OWNERS' NOTES FOR

TIVOLI

Jeanneau Sun Odyssey 409
3 Cabin / 2 Head Performance Cruiser

Welcome aboard Tivoli!

We are excited you're considering her for your upcoming voyage. We are a sailing family that started as charter guests at San Juan. Our second boat in the San Juan fleet, we consider Tivoli to be the perfect size: easy to dock, pick up a mooring ball or simply anchor out. With two heads and three cabins, she provides ample accommodation in her modest footprint. Best of all, her salon is bright with light wood tones throughout.

When it comes to sailing, Tivoli sails like a dream. The main is easily raised and offers the advantage of sail tuning. The furling jib is also easily deployed. The Jeanneau Sun Odyssey 409 delivers all of this and so much more. She is a spirited performance cruiser with a lively character.

Here is a quick rundown on why we chose her, how she has been outfitted for comfortable local cruising and why we believe you will enjoy your time aboard as well:

- Accommodations: There are three large cabins, each with oversized queen berths. Each stateroom features generous floor and locker space, nightstands and excellent headroom. There are two heads, including a large shared head with separate shower off the main salon and a private head in the forward stateroom.
- Large cockpit: With dual wheels and a large center table, there's plenty of space for everyone onboard. The cockpit table has folding leafs, center ice bin with drain for cold drinks with cup holders. A custom full-beam swim step and open transom allow easy access and safer dinghy entry. Newly upgraded canvas with ultra-clear Makralon glass all around provides a clear view out in all conditions.
- Speed: Tivoli cruises at 8 knots under power and she sails like a dream. A Flex-O-Fold 3-blade feathering propeller was added to maximize speed under power and sail.
- Smooth and quiet: Tivoli is equipped with an efficient Yanmar diesel and new in 2023 SD60 Saildrive, providing quiet, smooth motoring when the air is light.
- Ease of handling: Two can easily handle her and it's possible to single-hand in a pinch thanks to German sheeting (all headsail and mainsail sheets are led aft to the helms). The mainsail features lazyjacks and a Tides track for dropping the sail quickly. Two-stage reefing is handled from the

cockpit.

- Wide uncluttered decks: All lines are led under a cowling between the mast and cockpit, eliminating trip hazards and providing more deck space to spread out and enjoy. Inboard shrouds allow for easy movement fore and aft.
- Bright and cheerful interior: Light Anigre wood, new in 2023 off-white leatherette upholstery, natural maple cabin sole and ample windows, both above and below the beltline, create a bright, elegant living space below with a modern feel.
- Excellent tankage: With a full 140 gallons of water and 53 gallons of fuel, Tivoli can leave the dock behind and head out on an extended cruise.
- 100% LED lighting: Not a single incandescent bulb aboard! LED lighting provides bright light and minimal battery drain.
- Diesel 3-zone hydronic heat: Unlike a traditional forced air system, a Hurricane Zephyr furnace circulates hot water through the boat to 3 zone heaters allowing individualized comfort for the forward stateroom and head, salon and rear staterooms. As an added benefit, the lines are led under the cabin sole to heat the floor. The hydronic system minimizes run time as well.
- A galley for the gourmet chef: We upgraded the factory range to a polished-stainless steel Force10 unit that offers excellent cooking control at the burners and in the oven. For this season, we added a clever 10-piece commercial cookware set that stacks neatly in a compartment beneath the range.
- Onboard entertainment and connectivity: The salon features a new 32" Roku smart TV and Blu-Ray player with WIFI streaming capability and an auxiliary HDMI input for connecting your own device. A Pioneer touchscreen stereo with Bluetooth connectivity allows you to stream music or make a hands-free call from the main salon.

By chartering Tivoli for the 2022 season, you will enjoy many new features and equipment added during a 4-month, $20,000 refit:

- **Bow Jet Thrusters!** You read correctly. Rather than add a conventional bow thruster, we chose the latest technology available. Imported from Europe, the Jet Thruster system utilizes a central pump with small jet ports located far forward for excellent boat control in tight spaces. From the helm, you can individually control the bow jet. As an added benefit, the inlet and jets are much smaller than a conventional bow thruster tunnel, so there is no adverse effect on boat performance. This is a truly revolutionary system and it works remarkably well.
- **Underwater and cockpit lighting:** We added underwater lights at the stern (fish and seals love them!) along with a bright retracting light for the cockpit table. New under-table ambient lighting illuminates the cockpit floor for late evenings on deck.
- **Racing bottom**: Tivoli's bottom paint was removed to bare gel coat, faired and epoxied, and then repainted using slippery Trinidad paint. In short, she glides through the water.
- **Upgraded cockpit canvas:** A new bimini was added with an easily-removable connector panel. The bimini features a wide ultra-clear Makralon window for a clear view of the rig.
- **Upgraded cockpit shower:** With a 15' hose, you can now rinse off the cockpit or dinghy.
- **New cabin sole**: To brighten the interior, we've replaced the original cabin sole with all-new, natural Maple flooring throughout.
- **New deluxe salon table**: The traditional salon table was replaced with Jeanneau's deluxe table with storage. The clever folding, drop-lead design maximizes salon space when folded and simplifies the process of converting the table to an extra berth.
- **AIS transceiver**: Tivoli will now send her heading and speed information to other boats equipped

with AIS receivers. The system works to avoid collisions and adds an extra measure of safety.

- **Inflatable PFDs**: We've equipped Tivoli with 6 inflatable PFDs for your added comfort and convenience.
- **Kachemak 310AL dinghy with storage locker: New in 2023, the Kachemak dinghy is the most popular choice in the San Juan fleet. With an aluminum hull, this dinghy can easily withstand the rocky beaches of the San Juan Islands.**

We hope you will enjoy your time aboard as much as we do and consider Tivoli your home away from home while sailing our beautiful waters. Please consider sharing your experience in our guest book. We love to hear about our guest's adventures.

We take great pride in Tivoli's upkeep and have two easy rules: **No smoking and no pets**.

Happy Sailing!
The Swanson Family

Table of Contents

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

- ***Italics*** – are used for headings.
- ALL CAPS – is used for safety and operational warnings.
- <u>Underlining</u> – indicates the location of things.
- **bold –** indicates important knowledge or data.

1. Vessel Information and Specifications

Vessel Information:

Washington State Parks Annual Permit Decal – Located on the cabin exterior, port side aft.

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

Vessel Official Number - 1269022 (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). Tivoli's number is located on a bilge stringer in the salon adjacent to the aft head. Look for 3" high numbers.

Coast Guard Boarding Document – Refer to the Charter Guest Reference Manual (white binder), Section 5 Documentation. Explains what to expect if you are boarded by the Coast Guard and where to find the information/equipment they may ask to see as part of their safety inspection.

Specifications:

Year:	2011	Engine:	40 hp Yanmar Diesel
Make/Model:	Jeanneau 409	Fuel (1 tank):	53 US Gal
LOA:	41'-9"	Water (2 tanks):	140 US Gal
Beam:	13'-1"	Holding (2tanks):	42 US Gal
Draft:	6'-10"	Heads:	2
Displacement:	17,900 lbs. (Dry)	Electronics:	Raymarine
Mast Height:	64'-6"		

Staterooms:	3 doubles		
Forward:	Headroom: 6'-3", Berth Dimensions: 7'-0"x6'-6" (head), 7'0"x2'-3" (feet)		
Aft, Port:	Headroom: 6'-6", Berth Dimensions: 7'-0"x5'-3" (head), 7'-0"x5'-3" (feet)		
Aft, Starboard:	Headroom: 6'-6", Berth Dimensions: 7'-0"x5'-3" (head), 7'-0"x5'-3" (feet)		
Salon Headrm:	6'-4", Salon Head & Shower: 6'-3"		
Refrigerator:	30"Wx32"Hx19"D	Freezer:	17"Wx4"Hx10"D

2. Nuances

There are a few things about Tivoli that are not 'typical'. These are the things that may require special attention or where it may be best to deviate from customary operating procedures. We have listed some here because we believe they will help you plan your charter.

Jet Thruster

Brand new for 2021, Tivoli is equipped with a Jet Thruster Combi 50 bow thruster system. Instead of a traditional tunnel cut through the hull, a centrally-mounted jet pump pulls seawater through a small 2.5-inch through-hull and pushes it out of two 1.5-inch ports via a network of heavy-duty, double helix-reinforced hoses and computer-controlled valves. These ports act as your thrusters. Refer to Section 23, Thrusters, below for instructions on how to operate.

Companionway Hatch Slide Storage Compartment

The large one-piece acrylic hatch slide has a convenient "home" to keep it safe when not in place. At the aft end of the cockpit in between the helms, there is a large floor lazarette. Open the hatch cover and insert the hatch slide vertically down into the forward end between the nylon guides and the hatch face.

3. Emergency/Safety Equipment and Emergency Procedures

EQUIPMENT:

You are not likely to need many of these items, but must know their location.

Bilge Pump (Manual) and Handle. Pump located behind the port helm near floor level. The pump handle is located in the Cockpit, port side adjacent to wheel in clips inside the small line locker. Note: if water rises above floorboards, can use shower sump pumps also in emergency.

Carbon Monoxide Detectors. Located in all 3 staterooms. There is a smoke detector located in the salon.

Cockpit Cushions. In case of Crew Overboard, throw anything that floats, quickly.

Emergency Tiller. Port cockpit locker.

Fire Extinguishers (Portable) (3): 1 in each of the aft staterooms and 1 at the Nav Station, inboard side of seat base.

First Aid Kit. Head, aft, in vanity cabinet.

Flares (Pyrotechnic - 3). Nav station, under forward seat in mesh bag with flares and StaPlug.

Flashlights 1 & 2. Chart table and on shelf above electrical panel in nav station.

Flashlight 3 (Searchlight). Nav station.

Horn, handheld. Nav station, under forward seat in mesh bag with flares and StaPlug.

Lifesling. Port stern pulpit. Please review the cartoons on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.

PFDs – Inflatables (6). All 3 staterooms in hanging lockers.

PFDs - Foam Vests (4). Port cockpit locker.

Radar Reflector (tube style). Mounted on shrouds.

Spares, equipment. Salon, port side under aft settee seat.

Spares, spare parts. Salon, port side under aft settee seat.

Tapered Plug, Universal Foam Orange StaPlug. Nav station, under forward seat in mesh bag with flares and StaPlug.

Tools. Nav station, under seat.

VHF Radios. Channel 16. VHF base unit at nav station and handheld at Nav Station, stored behind chart table when not in use.

Windlass Clutch Release/Tighten tool (winch handle). Use winch handle.

EMERGENCY PROCEDURES:

Fire – There are three BC rated fire extinguishers on board. They are located (a) main salon immediately aft of the navigation station (b) directly behind the door in the port side aft stateroom and (c) directly behind the door in the starboard side aft stateroom. In addition, the starboard side aft stateroom features a fire extinguisher port to the engine compartment behind the door. All are BC fire extinguishers which are effective against electrical, grease, wood, and fuel fires. If you have a fire at the stove immediately turn off the gas solenoid switch, which is located on the face of the cabinetry below the sink. A fire blanket is located on the bulkhead directly over the stove should, but a fire extinguisher may be the fastest solution.

Hitting a Rock, Log, or Running Aground – In case of striking a rock, log, or running aground, immediately **c**heck for leaks in the bilge and then check for cracks in the fore and aft sections of the bilge where the keel attaches to the hull. Check all keel bolts. Also, inspect the saildrive for leaks. The saildrive is located directly behind the engine and is visible by removing the nightstand tops in either aft stateroom. Once you are sure no water is entering the hull contact **San Juan Sailing at 800-677-7245** and proceed to the nearest harbor and have a professional diver check the hull, keel, saildrive, prop, and rudder before proceeding on your vacation.

Leaks – Determine the source of the water. Check the engine bay first (the saildrive leg is directly behind the engine and is visible by removing the nightstand countertops in either aft stateroom) and then the through-hulls. The saildrive has a double seal where it exits the hull – if the outer seal develops a leak, an alarm should sound at the engine panel, assuming the engine is running. An alarm should be taken seriously, even if no leak is visible in the engine compartment, as you have lost one of the two critical seals. There is a diagram showing the location of the through hulls in the notebook. Also, be sure the bilge pump is switched on. Get the crew on deck and into life jackets. Call for help as needed (use a PAN PAN call if the situation does not appear life threatening and a MAYDAY if it is). There are wood plugs in each area where there are through hulls.

Please note that small amounts of fresh water in the bilge, or hearing the bilge pump run periodically, is considered normal.

There are two bilge pumps. The manual bilge pump is located on the port side of the cockpit, just behind of the steering wheel. The handle is under the outer helm seat next to the shore power connections. The electric bilge pump has an automatic float switch **but the switch on the electrical panel can be used to power the main pump manually (this breaker is normally set to auto)**. The float switch and pump intake is located under the salon sole between the navigation and dinette tables, approximately 4 feet aft of the mast.

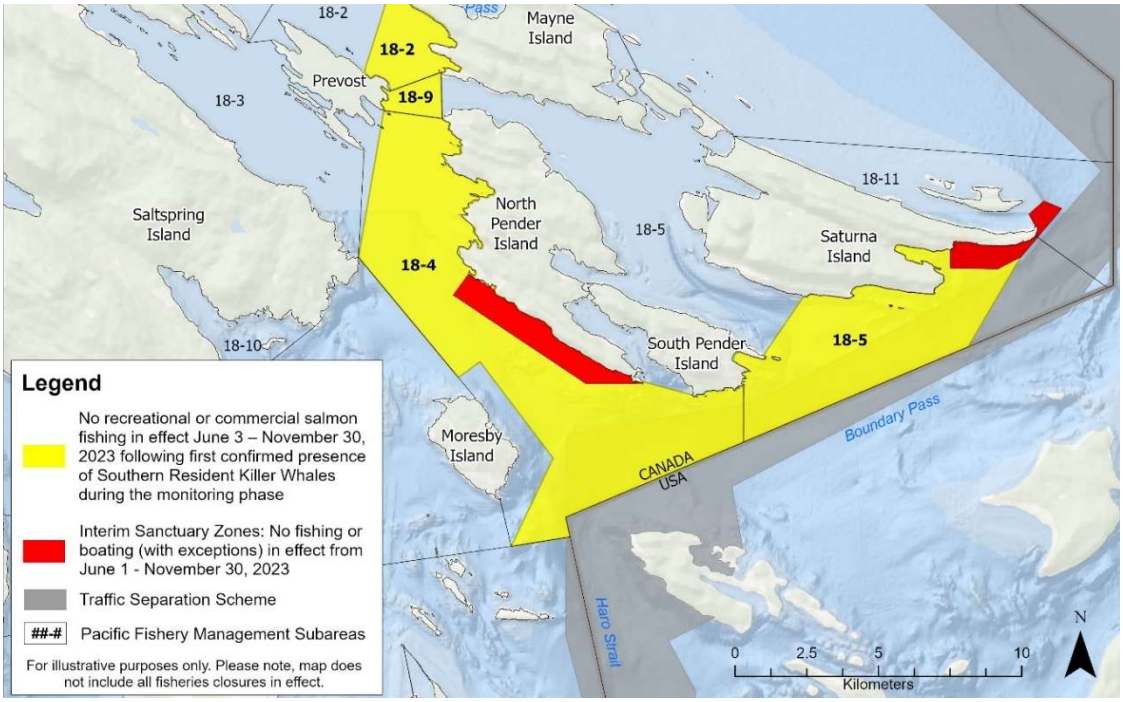
Steering Failure – If the steering system fails there is an emergency tiller in the port cockpit locker. It fits on

the rudder post, which is accessed through the round stainless steel cap in cockpit floor. The cap is immediately recognizable by the
star-shaped receiver and is unscrewed using a winch handle. You will want to reduce sail or power when using the tiller since the rudder is large and the tiller is small.

Emergency/Safety Equipment – Emergency flares are located with the tools and spare parts under the seat at the navigation station. There are air horns located in the cockpit. Please keep one visible and within easy reach in the cockpit. Spare air horns are located in the cockpit table's forward storage compartment and in the storage compartment at the top of the companionway steps. Should you run out of compressed air, use the orange blow-through air horn.

Crew Overboard – Throw a Type IV PFD, cockpit cushion or the yellow horseshoe buoy to the person in the water first.
Second, hit the mob button on the chart plotter so you will know where they are. There are several procedures one can use
to get the boat back to the person in the water and San Juan sailing will discuss these in the skipper's meeting. However, they all include the use of the LifeSling to aid in getting the person back onboard. We keep the LifeSling mounted on the stern rail, port side, at all times. Do not deploy the Lifesling until the boat is stopped or you run the risk of pulling the person through the water. In addition, although we request that you not sail or motor after dusk, a floating MOB light is located on the stern rail, port side. This light should be stored upside down in the bracket. When it hits water, it will float upright and an internal switch will turn it on. The light will aid in locating your crew member in the water.

4. Being Whale Wise



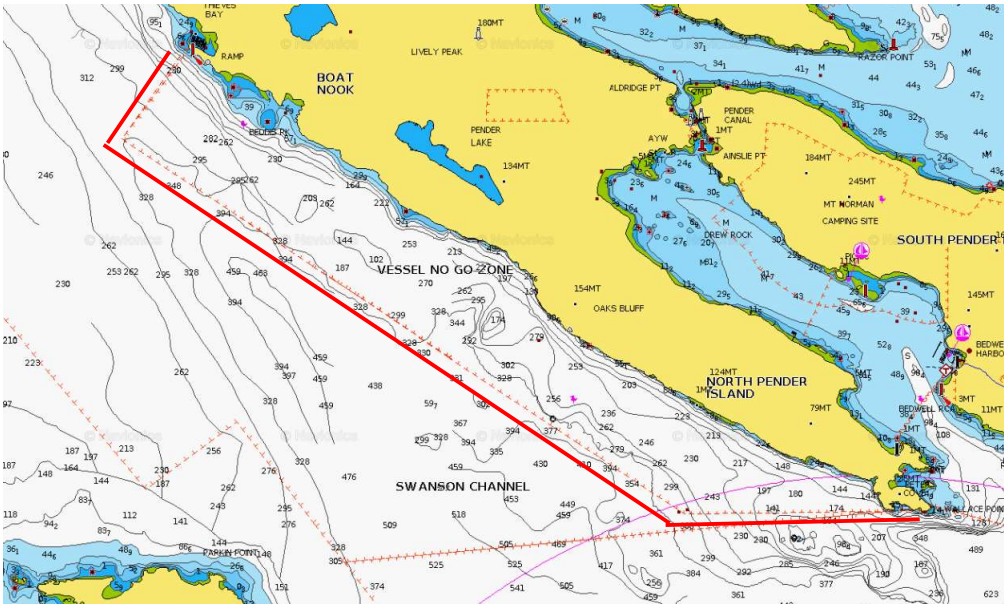
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to decrease human impact both the Canadian and US governments have implemented rules. We provided you a summary of these rules in the packet you receive when you arrived and there is more information in section 10 of the white reference book onboard Tivoli. In general, stay at least 400 yds. away from the whales. Sometimes they come to you, if this happens shutdown the engine and turn off the instruments (assuming this is safe to do). They can hear the pings of the depth sounder – this is why we have you turn off the instruments.

In Canada they have gone a step further by creating some zones where boats are not allowed. This further

improves the environment for the whales. The red areas in the diagram below show these zones.

And here is an example of what they look like on Tivoli's chart plotter(s). The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.

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



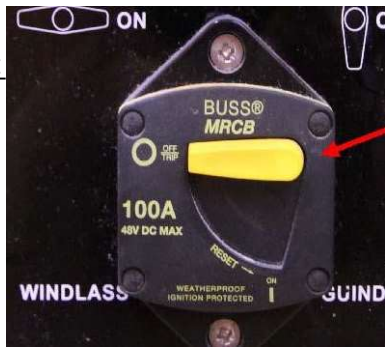
5. Anchors and Windlass

Highlights:

- Primary anchor is a 35 lb Delta fast-set with 180' of chain and 50 feet of rode)
- The primary anchor chain is marked per the legend placard shown on right. The last 15' of chain is painted red. The placard is glued to the underside of the anchor locker hatch.
- Please disregard any yellow paint, as this is from a previous SJS marking method that has been recently retired.
- Secondary (emergency) anchor in the port cockpit locker (35 lb Delta with chain and rode).
- The electric windlass receives power from the start battery. The circuit breaker is located in the aft starboard stateroom on the same panel as the battery switches.
- The controller for the windlass is located in the anchor locker on the port side of the windlass.
- The windlass pays out chain at approximately 1 foot/sec.

Details:

The scope normally used in the islands is 4 to 1, definitely not 7 to 1 (unless conditions call for it, i.e. sustained winds over 25 knots). Most of the anchorages are well protected and popular, so you will likely have someone anchored nearby. Most coves are 20'-40' deep; so expect to pay out about 80'-160' of chain. After you have paid out the suitable amount of chain, 1-2 minutes of idle reverse sets the anchor. Also, the tides can change water depth up to 15 feet in our waters so be aware of where you are in the cycle when choosing an anchorage and deciding how much chain to put out. **Here is an easy formula for how much chain you need; add the water depth on sounder, plus any tide increase expected during the night, plus 5' (to account for the distance from sounder to roller on bow) and take that total and multiply by 4 (typical example would be 25' of water + 6' of tide increase + 5' = 36' x 4 = 144').**



The electric anchor windlass receives power from the dedicated start battery. The circuit breaker (i.e., the "on" and "off" switch) for the windlass is located in the aft starboard stateroom on the same panel as the battery switches. **Please note the windlass will not run unless the engine is running**. **In addition, if the engine has just been started it may be necessary to up the RPM's a bit to get the windlass to work. Basically, the system voltage needs to be higher for the windlass to work. This does not happen all the time but is worth noting.**
The up-down controller for the windlass is located in the forward locker to the left of the windlass. Be sure to take the tension off of the windlass by attaching the snubber to the chain and a cleat (not the windlass), and then running out more chain until the chain on the drum is slack. If you store the anchor snubber in the anchor locker, please hang it by attaching the hook end to the winch handle holder, coiling the line to keep it away from the anchor chain. You may also store the snubber in the cockpit port lazarette.

Lowering the anchor:

a. Turn on the circuit breaker for the windlass (aft starboard stateroom on panel near floor).
b. Untie the line holding the anchor in place (this line doubles as the snubber).
c. Lower the anchor until the needed chain is paid out. The windlass pays out approximately one foot of chain per second. You will notice a short section of black rope that is tied to the anchor. Please us this to ease the anchor off the roller. Tivoli has a very plumb bow and a quickly dropping anchor may strike the boat and damage the hull.
d. Secure the chain with the snubber (rope with hook, which can be found in the anchor locker) and run out enough chain to take the load off of the windlass. DO NOT LEAVE THE LOAD ON THE DRUM.
e. Set the anchor by reversing the engine at 1100 RPM for about a minute.
f. Turn off the circuit breaker and turn on the anchor light if appropriate.

Raising the anchor:

a. Start the engine.
b. Turn on the circuit breaker for the windlass and, if needed, turn off the anchor light.
c. Take in enough chain to retrieve the snubber.
d. When retrieving the anchor, never use the windlass to pull the boat; instead, slowly power toward the anchor while using the windlass (up button on the remote control) to take up the slack. Also, if the anchor is really stuck in the mud (you will hear the windlass slow under the load) stop the windlass and drive the boat forward to free the anchor.
e. The incoming chain will pile up against the aft end of the chain locker so the operator needs to reach in and push the pile of chain forward every 20-30 feet of chain. Also be aware the lines used to mark the chain length tends to catch in the outlet of the windlass and may cause a jam. Just lift up the chain and let it fall through or run the windlass back out for a second to clear.
f. Once the anchor is out of the water, please retrieve it by hand. Please do not pull the anchor up onto the rollers using the power of the windlass. BE VERY CARFUL WHEN THE ANCHOR IS OUT OF THE WATER, TIVOLI HAS A PLUMB BOW AND IT IS EASY TO HIT THE BOW WITH THE ANCHOR. NEVER DRAG THE ANCHOR IN THE WATER WHILE THE BOAT IS MOVING, AS THIS WILL CAUSE IT TO STRIKE THE BOW.
g. Secure the anchor by hooking the snubber onto the chain and tying it to the windlass drum (the chain over the drum should not be the only thing keeping the anchor onboard).
h. Switch the windlass breaker "off" to prevent draining the start battery.

Stern Ties: There are times when adding a stern tie to shore will be handy, especially in Desolation Sound. Tivoli has **400' of line on a spool** for this purpose. It is stored in the port lazarette. Due to the width of the transom opening, we suggest extending the boat hook and laying it across the lower mounting point for the rear rails. Slide the eye of the spool over the handle end of the boat hook. This allows the line to be easily deployed and recovered. The recovered line is usually very wet, so we leave the spool sitting on end in the walk-through for a couple hours to dry before we put it away. Please use the cockpit shower to rinse off the line before leaving it to dry.

2. Barbecue

Highlights:

- Stainless steel propane barbecue is mounted on the stern pulpit.
- The BBQ propane hose is plumbed to the two 2.5 gal aluminum tanks in the aft starboard lazarette propane locker.
- The propane hose is connected downstream of the solenoid valve and additionally has a manual shutoff (isolation) valve near the bottom of the propane locker between the tanks. Always turn off the isolation valve after done with the BBQ to avoid accidentally dumping the tank due to leaving the BBQ temperature control knob in the ON position.
- The solenoid valve switch is located in the galley on the face of the cabinet below the sink.

Details:

The stainless steel propane barbecue is mounted on the stern pulpit. There is a line plumbed from the main propane tanks inside the propane locker to the BBQ. However, you may need to turn on the valve located inside the propane locker (it's near the floor of the propane locker and access requires temporarily lifting the starboard tanks), as well as turn on the solenoid switch, which is located on the face of the galley cabinet under the sink. Be sure the BBQ controller is off when opening this valve or the tank valve; having it on will cause the safety system in the main tank to engage and severely limit the flow to the BBQ. When done with the BBQ turn off this valve; DO NOT RELY ON THE CONTROLLER AT THE BBQ AS THE ONLY SHUTOFF FOR THE PROPANE. The barbecue does not have an automatic ignitor. We suggest using one of the provided butane lighters to ignite the barbecue, rather than a match, but use whatever method is easiest or most convenient for the chef. THE GRILL GRATES ARE NOT SECURED TO THE BARBECUE, SO BE CAREFUL THAT THEY DON'T FALL OVERBOARD.

Please do not leave the barbecue on to warm up, or after you have finished cooking. Doing so will waste your propane and will also discolor the stainless steel. The small size of the barbecue and the thin stainless steel means it produces maximum heat almost immediately.

Tivoli is equipped with two propane tanks. A new hand-turn pigtail hose was added for this season to allow tool-free tank changes, although you may need to use a wrench from the tool set if the hose connection at the tank was over-tightened. And note that the threads are opposite to standard so it's "lefty tighty, righty loosey". **Be sure that the solenoid switch located in the galley is off and the hand valve on the tank is**

closed before disconnecting the tank.

6. Batteries & Charger/Inverter

Highlights:

- Batteries
  House: Two 4D batteries plus one Group 27
  Engine Start & Windlass: One battery
  Jet Thruster: Two Group 35 batteries
  Battery groups are isolated from each other and all are charged automatically when on shore power or operating the engine at cruise RPM.

- Battery Monitor and Battery Charger/Inverter - Xantrex Freedom HFS Panel located in the aft starboard stateroom on the face of the berth base – see details below.

Details:

Batteries

- The engine and house batteries are located under the forward portion of the quarter berths, two on each side. The Jet Thruster batteries are located under the aft portion of the forward V-berth.

- Never turn a battery switch to OFF while the engine is running. This will blow the diodes in the alternator and the batteries will no longer charge.

Charger/Inverter

There is one battery charger connected to a battery isolator, which feeds the engine and house battery banks. A smart charger connects the house bank to the Jet Thruster bank and will only recharge the Jet Thruster batteries when the charger detects charge voltage from either the alternator or shore power. The engine's alternator will also charge the batteries while you are away from the dock.

2000 watt pure sine wave inverter. Only use low amperage items as it is easy to draw the batteries down. While rated at 2000 watts, please do not use the hot water heater or operate high-powered electronics (including hair dryers) as these devices will drain batteries extremely quickly. These devices should only be used while on shore power.

a) The inverter control is on the same panel used to monitor battery voltage and is located on the panel in the aft starboard stateroom with the battery switches.
b) We recommend leaving the inverter/charger panel on at all times to ensure that the system charges when connected to shore power (the power button is green – see photo below).
c) Do not turn the inverter off if you are using the diesel heater, as the circulation pump runs off of the 110V AC outlet circuit breaker.
d) The gray button cycles through battery voltage, amperage and current readings. Note: The inverter has a built-in cooling fan that will run often when charging the batteries or inverting away from the dock. This is normal.

Battery Monitor

- When disconnected from shore power and with the motor off, the voltage normally starts at around 13 volts. It will then drop to between 12.2 and 12.5 volts and remain there for quite a while before

dropping again. When it starts dropping this second time you have very little reserve left.

- **And it is time to recharge by either connecting to shore power OR starting the engine when the voltage gets to 12.0 volts** – PLEASE DO NOT RUN THE VOLTAGE BELOW 12.0 – DOING SO DAMAGES THE BATTERIES. We recommend running the engine for two hours each morning and two hours each evening to keep the batteries charged.

On shore power codes:
"Bul" – Initiating charging circuit. This is a temporary message.
"AbS" – Absorbtion (charging).
"FUL" – Batteries at full charge (charging off).

Inverting power codes (shore power disconnected):
"12.5" – Current voltage reading, typically between 12 and 13.
"E01" – Low-voltage or high consumption. Check for high loads.
"E05" – Low-voltage or high consumption. Check for high loads.

The green power button works to turn the inverter on and off while shore power is disconnected. Press the button once to cycle on and off. The inverter has a power saving function, so please leave the inverter on at all times. Note that holding the power button in for several seconds takes you to a sub menu to change the system configuration. Please do not change any settings, as this may cause the inverter to malfunction and may damage the batteries. If you accidentally reach this menu, let the panel sit for several seconds and it will revert back to normal operation.

The gray button allows you to cycle through voltage, amp draw (consumption) and output power.

There are two panels that provide voltage readings. The primary electrical panel offers battery monitoring for both the house and starter banks. While disconnected from shore power, the inverter panel will also display a voltage. We have found that the Jeanneau electrical panel occasionally flashes low voltage warning messages on its LCD display, while the inverter is reading acceptable voltage readings. Do not be alarmed if this occurs. Should a low-voltage warning message appear, confirm the true voltage using the second (yellow) voltage reading on the panel and at the inverter panel.

Charging Your Personal Electronics

There are three 12-volt cigarette lighter type outlets for recharging your personal electronics located in each stateroom, directly adjacent to the 110-volt outlet, as well as two 12-volt 1.2-amp USB charging ports located at the aft end of the cockpit table. Also, since we have an inverter you can charge using a normal 110-volt charger. Cell phone coverage is good in Friday Harbor and Roche Harbor. It is spotty elsewhere, particularly for data.

7. Berths

Our boat sleeps six comfortably and seven if the dinette table is converted. Each cabin has a berth that is approximately the same size as a queen-sized bed and can comfortably accommodate two people.

The dinette table can be converted to a berth as follows:

- **Please make sure the table top leaves are folded up before lowering.** Inside the table base cabinet, pull the two cord straps beneath the shelf and push the table top down. There is a counterweight inside the table assembly, so the table top will not drop suddenly when the cords are pulled.
- Once the table top is down, insert the cushion to complete the conversion. **Please do not stand or walk on the table when lowered, as this will damage the table assembly.**
- To raise the table, lift the table top until you hear two distinct "clicks". With the table leaves stacked, you will see two stainless steel blind hinges connecting one leaf to the other. We have found that the hinges are the ideal location to grasp the table top when raising it. Raising the table is best accomplished with a helper, as even with the counterweight it is heavy.

8. Bilge Pumps

Highlights

- Emergency Bilge Pump (manually operated): Pump is located behind the starboard helm near floor level adjacent to the drain. Note: if water rises above floorboards, can use shower sump pumps also in emergency. The pump handle is clipped to the lazarette lid underside located above the pump.
- Electric Bilge Pump: Has automatic float switch. Pump is located in the salon bilge – lift the floor hatch adjacent to the aft end of the settee. Check the strainer on the pump inlet for any clogging debris and remove if needed.
- Please visually inspect the bilge each day for excess water or any oil.

9. Dinghy and Outboard

New for 2023, Tivoli is equipped with a **10' - 1" Kachemak 310 AL aluminum hulled dinghy. Caribe fiberglass hard-bottom dinghy and a 2.3 hp outboard**. The dinghy is roomy (holds up to 5 adults and lots of gear thanks to its oversized tubes and deep floor, and storage locker in the bow - but you may prefer two trips with fewer riders) with plenty of handholds and the outboard is easy to operate. The dinghy tows with the least drag if brought close to the boat - about a foot off the stern. This guarantees that you won't accidentally wrap the painter around the propeller when you back up! **Note the location of the hydronic furnace's exhaust port on the starboard side of the stern. It is very important that you keep all lines, including the painter, fenders, etc. away from the exhaust or they will melt. Preferably, these items can be secured on the port side.**

Beaches in the San Juans are seldom gentle, sandy beaches; most often they are rocky and covered by barnacles equipped with extra sharp rubber cutters. Here's what works best:

- launch a person off the dinghy bow as you approach shore; then offload everyone over the bow.
- We highly recommend securing the painter to a large rock or to a log – a rising tide can leave you high, dry and dinghyless!
- For safety, please always carry the oars on the dinghy even if you plan to use the outboard. The oars can be secured low in the hull using the clamps on the pontoons

A large wake or gust of wind can overturn a dinghy while it is being towed. With the exception of short trips on very smooth water, the dinghy seat, outboard and oars should always be stored aboard Tivoli to ensure they are not lost to the sea. We are less concerned with replacing any of these items as we are you not having them when needed.

The outboard is a four stroke engine, so do not add oil to the gasoline mixture – it uses straight gasoline and has its own built-in gas tank to free up space in the dinghy. San Juan Sailing will be sure you have a full spare gas can which is normally in the dinghy. But if you need to store it somewhere else use the swim platform locker. This is the only locker where the gas fumes will not enter the boat. We recommend taking the outboard off the dinghy at night.

The outboard is light so it's easy to transfer from the stern rail mount to the dinghy transom (and vice versa) by hand. **Please be sure to secure the outboard as close to the starboard side of the storage bracket as possible to ensure that it is not damaged by heat from the barbecue**.

The outboard has a built in kill switch connected to a red coil lanyard. The lanyard should be stored attached to the motor.

Starting the Outboard

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

While Running

a. There is no transmission--just throttle up to go forward and throttle down to stop. If you want to go in reverse--just swivel the outboard around 180 degrees.

To Shut Off

a. Shut the outboard off by pushing in the red shut-off knob (where the kill clip is clipped in). Or just pull the red lanyard until the clip pops off.
b. To avoid prop damage, shut the outboard off and raise it out of the water before you reach the shore. Pull the outboard forward and out of the water until it clicks and stays in place.
c. To put the outboard shaft back in the water, release the stainless steel lever on the starboard side of the shaft.

When Not in Use

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

Troubleshooting

If the engine won't start, review steps 1-6 above to make sure you've done all 6 steps. There is a spare spark plug and spark plug wrench in with the safety equipment in case you need them. A new spark plug solves myriad outboard problems. If you use the spare spark plug, notify your check-in skipper upon your return so a

new one can be placed aboard for future guests. If the outboard is running and you're heading toward shore, and the engine suddenly quits, it's usually that someone has
forgotten to vent the fuel cap. If the engine is running fine but the propeller isn't moving, the shear pin is probably broken – just take the cotter pin out to remove the propeller and replace the broken shear pin (a spare pin is located forward of the shaft under the handle grip). As mentioned above, please always carry the oars on the dinghy even if you plan to use the outboard. This ensures you will always make it back to Tivoli in the event of an engine issue.

10. Docking

Tivoli has a deep keel and a relatively high freeboard; this combination can create some sideslip in a beam current or wind. We find it is helpful for the person handling the lines to take a line from the mid-ship cleat, this allows them to pull the boat to the dock without 'losing' the stern.

The other important issue is prop-walk with a sail drive – **Tivoli has very slight walk to starboard** in reverse. Be aware of this when planning your docking, as you won't have as much "pull" as you are accustomed to on other sailboats that have standard shaft drives. Still, you can use the prop-walk to your advantage when docking. For example, if you can get a bow-in, starboard tie slip, the prop-walk will pull the stern into the dock as the boat slows under reverse propulsion.

Please refer to the Jet Thruster section for tips and tricks for utilizing the bow thruster while docking. Even if you are familiar with traditional tunnel-type bow thrusters, we recommend testing this new system in open water away from docks and other boats before you may need to use it so you understand how it operates and how the boat responds to joystick inputs.

11. Dodger & Bimini

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

The bimini was upgraded for 2021 to a more traditional design that has a removable connector panel. Removal of the connector panel requires unzipping zippers at the top of the dodger and where the connector panel attaches to the bimini. The front of the connector panel is unzipped from the top of the dodger, while the back is unzipped from below. When storing the connector panel while not in use, please employ a helper to gently roll or fold it like a flag and store it in a location where it will not be crushed or creased, either in a lazarette or in the cabin. Reinstalling the connector panel is the reverse of removal. We find it easiest to connect the dodger end first. Due to the size of the connector panel, having a helper makes the process of removal and reinstallation much easier. The aft section of the bimini over the helms – the panel with the window – is meant to stay up at all times. Removing the front section requires lessening the tension on the forward straps, one person holding the frame and the other unzipping the canvas.

12. Electrical

The electrical panels on Tivoli are straight forward and clearly marked.

The main electrical panel is located above the nav station. A couple of tips;

1 A needle-type voltage meter is located in the upper left-hand corner of the electrical panel. This meter will read 110 volts when on shore power, as well as when on the inverter. The inverter has a built-in transfer switch and will automatically switch between batteries and shore power.

2 A digital multi-function display is located in the upper right-hand corner of the electrical panel. This display defaults to displaying the voltage and amp draw on the domestic (house) battery bank. A round keypad below the display allows monitoring of domestic and engine starting battery bank voltages, fuel level and water level for both water tanks. Pressing the battery bank button toggles between the domestic and engine start battery voltages (assuming both battery switches at the battery panel are in the vertical "on" positions). Pressing the fuel level button shows you the fuel level in the tank. Like a car, the tank will read full for quite a while before it drops. Pressing the water level button toggles between the water level readings i

3 Be sure to keep the 110V AC plugs switch set to "on". The furnace utilizes a 110V AC circulation pump to move the heated coolant through the boat. This pump shares the circuit with the AC plugs.

4 When you leave the boat at the end of your trip the only 12V switch that needs to be left on is the refrigerator.

5 When you are not connected to shore power, do not use the water heater as doing so will rapidly discharge the house batteries

13. Electronics and Instruments

Chart Plotter/Radar

We have a large-screen Raymarine color chart plotter installed on the cockpit table between the helms. It is integrated with the radar. The "Navigation Instruments" breaker must be on at the electrical panel power the unit. The unit will power up on its own and you have the option of turning the unit on and off via the red power button at the unit. **Please be gentle with the red power button, as we are on our third power button. They are fragile.** Fortunately, they don't require much effort. Note that it will default to whichever screen it was on prior to powering down. Take some time to familiarize yourself with the various displays and menus prior to starting your trip. The manual for the chart plotter is in the chart table pedestal.

Highlights

- The magnetic fluxgate compass for the plotter/autopilot is located inside the port aft cabin closet in the upper forward outboard corner. **Do not place electronics or other magnetic (ferrous) equipment (like a portable speaker) or steel items (like a coat hanger) nearby or on the shelf above.**
- The following DC breakers must be flipped on to have all electronics functioning together: On the lower DC panel – RADAR, AUTO PILOT, VHF RADIO breakers and on the upper DC panel – the AUTO PILOT breaker.
- Please refrain from changing settings beyond the typical functions like chart orientation, radar overlay, AIS overlay and range.
- Commonly used chart plotter selections are detailed below. For a more complete orientation of how to operate and get the most value from a Raymarine chartplotter, refer to the Raymarine User Manual stored in the chart table.

Commonly Used Chart Plotter Selections:

Finding the Navigational Chart:
Tivoli is equipped with Navionics charts on our new in 2023, Raymarine Axiom 9+ Chartplotter with touch screen control. The screen is mounted on a swivel pedestal located on the aft cockpit table between the helm stations. To find the charts function, you must first be sure that the "Navigation" breaker is turned on at the electrical panel. Then touch the power button on the lower right of the screen and it will momentarily illuminate, showing multiple tiles on the home screen.

The "Charts" tile is located in the upper left corner. Touch the "Charts" tile to select it and the local chart will open. You should see the outline of Tivoli on the chart in her current location.

Zooming in and out:
Once the chart loads, you can easily zoom in and out using the "+" and "-" prompts located in the lower portion of the screen or optionally, simply use two fingers as you would any other touch screen. Zooming in while entering busy waterways or areas with possible navigational obstructions allows you to better see and avoid potential hazards.

Returning the screen to the vessel's current location: ie. Stop Panning or Clear Cursor.

- Look for the "Find Ship"icon on the chart screen
- Press the icon and the screen should show the outline of the boat of a black dot at your current location.

Clearing Pre-existing Waypoints, Routes and Tracks:

- Start at the "Home" screen
- Select "My Data" on the lower right corner of the screen
- Select from among "Waypoints", "Routes" and "Tracks" to see any saved data
- You can delete prior navigational data by selecting it and then choosing "delete" from the "More Options" menu

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

- Personal preference usually dictates either North "up" or Heading "up"
- On the "Chart"menu, select "presentation"
- Then select "View & Motion"
- Select "Chart Orientation"
- Select either "Head Up", "North Up", or "Course Up"
- The screen will then update with the preference you selected.

Display Brightness:

- Press and quickly release the Power button.
- Adjust brightness slider at bottom of screen.

Course over Ground (COG) Vector/Line: Ensure the COG line is always ON. If not currently on:

- In the top right corner, press the DATA soft key.
- On the bottom row, press the soft key below the CHART VECTORS box.
- On the bottom row, press the soft key below the COG VECTOR box.
- Use the cursor controller button in the lower right corner to select ON.
- Press the OK button in the lower right.

Set the Course over Ground (COG) Vector/Line Length:

- In the top right corner, press the MENU soft key.
- From the Menu dialog box, use the cursor controller button in the lower right corner to select CHART SETUP. Press the OK button.
- On the bottom row, press the soft key below the VECTOR LENGTH box.
- Use the cursor controller button in the lower right corner to select INFINITE.

- Press the OK button in the lower right.

Displaying and using a Split Screen: Ex. Chart zoomed-in on one side and zoomed-out on the other, Chart on one side and Radar on the other.

- In the "settings" app, tap "Display and Brightness"
- You can then drag the slider to adjust brightness

Radar

- The "Radar" breaker must be on at the electrical panel to power the unit.
- When powered on, the chart plotter will communicate with the radar and be ready to display the data it receives, depending on the chart plotter page that is active.
- **The scanner takes time to warm up so it will look like nothing is happening – be patient**. If the chart plotter does not recognize the radar, you may need to power cycle the radar (power down for 30 seconds) using the switch at the panel.
- Be sure to turn the radar off again when you no longer need it. Due to the capacitors in the radar, the red status light on the electrical panel goes out slowly.

We recommend that in addition to using your PRIMARY navigation aids – namely, the San Juan Islands Maptech waterproof chart book or the roll charts (with the most active "killer rocks" marked in red) – up in the cockpit while underway, you also utilize the chartplotter for added safety. It helps you to see if you are where you think you are on the chart book or paper charts. The best way to stay off the rocks is by knowing where you are at all times. And the primary role of the chart plotter is to verify that you are where you think you are.

The fog that we've encountered in the islands usually forms in the wee hours of the morning and burns off by mid-day. So, if it's a little soupy after breakfast, we put on an extra pot of coffee until it lifts. Never depart from a safe location into the fog! To do so, even with radar, would be contrary to prudent seamanship. FYI – Fog becomes "reduced visibility" when you can see ¼ mile (about 4 football fields) in all directions. It is safe to proceed CAREFULLY in reduced visibility using your radar to "see" beyond the haze, but be sure to look up from the screen about every 10 seconds and use your eyes to scan the horizon forward, behind, and side to side. A motoryacht, tanker or freighter traveling at 20 knots takes only 39 seconds to travel ¼ mile! You need to see these fast-moving vessels sooner-rather-than-later so you can prepare, if indicated, to quickly take evasive action to avoid an impending collision.

A.I.S.

Tivoli is equipped with an Automatic Identification System. This system will show most commercial vessels on chart plotter screen as triangles. The triangle points in the direction that vessel is moving and if you move the cursor over the triangle the system will give you addition information (such as name, size, speed, etc.) about the vessel. The system also transmits this same type of information about Tivoli to other vessels with A.I.S. **This system should come on automatically when chart potter is turned on AND the primary VHF unit is also turned on.** The VHF unit is picks up the AIS signal and sends it to the chart plotter. If you get frequent "AIS Dangerous Target" alarms on the chart plotter, the mute setting has been disabled. You can press the center lower button under the screen to dismiss the alarm or turn the alarms off in the menu.

Depth Sounder – The digital depth sounder will not give accurate readings beyond 400'.

It is designed for use in shallow waters. In deeper water, the sensitivity on the unit increases as the transducer tries to get some reading back. Consequently, when you are in deep water false readings caused by currents,

changes in water temperature, fish, etc are common. false reading often report very shallow water so knowing you are in deep water is important. The depth showing on the sounder is being measured from the transducer (about 18" under true water level) so the water under the boat is really a bit deeper than the reading. But we strongly recommend leaving 10-12 feet of water under the boat at all times (noted exception is Bellingham's harbor at low tide – it gets down to about 8 feet).

We suggest using the depth sounder mainly as an aid-to-navigation in shallow water. However, the key to avoiding rocks is not the depth sounder – but knowing where you are on the chart at all times. ROCKS ARE THE SINGLE BIGGEST NAVIGATIONAL AND SAFETY HAZARD IN THE ISLANDS – BUT THEY ARE ALL MARKED ON THE CHARTS. We do not recommend using the alarm. Experience in the islands tells us that it goes off at the wrong time – usually the middle of the night as a seal or fish passes underneath..

Knot Meter

If the digital knot meter shows a reading of "0.00" while underway, the impeller is most likely clogged. Sometimes it will clear its self; wakes from big powerboats are good for this. You can also try clearing it by traveling in reverse. The instrument transponders are under the forward end of the salon just port of the mast. You can remove the impeller to clear it but only if you are experienced in such things. If needed, the SOG (speed over ground) reading on the chart plotter will work as a standby knot meter.

Wind Instruments

Wind speed and direction are displayed at the helm.

VHF Radios

Highlights

The iCOM base unit radio is mounted at the nav station and an iCOM RAM is mounted in the cockpit at the starboard helm. If the RAM happens to come un-plugged please turn off the base radio before re-connecting the RAM as **the RAM can be damaged if the port is energized while connecting.**

We recommend that you monitor Channel 16 during your cruise. It is reserved for emergencies and boat-to-boat initial contact. After contact, move to channels 68, 69, 72, 74 or 78. We listen to weather channels 1, 2, 3, 4 or 8 (whichever gives the best reception) before we sail in the morning and prior to anchoring for the evening. The islands are generally a light wind region but weather changes can be sudden. Listen for the reports identified as "Northern Inland Waters". **San Juan Sailing monitors channel 80** during office hours The San Juan Sailing office phone is 1-800-677-7245.

Details

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

- **Turning On and Off the radios** – **Base** radio: Press the center of the large channel-selector knob on the lower right corner of the unit. Cockpit **RAM**: Is powered on automatically when the base radio is turned on.
- **Silencing a DSC Alarm** – When another boat (or the Coast Guard) press the DSC button on a radio it sounds an alarm on all boats in the area. To silence this alarm, press any key on the radios.
- **Changing from High (25W) to Low (5W) transmit power** – **Base**: Press the H/L button on the mic. **RAM**: Looking at the Menu options at the bottom of the LCD display, scroll to the right (press the right arrow button) until you H/L displayed. Press the rectangular button directly below the displayed option.
- **To quickly get to channels 16/9** – Base and RAM: Pressing the blue 16/C button will switch to channel 16. Long press will switch to channel 9.
- **Accessing the weather channels (WX)** – **Base and RAM**: Looking at the Menu options, page 1, at the bottom of the LCD display, the right-most displayed item should read CH/WX. Press the rectangular button directly below the displayed option to switch between the weather and standard channels.
- **Adjusting Volume and Squelch – Base:** Turn the small Volume and Squelch knobs at the bottom of the unit. **RAM**: Turn the Vol/Sql knob on the top of the RAM.
- **Changing between International & U.S. channel** – Base only: Press the Menu button, then select RADIO SET, then select CHAN Group, then select USA, INT or CAN. **Please leave the unit set on USA at the end of your charter.**
- **How to set up and use Channel Scanning** – **Base and RAM**:
  a) **Flag Channels you select to be included in your scan** - Looking at the Menu options at the bottom of the LCD, scroll to the right (using the right-arrow button) and look for the "star" icon (should be on pg. 3). Turn the channel knob to the first channel you want included. Press the rectangular button directly below the star icon to flag this channel. A "star" icon will appear above the channel number showing in the LCD. Repeat the process to flag other channels you want included in your scan.
  b) **Start Scanning** – scroll back to pg. 1 of the menu items in the LCD and look for SCAN. Press the rectangular button directly below the SCAN icon to start the scan. The scan will stop anytime one of the selected channels (including 16) transmits.

14. Engine and Operating Under Power

Highlights

- **Yanmar 40 hp 4-cylinder diesel with sail drive.**
- **The saildrive helps eliminate shaft vibration, noise, and alignment problems. Under engine power, you will find *Tivoli* to be quiet, balanced, maneuverable, and powerful.**
- **Maximum RPM is 2800. Cruising RPM is 2000-2500. Idle is around 900 RPM. It's OK and in fact preferred to vary engine speed as you cruise. Please try not to exceed the cruising RPM range.**
- **There is a blower in the engine compartment between the cockpit and the swim step, which is vented in the transom walkway. This blower is temperature controlled so do not be surprised if it comes on automatically. This is normal.**

Details

Inspecting the Engine

Engine access is provided by lifting the companionway stairs, which operate on hydraulic lifts – there are no

latches, just lift it up, push it down. Side access is provided via hatches in the aft cabins.

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

- *Look around and below* the engine for any signs of oil, other fluid leaks or belt dust.
- *Check the coolant reservoir level*. The reservoir is accessed by removing the small upper table top in the aft port stateroom. Look for the white bottle on the starboard aft side. Cold engine – lower line, hot engine – upper line. There is extra coolant located under the navigation station seat with the tools
- *Inspect the raw water strainer for debris using a flashlight – no need to open the strainer unless clogged*. If clogged, unscrew the top of the strainer, clean out any debris, then replace the cap **making sure that the o-ring seal is in place. Please do not overtighten.**
- *Check belt tightness* by deflecting the belt inward with your fingers; it should not depress more than an inch or so.

For longer charters (> 7 days), check the oil level once a week as follows:

- The dipstick is on the starboard side of the engine and can be accessed from the starboard cabin.
- Pull and wipe the dipstick, then push it all the way in and pull it back out to check. Due to the viscosity of the oil and the small dipstick tube, you may need to insert the dipstick two or three times to get a reliable reading.
- If you need to add oil, there is extra oil located under the navigation station seat with the tools. Use only Chevron Delo 400 oil in the diesel engine. The filler port is yellow and located just up and to the right of the oil filter. Do not overfill, add no more than a cup at a time and re-check the oil level.

<u>Starting the Engine</u>

- This is a keyless start system. The battery engine switch, located in the aft port cabin, must be in the "ON" position. For security, when docked in a marina or leaving the boat for an extended period, switch the engine battery switch to "OFF" and lock the companionway hatch.
- Gearshift in neutral (approx. vertical).
- Press the I/O power button on the right side of the engine control panel. It's the lowest of the four buttons. The display will illuminate, the engine room ventilation fan will start and the buzzer will sound. This is the warning buzzer you would hear if the engine overheats or if there is loss of oil pressure.
- Press and hold the engine start button and release when the engine starts or not longer than 5 seconds. (circle and arrow icon - top button on the engine control panel). No need to press the glow plug button.
- You will need to increase the RPMs immediately after starting for the warning buzzer to stop. This is due to low initial output from the alternator. Do this by pressing the red button at the base of the throttle lever to disengage the transmission, and then pushing the throttle lever forward. You only need to increase the RPMs slightly and for only a few moments before returning to idle after the buzzer stops.
- After starting, check for water flowing out the exhaust. You should hear a splashing sound on the port side about two feet forward of the stern. At idle, the flow will not be high and you may hear a splash every second or two. This is normal. Do not operate the engine if water is not exiting the boat, as this means the raw water cooling is not working.

- Please allow 5 minutes of warm up before increasing to cruising RPM. Departing your slip or pulling up anchor gives plenty of warmup time – no need to sit and idle - allowing a diesel engine to idle too long will cause carbon build-up.
- If the ignition panel won't turn on, check to be sure that the start battery switch is on; it is located in the aft starboard stateroom. Also, check the shift lever is in neutral.

Engine Shutdown

- Gearshift in neutral.
- Push and hold the stop button (STOP icon) on the engine control panel.
- Press and hold the power (I/O) button until the warning buzzer stops and the illumination turns off.
- Note that if the power button is turned off while the engine is running, simply press the button again to turn the control panel back on, then press the stop button. Leaving the panel off while the engine is running can damage the diodes on the alternator and as a result, the batteries will no longer charge.

Running the Engine

- When shifting between forward and reverse, always pause for a second in the neutral position. Rushing your gear shifts will damage the transmission.
- To avoid sucking in air or sludge when the fuel level approaches ¼ of a tank, refuel when the fuel drops below ½ full and before it reaches ¼ full.

Engine Overheat – If the buzzer sounds while the engine is running, immediately check for oil pressure or temperature warning lights. If oil pressure is low, shut down the engine, check the oil level, and contact San Juan Sailing. (We have never had an oil pressure problem and we hope you don't either). Most likely a buzzer means the engine has overheated. Check for water flowing out with the exhaust. If flowing, check the coolant level. If there is no water flow the water strainer is likely plugged. If something like eelgrass gets sucked into the engine cooling water intake, it jams the raw water strainer (located on the starboard side of the engine compartment). **The strainer has been installed above the waterline, so there is no need to shut off the raw water intake** through-hull seacock (at the hull, below and aft of the engine) prior to removing the lid to clear debris. To clear it unscrew the top of the strainer and remove the eelgrass or other materials. **Replace the lid and tighten by hand**. If the engine overheats again upon restarting, check to be sure the cap is tight; if it draws air, it won't draw water (also, if you shut the raw water intake seacock, even though unnecessary, make sure it's in the open position). If still overheating, call San Juan Sailing for assistance.

15. Entertainment Systems

Stereo

We have installed a high-end stereo/CD player on the electrical panel and with speakers in the cabin and cockpit. Please be aware of other boats when you are in harbor and adjust the fader so that the cockpit speakers are turned off when not in use. You can connect your phone to the stereo using its built-in Bluetooth function. You will need to pair your phone. It may be necessary to clear the Bluetooth memory first, as the stereo can only pair to five phones. Please follow the menus on the screen. Note that the stereo will show up as "AVH-X2800BS" on your phone when searching for available devices.

TV/DVD/Blu-Ray Player

We have a Roku smart HDTV and separate DVD/Blu-Ray player (and movies) on board for your enjoyment. The TV is on a swivel mount so it can be flat against the wall when not in use or rotated to face the dinette when in use. The Blu-Ray player is stored on top of the hanging locker in the forward stateroom, with a power cord and HDMI cord (if the HDMI has gone missing, a second cord should be in the chart table). Below the electrical panel, just to the right of the furnace control, you will find an HDMI port (it's black, so it may not jump out at you). You can plug the Blu-Ray, or a personal computer, in here rather than at the back of the TV. The remote controls are normally stored in the chart table. For added convenience, you can connect the TV to your phone's WIFI hotspot and watch your favorite shows using the Roku apps (Netflix, Hulu, Disney Plus, etc.). **Please be sure to delete your accounts when you return to Bellingham.**

16. Fuel

- Fuel tank capacity is 53-gallons. Located under the aft port stateroom berth.
- The fuel shut-off valve is located on top of the tank.
- The fuel gauge is located at the electrical panel in the salon and can be activated by pressing the button that looks like a fuel pump (see notes under Engine operation above).
- The deck fill is on the port side near the transom and is easily accessible by lifting up the outer helm seat.
- Be sure you are opening the cap labeled diesel, as there is an identical fill port on the starboard side, which is your aft water tank.
- When filling the tank, have a crew member monitor the fuel gauge and notify the person fueling when the gauge reads 7/8 full. The fueler should listen closely and stop as soon as they hear the pitch rising in the fill pipe. It will foam out the vent and fill port if you go much further, depositing diesel both in the water and in the cockpit.

17. Galley

For those of you who are interested in fine dining while on vacation, we have done our best to setup Tivoli with a well-equipped galley. We have place settings for eight on board and most of the pots, pans and utensils needed for food preparation. There is usually a good assortment of cooking oils, spices, condiments and supplies on board. We start the season with full cupboards and it's not uncommon for new items to arrive throughout the season. The following list is intended to give you a flavor of what we try to keep on board. Please note that no refrigerated items are included.

- Condiments – Cooking oils and spices are in the cupboards to the left of the refrigerator.
- Supplies – saran wrap, aluminum foil, baggies, a few containers for leftovers, and garbage bags. All we ask is when you use the last of something that you replace it. There is also an assortment of cleaning supplies should you need them, some under the sink and more in the cabinet in the shower.

18. Heads and Holding Tanks

- Please do not put anything in the toilet that has not been eaten. Experienced sailors deposit toilet

paper in a wastebasket, not down the toilet because paper tends to clog the vents.

- Each head has its own holding tank, Both are 21 gallons each.
- If you have four people on board and have 'normal' usage, the tanks will need to be emptied every other day. If you have more onboard or heavy usage, please dump or pump every day. There is no tank level indicator, so regularly emptying each tanks is important.
- Our one plea is this: don't over fill the holding tank as leaking sewage or a clogged holding tank vent line is most unpleasant! Thank you.

Emptying the Holding Tanks

1. Deck Pumpout

   The holding tanks can be pumped out via the labeled deck caps located near each head. Pumpout stations in the San Juan Islands are shown in Section 6 of the white Charter Guest Reference binder on board. After pumping out the holding tanks, please refill each tank with about 5 gallons of fresh water through the deck fitting to rinse, and then pumpout again. This will help keep the waste system smelling fresh! Thank you!

2. Overboard Discharge (**where legal**)
   - Both holding tanks are gravity discharge, no macerator pump.
   - The overboard discharge through-hull for the forward head is located under the sink inside the cabinet (look for the red handle on the valve just below the floor of the cabinet).
   - The overboard discharge through-hull for the aft head is located under the hinged shower seat.
   - The tanks will normally drain in less than a minute (you will hear them finish with a 'woosh' if the engine is not running).

19. Heater (Cabin)

Tivoli has a three-zone ITR Hurricane Zephyr diesel furnace, which heats the boat in two ways: the first is through forced air via many vents throughout the boat and the second is through 180 feet of hydronic piping that is routed under the floor of the cabin. Being hydronic, there is a warm-up period of several minutes before the fans turn on.

Furnace Location – The ITR Hurricane is mounted in a compartment accessible via the aft starboard stateroom, with many accessory components located in the aft starboard locker in the cockpit. The furnace components are fragile. For this reason, **we ask that nothing be stored in this locker. In addition to damaging the system, there is a risk of heat damage caused by the furnace, hydronic lines and exhaust. Also, for your safety, please do not touch the furnace, hydronic lines or exhaust while the furnace is running or after the furnace has been shut off.** This is a sealed system and does not require any maintenance during your time aboard.

Exhaust location – The exhaust port for the furnace is on the starboard side of the stern (the exhaust port on the port side is not in use). Exhaust temp can reach as high as 700 degrees. **We ask that nothing be hung from the rails that may come in contact with the exhaust port. Please also watch dock lines, fenders tied to the boat and the dinghy painter line.**

Furnace Control – There are three thermostats: one in the forward stateroom on the side of the hanging locker, one in the main salon on the side of the mast compression post and one in the aft starboard

stateroom. The furnace has a main on/off control switch and status display located beneath the electrical panel. To turn the furnace on, you must turn the main control switch to "on" and move the slide switch to "heat" on at least one of the three thermostats. The system will not heat unless a thermostat is requests for heat. Adjust the temperature setting to the desired temperature. A hydronic heating system heats the water moving through the boat. Each thermostat-controlled zone has a fan unit dedicated to that zone. There are two types of heating vents: the first is a round adjustable vent that can be both opened and closed, and turned, and the second is a toe kick vent in the galley that can be opened and closed. Be sure the vents are opened and not covered with gear, bags, etc. to ensure they operate.

20. Lighting

- Flip on the CABIN LIGHTS breaker switch on the DC panel at the Nav Station.
- The Salon ceiling lights are controlled by the two white paddle switches on the ceiling above the base of the companionway stairs (starboard side of the hatch slide).
- The forward and both aft stateroom ceiling lights are operated by small toggle switches on the light fixtures.
- The stalk lights in the salon and all three staterooms are operated by small switches on the end of the stalks.

21. Refrigerator/Freezer

The on/off switch is on the panel. **The Vitrifrogo compressor is extremely efficient and we normally leave the unit running 24 hrs a day without battery issues.** The box is broken into sections with a small compartment in the upper forward portion of the refrigerator. This metal compartment will serve as a freezer/chiller, as it is closest to the coils. We find that our ice lasts longer (usually several days) if we put it at the bottom of the refrigerator where the cold air wants to settle. If you have meat you want to keep good and cold this same area is useful.

Drain Pump – As your ice melts, the water will be deposited in the bilge. **The bilge pump should always be switched to "auto", so it takes care of any and all excess water that winds up in the bilge.**

22. Sails and Rigging

Highlights

- Hoisting main and furling jib.
- All lines led aft to the cockpit.
- Single line reefing from the cockpit.

Details

Jib - The jib is standard roller furling. Whether fully or partially deployed, you'll have good sail shape. Slight hand-over-hand tension on opposing lines – furling line and sheets –prevents problems such as a rat's nest on the furling

drum (should the wind catch the sail and unwrap it violently) or a baggy furled sail. The easiest way to unfurl the jib is to put the working sheet on the leeward winch to deploy the sail. Once the sail is deployed, it will be on the winch and can be adjusted by winching in or easing it out.

Furling or Reefing the Jib - Ease the jib sheets (keeping control of them) while pulling in the jib furling line until only the amount of sail you desire is deployed. If you are going to reef the jib, make sure that you keep tension on the furling line both during and after the reef to prevent the reef from coming out. The most common problem is forgetting to take a jibsheet off the winch or not opening the appropriate clutch.

Reefing Guidelines - Tivoli will sail comfortably in full rig in apparent wind speeds into the upper teens using standard depowering techniques at the top end of the range. If you anticipate (or find yourself in) stronger conditions, you may wish to partially furl either or both sails. If the boat develops excessive heel or weather helm, reefing may correct the problem, make your ride more enjoyable, keep loose gear from rocketing around the boat and improve performance. Everyone likes "rail in the water" shots but no sailboat sails efficiently that way.

With a reefed main, you may wish to balance the rig by partially furling in the jib. Correct balance should result in slight weather helm so that, if the wheel is released, the boat has a slight tendency to head up toward the wind.

23. Thruster (Jet)

Brand new for 2021, Tivoli is equipped with a Jet Thruster Combi 50 bow thruster system. Instead of a traditional tunnel cut through the hull, a centrally-mounted jet pump pulls seawater through a small 2.5-inch through-hull and pushes it out of two 1.5-inch ports via a network of heavy-duty, double helix-reinforced hoses and computer-controlled valves. These ports act as your thrusters.

A joystick control panel is located at the starboard helm station within easy reach while maneuvering. The controls are simple and intuitive, with a computer below making all of the necessary adjustments to the pump and valves to make the system respond to your commands. Still, even if you are familiar with traditional tunnel-type bow thrusters, we recommend testing this new system in open water away from docks and other boats before you may need to use it so you understand how it operates and how the boat responds to joystick inputs.

Turning the system on

Press the small button at the lower left side of the control panel. A blue light will illuminate to let you know the system is ready. The system and light will remain on for 10 minutes of inactivity, then automatically power down.

Operating the Jet Thruster

Gently push the joystick to port or starboard to direct the flow of water (these are simple on/off switches, so there is no need to use force on the joystick). Pushing the joystick to port will result in a jet of water exiting the starboard side, pushing the boat in the port direction, and vice versa. Note that there is a short latency period as the system determines what it needs to do to carry out your command (please be patient and hold the joystick until the boat responds before letting go).

As with any thruster system, the motor draws a significant amount of power (960 amps at 24 volts!) from the thruster's battery bank. In addition, the system will only charge while the diesel engine is running or the boat is

connected to shore power. To ensure there is sufficient battery power available when you need it, please only use the thrusters when they are absolutely necessary. There is also the potential to overheat the jet pump motor with extended operation. The motor is equipped with overheat protection and will shut the system down until the motor cools. Either low batteries or an overheated motor will result in the system not working when it is needed.

24. Tools & Spares

It is our goal and hope that you will not need to make repairs during your trip. That being said, we have also provided a good selection of tools and spares in case you need them. The tools are stored in a compartment under the navigation station seat. In this same location we have miscellaneous hardware, tape, wire ties, etc. The spares include engine filters and belts along with a replacement head pump, replacement starter and replacement alternator. If you have problems please call San Juan Sailing or us (see numbers on page 1).

25. Water

Highlights

- Two water tanks totaling 140 gallons.
- The tank level indicator is located at the nav station on the AC/DC panel. The level gauge is a multi-function display. Press the water tank icon button to display the levels for each tank.
- Water tank selection valves are located in the salon behind the starboard settee seat back near the aft end. Open only one tank at a time, starting with the forward (#2) tank.
- Deck fill caps are located above the holding tanks – forward head on the starboard side near the forward end of the cabin top and the aft head on the port side near the aft end of the cabin top.
- Water pump breaker is on the DC panel at the nav station.
- Hot water is produced by two methods: 1. Shorepower, 2. Engine. See details below.

Details

Water Pump: Please turn off the water pump breaker when the system is not being used. If one of the water tanks runs dry the pump will run continuously and burn out. You will likely not hear the pump running over the sounds of motoring or sailing.

Hot Water Heater:

The 6 gal hot water tank is located under the starboard side salon table cushion. The hot water heater is only powered by two sources: the engine running, or shore power.

- It takes about 30 minutes of running the engine under load to get the water hot. CAUTION: Engine heated water may be scalding hot. Please BE CAREFUL!
- When on shore power, you can heat your water using electric coils by turning on the WATER HEATER breaker on the AC panel.

State parks do not have pressurized water to refill tanks, but all points of civilization do.

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