains the house battery bank. Use devices as needed.

Voltages for the house, start and thruster battery banks are available above the forward stairs and to the starboard of the lower helm, see pictures:

Several of the circular displays to the starboard of the lower helm were decommissioned as part of the engine repower in 2022-2023. They have been replaced by the M2 ammeter to the starboard of the lower helm. Using the switch and the ammeter the amps out of each alternator and into the thruster battery are available. The gauges above the stairs shows the amps out of the charger into each of the house and start banks.



There is a Blue Sea Systems vessel system monitor about the lower helm next to the autopilot head. Its primary function is to provide monitoring of the waste tank and the main engine room bilge pump. Press a button to activate the screen and give it a minute to show the waste tank percentage. Currently, if you see a waste tank percentage of "zero" assume it is invalid. This can happen when the tank has too much surface paper in the tank.

NOTE: The waste tank percent full readings is an approximation. The system is configured to assume the tank is rectangular and it is not. It holds more at the top of the tank than the bottom and so the tank will go through the lower percentages more rapidly than the higher ones. The tank is about 120 gallons.

When a battery bank is being charged, the voltage will read from above 13-volts depending upon state-of charge of the battery bank and whether the charger is trying to condition the batteries. When the battery bank is at rest, (that is, not being charged), the voltmeter can give a rough indication of the state-of-charge of the battery bank.

The three battery banks are charged by the engine alternators while underway. The port engine charges the house bank with a 120 Amp alternator and the starboard engine charges the start and thruster bank with a 120 Amp alternator. The thruster is only charged when the start battery is fully charged. Independent of the battery switch settings all battery banks are charged by the battery charger. The battery charger is 60 amps so <u>if the house bank is badly drained it will take several hours for it to properly recharge</u>**.** ☹ If at anchor start your nightly charge around dinner time or earlier (depending on when you want to go to bed or don't want to hear the generator 😋.).

The engine/house batteries are charged by the BATTERY CHARGER when connected to shore power or the generator. Ensure the Battery Charger circuit breaker at the electrical panel is always ON. The difference in battery technology means that the battery state is slightly different between the house and start banks.

The house bank has more capacity and (counterintuitively) will read a lower voltage when fully charged.

Voltage (AGM Battery)	Battery State
~12.6 volts	100%
~12.4 volts	75%
~12.2 volts	50%
~11.95 volts	25%
Avoid anything lower	

The battery charger has a remote display above the salon VHF radio. The display will show the amps being put out to ALL batteries as it charges. See below (it is charging 2.8 amps):

The charger is a 60-amp charger so the maximum output will be about 60 amps. It will get to single digits when all batteries are getting close to full charge – assuming minimal 12-volt load. Running the generator until it gets under about 15 amps is a decent model. The OLED's by the monitory displayed abovue

When off shore power I would recommend running the generator at least once if not twice a day. We typically do it morning and night. Given the size of the house battery a short cruise may not be enough time to recharge the house battery, if it were significantly drained, so pay attention to the voltage readings. The vessel system monitor does monitor and alarm for low voltages so there is some protection should you get forgetful. The thruster battery voltage represented in a small dial to the right of the lower of the salon helm.

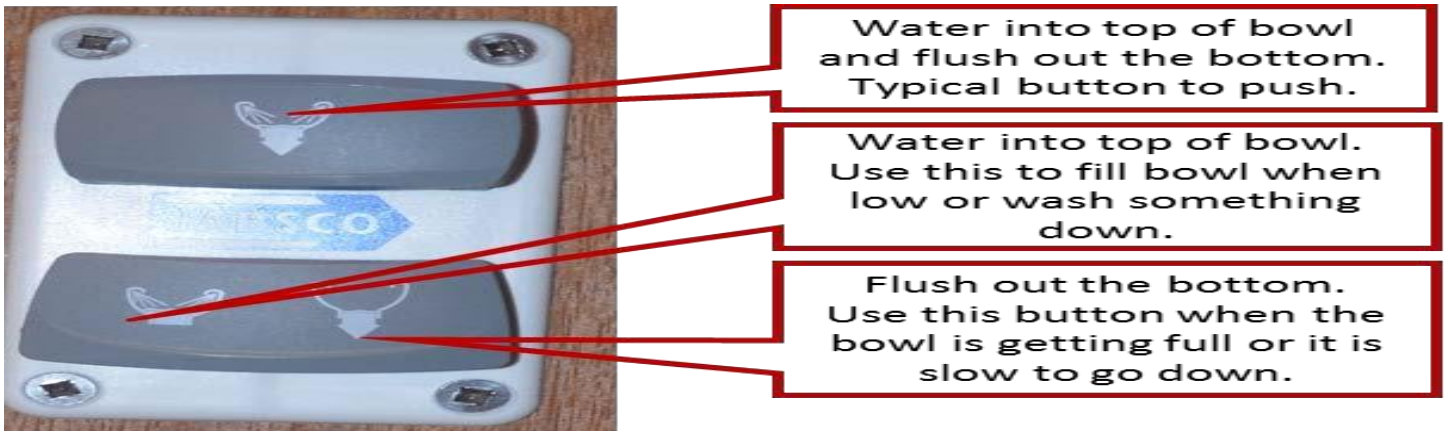
3 SANITATION SYSTEM

3.1 Marine Toilet

It is important that every member of the crew be informed on the proper use of the MARINE TOILET. The valves, openings, and pumps are small and may clog easily. If the toilet clogs, it is YOUR RESONSIBILITY!

Always pump the head for children, so you can make sure nothing foreign is being flushed.

The toilets each have three switches that control their operation. See the picture below (callouts indicate when to use each button):



Since the waste tank is large it is recommended that you pump every time something is placed in the toilet. *It is easier to pump the holding tank a little more often than it is clear a plugged toilet.*

Caution: **Never** put paper towels, tampons, Kleenex, sanitary napkins, household toilet paper, or food into the marine toilet. Use only the special dissolving marine toilet tissue provided by AYC or similar toilet paper purchased at a marine supply store.

3.2 Holding Tank

The sanitation HOLDING TANK's capacity is approximately 120 gallons. Be aware of the rate of waste production. With an overfilled tank, it is possible to break a hose, clog a vent, or burst the tank. The result will be indescribable catastrophe and an EXPENSIVE FIX for you. With a 120-gallon tank, you should be able to go a few days without pumping but you must make sure it gets emptied on a regular basis and before getting full. Empty the tank EVERY FEW DAYS to avoid this problem. *The approximate status of the holding tank can be seen on the vessel system monitor that is above the lower helm in the salon. Do not expect the monitor to be exact, it isn't.* Use this to track the status of the tank.

The HOLDING TANK is located under the floorboards between the engines. If you don't trust the monitor you can thump the end of the tank.

The holding tank is emptied in one of two ways:

#1: At the Marine Pump-Out Station, remove the WASTE CAP located on the forward deck on the starboard side under the end of the paddleboard. Double-check your deck fitting – it should have "WASTE" stamped on it – see below!

Cover the waste opening with the pump-out nozzle taking care to make sure you have a good seal. Turn on pump and open valve located on handle. When pumping is finished, close lever on handle and turn off pump. Replace the deck cap.

If there is a fresh water hose on the dock, rinse the tank by adding some water into tank. Then repump to leave the tank rinsed for the next charter. This also eliminates head odors. Typically, you should also pump a little seawater through the pump out hose to clear it.

#2: The tank's contents can be discharged with the electric "poop pump" but only in Canadian waters.

To pump the waste tank using the poop pump do the following:

1. Turn on the "Poop Pump" breaker in the electrical panel (behind the door, port side of the salon – a middle switch in the bottom row.
2. Open the thru hull fitting in the bottom of the forward stateroom closet. (It is typically left open as trying to pump when it is closed damages the pump. **PLEASE DO NOT CLOSE IT!!**) **The thru hull valve must be open to pump waste out!**
3. With the Voyager stopped or at idle push the "Pump Waste Now" switch to the starboard side. The switch is located just aft of the pipe by the lower helm station – just below the VHF radio (it faces down).

4. There are two ways to decide when you have completed pumping. You can look at the “Waste” tank reading on the vessel system monitor above the lower helm or you can watch the discharge thru hull. To watch the discharge, have a second person look over the starboard side just forward of the forward head.
5. You can stop pumping when the tank reading gets below 20% or there is no fluid being pushed out the discharge. You may notice the reading not change quickly or jump, that is normal. As the tank is 120 gallons it can take some time to pump out.

3.3 Y-Valve

A Y-VALVE directs waste effluent into the sanitation-holding tank or flushes the effluent ‘directly overboard’. **Voyager has no Y-Valve.**

4 WATER SYSTEM

4.1 Fresh Water Tank(s)

The FRESH WATER TANK holds 500 gallons. The tanks are located on either side of the main engines. Waste water from the sinks and showers drains overboard through various thru-hulls usually located under the sinks.

The aft shower sump pump is under the hatch forward of the master bed. The forward shower sump pump is under the hatch at the foot of the forward stairs.

To refill the tank, remove the blue WATER CAP(S) located on the side decks. The deck fitting has "WATER" stamped in it and is **blue** – though hard to see. There is a labeled fill on both port and starboard side decks. Both tanks must be filled.

Avoid flushing debris from the deck into the tank opening. DO NOT fill water and diesel at the same time!

4.2 Fresh Water Pressure Pump

The WATER PRESSURE PUMP is located aft of the starboard engine on a shelf in the engine room. Activate pump at the DC panel by turning on the breaker – bottom row port side. If the water pump continues to run, you are either out of water or might have an air lock and need to bleed the system by opening a faucet.

There is a sight gauge on the aft end of each tank. Open the values at the top and bottom ends then check where the top of the water in the clear tub ends. *Make sure to close the values again!* The values must always be kept closed.

If you run out of water SHUT OFF YOUR HOT WATER HEATER on the AC panel. ***Serious damage can occur if it is left to run with no water!!!!***

4.3 Hot Water Tank

The HOT WATER HEATER has a 20-gallon capacity tank and hot water is available when connected to shore power, while running the generator, through the heating system, or via a heat exchanger while underway. To use on shore power, flip on the "Hot Water" circuit breaker (upper part of the panel on the port side) on the AC electrical panel. **Do not use the water heater if the water tank level is very low.** The water heater is located engine room aft of the starboard engine.

The furnace can also be used to warm the water in the hot water tank. Turn the furnace on and pull the silver switch near the furnace control panel.

4.4 Shower

Both heads have separate showers to make it convenient for all passengers. Before taking a shower, make sure fresh water system is on. The shower sump pump is wired directly to House battery bank. Take only very short "boat" showers (turning off water between soaping up and rinsing) to maintain your water supply if you don't expect to be able to refill your tanks soon. There is a push button in the handles of the shower head to make this easy. **Be aware the hot water is very hot so make sure you don't burn yourself!**

NOTE: Be aware that you step down into the aft shower from the floor by the sink.

NOTE: Ensure that the faucets and nozzle are completely off after use.

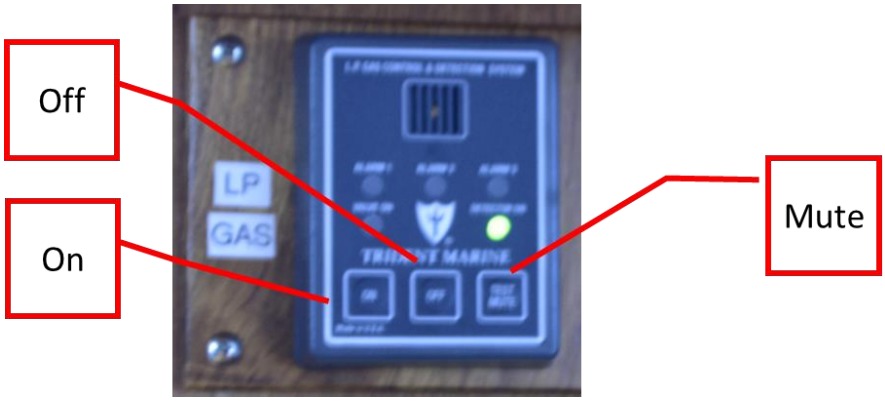
The aft shower may accumulate water in its base if the boat has a slight heal. This can be left as the normal motion of the boat will eventually drain the shower.

5 GALLEY

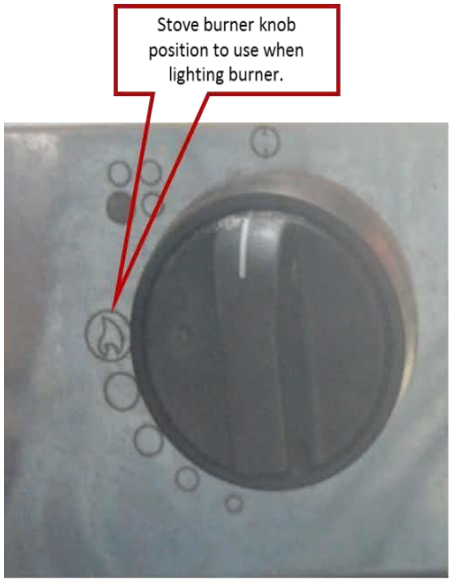
5.1 Stove

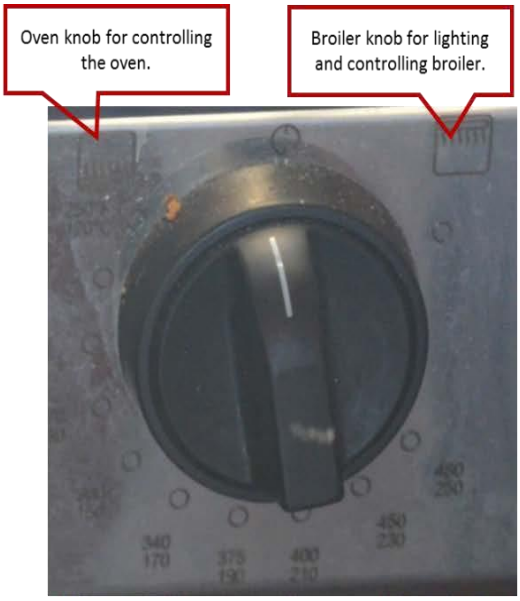
The stove burns propane to provide heat. Voyager's propane stove is activated by the following steps:

1. Turn on the propane tank located in the box on the flybridge, port side. It is recommended you use only use one tank at a time. The white selector valve determines which tank is in use. You will normally find it on.
2. Turn on the solenoid switch labeled "LP GAS" located forward of the stove. For this switch to work the "Galley Blower" switch must be on in the panel behind the door forward, port side of the salon. It is normally on. *Please turn the "LP GAS" switch off when done with the stove.*



3. To light a burner, press in and turn the knob for the desired burner to the first position then press "lightning button". The first position looks like a flame. Press the "lightning button" in short bursts until the burner ignites. Hold the knob in for 10 seconds after it ignites to give the thermocouple time to heat up. If you don't hold the knob in long enough the thermocouple will turn off the gas to since it will assume the flame has gone out.



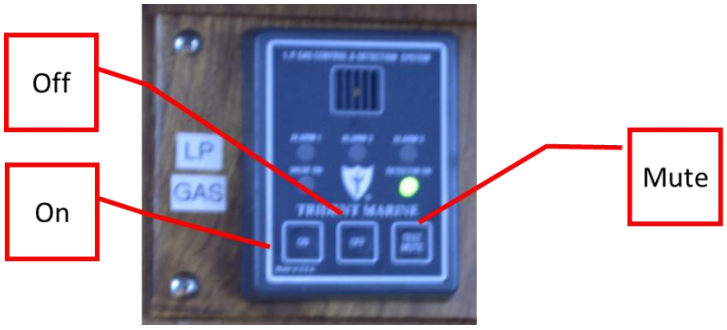


When finished, cooking turn off the "LP GAS" switch. Close the bottle on the flybridge at the end of the trip.

5.2 Oven

The oven burns propane. Your propane oven is activated by the following steps:

1. Turn on the propane tank located in the box on the flybridge, port side. It is recommended you use only use one tank at a time. The white selector valve determines which tank is in use.
2. Turn on the solenoid switch labeled "LP GAS" located forward of the stove. For this switch to work the "Galley Blower" switch must be on in the panel behind the door forward, port side of the salon. (NOTE: At this time the light does not work.)



3. To light the oven, open the oven door and bend down so you can see the bottom burner. The door opens by lifting the handle. The door will disappear under the oven cavity.
4. Turn on the gas at the stove (Press in and turn the knob left to the first position) and press "lightning button". The first position looks like a box with flames from the bottom – see picture above. Press the "lightning button" in short bursts until the burner ignites. Hold the knob in for 10 seconds after it ignites to give the thermocouple time to heat up. If you don't hold the knob in long enough the thermocouple will turn off the gas to since it will assume the flame has gone out. After 10 seconds turn the knob to the setting you desire.
5. To light the broiler, follow the previous step but turn the knob to the right – box with the flames on top.

When finished, cooking turn off the "LP GAS" switch. Close the bottle on the flybridge at the end of the trip.

5.3 Refrigerator(s)

Voyager has two refrigerators. One in the galley and one under the salon seat just forward of the galley refrigerator. Open it by moving the seat cushions, opening the cabinet door and then taking the refrigerator top off. Be sure to completely reseal the lid and make sure there isn't anything stuck in the cabinet door that will hurt it when it closes.

The refrigerators can use either both 12-volt and 120-volt power. It automatically switches between each as their availability changes. The refrigerators prefer to run on 120-volt. Monitor the power use of the refrigerators when you are using the 12-volt battery system as the energy supply. When shore power is not available you should be checking battery health on a periodic basis and charging batteries with the generator as needed.

Turn the refrigerators on as follows:

1. Turn on the circuit breaker labeled "Galley Fridge" main circuit panel (behind the door port side forward in the salon). It is in the bottom row near the center. (12-volt)
2. Turn on the "Both Fridges" circuit breaker. It is in the top row near the center of the same panel. (120-volt) You must have both 12 and 120 volt breakers on when running the galley refrigerator as there are 12 volt fans to provide it extra ventilation.
3. Turn on the refrigerator under the seat (12 volt supply) by turning on the "Salon Fridge" breaker behind the door port side forward in the salon.

There is a small removable thermostat provided to track the temperature of the refrigerator. On hot summer days you may need to adjust it up. Please return it to the original setting at the end of your trip. Minimizing how much it is open will help keep it cool.

6 HEATING SYSTEM

6.1 Diesel Heater (DC)

The main control for the DIESEL HOT WATER BOILER is located on the aft bulkhead, aft stateroom on the starboard side above the nightstand. There is a thermostat and a control panel there. The thermostat is on the left in the picture below.

The boiler provides heat in the same way as a household furnace.

The first step turning on the boiler is to turn on the circulation pump breakers. Turn on both breakers that are labelled “Hurricane” in the main electrical panel. The breakers are behind the door in port side forward area of the salon. Next use the thermostat (ivory box in the picture above) to set the desired temperature. This done by sliding the lever on the bottom all the way to the right as you face the thermostat.

The Hurricane boiler has two options for providing heat. One is to use a 1300-watt electrical element and the second is to use the diesel. To use diesel, turn the switch labeled “Burner” on. To use the electrical option, turn the switch labeled “Electric” on. It is ok to have both on. If you use diesel, then within a few seconds you should hear the boiler going through its startup cycle. There is a light next to the switches to indicate which is on. It takes about 10 minutes before the fans will run in the radiators spread around the boat and make heat will flow.

After the boiler ignites and runs for a few minutes set the thermostat to the desired temperature. There are thermostats in all the staterooms that need to be set to the desired temperature.

WARNING: Before turning on the boiler check the Exhaust Port for obstructions like a fender or line. The furnace EXHAUST PORT is located on the transom starboard side. Do not block this opening when operating the boiler. Heat will damage fiberglass.

The boiler is turned off by putting all thermostats at their low setting and then turning the switches on the black control panel to “OFF”.

Note: After turning the unit off it will still run for a few minutes as it cools down. This is normal.

7 ELECTRONICS

All electronic manuals are in the bookshelf above the main salon settee or in the blue briefcase located behind the mirror of the makeup table in the aft stateroom, port side. The door opens by pulling the mirrored door out by the bottom.

7.1 VHF Radio

There are two VHF RADIOS each powered by separate circuit breakers in the main electrical panel. The main electrical panel is forward on the port side of the salon behind a door. The two breakers are labeled “Flybridge VHF” and “Salon VHF”, respectively.

The salon VHF radio is above the stairs to the forward staterooms. It is turned on by pushing the volume button. This radio is not connected to the GPS or registered for distress.

The fly bridge VHF radio is built into the fly bridge panel to the starboard of the fly bridge helm. It is turned on by pushing and holding the 16/9 button. This radio is connected to the GPS and will transmit GPS coordinates when the distress button is pressed. **It is appropriately registered.**

There are two handheld VHF radios that has built in GPS. It is located on the fly bridge holder, port side – see picture below. (The charger is in bottom drawer of the starboard nightstand in the aft stateroom.) To issue a distress call with location information open the plastic cover on the right side of the radio and press the button underneath.

The fly bridge VHF may occasionally emit a high-pitched beep. This is cleared by pressing the clear button.

Always monitor channel 16 while underway with the squelch and volume appropriately set.

7.2 Personal Locator Beacon and EPRB

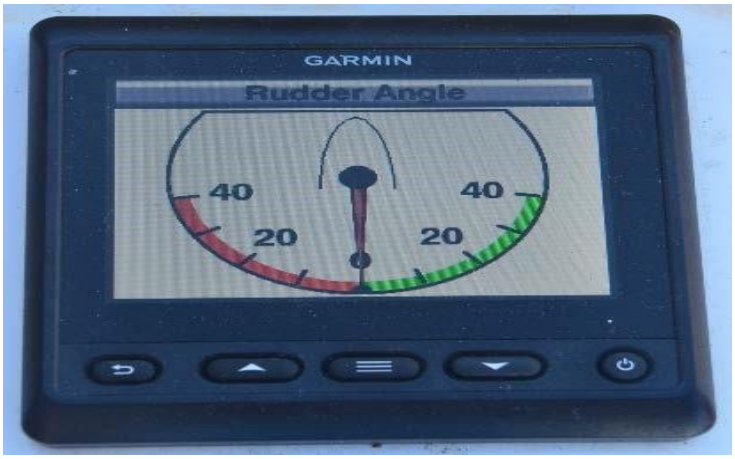
The upper helm station has a personal locator beacon to be used in the case of an emergency. Extend the antenna wrapped around the device and then press the power button. This will send a registered distress signal to authorities. Do not used this device unless there is a dire need.

The above picture shows the handheld VHF radio with GPS and personal locator beacon, respectively.

There is also an EPRB located on the fly bridge just to starboard as you come up the stairs. It is also properly registered.

7.3 Global Positioning System (GPS)

Voyager has two fixed mount Garmin GPS/Chart plotters (1242 xsv) with one on the fly bridge and a second one at the lower helm station. These two systems are connected and connected to the autopilot, rudder indicator radar, and depth sounder. This system is turned on by the "Main GPS" circuit breaker at the main electrical panel behind the door forward, port side of the salon. The breaker is on second row from the bottom starboard side. The main autopilot system also has a separate circuit breaker that is always left on in engine room. It is on the forward bulkhead ahead of the starboard engine. Below is a picture of the fly bridge GPSMap 7212 and the autopilot rudder indicator.



There is an independent third Garmin chart plotter and depth sounder (GPSmap 1040xs) located on the starboard side of the fly bridge as a backup system. This system is turned on by the "Small GPS" circuit breaker at the main electrical panel behind the door forward, port side of the salon. The breaker is on the second row from the bottom starboard side.

At the lower helm there is a second 1242 xsv and a 741xs. The primary purpose of the 741 is to provide sonar data to the 1242s. The 741 is a touch system and has access to the radar and autopilot systems. The 1242s can share user configurations data like routes but this data is not shared with the 741. Do not try to operate Voyager without the 741 turned on – it will come on by default, if left alone.

The 1242 and 1040 chart plotters are button-based with an intuitive menu system – though slightly different. There are YouTube videos that can help you understand the menu system. One hint on using the auto navigation features of the chart plotters: on the 1242 press the "Nav button" and scroll down to services. On the 1040 press home and select the "Nav item" to get to a similar place.

Note -- GPS is considered a navigation aid. Do not rely on it. Compasses, charts, and dividers are the tools to plot position, course, and speed.

7.4 Depth Sounder

The depth readings are provided to all the chart plotters. Voyager has two transducers with the two 1242 and 741 using one and the 1040 using the second. At extreme depths they can return errand numbers. Cross check your charts, chart plotter and depth readings. If your reading is blinking, it is a FALSE reading. False readings can occur in depths of more than 350 feet or in areas of strong currents or tides.

7.5 AIS

AIS is a vessel identification system operated on behalf of the maritime industry. Not all boats have the necessary electronics but it can still be useful. For example, it will enable the ferries to identify Voyager and contact you on the radio if they feel it is necessary. The GPS will alarm if it determines a collision is imminent. You can temporarily turn this off if you like to avoid the alarms. The GPSs are able to provide speed and course information using the AIS data if you select the icon and ask for it.

7.6 Radar

Garmin radar is available on the 1242s and 741- chart plotters. Select a display that uses the radar – direct or overlay and then press menu and "radar to transmit".

7.7 Autopilot (GPS)

Both helm stations have an Autopilot control display. On the fly bridge the display is to the right of the helm. At the lower helm the control head is above the helm.

See picture below on the autopilot control head:

It can be used to maintain your course, but someone must always be at the helm looking for debris and other boat traffic!

To get the autopilot to steer the boat steer the course you desire and press "Engage". To stop having the autopilot steer the boat press the red "STBY" button.

Note: The autopilot can't avoid logs and other things in the water. **YOU MUST WATCH FOR THEM!!!!!!!!!!!!!!** If you need to avoid something, press "STBY" and turn the wheel. When back on course press "Engage" again. The top of the autopilot's display will always show whether you or the autopilot are steering the boat.

Note: If you experience strange behavior with the GPS/Chart plotter then restart the system by turning off the "Main GPS" breaker.

WARNING 1: If you try and change course to starboard with Autopilot in standby then you will invert its perception of the course it should take when engaged. In this mode when engaged next it will do a 180 from the last course! To disengage this feature go back to standby and press the right button (a dot should appear in the upper corner of the display).

WARNING 2: Use care when allowing the autopilot to execute a planned course – versus using it in heading hold mode. The placement of the compass module for the autopilot is complicated to guarantee correct compass readings. It requires placement away from metal, being amidships and at the waterline or the compass readings are not completely accurate. Voyager's cabin layout and bow thruster make this problematic which has results in a suboptimal placement (with the some downstream impacts).

7.8 ENTERTAINMENT SYSTEMS

7.8.1 *AM/FM Stereo Radio - Salon*

The Fusion brand stereo unit is located above forward stairway slightly to port. It operates like a normal car radio – but does not accept CDs. There are 2 speakers (stereo) in the salon, two in the aft stateroom and two on the flybridge. It integrates with IPODs through either an internal docking port, Bluetooth, or an audio plug. The following pictures should help clarify:

The top picture is the stereo when closed. The bottom left is with the door open and tray pulled out, note sliding release on top of the front panel. The bottom right picture is looking in at the tray with an IPOD in the tray. To connect find the right connector and plug into the USB of the tray and the device. Various connector types are in the tray to the port of the salon TV.

Turning On:

The power button is in the lower left corner. Press and hold the button to turn off the stereo.

Volume:

The big knob controls the volume. The stereo supports three zones but only two are in use now. The salon and aft stateroom are zone 1. Push the volume button to select zone volume control.

Radio:

Radio is selected by pressing the upper left of the center six buttons. It takes you to the radio and then you can select a channel with the knob.

Docking:

If you have a phone or music device, then you can connect to the dock and put it in the tray using a USB connection. The available cables are located port side, forward in the salon in a small tray.

Follow these instructions to access the tray:

1. Release the front cover by the slide button on the top of the stereo.
2. Pull the tray out.
3. Connect the device to the USB of the tray.
4. Position the device in the tray and carefully close the tray. Leave the tray open if it does not close.
5. Select the right input using the upper left button in the center of the stereo.

Note: The available cables are in the tray to the port of the TV.

AUX:

The audio in connection can also be used to connect your device to the stereo. The cable is in the small tray to the left of the salon TV and the plug is to the left of the stereo.

Bluetooth:

The Fusion stereo support Bluetooth connectivity. Select input "BT" by pressing the button in the upper left of the center six knobs. Then press the menu knob in the upper left corner and make it discoverable. Follow onscreen directions from there. *Your device must be discoverable for it to work.*

Turning Down Salon Stereo Speakers on Fly Bridge:

The salon stereo's fly bridge speakers can be turned down using the volume knob on that stereo. Press the volume knob until only zone 2 is selected and then turn the volume knob until the volume shows zero.

7.8.2 AM/FM Stereo Radio – Fly Bridge

There is a second stereo (the brand is Dual) on the fly bridge that only has speakers on the fly bridge.

Remote Control:

There is a remote control for the fly bridge stereo in a small bag under the chart plotter. Please keep it on the fly bridge and in the bag under the small chartplotter.

Bluetooth:

To connect a Bluetooth device to the fly bridge stereo, follow these steps:

1. Disconnect the previously connected device.
2. Turn “Mode” to Bluetooth.
3. Go to the pairing configuration screen on the target device. Find “Dual BT” on the device you want to connect.
4. Tap “Dual BT” on the device.
5. If a PIN is requested the PIN is “1234”.
6. Go to your music application and select what you want to play.

7.8.3 *TV/DVDs*

The two forward staterooms have wall mounted combo TV/DVD units. They are each 32” (diagonal) TVs. They are clipped to the wall to prevent movement when underway. They can be unclipped when in a harbor. **Please take care to not lose the remotes.** *They are kept on velcro’d to the back of the TVs.*

The master stateroom has a 32” (diagonal) TV with a separate Blu-ray player. The TV is again wall mounted and must be clipped back when underway. The remotes are kept on the makeup table on the Blu-ray player.

The main salon has a 42” (diagonal) TV with separate Blu-ray player. This TV is laid down when under way.

- To stand up disconnect the two straps and turn TV to stand on the counter (with feet down). Next, connect the two cables. Finally, make sure the strap on the back of the TV is connected to the strap on the wire tray between the center and port windows.
- To lay it down disconnect the power and HDMI cords and turn the TV face down on the felt covered blocks. **Make sure the two straps are connected and snug.** The feet of the TV hang over the edge of the shelf toward the chart drawer. The Blu-ray player can under the TV if there is nothing under or on top of it. Please keep the remotes by the small wooden tray to port of the TV.

Note: Please make sure to create enough clearance for the TV to not be scratched when turned face down.

8 ANCHORING

The primary WORKING ANCHOR is a claw and is attached to 400 feet of chain. The chain passes through the deck from the anchor locker. The locker can be accessed through the door in the bulkhead of the forward stateroom.

Note: Never use the anchor winch without the engines running.

The circuit breakers for the anchor winch are in the engine room above the forward end of the port side fuel tank. There is a breaker for the entire system and a reset breaker for the control circuitry. *These switches need not be touched!*

To enable the anchor winch, turn on the switch with the white label that says “Windlass”. The switch is located with the lower helm instrument switches. This turns on the control circuitry allowing the up/down switches on the fly bridge and the forward deck to work.

NOTE: If there is some emergency reason to cut power to the anchor winch there is a switch in the anchor locker on the port side.

The picture below shows the winch and the push button switches that controls it.

Steps to lower anchor:

1. Make sure the “Windlass” switch (right side) on the lower instrument panel is on.
2. Make sure all hands and clothes are away from the chain and winch while in use.
3. Release the chain stop by turning the lever on the side clockwise. Hook the small loop of over the chain stop lever to keep it open while lowering the anchor. **It will flip back and lock the anchor if this is not done. This will cause the chain to bunch up around the anchor winch and may damage something.**

4. Flip open the black cover on the starboard switch and press the button. Do not move the anchor any direction when anyone is close to the windlass or the chain as the risk of getting caught in either the chain or winch is very dangerous. Always use the winch motor to raise and lower the anchor.

5. Let out sufficient ANCHOR RODE (chain) before setting the anchor. Colored markers (chain inserts) are placed every 33 feet on the chain to indicate amount of rode. If the anchorage is crowded put down at least a 3 to 1 scope (63 feet for 14 feet of water and 7 feet to the water line for a total of 21 feet) for a day anchor and at least 5 to 1 for overnight, set the anchor with a short burst from the engine. Then let out additional scope dependent upon conditions.

6. SET THE CHAIN STOPPER.

The markings are chain inserts thru the chain with color coding as follows: (There is a label on the bottom of the small chart plotter on the fly bridge with this information for reference.)

33’ Yellow

67’ Red

100’ Green

133’ Green/Yellow

167’ Green/Red

200’ Blue

233’ Blue/Yellow

267’ Blue/Red

300’ Black

333’ Black/Yellow

367’ Black/Red

400’ Bitter End

DO NOT USE THE WINDLASS TO LOCK THE CHAIN. USE THE CHAIN STOPPER BY TURNING THE LEVER COUNTERCLOCKWISE.

Before raising the anchor, ALWAYS start the engines as it uses large amounts of power.

NOTE: Use the short green hose to wash the chain off as it comes up. Getting mud into the anchor locker makes the boat smell. The hose is turned on at the deck and on the nozzle. (It is fresh water.)

NOTE: Use short loop of rope to keep the chain stopper flipped open. It tends to flip back if not held down. If it does flip back be very careful with your fingers while clearing it..

Use the engines to move the boat over the anchor. Do not use the winch to pull the boat to the anchor. As the boat moves toward the anchor, press the “UP” button to take up slack line. **PLEASE USE THE HOSE BY THE ANCHOR TO WASH THE CHAIN COMPLETELY CLEAN OF ANY MUD OR SAND. It is much easier to clean mud off the deck than out of the anchor locker.** Do not be afraid to get mud on the deck as this is the best way to know the chain is clean. Give the windlass short rests as you are pulling it up. **Keep your hands, clothes and body parts away from the winch and chain.** As the anchor rises, be careful not to allow it to swing against the hull. Make sure the skipper moves the boat to make it so the anchor is always being pulled straight up.

A SPARE Danforth ANCHOR is kept on the forward deck. The SPARE ANCHOR RODE is 250 feet of rope and 50 feet of chain. The rope is in a hamper under the floor in the forward stateroom. The chain is starboard side aft seat locker. Attach the anchor securely using the shackles one the anchor. Please use care when moving the anchor to avoid damaging the deck or other teak.

Mounted on the aft end of the upper deck is a reel of yellow floating line to use when doing a stern tie. There is 600’ of floating line to use for this purpose.

9 MOORING CANS/BOUYS

Due to its size Voyager should not use mooring buoys. There is no state park sticker or the boat. Voyager can use the moorage ring line arrangements that are located at various parks (like at Echo Bay in Sucia).

10 BOARDING

Voyager has doors in the cap rails to make it easy to board her. The doors can be tight and so to open flip the lock bar away and then, if necessary, give the door a push from the inside. There is a single fiber step on the slip dock. You are encouraged to take that step and keep it by the transom.

NOTE: Depending on dock height it is possible for the doors to hit the dock or step. Please wrap the end of the fender line around the hook from the bottom to keep the door open and avoid damage to the boat.

11 BARBEQUE

The barbeque is located the starboard aft on the fly bridge deck. It can be accessed by the fold down deck above the passage to the fly bridge. **Make sure to not allow the folding deck to drop down unattended as it is heavy. Watch your head and fingers!**

To lower the folding deck, start up to the fly bridge and turn around when standing on the cabin roof. With your right hand on the top of the folding deck use your left hand to release the deadbolt. Gently lower the deck into place. Access to the fly bridge will still be possible but you need to duck a bit longer. **Make sure to flip down the sliding bolt when putting the ramp back up after you are done with it so that it stays in position!**

The cable part of the railing can be released by pulling on the ring of the latch.

There is a working board inside the barbeque. It hooks onto the front of the barbeque. Please put it back inside the barbeque after use (and cleaning) and when the barbeque is cool.

Turn on the propane bottle and light using the following directions:

1. Push the knob in and turn to high.
2. Push the red button to have the striker fire to ignite the propane.
3. Repeat until you feel heat coming up in the barbecue.
4. If the ignitor fails, then use propane BBQ lighter located in the drawer forward of the oven. When you are done turn the knob to the “locked” position.

Caution -- For safety reasons, do not store an opened propane bottle within the salon or engine compartment. Chances are these will leak slightly once opened and propane gas could settle into low spaces. Ensure gasoline and flammable materials are not near the barbecue. You are encouraged to store the bottles in the propane locker without putting them on hoses, fittings or values.

12 DINGHY, OUTBOARD MOTOR and KAYAKS

Voyager's 11' 6" foot RIB dinghy with a 20-horsepower outboard engine is stored on the fly bridge deck. A power winch and davit are provided to launch and retrieve the dinghy. The dinghy has a capacity of about 1500 pounds (motor, equipment, and people).

Follow these steps to deploy the dinghy:

1. Release the straps over the dinghy. Flip the handles up and push the two spring clips. The handle can come back and some slack will be released. Repeat until it is loose. Put the protector towels under the enclosure area or by the crab pot so they do not blow away.
2. Attach the winch clip to the ring at the center of the dinghy. Make sure the hoist line is not twisted and that all three points of the harness are connected and not entangled. This may involve lowering some winch line from the winch. Follow the directions below to lower and release line.
3. Make sure the dinghy does not have any water in it. Make sure that only the engine, battery, single gas tank, bilge pump and dinghy accessories are in the boat. Remove the drain plug to drain any water before launching. MAKE SURE THE PLUG IS PROPERLY INSTALLED BEFORE LAUNCHING. Never try to lift a dinghy full of water out of the water – the davit is not built for this. (If you launch the dinghy with the plug out then just climb into the boat and replace. Use the bilge pump to get the water out of the boat.
4. Take hold of the yellow winch control and stand away from the boat. The control has two buttons; one to raise and one to lower the winch line. Figure out which is which for yourself with a short press of each button. (Hint: The arrow points to or away from the winch.)
5. Raise the dinghy off the aft deck. When it is completely clear go to the next step.
6. Push the dinghy out over the water by pushing the stern out, bow aft and out to port.
7. Lower the dinghy by pressing the correct button on the yellow control.
8. If there is a free hand have them stand on the main deck to keep the dinghy with the bow aft and parallel the side of Voyager. NO ONE SHOULD BE UNDER THE DINGHY WHILE IT IS BEING LOWERED.
9. Put out enough line to allow someone to release the clip on the harness and gently put the hook and weight on the deck inside the railing. Make sure it does not bang.
10. Hang the control unit from the TEE handle on the end of the winch.

NOTE: The dinghy chocks that are left behind after the dinghy is lowered can be removed. NEVER REMOVE THEM AS THEY CAN EASILY BE LOST.

NOTE: There are two switches in the control circuitry of the davit. The circuit breaker is in the engine room above the port side fuel tank. The second switch is behind the radar post in the side wall of the fly bridge. Both should be left on all the time.

REALLY IMPORTANT: Make sure when you are done with the control unit you hang its wires down from the winch see picture below. Leaving it in a wires up orientation risks water getting into it causes it to fail.

Coast Guard regulations state that any child 14 and under must wear a life jacket in a dinghy. It is a good idea for EVERYONE to follow this rule.

Note: People are expected to sit on the tubes. Make sure they hold on!!!

Note: Sudden stops from high speed runs may get backwash into the boat.

Follow these steps to retrieve the dinghy:

1. Bring the dinghy along the port side with the bow facing aft.
2. At least partially raise the motor by using the "UP" button on the side of the tiller arm.
3. Attach the winch line to the ring at the center of the harness. Use the bow and stern lines to keep the boat in place.
4. No one should be in the dinghy when it is raised.
5. Use the yellow winch control to have the winch pull in the winch line. Have someone on the main deck to keep the dinghy generally parallel to Voyager's side.
6. When the dinghy is above flybridge deck stop raising it and pull the bow into the middle of Voyager. With the bow over the deck amidships pull the dinghy's stern into position (the two ends of the dinghy will be against their respective railings) and over the brackets on deck. Lower the dinghy with the yellow control while holding the dinghy is in place.
7. Release the winch line from the harness and connect back to the deck ring rope. This is attached to the railing and needs to be wrapped past the railing to keep the davit from swinging.
8. Use the two straps to strap down the dinghy. Put the strap through the slit in the center of the ratchets and pull snug. Put the saved white towels under the metal ratchets to protect the tube. Next work the ratchet lever to tighten. You need a couple of strap turns over the core of the ratchets to make sure the strap is held firm.
9. HANG THE CONTROL UNIT FROM THE "TEE" handle on the end of the winch.

Under the seat in the dinghy are the following supplies:

1. Dinghy bilge pump.
2. Air pump for the dinghy.
3. Dinghy patch kit.
4. Dinghy anchor.

The oars are attached to the inside part of the tubes. Please re-attach them when you are done using them to avoid having them get lost.

12.1 Getting Up and Down the Stern

When climbing up from the swim platform do not grab the opening part of the teak railing – you will break the hinge. Grab the top of the cap rail or the knotted rope attached to a rail post

!

12.2 Starting and Stopping the Motor

Never start the motor if it is out of the water. To lower the motor into the water, press the "DOWN" button on the side of the throttle arm. Lower it all the way.

Follow these steps so start the engine:

1. Make sure the engine is in the water.
2. Make sure both ends of the gas hose are connected.
3. Make sure the black clip is snapped behind the red stop button. The clip should have a curly red "wire" and a clip. Attach the clip to your person.
4. Turn the throttle to start.
5. Make sure the bulb on the fuel line is hard. If it isn't hard then squeeze it until it is firmly hard. Make sure the tank cap is firmly tightened as well.
6. When the engine is cold put the engine in forward by pulling the shifting lever forward. Next turn the throttle to full speed and then back to start. Repeat these steps four times and then put the engine back into neutral with the throttle at start.
7. Press the engine start button under the throttle and near the "UP"/"DOWN" switch. Release the start button when the engine catches and starts. (NEVER PUSH THE START BUTTON WITH THE ENGINE RUNNING.) It is normal for the engine to die once or twice while warming up; just restart if that happens.

CRITICAL: Always snapped the emergency stop clip to your person when operating the boat.

12.3 Kayaks and Paddleboard

Voyager has two 10-foot kayaks mounted on the bow. They are available to explore the harbors you visit. The kayaks are mounted against the forward railings with their tops inboard and oriented as labelled on the holders. The simplest way to launch them is to grab them amidships and drop them flat into the water once you have them past the railing. Make sure to hold onto the stern line! The paddles are kept in the boats. Take them out before launching.

The more conservative launch strategy is to use the stern line and lower them over the railing. Make sure you protect the railing before doing this. There is a padded mat in the forward port hatch that can be wrapped around the railing.

To retrieve the kayaks put the pad over the railing and pull them up by the stern lines. Do not try to drag them forward from the stern through the walkway (you will bang up the cabin and railings. You may need two people to complete this task.

13 CRABBING & FISHING

Always check the fishing and crabbing requirements before you leave on your cruise. The crab pot is tied to the railing on the fly bridge. You will need a license. Many areas are CLOSED to crabbing and fishing during certain months.

CRAB AWAY FROM THE BOAT! Lines can get wrapped around propellers. Fish-flavored cat food with the pop-up ringed lids work the best for a nice neat way to bait the pot. After 15-20 minutes, retrieve the crab pot quickly. Measure the crabs using the CRAB MEASURING GAUGE normally located in the drawer of the lower helm seat. Keep the male crabs of proper size (usually 6 ¼ inches across the carapace). Boil crabs about 12 minutes to cook.

Critical: You are not allowed to boil crab in the galley of Voyager as the smell lasts for a long time. Please use the barbeque.

After using, wash equipment thoroughly with fresh water (available from the cockpit shower faucet). *Note - Please do not store crab pot and gear inside the boat.*

14 OTHER: Safety & Bilge Pumps

SAFETY should be paramount in your daily cruising. A MAN OVERBOARD DRILL should be discussed and perhaps even practiced with a life jacket. Remember your lifejackets are stowed under the starboard seats of the fly bridge. The adult life jackets are on the outboard side and the children are inboard. A few should always be out and ready. Your flares and safety equipment are located in the drawer under the lower helm seat.

Note: The owners of Voyager wear inflatable life jackets while underway. Voyager is a stable boat when underway, but we have chosen to take this extra precaution anyway. These jackets are left on board for the comfort of our customers. They are kept in the closet behind the aft head door. Feel free to take advantage of them but also be respectful and return them to the closets upon completion of the charter. (Use regular life jackets when going in the kayaks.)

Voyager is equipped with AUTOMATIC BILGE PUMPs that are "directly" (house battery must still be on) connected to the battery. A manual activation switch is located near each pump. The pumps are in these locations:

1. Under the hatch at the foot of the forward stairs.
2. Amidships in the engine room by the forward bulkhead.
3. Under the hatch at the foot of the aft stairs.
4. In the lazarette.

An AUXILIARY HAND OPERATED BILGE PUMPs are located under the propane tank and under the fly bridge. This is used only in emergency situations. The dinghy also has a manual pump to be used to empty the dinghy of water as needed.

To the right of the lower helm are the high-water bilge alarms. The LEDs indicates the systems have power. The switches are to silence an alarm; they should normally be down – not silenced.

Engine spares are kept in the engine room, under the flybridge and under the master bed.

Voyager carries extra air horns, an EPRB and a personal distress device.

14.1 Fire Extinguishers

There are six fire extinguishers located on Voyager. One on the fly bridge, two in the salon, and one in each stateroom. The fire extinguishers produce a gas to suppress the fire. It is not hazardous but avoid breathing it anyway.

The engine room has its own automatic fire bottle. If you suspect a problem immediately turn off the engines and generator!

14.2 THRU-HULL LOCATIONS

The thru hulls are located as follows:

1. Sea chest in front of the starboard engine for both engines.
2. Genset behind the starboard engine
3. Port side in front of the water tank.
4. Starboard side in front of the tank.
5. Under the forward head sink.
6. In the forward stateroom closet.
7. Under the sink in the closet (behind a panel) aft of the aft head.
8. Under the sink in the aft shower room.
9. Lazarette, port side.

15 IDIOSYNCRASIES

This section lists a few peculiarities of Voyager that you may experience.

1. The second, smaller chart plotters (1040 or 741) can be used to get a second scaled view of the cruising area. It can be zoomed in to catch nearby shallow spots. It will not always precisely agree on depth and speed with the 1242.
2. When shifting from forward to reverse or reverse to forward make sure you briefly pause in neutral to allow the gear to stop turning.
3. Doing a hard reverse while maneuvering may cause a depth alarm to sound from the chart plotter. The transducer is forward of the propeller and can be disrupted by the turbulence of reverse.
4. The full oil levels of the two interior main engine dipsticks is not the same. Interior dipstick of the starboard engine is an added one and the full level is above the normal markings on the dipstick. Please use the added scratch marking as the full line and the original full as the low line. Do not overfill.
5. The only fixed VHF radio that will transmit GPS location and identity information is the fly bridge one. The handhelds will also do it.
6. There is a second handheld VHF radio in the starboard nightstand, aft stateroom. Please keep the charger here.
7. The vessel system monitor will alarm on voltage.
8. The autopilot has a pump to drive the steering. You must put the autopilot on standby to use the helm to turn the boat. This is normal.
9. There is storage under the main salon seat and under love seat. We often use the salon storage for food.
10. Make sure you turn off the engine room lights when leaving the engine room. There are both 12 volt and 120-volt lights in the engine room. ***This means there are two switches to turn off!***
11. The running lights are turned on using switches on the lower helm gauge panel. They are near the bottom starboard side. The "Nav Lights" breaker must also be on.
12. The anchor light is turned on using a switch on the lower helm gauge panel. The "Nav Lights" breaker must be on.
13. Voyager has trim tabs. **Do not use them as their operation was damaged during the repower of 2022.** There is no reason to alter their settings, but the control is next to the starboard salon speaker.
14. The spreader lights on the mast are turned on using the "Spreader Lights" circuit breaker on the distribution panel.
15. Voyager has a forward-facing search light. The switch and control are to the right of the vessel system monitor above the lower helm. To use: turn the bottom switch left or right and then adjust the light's direction with the joystick. The "Spot Light" breaker must be on for it to work.
16. Voyager has a forward deck light. This can be turned using the "FWD Deck" switch on the lower helm.
17. Voyager has a built-in CB radio and a hand-held unit for use when in a harbor. The hand-held unit does not float and is kept under the forward helm station by the door.
18. There is a freshwater hand shower on the aft deck. To use just turn the knob and use the shower head control to pause the water.
19. Extra dock lines are in the aft deck seat port side. Normally the dock lines are left connected to the cleats for convenience. (They can be hard to remove and replace.)
20. There are four folding chairs on the roof of the aft stateroom. Please keep them tied down while underway. Do not scratch Voyager when putting them away or moving around the boat with them. These can be used to add a seat or two at the salon table.
21. There are two seats in the two aft corners of the boat. They are nice to sit in early in the morning and in the evening. Please make sure the cushions are kept on the fly bridge at night and when it is raining.

22. We encourage you to keep the head and stateroom doors clipped open when possible, to maintain air circulation. **Make sure to clip or close doors so they do not bang.**

23. The toilet paper holder for the forward head is on the back of the cupboard door.

24. The forward hatch is heavy – make sure you exercise care in opening and closing it.

25. Some but not all the ceiling lights are controlled by the switches by doors and steps. You will need some trial and error to figure out which is which – especially for the galley.

26. Make sure you hold on going up and down the flybridge steps. There are plenty of handles to enable you to maintain your balance. ☺

27. **Please do not spin in the helm chair on the flybridge.** It will wear out the mechanism and make it harder to face forward.

28. The fans at the lower helm area are controlled from a "Fan" switch on the instrument panel. The "Fan" breaker must be on.

29. The "Fan" breaker must be on for the forward head fan to be functional.

30. Please do not leave the fenders hanging overboard while underway – it damages the hull. For simplicity the owners often just flip them up while traveling and remove just the two that impede travel between the salon and flybridge.

31. There are 4 folding chairs in the lazarette that can be used forward or on the aft stateroom roof.

32. The galley outlet on the port side is a GFCI outlet that will make an audible noise when it has popped. Reset is accomplished by pushing in the top built in button between the two sockets.

33. The helmets and bike locks are in the bike bags. Please use extreme care when getting the bikes up and down from the flybridge deck. THEY MUST BE TIED AT ALL TIMES WHEN ON THE FLYBRIDGE!

34. The salon TV has a built-in web browser. If wireless access requires a web browser page login then you can connect to the wireless link and then go to the browser to authenticate to the web page.

35. The hot water can be very hot under some circumstances, be careful when using it.

36. Two different seasons a kayak has been holed by someone sitting in it when it was grounded. Please exercise care when going ashore in a kayak.

37. Make sure you tie back the side gates with a fender line or it can catch the step or dock when the boat moves in the marina.