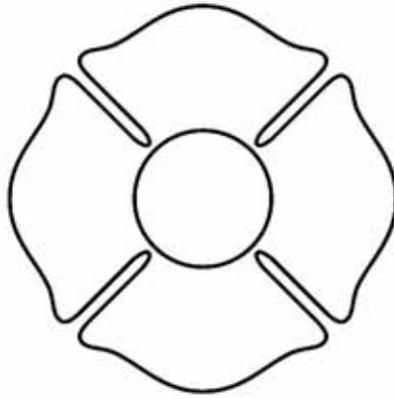


Owner's Notes



“Florian”



FLORIAN

Florian is the Patron Saint of firefighters. And those who use water to better their lives and the lives of others.

He was born in Austria and became a high ranking Roman army officer in the third century A.D. His duties in the army included fighting fires and organizing early firefighting brigades.

Today the Cross of Saint Florin is used as a badge by many firefighters worldwide, including the U.S. and Canada.

For the fire service the eight points on the Florian cross represent the eight virtues of knighthood:

- ❖ Tact and discretion
- ❖ Loyalty and commitment
- ❖ Dexterity and mental adroitness
- ❖ Observation, attentiveness and perceptiveness
- ❖ Sympathy, compassion, caring and sharing
- ❖ Explicitness and thoroughness
- ❖ Gallantry
- ❖ Perseverance

INTRODUCTION

Welcome Aboard Florian!

Florian is a 2010 Nordic Tug 32, powered by a Cummins diesel engine, with a HP rating of 270 @ 2800 RPM. It can carry 205 gallons of fuel and 100 gallons of water. At a time when we are all concerned about high fuel prices, the Nordic Tug provides a real bargain. Actual “Florian” data indicates that this 32 Nordic Tug can provide hours of cruising fun at reasonable speeds with very limited fuel consumption.

RPM	SPEED (kts)	Gallons/hour
1200	5.5	1.
1500 Economy Cruise	.6.2	1.2
1800	7.0	1.8
2000 Fast Cruise	7.5	2.5
3000	10.5	8.4
3600	14.5	14.2

We hope you enjoy cruising with Florian. Please let us know if you find anything missing or in need of improvement.

While using or reviewing these notes, please feel free to mark corrections, and make suggestions and improvements. Your constructive criticism will be appreciated.

Thank you.

Ron Devolder

Much of the information is taken from the Tug Operator’s Manual for the 2006 model year, and from the component manufacturers’ installation/operation manuals that came with the boat. The Owner’s Notes assume that the charter guest/operator is experienced and competent in the safe operation of a 18,500 pound, 35 foot power boat, and knowledgeable of boating rules and regulations. These notes do not attempt to anticipate every situation or occasion that may arise, and are not a substitute for reading the Owner’s Manuals and other informational materials which are located on the boat, or for exercising reasonable care and good judgment in the handling and operation of the boat. NO WARRANTY IS EXPRESSED OR IMPLIED.

Revisions:

11/3/16, Sect. 4 Batteries – increased amp hours to 600, added battery monitoring voltage parameters. Sect. 9 Electrical Panels and Sect. 17 Inverter/Charger – added reference to Sect. 4 for voltage monitoring details. Sect. 23 Preparaton for Departure #3 DC Panel – added turn on green and yellow dot breakers and reference to Sect. 4 Batteries.

10/6/16, Sect. 6 Deck Wash – connecting/disconnecting the hose. Sect. 8 Dinghy – deleted reference to davit remote controller, added instructions for using transom mounted push buttons. Sect. 10 Electronics – added detail for using Fusion entertainment system and TV/DVD flatscreen. Sect. 11 Emergency/Safety Equipment – moved this section to Section 1 per SJY standard. Sect. 12 Engine – added reference to Sect. 23 of owner notes for pre-departure checklist. Section 23 Preparing for Departure – added detail to checking the coolant level.

8/18/16, Sect. 21 Water – deleted reference to Generator.

Florian Owner's Notes

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1. EMERGENCY/SAFETY EQUIPMENT

1. Adult inflatable vest-type life preservers (4) are located in the staterooms, plus 4 additional life vests are in a storage bag in the aft lazarette..
2. Life sling is mounted on the rail at the starboard stern.
3. There are three (3) fire extinguishers:
 - affixed inside the cabinet starboard side above settee
 - affixed to wall inside starboard closet in forward berth
 - affixed to forward bulkhead on port side of engine room
4. Horn at helm station.
5. Flare kit in step at the helm station.
6. Flashlights (2) in holders; one located under helm seat starboard side, second one in forward berth forward bulkhead on port side.
7. Bilge pumps (3) located in the engine room, below the salon/galley, and in the Lazarette (The bilge pumps should be in automatic position on the helm control panel.) High water alarm at amidships.
8. Wooden seacock plugs in Tupperware container in engine room.
9. First Aid Kit located under head sink.

2. ANCHORING SYSTEM

The primary anchor is a Delta weighing 35 pounds. The anchor holding line with the galvanized chain hook is stowed in the step at the starboard helm door. A spare anchor with 15' chain and 250' rode is located in the stern locker. A 600' braided 3/8" polypropylene line for stern tying is located at the stern in the aft cockpit lazarette.. "Florian's" **draft is 4 feet**. The depth displayed in the electronics is the water depth not including the keel.

Chain Markings

The anchor chain is 300' in length with about 15' of nylon line at the "bitter end". The nylon line is used in case of emergency to release the anchor by cutting the line. The chain is marked with **yellow paint at 50' intervals, and double yellow paint at 100' intervals**.

Windlass

The anchor windlass has foot controls (Up/down) at the forward end of the deck. There is also a switch on the helm panel, so the anchor can be deployed or lifted at either location. If there is no power to the

windlass, check the circuit breaker for the windlass which is located on the DC panel. Another breaker is located on the aft starboard support for the forward berth

Scope and Tide Swing

Scope is the relationship of length of rode (chain, line, cable) to the depth of the water.

San Juan Yachting recommends a 4:1 scope.

- Check the tide tables to know at what point in the range you are anchoring, and measure the scope for the high tide.
- Check for depth and rocks within the proposed “swing” area.

Setting the Anchor

1. The boat should be idling facing into the wind.
2. Ensure that the “Windlass” breakers on the DC panel and on aft starboard support of forward berth are ON.
3. At the bow, take the snubber off the anchor chain.
4. Depress the down arrow foot switch to lower the anchor. Push the anchor past the anchor roller carefully so the anchor does not swing back and strike the bow of the boat.
5. Let out the proper amount of rode based on scope desired. Moving the throttle in and out of reverse will provide adequate astern momentum to lay out the chain on the seabed.
6. Put the engine astern momentarily to put a strain on the anchor.
7. Verify the anchor is set by seeing the boat move forward and seeing slack in the chain.
8. Using the anchor holding line (snubber) with the galvanized chain hook (cleavis hook), secure the chain in front of the anchor roller with the chain hook and secure the other end of the line to the Sampson post creating a slack loop in the chain between the anchor roller and the place where the chain hook grabs the anchor chain.
9. Do an “anchor watch” for the first 30 minutes, observing how the boat swings and how close it gets to other boats and objects.
10. On the Raymarine monitor, turn the Radar to standby mode.

Retrieving the Anchor

The engine should always be idling when you are retrieving the anchor, in case it is necessary to move the boat forward momentarily by moving the throttle in and out of gear.

At the circuit breaker panels next to the helm:

- Turn ON the WINDLASS breaker at DC panel or breaker in forward berth.
- Turn ON the WASHDOWN PUMP.

At the bow:

- Connect the blue coiled hose with the black nozzle to the faucet at the bow near the anchor.
- Release the line from the Sampson post to the anchor chain and remove the chain hook from the chain.
- Depress the UP ARROW to bring up the anchor.
- Wash the chain with plenty of sea water before it comes over the roller to keep the mud off the boat.
- As the chain tightens and starts to bog down the Windlass, wait until the boat catches up, then continue. Don't drag the boat by the anchor chain thru the water.

- When the anchor is clear of the water make sure it is clean of mud. A boat brush and hose may be used to assist this.
- Be careful for the last couple feet to **make sure the anchor is facing the proper direction.** Release the tension on the chain slightly to take the strain off the Windlass.

3. BARBEQUE GRILL

The stainless steel propane barbeque grill is mounted on the aft railing. It is for *outdoor use only*. The propane tank which serves the grill is located inside the molded step to the upper deck, on the port side of the cockpit.

To light the grill:

- Make sure the regulator knob on the grill is in the OFF position.
- Open the lid to the grill.
- Push and turn the regulator knob counter-clockwise to the high setting.
- Light the BBQ with the red lighter button or a Butane lighter using the lighting holes located either on the right hand side of the heat plate within the BBQ, or on the left side of the BBQ. If the burner does not light after 10 seconds, turn valve to OFF position and wait 5 minutes before repeating.
- Confirm that the burner is lit by looking through the front vents of the BBQ.

Grilling

- Adjust the regulator knob on the grill to the desired heat setting.
- The BBQ does not require pre-heating. Do not overheat.
- Do not cook on the high setting with the lid closed.

To shut off the grill:

- Turn the regulator knob on the grill clockwise to the LOCK-OFF position.

Cleaning the grill: The grill should be cleaned on a regular basis. Stainless steel exposed to high heat will change color over time. Discoloration of components does not affect the operation or performance of the BBQ.

- Lift out the cooking grill and the heat plate for cleaning.
- The exterior of the BBQ can be cleaned with soapy water.

When the grill is not in use

- Lock the lid of the grill securely with the latches.
- Cover the grill with the canvas cover between uses.

4. BATTERIES

Florian is equipped with 4 house batteries and 2 additional batteries that together power the engine starter, bow thruster & windlass. The house batteries are located in the engine room below the helm station. The total amp hour capacity is 600, of which 300 are usable. The house bank is located on the starboard side of the engine room and the start/thruster/windlass batteries are on the port side.

The DC Panel is located at the inboard side of the helm seat. The **main DC circuit breaker should be left ON if the boat is in the water, whether you are on or off the boat, and regardless of whether you are connected to shore power.** If you have been plugged into shore power for 3 or more hours, the batteries should be charged. Away from shore, as long as you are cruising a couple hours a day, the batteries are recharging, and you should have adequate power without the aid of shore power.

Voltage Monitoring

At the top of the DC Panel is a voltmeter. Position #1 on the selector switch is the start/bow thruster/windless bank. Position #2 is the house bank. Position #3 is spare.

On Shore Power: The batteries should read over 13V, if they do not it means that they have been drawn down significantly and will need to be charged for more than a couple of hours of runtime or shore power time.

Underway (engine running): The batteries should read over 14V.

At Anchor/Mooring (not underway or plugged into shore power): the batteries should read 12V or above. To protect the batteries and the proper function of all electrical equipment on board, the batteries need to be charged when they reach 12V. The engine must be running at greater than 1000RPM's in order for the alternator to produce enough excess power to charge the batteries. When at anchor or on a mooring, it is extremely important to be judicious with what electrical devices are used and left on.

Battery Charging

All batteries are charged automatically from the main engine when running or from shore power when selected. When the main engine is running at cruise speed above 1000 RPM, the batteries are charged automatically by the alternator on the engine through combiners which connect to and charge the 2 battery banks. The output charge from the alternator is connected to the house battery bank directly and then to the start bank and bow thruster/windless bank through the combiners. When on shore power, the inverter/charger reverts to the charging mode and takes over for the output load of the main engine alternator.

5. BERTHS

The forward stateroom has a double berth 76” long, 48” at the foot and 61” at the shoulder width.

To convert the settee, remove the table and leg. Pull the back and seat cushions off settee. Pull pins forward and aft on slide out shelf. The built in legs will support the slide out shelf. Reposition cushions to make a double berth. The size of the berth is 45” wide by 79” long.

6. BILGE PUMPS

“Florian” has 3 bilge pumps. They are located below cork floorboard in the head at the centerline of the boat, below the salon/galley at the shaft seal, and in the Lazarette. The bilge pumps should be in the automatic position on the DC control panel. There is a high water bilge alarm amidships.

7. DECK WASH

There is a wash down connection at the forward end of the deck and also in the cockpit. Salt water is pumped through the hose which you can use to clean the anchor and chain, or wash dirt overboard through the deck drains called scuppers. To utilize the system:

- Turn ON the WASHDOWN PUMP circuit breaker located on the BATTERY/DC SUPP distribution panel beside the helm seat.
- If there is no water flow, check to see that the salt water sea cock, located in aft cockpit lazarette starboard side is OPEN. Also check the filter on the washdown pump above the seacock.
- The blue coiled hose has a quick disconnect and can be used at either the bow washdown or the one located on the vertical face of the propane locker in the cockpit.
- To connect hose, align hose slots with hose end grooves and turn clockwise. To disconnect, push in hose end then turn counterclockwise (look for grooves on hose end).

8. DINGHY

“Florian” has a hard-bottom inflatable dinghy with a 8 HP Yamaha four stroke outboard motor. The dinghy is accessible from the swim step. It is mounted to a davit at the stern and is lowered into the water with a davit motor. The Outboard Motor manual is located in the Nordic Tug Notebook in the cabinet forward of the crew helm seat.

Launching the dinghy

Caution: Never raise or lower the dinghy with occupants (adults or children).

- b. Put the plug in the transom of the dinghy.
- c. Davit winch motor control buttons are located on the cockpit side of the transom, starboard side of pass-through to swim step. Raise davit is the top “ON” button. Lower davit is the bottom “OFF” button.

- d. Raise dinghy enough to remove carabineer safety cable. Then lower davit and dinghy into the water.
- e. Create enough slack to be able to pull the dinghy to the swim step; then carefully climb into the dinghy. It is probably safer to sit on the swim step and slide into the dinghy.
- f. Unsnap the two (2) cable bridals at each end of dinghy while inside the dinghy from the stainless steel davit, leaving the cable bridals attached to the bow and stern of the dinghy.
- g. Raise the davit by the motor control to get it out of the way of boarding guests.

Operating the dinghy

- a. Make sure all occupants are wearing appropriate **life jackets**, and that the **oars** are in the dinghy.
- b. **Never let minors start or operate the dinghy.**
- c. Check to make sure the tubes are inflated as hard as possible. There is a foot pump located in the lazarette when additional inflation is needed.
- d. **Check the gas level** by removing the lid and looking into the red 3 gallon plastic gas container located under the seat in the dinghy.
- e. **Open the vent on the gas tank** and connect the fuel line to the outboard motor.
- f. **Squeeze the primer bulb** several times until it is firm to prime the line and the motor.
- g. Start the motor:
- h. Set gear selector to **neutral** position. **NEVER START THE MOTOR IN GEAR!**
- i. Pull the choke knob out when starting a cold motor.
- j. Pull recoil starter cord slowly until you feel the starter engage, then pull rapidly to crank the engine. Repeat until the engine starts. *If the engine is flooded, wait 30 seconds, then continue.*
 - After engine start check for a steady stream of water flowing out of the water pump indicator hole.

If no water is coming out, stop the engine and check the cooling water intake for obstruction. If there is no obstruction, there may be a water pump failure or blockage in the cooling system, which will cause the engine to overheat--*do not operate the engine.*

Allow the motor to warm up for a few moments, then push in the choke knob half way.

After several minutes, push choke control in all the way.

Operate the dinghy with the shift lever (forward, neutral, and reverse), steering with the handle that has the twist throttle.

To stop, push in the red engine stop button, or pull out the end of the red lanyard (the kill switch).

Fastening the dinghy to the davit at the stern

Disconnect the fuel line from the outboard motor, and close the vent on the fuel tank.

- a. Turn ON the “dinghy” circuit breaker at the bottom of the BATTERY/DC SUPP distribution panel.
- b. Lower the dinghy davit until you can clip the cable lifting bridals to each end of the davit.
- c. **ALL OCCUPANTS MUST BE OUT OF THE DINGHY BEFORE RAISING IT.**
- d. Use the remote control to raise the dinghy out of the water.
- e. Open the plug in the bottom of the dinghy so water does not accumulate in the dinghy.
- f. Attach the cable with the carabineer and lower the davit until the cable is taught.
- g. Attach the 2 side fasteners from the dinghy to the sides of the davit arms.

Fueling the dinghy motor

Always stop the motor before refilling the tank.

- a. The outboard motor **is a four stroke and does not require mixed fuel.**
- b. If additional *unleaded* gas is purchased for the outboard motor, make sure it doesn't contain Ethanol

- c. Remove the gas container from the dinghy by releasing the clip to disconnect the gas hose at the motor, then release the plastic container from the straps that secure it.
- d. Store the gas container with the hose in the dinghy, and store the extra fuel container in the propane locker. **NEVER STORE GAS OR OTHER FLAMABLE LIQUIDS IN THE LAZARETTE.**

9. ELECTRICAL PANELS

The electrical distribution panels are located on the inboard side of the helm seat (DC) and crew seat (AC).

1. DC/BATTERY POWER distribution panel. The **DC POWER circuit breaker should be left ON if the boat is in the water, whether you are on or off the boat, and regardless of whether you are connected to shore power.** At the top of the BATTERY POWER panel is a digital meter that indicates the level of battery power. Turn on **all** DC breakers that are labeled with a green or yellow dot to operate the vessel. **Refer to Section 4 Batteries for detailed information regarding charging and monitoring.**
2. AC/SHOREPOWER distribution panel
Turn on **all** AC breakers that are labeled with a green or yellow dot.

10. ELECTRONICS/ENTERTAINMENT SYSTEMS

Raymarine

“Florian” is equipped with the latest Raymarine electronic equipment, and with the Navionics Platinum Multi-Dimensional Charts for the area. The C120W-Series Display includes navigational charts, 3-D displays, Fishfinder, Radar, AIS, Data, Video, Course Deviation Indicator and Waypoints capabilities. Please refer to the QuickStart Card, Operating Guide and Reference Manual which is on-board. The ST-70 Auto pilot is located next to the Chartplotter/ Radar screen.

FUSION AM/FM Radio CD & iPod Player

- Located in the pilothouse on the overhead dashboard.
- Flip on the Stereo and Electronics 1 breakers on the DC panel then press the red power button on the Fusion unit.
- Large knob adjusts the volume. Volume in salon and cockpit can be controlled separately. Press the volume button: Zone 1 is the salon and Zone 2 is the cockpit.
- To insert a CD, open the face of the unit by pressing the black button on the top and flipping the face downwards. The insert/eject button is on the backside of the face, left side.
- Select the AM/FM frequency by the right or left arrow.

- Upper buttons include tuning, disc player and IPOD connection.

Flatscreen DVD player/monitor with remote.

- The remote controller and DVDs are located below the TV inside the compartment behind the sliding wood door.
- Insert DVDs into the left side of the TV with the disc label facing towards you.

VHF radio is located in the overhead panel at the Helm station.

- Turn on the VHF radio by pressing and holding IN on the power/volume control knob.
- **WX (weather) stations are found by pressing CLR/WX button.**

11. EMERGENCY/SAFETY EQUIPMENT (See Sect. 1 of this Document)

See Section 1 of this document.

12. ENGINE

“Florian” is powered by a 270 HP CUMMINS DIESEL ENGINE located in the engine room below the helm station. The Pre-departure Checklist is found in Section 23 of this document.

13. FUEL

Florian has one 205 gallon diesel tank located in aft lazarette. There is a sight gauge on the aft side of the tank. The fuel gauge is on the “**Smartercraft**” engine monitor at the helm. Scroll through menu on the “**Smartercraft**” to locate percentage of fuel remaining. The fuel usage in gallons per hour also on menu.

Filling the Fuel Tank

The fuel fill deck fitting for the diesel fuel tank is located on the starboard side of the aft door. *On the starboard side, the WATER deck fitting is next to the DIESEL deck fitting—DON'T mix them up!* They are marked. *When fueling please fuel to the top of the sight gauge on the fuel tank.*

Before you start to fuel:

- a. Make sure the engine is shut down, the stove is off, all ignition materials have been extinguished, and everyone else is off the boat.
- b. There is a fuel tank vent located just below the fuel tank fill. Usually the fuel attendant has an **overflow device** to attach below the vent to catch any spillage. Fuel spills are the responsibility of the person operating the fueling hose.

- c. Fueling can be messy: take an absorbent pad, rag, and/or paper towels from the engine room to have at the ready. Clean any fuel spill off the deck--- it is slippery and hazardous.
- d. Open the DIESEL plate with the deck wrench/key located at the starboard side of the helm.
- e. Insert the nozzle into the fill valve, then start the flow. As the tank fills, LISTEN for the sputters and WATCH the fuel vent. Your goal is to STOP pumping BEFORE liquid fuel spurts out of the vent. Use the sight gauge on the aft of the fuel tank to gauge your progress in filling the tank (you will fill to the top of the sight gauge). Press the pushbutton on the sight tube to check the level.
- f. After the flow stops completely, remove the nozzle from the fill tube, put the hose back on the dock, screw the fill cap back in place, and return the key to the starboard side of the helm.

Servicing the Racor Fuel Filter located in the aft lazarette on fuel tank.

Few things you do are as important to your safety on the water as having uncontaminated fuel going to the engine!

- a. **Check the fuel filter for contaminants or water as part of the pre-cruising engine room check.** If there are contaminants or a separation of fluid in the bottom of the collection container, they should be drained of the contaminants.
 - With a collection container in place, open the black drain at the bottom of the container by partially turning the valve; *quickly retighten* the valve when the water or contaminants have been drained.
- b. **Replace the RACOR fuel filter if needed.** The **replacement RACOR 2-micron filters** are located in the plastic bin in the engine room marked CUMMINS MAIN ENGINE SPARE PARTS, RACOR FUEL FILTERS.
 - Close the fuel supply line. Remove the lid of the filter to be replaced by turning/loosening the brass T handle located at the top of the filter unit. Remove the filter element by holding the molded handles on the filter element and slowly pulling upward with a twisting motion.
 - Replace the black lid gasket with a new black lid gasket supplied with the new filter. Apply a coating of clean fuel or motor oil to this gasket seal prior to reassembly. Insert the new filter (with labeled end up) with a slow downward twisting motion.
 - Fill the filter unit with clean diesel fuel by pouring it on top of the filter element.
 - Replace the red O ring on the brass T handle shaft under the lid with the new red O ring provided with the new filter element.
 - Then put the lid back on the unit and snugly tighten the brass T-handle by hand ONLY. **DON'T FORGET TO OPEN THE FUEL SUPPLY LINE.**
 - Start the engine and check for leaks. Correct any leaks with the engine off.

14. GALLEY

The galley has a **NovaKool** refrigerator/icebox, and a **Force 10** two-burner propane stove with oven. See REFRIGERATOR and STOVE sections.

Non stick cookware

Florian is equipped with non stick cookware. *Do not use nonstick cooking sprays* on the nonstick cookware- an invisible buildup will impair the nonstick release system and food will stick in the pan. The nonstick cookware *does not need oil*. If you prefer oil for flavor, olive oil or peanut oil is recommended.

Use *low to medium heat* only. Excessive use of heat will cause pan warping and permanent nonstick coating damage. The non-stick cookware is *oven safe to 350 degrees F*—but never in the broiler.

Do not use metal or sharp-edged utensils.

Clean using mild dishwashing detergent and warm water. Use only nonabrasive plastic mesh pads to dislodge food particles.

15. HEAD & HOLDING TANK

The head has a **TECHMA** freshwater toilet. Unlike other systems which have Y valves allowing the option of flushing directly overboard, the **TECHMA** system does not have a Y valve and **ONLY** flushes into the holding tank.

Using the Head

- a. At the BATTERY POWER distribution panel located at the side of the helm station, make sure the following circuits are in the ON position:
 - DC POWER circuit breaker in ON position
 - HEAD circuit breaker in ON position
 - FRESH WATER circuit breaker in ON position
- b. In the head, there is a panel on the lower cabinet:
 - Check the **TECHMA THETFORD** panel below the head sink to make sure the *blue back light is ON*. Also the green light in the lower right corner should be on.
 - Check the **DOMETIC** panel at the base of the forward stairs to make sure the holding tank is **NOT** full.
- c. Push the left button to add water. Push the right button to flush the head. It will fill and flush twice during its normal flush cycle.
- d. Use the head. In conformity with San Juan Yachting's policy, **DO NOT PUT ANYTHING DOWN THE HEAD THAT HAS NOT BEEN EATEN FIRST**. Please, **NO** tampons or other feminine products, no hair, no Kleenex, and no toilet paper!! Use the waste basket and the plastic bags located in the cabinet under the sink to dispose of these items.

Cleaning the Head

There is a toilet brush in the cabinet under the sink. Use liquid dish washing soap and water for everyday cleaning of the toilet bowl. Never use chlorine based cleaners, caustic cleaners, chemicals, drain openers, alcohol, solvents, etc. in the system.

Monitoring the Holding Tank

The holding tank should be monitored daily. The **DOMETIC** monitor panel is located at the base of the forward stairs up high. The gauge will register the level of the contents of the tank: green for empty, yellow means low, amber indicates mid level, and **red says the tank is full—DO NOT ADD MORE**.

Discharging the Holding Tank

The WASTE deck fitting is located on the swimstep.

To empty the holding tank at a pump-out station or at a portable holding cart

- a. Locate the deck fitting labeled “WASTE” on the swimstep.
- b. Open the deck fitting with the key located in the helm drawer.
- c. Push the pump-out nozzle into the WASTE deck fitting and hold the nozzle securely to create an airtight connection to allow the contents of the waste tank to be vacuumed out of the holding tank.
- d. Follow the instructions at the pump out station to pump out the holding tank.
- e. Rinse the waste holding tank after emptying:
 - Add a few gallons of fresh water through the WASTE deck fitting with the available fresh water hose from the dock.
 - Reinsert the pump-out nozzle into the boat’s WASTE deck fitting and pump some more liquid out of the waste holding tank.
 - Repeat this procedure.
- f. When the tank has been pumped, check the Tank Level Monitor in the head to confirm your success; it should show a green light.
- g. Carefully remove the pump-out nozzle and place it back on the portable holding cart or the pump-out station.
- h. Replace the deck fitting and tighten it down with the key.
- i. Return the deck key to the right side of the helm.
- j. *Wipe up* any spills on the deck and *throw away* the used disposable gloves and wipe up rags.
- k. *Wash down* the fill area on the boat with the fresh water hose.

Discharging the Holding Tank Overboard

This method of discharging the holding tank should only be used in strict compliance with the law. A thorough understanding of the laws and regulations of overboard discharge is mandatory before discharging waste overboard.

Confirm that the SEACOCK IS OPEN BEFORE OPERATING DISCHARGE PUMP

- a. Turn on the MACERATOR switch on the DC panel beside the helm.
- b. Open the hatch in the aft lazarette and crawl in. The seacock is in the aft starboard corner of the lazarette.
- c. The **yellow lever** opens the Macerator Seacock. Confirm that the lever is in the **vertical position** to open the Seacock.
- d. Once the seacock is open return to the DOMETIC panel at the companionway stairs, push the macerator toggle to discharge the waste overboard. Once the holding tank level indicator reads empty on the **DOMETIC** panel to confirm that the tank is empty (green light), turn the toggle off. Make sure you keep constant supervision as to not run the pump dry and ruin the motor.
- e. When finished discharging waste, turn the macerator switch off at the DC panel and return to the lazarette and turn the yellow seacock to the horizontal position until next use.

16. HEATING SYSTEM

There are three sources of heat on “Florian”:

- 1) Heat produced as a by-product of the engine.
- 2) The **ESPAR** forced air diesel fueled furnace.
- 3) The auxiliary electric heat located under the stove in the galley.

Engine Heat (used while cruising)

Heat from the engine can be utilized to heat the pilot house, passageway, and head when the engine is running. At the helm, in the center of the control panel is a HEATER switch, with 2 speeds for the blower: high or low. Select the desired speed.

Primary Heating System is a **ESPAR** forced air diesel fueled furnace. The on/off toggle switch is in the salon, just behind the port crew seat.

- Turn the HEAT toggle switch to the ON (I) position; the red light will indicate power.
- The wheel should be in the $\frac{3}{4}$ to high heat position. The thick long indicators on the wheel are the higher heat settings. If the furnace is run at the lower settings it will soot up the chamber and quit.
- To turn the heat off, move the toggle switch to the OFF (O) position.

Auxiliary Electric Heat (used with shore power to heat the galley/salon area) The auxiliary electric heater is located below the stove, and is designed to heat the galley and salon area. It requires shore power. ***Do not run the auxiliary electric heater and the hot water heater at the same time when connected to shore power, or you will trip the circuit breaker.*** To turn on the auxiliary electric heater:

- Turn ON the circuit breaker labeled HEATER at the SHOREPOWER distribution panel located at the side of the helm.
- Adjust the thermostat at the electric heater to the desired temperature.

While away from shore power, if you want 110 AC power:

- Turn the Inverter ON at the Xantrex panel (above and to the left of the helm) by pushing where it says INVERT and a green light will come on.

17. INVERTER/CHARGER

Please refer to Section 4, Batteries for detailed information regarding voltage monitoring.

The inverter is intended to provide 110 volt AC power to small appliances when you are away from shore power. The inverter converts 12 volt battery power into 110 volt AC power. The rectangular black “Xantrex” Link 1000 INVERTER/CHARGER control panel is located at the left side of the helm station.

Confirm that the following three circuits on the AC panel at the helm station are ON:

- Microwave
 - Outlets Aft (all the outlets from the helm station aft)
 - Outlets Forward (Both staterooms and the Head)
- **If you don’t appear to have power** (e.g. the appliance won’t work at the outlets in the galley or salon, push the red reset button at the GFCI on the bulkhead forward of the stove. This should restore the circuit. If you don’t appear to have power forward of the helm station, push the red reset button at the GFCI in the head to restore power.

- **Monitor your usage.** If too many appliances are on at the same time, you may trip a breaker. If this happens, unplug one or more appliances and reset (turn on) the MICROWAVE and/or OUTLETS AFT circuits at the AC/SHOREPOWER panel.

When AC power is available from shore power or from, the inverter/charger automatically charges the house batteries. However, **when leaving the boat, turn OFF the Inverter at the Xantrex Link 1000 control panel**, so if shore power should fail, an onboard appliance (e.g. a coffee maker) will not draw down the batteries. The real danger is that the bilge pumps depend on battery power, and if they die, the bilge pumps die with them.

18. REFRIGERATOR/FREEZER

The Galley has a NovaKool refrigerator/freezer. When connected to Shore Power, make sure the REFRIG is ON at the SHOREPOWER distribution panel next to the crew seat. The thermostat control is located inside on the right side panel of the refrigerator, and controls both. Water from a defrosting cycle will collect in the tray under the freezer compartment and must be disposed of manually.

19. SHOWER

Using the shower

At the BATTERY POWER PANEL:

Turn ON the Fresh water pump.

Turn ON the Shower pump.

Hot water

Hot water is provided by a 6 gallon tank heated electrically and by a heat exchanger from the engine. You automatically have hot water if the engine is running, and it will stay hot for quite awhile even after the engine is turned off. So if you have been cruising for a couple hours, you should have abundant hot water after the engine is off.

When connected to shore power, make sure the WATER HEATER circuit breaker on the SHOREPOWER distribution panel is in the ON position.

20. SPARES

Florian carries an extensive collection of spare and replacement parts. See the Inventory for their description and location.

21. STOVE

Florian has a two-burner **FORCE 10** propane stove with oven.

To operate the stove:

1. Make sure the valve is open on the propane tank in the rear cockpit locker.
2. At the BATTERY POWER distribution panel at the side of the helm seat:
Make sure the DC POWER LPG CONTROL circuit breaker is in the “ON” position.
3. a. At the circular control panel below the DC panel:
The “power on” light should be green, confirming that you turned the STOVE circuit breaker in the distribution panel to the ON position.
b. Press the “valve on/off” indicator, which should activate the “green valve on” light. (This valve on/off indicator should be pressed to turn off the stove when the stove is not in use.)
4. Each burner on the cook top needs to be lit separately. Instruction for lighting the burners are on the inside of the oven door.

To operate the oven:

5. In order to use the oven/broiler turn selector valve to chosen temperature and push in on the valve until the oven or broiler light. Turn right for broiler and left for oven.

22. WATER

There are two 50 gallon fresh water tanks on “Florian”. Water is pulled off each tank at the same time. .

Checking the Water Level

The gauge for checking the fresh water level is located at the gauge at bottom of the forward stairs.

Filling the Water Tank

- a. Locate the deck fittings marked “WATER” at the port and starboard amidships. The deck plate key to open the plate is located at the right of the helm.
- b. Connect the fresh water hose (located in the lazarette in the cockpit) to the domestic water supply at the pier. Let the water run through the hose (overboard) for a minute or two to wash any contaminated water from the hose.
- c. Fill until water comes out the vent/overflow on the hull just below the deck fills.
- d. Tighten the deck plates.
- e. Return the deck plate key to the right side of the helm.

Hot Water

Hot water is provided by a 6 gallon tank heated electrically and by a heat exchanger from the engine. You automatically have hot water if the engine is running. When connected to shore power make sure the WATER HEATER circuit breaker on the SHORE POWER distribution panel is in the ON position.

23. PREPARING FOR DEPARTURE

1. ENGINE ROOM CHECKS should be performed daily, before cruising.

At the helm station, turn ON the Engine Room Lights. Enter the *engine room* below the helm station. The easiest location to perform the engine room checks is to sit on the starboard of the engine.

- a. **Check the oil level in the engine.** The dip stick is in the top center of the engine. Lift the plastic lid on the top of the engine with a label “NO STEP”. The oil level on the dip stick should be between the hash marks. *If the oil level is low:*
 - Add oil from the **blue plastic jug marked Delo 400 15/40 SAE**, using the **funnel** from the basket marked Replacement Fluids.
 - **DO NOT OVERFILL THE OIL CAPACITY** of the engine. It only takes 2 quarts to fill the oil supply from the lower line to the upper line on the dipstick.
- b. **When the engine is cold, check the coolant level** of the solid white recovery reservoir mounted on the engine, front starboard side. The fill cap is black – do not open when engine is hot. The reservoir should be *half full*. *If the coolant level is low:* Add some engine coolant to the recovery reservoir. Spare coolant is located along with spare engine oil on the port side of the engine room.
- c. Make sure that the **MAIN SEA STRAINER for the engine is free of seaweed or debris**. The sea strainer is mounted on the forward bulkhead, and is attached by a large black hose to the seacock. It is a large bronze unit with a glass-enclosed section.
 - Using the flashlight, check to see if the strainer is clear and not plugged with seaweed or debris *before every start*.
 - To clean the strainer, close the seacock (lever horizontal), unscrew the top with the *spanner wrench* in the tool box, lift out the basket, swish it back and forth in a bucket of clean water, and then reinstall it.
 - **REOPEN THE SEACOCK!!**
- d. When you have completed the engine room checks, **turn off the engine room lights at the helm station.**

2. DISCONNECT SHORE POWER

- a. At the SHOREPOWER breaker panel, turn OFF the double SHORE circuit breakers. Leave ON the 2 Inverter circuits on this circuit breaker panel.
- b. On the dock, first turn OFF the shore power circuit breaker at the pedestal on the dock, then disconnect the yellow electrical cord from the dock power.
- c. On the boat, disconnect the yellow electrical cord and store the cord coiled in the round blue basket in the lazarette next to the propane tank.

Caution: Always DISCONNECT from the SHORE-END and ---CONNECT from the BOAT-END---to avoid moving a LIVE cord!

3. DC/BATTERY POWER PANEL (main breaker should always be on)

Turn on **all** DC breakers that are labeled with a green or yellow dot to operate the vessel.

Refer to Section 4, Batteries for detailed information regarding battery charging and monitoring.

- DC POWER in the ON position
- REFRIG in the ON position
- Other circuit breakers on as you desire.

4. **CLOSE ALL PORT HOLES AND HATCHES** which might permit water to enter the interior, except those deliberately left open for ventilation.

5. **CONFIRM THAT THE DINGHY** is securely attached to the davit and that the hole in the bottom of the dinghy is open so as not to accumulate water in rough seas.

6. CHECK AROUND THE BOAT

Review the exterior area around the hull to confirm that there are no obstacles in the water or loose items that should be secured.

7. HELM CHECKLIST

- a. **Check the fuel level** at the “SMARTCRAFT” gauge.
 - See fueling instructions below if fuel is needed.
 - Record fuel quantity, engine hours, and date in the log book.
- a. **Check the water level** at the gauge at the bottom of the forward stairs.
 - See instructions below for adding water, if necessary.
- b. **Turn on electronics and instrument switches then start up the Raymarine C120 W multifunctional display** by *pressing* the red button in the lower left hand corner of the unit. Follow the prompt on the screen. The C-series Display has many functions, navigational and safety, including radar. *Study the Raymarine Operations guide* to set up the display in the manner most useful to you.
- c. **Turn on the VHF radio** by pressing IN and holding on the volume/power control knob.
 - **Check the weather channel.**
 - **Select Channel 16.**

24. GETTING UNDERWAY

1. Make sure that the **shift lever is in the neutral position.**
2. **Turn the ignition key ON.** Wait a few seconds as the VOLT METER at the helm panel falls and then rises to or near the 12 volt level as the preheat operation is completed.
3. When preheating is complete, **push the START button while the key is in the ON position** to start the engine. *Note: “Do not crank engine for more than 30 seconds, wait 2 minutes to allow the starter motor to cool down before restart attempt.”*
4. **Check that cooling water is coming out the engine exhaust.** (Look down at the water from the starboard side of the cockpit for a little water coming out with the exhaust . If no water flow is visible, check in the engine room to see that the seawater intake seacock is open!)
5. **Let the engine idle** for about 5 minutes or until the engine coolant temperature gauge reads above 100. *Note: During warm-up at idle, the volt meter will register between 10.5 and 12 volts as the preheater cycles. The temperature indicator will not show any indication of heat until the engine has been running for several minutes. Keep the engine below 1000 RPMs for five minutes, as the preheater cycles on and off as needed during this time period. RPMs over 1000 block the preheating function.*
6. **Turn on the bow thruster** by pushing the ON button. Toggle the joy stick momentarily in both directions to ascertain that the thruster is functioning properly. (If it is not functioning, check the breaker on the starboard side of the bed in the forward stateroom.)
 - a. The bow thruster is used primarily in maneuvering at or near the dock. In open water while underway, the thruster is not effective.

- b. The bow thruster will turn off automatically after 5 minutes of non-use. Restart in the same manner.
- c. The thruster may overheat and stop after 3 minutes of continuous running. After a 5-10 minute cool-down period, it resets itself.

Use the bow thruster to control the movement of the bow while operating the throttle *in short bursts* of forward or reverse, pausing in neutral, as you maneuver in the marina.

7. **Check wind and current directions.**

*Note: when using reverse, the **STERN WALKS TO STARBOARD.***

25. CRUISING

1. When clear of the marina, make sure **all mooring lines, fenders and anything loose are stowed.**
2. Operate the engine no faster than 1000 rpm until the coolant temperature reaches 140 degrees.
3. Monitor the engine instruments at the helm station while cruising.
 - o Volts should read between 13 and 14 at normal cruising.
 - o Water temperature should be between 180 and 190 degrees.
 - o Oil pressure should range between 45 and 80 depending on RPMs.

Radar: If you want the Radar on:

Press the red power button at the bottom left of the Raymarine multifunctional display.

The bottom of the screen will show: Radar "TX" (transmit) or "STDBY" (standby). Select TX.

Windshield Defrost

At the helm station, turn the "defroster" toggle switch up.

The two fans should keep the windshield defrosted.

Windshield wipers

Turn ON the wiper circuit breaker at the Battery Power Panel.

There is an ON/OFF toggle for each wiper at the helm station.

Engine Heat can be used to heat the pilot house, passageway and head while underway.

At the helm, in the center of the control panel, is a HEATER switch with 2 speeds for the blower: high or low. Select the desired speed.

26. RETURNING TO DOCK

1. Fenders out and
 - a. On docking side of the boat
 - b. At appropriate level for the dock
2. The engine cool down period (the last 5 minutes) should be at idle to allow the engine to cool down before shut off.
3. Once docked and the mooring lines are secure, turn off the engine.
4. Shut down the Raymarine multifunctional display by *pressing and holding* the red power button in the lower left corner for the countdown on the screen. Please re-place the screen cover over the screen.
5. At the BATTERY POWER breaker panel next to the helm seat;
Leave ON the DC Power circuit breaker.

27. CONNECTING TO SHORE POWER

1. At the SHORE POWER distribution panel at the side of the helm, make sure the circuit breaker marked SHORE is in the OFF position.
2. Take the bright yellow electrical cord located in the lazarette and connect it to the receptacle located forward of the starboard helm door. Line up the prongs, insert the plug, turn, and tighten.
Locate the power supply on the dock, making sure that the breaker on the dock is in the OFF position. The yellow electrical cord is 30 amps. Check the amps for the shore power pedestal on the dock, and use an appropriate adapter, if necessary. Connect the electrical cord to the dock power source, matching prongs, twisting, and tightening. Then turn the dock power source ON.
3. Return to “Florian” and turn the SHORE circuit breaker to the ON position.
4. Verify that you have power to the main electrical distribution panel by looking at the AC voltage gauge on the SHORE POWER distribution panel. The digital gauge should display voltage above 117 to be receiving adequate voltage.
5. Turn ON the desired AC circuit breakers, including REFRIG.
6. Do not run the AUX Heater and the HOT WATER HEATER at the same time on shore power.

28. CLOSING THE BOAT

1. Close windows and hatches, unless you want to leave some open for ventilation.
2. At the DC BATTERY POWER distribution panel next to the helm seat.
 - a. Turn OFF the FRESHWATER and HEAD circuit breakers.
 - b. Leave ON the DC POWER and Refrigerator circuit breakers.
3. At the INVERTER/CHARGER panel above the circuit breaker panels next to the helm
 - a. Turn OFF the Invert, so if shore power should fail, an onboard appliance will not draw down the house batteries.
4. Lock the doors.
5. On the dock, check the position of all fenders and see that mooring lines are secure.