

Fairwinds Sailing Association **Standard Operating Procedures**

PART II – C&C 27 Mark V (Massilia)

Revision History

Dec 1,2025 - Fresh Water System handling, Depthsounder, Bilge Pump update

Jun 1,2021 – Note of mainsheet/dodger issue

Mar 26,2021 - Post-sail checklist correction

Jun 15, 2019 – Change to engine intake seacock procedures; checklists updated

Aug 29,2017 - Bilge pump update (new pump)

Aug 27, 2017 - Photos of bilge pump and stuffing box

Part II C&C 27 Mark V (*Massilia*)

Overview

- Boat Type 1984 C&C 27- 4 I
- Sail number: 29933 PHRF-BC: 211
- Registration number: 13K115212
- Hull ID: ZCC27010M841
- Engine Serial No. 17028, Year installed: 1999
- LOA: 26' 6" LWL: 23' Beam: 9'3"
- Height: 34'6"
- Displacement: 4420 lb
- Ballast 1715 lb
- Draft: 4 feet 10 inches
- Transducer/depth sounder: 1ft below waterline
- Tankage: Fuel 13 us gal (49 litres) Water: 40 us gal (150 litres) Holding: 15 us gal
- VHF call sign: CFN6074 MMSI# : 316021993

Engine / Propulsion Systems

1. GENERAL

- Yanmar Diesel: Model 1GM10 (1 cylinder)
- Normal cruising speed is 5.5 knots. Hull Speed 6.4 knots
- Fuel consumption 1.2 litre/hour @ 2800 rpm
- Horsepower: 8 HP @ 3400
- Folding prop, walks to port

If a problem arises with the engine: SHUT OFF ENGINE!

It is VERY IMPORTANT that the problem is described in detail in the Log and the Boat Captain is advised. This could save costly repairs later.

If possible, contact Boat Captain before any repairs are carried out.

2. FUEL

Location / Specifications:

- Aluminium tank, located aft (49litres/13 US Gal).
- Fuel shut-off valve is located aft starboard side, accessed from the hatch in the lazarette.
- Deck fitting: located at the aft port corner of the deck.

Use: Fill with diesel fuel only to max. 7/8 of tank's capacity. **Do not overfill** to minimize risk of a diesel leak from gasket at top of the tank. *Massilia's* range on a full tank is about 40 hours.

After Use: Pay the hourly rate \$6.00 to the kitty and note payment in log.

Always ensure you have at least 1/2 tank of fuel.

3. PRE-STARTING CHECKS

- Consult the on-board pre-sailing check-list. Check the boat usage and maintenance logs for boat's serviceability.
- Check water intake valve. The engine cooling water intake valve is located on the port side of the motor, at the floor level. The valve is open when the handle is parallel to the hose.

Make sure engine cooling water intake valve is *OPEN* before starting engine!!

Note that the valve is closed when the boat is sitting at the dock and the engine key will be attached. This is to guard against engine start with a closed valve. Do not detach the key unless you open the valve!

- Ensure engine cooling water filter is clean (port side of motor).
- Check fuel level
- Visual engine check. Check for obvious leaks of oil, fuel or cooling water. Check belt for wear and tension. Check for any loose hose clamps, fittings, broken components or signs of chafing.
- Check lubrication oil level. The oil dipstick is on the starboard side of the motor.
NOTE The dipstick is very close to the throttle linkage. It is easy to replace it on the wrong side of the linkage and cause the linkage to bind on it. Ensure the dipstick is replaced on the STARBOARD side of the throttle linkage.

4. STARTING ENGINE

- Turn the battery selector switch to "STARTING"
 - Ensure gear control lever is in neutral position.
 - Insert key and turn on.
 - With key on, oil pressure and battery warning lights and buzzer will turn on.
 - Press STARTER BUTTON. Release button as soon as the engine fires
 - When engine is running, the two warning lights and buzzer will turn off.
- Do NOT crank engine for more than 15 seconds. If engine fails to start, wait 15 seconds and try again. NEVER press the start button again unless the engine is fully stopped.

Always check that cooling water is discharging from the exhaust.

**If cooling water is not discharging from stern while the engine is running,
IMMEDIATELY SHUT OFF THE ENGINE.**

Do not operate engine until cause is determined and corrected.

Is the engine intake valve OPEN ????

A possible cause may be blockage of the strainer or a vacuum leak that causes the strainer to lose its prime. The strainer is located in the engine compartment (port side). Check for blockage such as seaweed sucked into the strainer. If loss of prime is suspected, remove the lid of the strainer, fill with water and then replace the lid.

- Warm-up engine for a minute or two at high idle (~1200 rpm) – long enough to ensure it is running smoothly and cooling water is discharging from the exhaust. Extended warm-up dockside is not necessary as diesels don't warm up well at idle with no load. Let it warm up under load slowly as you leave the harbour.
- Recheck engine compartment once engine is running. Any signs of leaks (fuel, water, oil) or anything subject to chafing from engine vibration?
- Before leaving dock and while boat is still tied to dock, check for gear operation by idling in forward and then reverse to ensure gears are working.

5. UNDERWAY**UNDER POWER (Engine ON)**

- Normal operating range is 2800-3200 RPM. The engine is rated for 3600 max RPM. It runs most comfortably at about 2800-3000 RPM.
- Avoid running at maximum RPMs except in emergency.
- Check cooling water discharge frequently. Maintain a watch on engine rpm and listen for unusual noises or unusual exhaust colour. Shutdown engine if there is anything out of the ordinary.
- To ensure that batteries are charging, leave ignition key in the *ON* position. The ignition switch should remain in the *ON* position while the engine is running. While turning the switch off will not directly harm the engine, it will turn off the engine warning systems and the battery charging circuit.
- There is a battery separator unit installed which charges both batteries at all times.

UNDER SAIL (Engine OFF)

- Battery **MUST** be left ON, with key in ignition for rapid start, if required in an emergency.
 - For domestic power (depth sounder, cabin lights, etc.), keep battery selector switch on "HOUSE"
 - It is not advisable to leave the battery selector switch to *BOTH* for domestic power with the engine off, because if there is a short circuit in the system, both batteries will be drained and there will be no reserve power for starting the engine.

6. STOPPING ENGINE

- Reduce RPM of engine to *IDLE SPEED*

- Place control lever in *NEUTRAL* position.
- Idle the engine for about five minutes to cool the engine down. If it has been operated a low speed to moor the boat, this will suffice ,
- Pull out STOP knob on the control panel to stop the engine
- Turn ignition key to *OFF* position to shut off engine electronics. (Turning the ignition key to *off* position without pulling out the STOP knob will not shut off the engine)
- Remove key.

7. ENGINE WARNING SYSTEMS

- The boat is equipped with three systems for detecting problems with the engine: the control panel contains three lights and a buzzer to warn the operator when there is a problem with the cooling water system (engine overheating), the battery charging system (undercharging), or the lubrication oil system (low pressure).
- With the ignition key in the *OFF* position, (whether the engine is running or not) the warning systems are disabled and no lights nor buzzer will be on.
- When the ignition key is in the *ON* position and the engine is NOT running, the low oil pressure and the undercharging lights will come on as will the buzzer.
- When the engine is running and if there is NO problem with the oil pressure or the charging circuit, these lights and buzzer will turn *OFF*.

If the oil pressure light remains ON (or comes on) with the engine above 1000 RPM, or the cooling water light turns on, IMMEDIATELY SHUT OFF THE ENGINE.

- The cooling water light will turn *ON only when the engine is overheating*. To test that the circuit to the cooling water warning system is operational, lift the toggle switch on the control panel up (it is spring loaded). The light will turn *ON* and the buzzer will sound

8. ENGINE EMERGENCIES

Emergency Starting

To start the engine if the electric starting will not work, use the hand crank lever. To start by this method, hold open the decompression lever, hand crank the engine and then close the lever while cranking. This is a two person job.

Emergency Stopping

1. In the case of an emergency, pull and hold the stop lever until the engine stops.
2. If the stop lever does not work, pull the stop lever mechanism on the engine.
3. If the engine still won't stop, close the fuel shut-off valve. Fuel lines will need to be bled to re-start.
4. As a last resort (in case of engine run-away) pull the decompression lever until the engine is stopped. If you use this method, fuel delivery to the engine continues until the engine stops turning. This will result in abnormal combustion, and possibly explosion, when the engine is next started.

Engine Alarms

The engine alarm panel has audible and visual alarms for high water temperature (Overheating), low oil pressure and low charging voltage (Alternator Failure). The following actions should be carried out if the alarms sound.

Overheating

If engine overheats, STOP ENGINE IMMEDIATELY. The most likely cause is a sea water blockage. Clean strainer and try again. Running the engine with no cooling water in circulation will damage the raw water impeller after a few minutes, followed by rubber exhaust hoses, the muffler and it will ultimately cause serious engine damage.

Oil Pressure Failure

In case of oil pressure failure, STOP ENGINE IMMEDIATELY. Check oil level and replenish if required. If oil level is ok, check/clean oil-pressure sender connectors and try to re-start engine. If oil level is low, (it will have to be very low to cause a loss of oil pressure) then check for leaks prior to restarting.

Alternator Failure

If the alternator fails, you may keep running the engine. The batteries however will not be charging during operation, and the problem should be rectified as soon as possible.

Deck/Hull

1. THROUGH HULL FITTINGS

It is important that skippers are aware of where the hull is penetrated as these are potential locations for major leaks. Care must also be taken not to damage these if the boat is hauled out of the water.

HEAD/TOILET INTAKE VALVE

- Located in v-berth bulkhead beside head (access from v-berth)
- The valve is open when the handle is parallel to the hose; (to close, turn handle perpendicular to hose). Valve must be open when the head is in use. Note this valve is not visible as it is under hoses and you must feel for its location. This valve has a plastic handle so be careful – you don't want to break it!
- Close the valve when boat is not in use, and leave an inch or two of water in the head bowl to prevent gaskets from drying.

HEAD/HOLDING TANK DISCHARGE VALVE

- Located in v-berth bulkhead beside head (accessed from v-berth)
- The valve is open when the handle is parallel to the hose. To close, turn the handle perpendicular to the hose. Valve must be open when the head is in use. This valve has a plastic handle so be careful – you don't want to break it!

HEAD SINK DRAIN VALVE

- Located in locker below the sink.
- To drain the sink, align the valve handle parallel with the hose.
- When boat is not in use or while underway, close the valve (the sink tends to fill with water when heeled on starboard tack).

GALLEY SINK DRAIN VALVE

- Located in locker below the sink.
- To drain the sink, align the valve handle parallel with the hose.
- When boat is not in use, close the valve (handle perpendicular to the hose).

ENGINE COOLING WATER INTAKE VALVE

- Located in the engine compartment (port side)
- Valve is in *OPEN* position when the handle is aligned parallel with the hose.
- **ENGINE COOLING WATER INTAKE VALVE MUST BE OPEN BEFORE STARTING THE ENGINE. THE VALVE SHOULD BE CLOSED WITH THE ENGINE KEY ATTACHED WHEN THE BOAT IS AT THE DOCK.**

KNOTMETER transducer

- Located at the bow under the holding tank.

DEPTH SOUNDER transducer

- In-Hull, located forward of the Galley's sink thru-hull.

COCKPIT DRAINS

- Drains empty through the stern (no valves)

2. BILGE PUMPS

- This vessel is equipped with a manual bilge pump operated from the port side of the cockpit and an automatic electric bilge pump (Rule LP900S). The handle for the manual pump is in the cabin on the port side shelf.
- The electric bilge pump is on its own control panel and the switch has 3 settings: OFF, AUTO and MANUAL. The pump's circuitry always has power even though the main battery switch is off. Normally the switch should be left in the AUTO position. Always periodically check the bilge regardless of the AUTO setting. If the pump malfunctions or burns out, the AUTO setting will be meaningless.
- The pump requires a 7.5A fuse. If the pump does not work in MANUAL mode then check the fuse. Always ensure there is a spare fuse on board.
- Check the bilge before starting out.

Do not pump dockside or in sheltered waters.

The automatic pump sensor will not operate with oil or diesel present in the bilge water. **DO NOT COMPLETELY FILL THE FUEL TANK OR THERE MAY BE LEAKAGE INTO THE BILGE!** Also, the engine leaks oil so keep an eye on the engine diaper and replace as required.

The pump can automatically detect water at 2 different level settings and also has a timed check function where it will cycle every 2.5 minutes. If the auto-sense detects oil or diesel in the bilge it falls back to the timed check cycle. So, if you notice the pump cycling every 2.5 minutes then you have something to deal with - the pump and bilge will need to be cleaned. Bilge cleaner **might** work. If not, you will need to remove the pump and clean both it and the bilge. Test the pump in a pail of clean water before reinstalling.

Pump Removal

The pump is snug to remove and replace but the body swivels and the following photo shows the

correct angle of attack. It might help to GENTLY flex the outflow hose towards the body of the pump. Nothing needs to be disconnected for pump removal. Just get the angle right and be GENTLE. If you need to apply force, you're doing it wrong and you will break something. Then it will be your turn to replace the pump :-}

Note that the pump's backflow valve could not be installed with the elbow fitting so there is a separate check valve installed further up the outflow line.

Auto-Sense Still Not Working After Cleaning?

If cleaning did not help then there could be a bad connection or corrosion of the corresponding 12VDC power supply wire. The pump has three wires: black, brown and brown/white.

Black – is ground

Brown/White – 12V for “manual” operation.

Brown - 12V for “automatic” operation.

If “manual” mode works fine, then the “brown” wire could be suspect (simply redo the connections). In order to access the connectors you need to remove the floor boards.



3. STEERING

- Tiller,
- Auto-helm

4. ANCHORING

GROUND TACKLE

Primary: 15lb Bruce anchor in anchor locker. 28ft of 3/8 chain & 200ft rope rode.

Secondary: Danforth in lazarette

ANCHOR LIGHT

• Use a battery light as an anchor light. Hang it on the forestay about two meters above the deck using the jib halyard and shock cords. The anchor light at the top of the mast is not functional.

Electrical Systems

1. BATTERY SELECTOR SWITCH

- Located adjacent to the port quarter berth
- When using domestic power (lights etc.) with the engine OFF, turn battery selector switch to "HOUSE". Both batteries will charge while engine is running regardless of the setting of this switch.
- After use: Switch to "OFF"

NEVER turn the battery selector through the "OFF" position while the engine is running. If the "OFF" position is selected while the engine is running, the alternator diodes may be damaged. Switch battery selector through the "BOTH" position to select batteries

2. MAIN CABIN SUPPLY SWITCH

Located beside the Battery Selector Switch. This must be ON for any of the electrical equipment to work (with the exception of the Bilge Pump)

3. DISTRIBUTION PANEL

The panel is located under the companion way. Not everything is switched via the Distribution Panel breakers. The following are switched:

- running lights
 - cabin lights
 - propane
 - knotmeter light
 - bowlight/steaming light (combination light fixture half way up the mast)
 - compass light
- All switches are normally OFF.
 - To operate switches, turn battery selector switch to “HOUSE”. Then turn on the Main Cabin Supply Switch
 - Avoid unnecessary use of electrical equipment to reduce drain on batteries.

The following are non-switched:

- Depth Sounder
- GPS
- Radios
- Propane Sniffer
- DC/AC Inverter

3. BATTERIES

- Two Batteries are located under the port side seating: 1 x *Deep-cycle* house battery and 1 x *Cranking* starting battery.
- Both batteries will charge when the engine is running regardless of the setting of the selector switch.
- Battery voltage gauge is located next to the battery selector switch

4. FUSE RATINGS

There are in-line fuses on some equipment such as the VHF radio, Inverter and depth sounder.

Never exceed the rated capacity of the electrical equipment otherwise there is a risk of fire and/or damage to equipment.

Instrumentation

1. DEPTH SOUNDER / CHARTPLOTTER (Hummingbird HELIX 5 CHIRP GPS)

- The depth sounder is NOT switched from the breaker panel.
- An in-line fuse is located behind the depth sounder.

- When checking depth for clearance or anchoring, always be on the safe side and don't take unnecessary chances. Take into account that the transducer of the depth sounder is located 1ft below the waterline.
2. **VHF RADIO (Standard Horizon's GS1500X c/w remote second station)**
 - VHF call sign: CFN6074; MMSI# : 316021993
 - The VHF radio is NOT switched from the breaker panel. There is an in-line fuse behind the radio.
 - All Skippers are required to have a VHF operators' license and to be familiar with the operation and use of the VHF unit.
 - Details of call procedures in an emergency are fastened to the cabin wall adjacent to the VHF radio
 3. **GPS (Garmin GPS 128)**
 - Interconnected with VHF radio. The GPS is NOT switched from the breaker panel.
 4. **AUTO-PILOT (Raymarine ST1000+)**
 - Tiller pilot with wired remote control
 - This is not switched from the breaker panel
 - Refer to manual for operating instructions.
 5. **KNOTMETER (Signet Analog)**
 6. **COMPASS (Contest)**
 7. **DC/AC Inverter**
 - maximum load 240W, typical load 60W, low battery cut-off.
 8. **AM/FM DECK**
 - The AM/FM/MP3 Deck is NOT switched from the breaker panel

Domestic Systems

ICEBOX

- The boat is equipped with an insulated icebox which requires ice for cooling.
- During and after use, melted water drains into the bilge. Optionally you may use a pail to deal with the melt water.
- After use, drain and flush with water until clean. Rinse and clean all surfaces and dry the inside.
- When not in use, leave cover open to permit air circulation.

FRESH WATER SYSTEM

- Utilizes a cold water, non-pressurized system
- The boat has 2 water tanks. One is located at the bow below V berth (forward of the holding tank). The other is under the starboard settee.
- Filler caps are located at bow (port) and amidships (stbd). Spanner wrench is in a port side drawer (same wrench as for the Diesel fuel cap). Do not confuse them!
Be sure to rinse cap's surrounding area before removing it to minimize

risk of water tanks contamination.

- **Do not overfill** tanks (only fill to within 2" of top) as water will pour out of head sink. If the head sink through-hull valve is closed, water will flood the boat.
- **Sinks and Drains:** manual water-pumps are mounted on the head sink and in the galley. On/Off control valves between the water tanks and the pumps are located under the head sink. Ensure the through-hull valves for drains are opened before use.
To drain tanks (off season): remove hoses from the control valves under the head sink and allow water to drain into bilge. Turn on electric bilge pump to remove water from boat.

HEAD (TOILET) and HOLDING TANK

1. Head operating instructions

Do not put anything other than a small amount of marine grade toilet paper into the bowl. Even small amounts of hair, facial tissue, etc. WILL clog the system. If you allow the system to become clogged, then you are responsible for unclogging it. This may require you to disassemble the lines and remove the obstruction – yuk!

- Fully open the two through-hull valves (water intake and water discharge valves).
- Before each use, flush some water into the bowl by moving the small gray lever at the top of the pump to the *flush* position (ie. left) and operate pump with full even strokes. This makes flushing and cleaning easier.
- After use, flush more water into bowl until the waste is flushed and the bowl and the water in the bowl are clean.
- To drain, move the small gray lever to the right and pump with full even strokes 8 times to completely remove waste from pipes.
- It may be necessary to repeat the flushing and draining several times.
- If material seems to stick, try a few short sharp strokes but DO NOT force the pump handle down hard. (Check to ensure that valves are fully open).
- When all material is clear, flush with about five strokes to clear out the pipe system.
- Leave the bowl drains, pump handle down and the lever to the right.

2. Holding Tank Instructions

Use: Check the holding tank before heading out. If the tank is more than 1/2 full, then it should be pumped; otherwise its content will slosh into and clog the vent line. Do not leave it *full* for someone else to deal with!

Always pump into the holding tank – this will avoid mistakes on valve positions from the head to overboard or tank. The skipper then pumps out the holding tank at sea, well off shore, or at a pumping station, depending on what the law requires. Note that a holding tank must ALWAYS be used in US waters, Y-valve locked in position.

There are two Y-valves that must be set for correct use of the holding tank. These are in a somewhat awkward location under the v-berth (beside the head) and should not be changed unless there is a problem with the holding tank. Refer to the photographs for their setting. Only in the event of a problem with the holding tank should the head be set to pump directly overboard. If you change any Y-valve settings, ensure you note this in the log.

After Use: Close head through-hull valves. Top up the tank with fresh water and add H/T enzymes to prevent build-up of hard deposits in the system

3. Equipment Locations:

- Holding Tank is located in the v-berth. All valves etc. are accessed from the v-berth.
- Macerator pump and Y-valve located on the v-berth bulkhead beside the head
- Macerator operating button: On/Off toggle switch on the v-berth bulkhead beside the holding tank. Pump's overload breaker switch is located next to the On/Off switch.
- Pump-out fitting: port side amidships is on the deck. It is marked "Waste". The key is in a drawer.
- Inlet Valve (thru-hull) in the v-berth bulkhead beside the head. Note, that it is not visible and you must reach under hoses to access it.
- Discharge Valve (thru-hull) in the v-berth bulkhead beside the head.

4. Macerator/ Pump-out Directions:

- The tank may be pumped out when it is 1/4 full or more. Do not let it get too full! If the tank is over-filled, you may flush up and out through the air vent... Yuk. Tank level may be seen through the wall of the tank, try using a flashlight.
- Open the discharge valve (thru-hull) in the v-berth. ALWAYS CHECK THIS BEFORE PUMPING (or the H/T content will end up in the head or other unexpected place).
- Refer to the plumbing photos to verify the correct position of the Y-valve. CHECK IT BEFORE PUMPING!
- Turn ON the macerator on/off switch.
- You should hear the macerator change tone when it has finished pumping.
- Under no circumstances should you need to run the macerator for over one minute. (it pumps 12 gal per minute). If you haven't heard the tone change after a minute, there might be something wrong.
- Close the discharge valve (thru-hull).

5. Shore Pump-out Directions:

- Ensure the visible Y-valve arrow is pointing to the deck line. (outboard line).
- Open deck fitting and suck with shore hose.
- Refill the tank with fresh water and repeat.
- Just so you know, to be properly legal in US waters, you are supposed to lock the Y-valve in the deck-fitting position with a padlock.

Galley Stove / Propane System

Massilia is equipped with a *Seaward Hillerange* stove which operates via the boat's propane system.

BE AWARE of the dangers of propane and risk of a propane explosion!
Propane is heavier than air and a leak could fill the bilge, linger in lockers and in the engine compartment creating an extremely dangerous situation.

Keep the entire system OFF when stove is not in use. If you have any doubts do not use the propane system.

The propane tank is located in the propane locker, starboard cockpit. Fill the tank if you empty it.

1. STARTUP

- Close all appliance (stove) valves
- Open cylinder/tank valve
- Ensure Battery Selector Switch and Main Panel Control Switch are ON.
- Push the Propane Monitor's ON button; wait until the ON light turns from "yellow" to "green". This alarm DOES NOT turn on automatically.
- Turn on LP control switch (toggle switch beside the Electrical Distribution Panel).

If you hear the propane alarm or smell gas, shutdown the system **IMMEDIATELY**. Air the boat thoroughly. Avoid any sources of ignition. Investigate possible sources of trouble.

The propane alarm stops automatically once the gas concentration levels drop below 10% of the explosive value threshold.

- Ensure nothing flammable is adjacent to the stove.
- Place a flame to the stove burner and turn on the stove valve.

2. OPERATION

- Adjust flame to desired heat.
- NEVER leave the stove unattended, even for very short periods of time.
- Be prepared to quickly re-light burner(s) should the flame go out.

3. SHUTDOWN

- Close Cylinder/tank valve.
- Allow the flame to extinguish on its own
- Turn off LP control switch
- Close stove valve(s).

4. SYSTEM TEST

- Close all appliance valves
- Open cylinder/tank valve
- Ensure Battery Selector Switch and Main Panel Control Switch are ON
- Make sure the Propane Sniffer is turned ON and active.
- Turn on LP control switch (separate panel beside the Electrical Distribution Panel).
- Close cylinder supply valve
- Observe pressure at the regulator for 15 minutes. If there is any drop in pressure then DO

NOT USE THE SYSTEM. Use soapy water/detergent to check all of the connections within the system

PROPANE BBQ

Massilia has a propane BBQ mounted at the stern of the boat. It uses screw-in disposable propane cylinders. Cylinders must ONLY be stored in the propane locker. **NEVER store cylinders in the lazarette or boat cabin, as they may leak propane and create a fire or explosion hazard.**

Running Rigging

Mainsheet/Dodger Issue

The mainsheet can peel back the dodger side panel when the boom is fully extended e.g. when running or a broad reach. This can happen even when the traveller is in an optimal position. Ensure the side panel canvas is not secured to the deck otherwise it may tear away. Note also that if the traveller is not positioned correctly, the mainsheet can wrap around the frame and place a load on it. See photo. Be mindful of the traveller position and always be careful with gybes.



Safety and Miscellaneous

SAFETY EQUIPMENT

- Two 5BC fire extinguishers are on-board and stored respectively in the Galley and Quarterberth.
- Lifejackets are located in the hanging locker
- Life sling is stored in the lazarette. When the boat is in use clip this on the INSIDE of the pushpit railing. Ensure the safety line is tied securely to a strong deck fitting.
- First-aid kit and flares are stored under the port settee
- Air Horn – handheld pressurized gas
- Waterproof Flashlight – starboard shelf
- Propane detector: monitor next to battery voltage gauge; sniffer at the floor, port side. This alarm is NOT connected to the propane solenoid valve.

TOOLS/SPARE PARTS

- Tools and spare parts are stored under the port settee

OPERATING LIGHTS (UNDERWAY)

The engine's RPM gauge can be lit by depressing the switch on the engine control panel (lifting the switch will test the cooling water warning system).

AUTO-HELM

Raymarine ST1000+ Tiller Pilot. It is mounted between the tiller and starboard mounting point in the cockpit. It operates off of the boat's 12 volt electrical system and draws ca 1.5Amp (30Watts), depending on sailing conditions. It also has a wired remote control which allows steering from other parts of the boat. Refer to the operating manual for instructions and additional information.

SAILS

- full battened main; 2 reefing points, lazy jacks
- #1 140% furling Genoa
- #2 100% Jib
- Gennaker
- Storm Jib

RUNNING RIGGING

Locations: All led back to cockpit.

Use: Use proper seamanship.

After Use: Flake and stow all lines.

Engine / Propulsion maintenance

Engine Oil

Location / Specifications: Filled through cap on the front of the engine. Oil is stored under the quarterberth on the port side.

Use: Use 15W-40 only, check oil level DAILY during engine use.

After Use: Clean all spilled oil thoroughly. Replace sorbent oil pads when needed.

Filters:

Replace on annual basis or every 200 hours of operation.

Oil:	Yanmar	124450-35100, Sierra 18-7910 or equivalent.
Water separator:	Parker-Racor	2010TMOR , 20 or 30 micron
Secondary, Fuel:	Yanmar	104500-55710 (10~15 micron).

Transmission

Location / Specifications: The transmission should not require any maintenance by boat skippers.

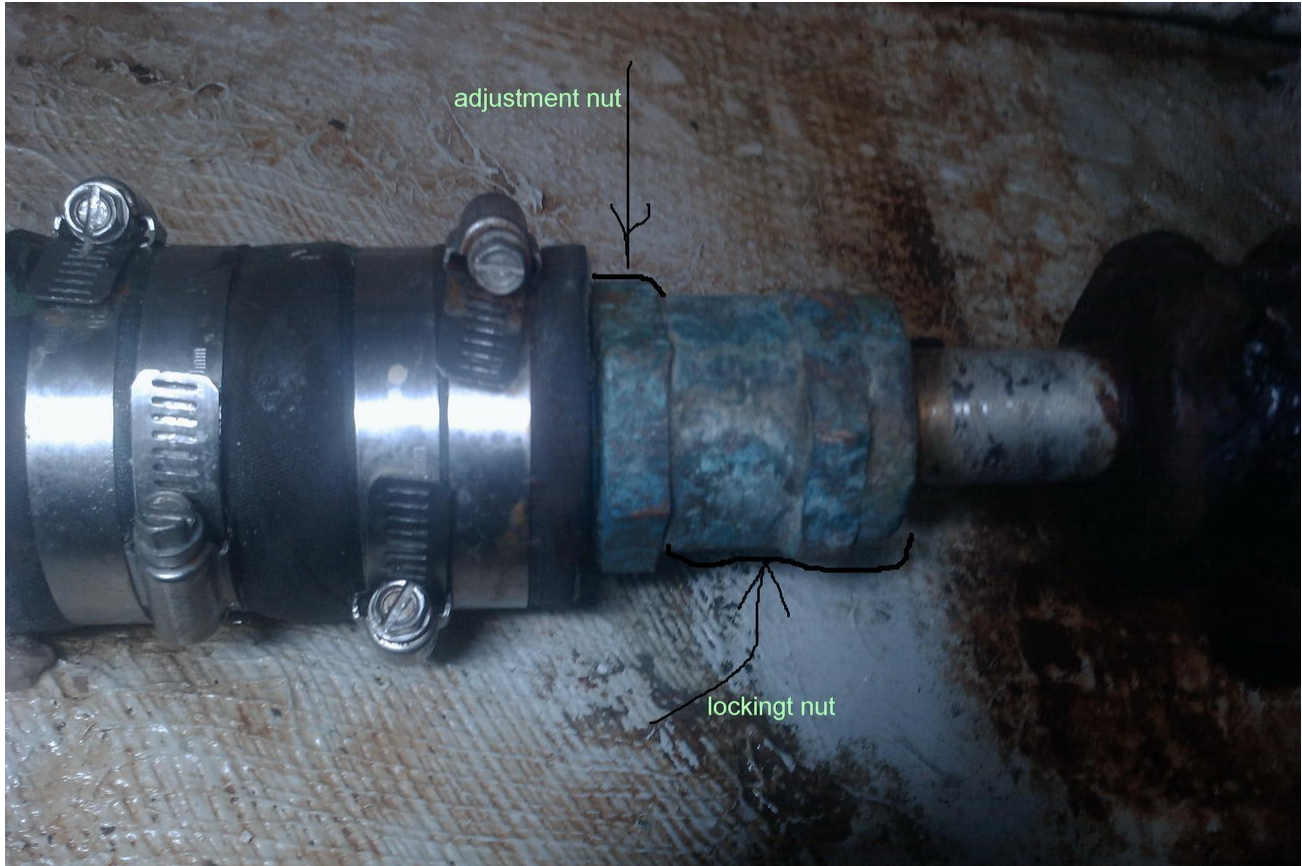
Use SAE 30 transmission oil only. Do not overfill.

Bleeding the fuel system

Learn how to do this! If you run out of fuel or air somehow gets in the system, the engine won't start unless the fuel system is bled. Instructions are in the Yanmar manual on-board and also available in *members area* of the co-op's web-site. Familiarize yourself with the bleeding points of the fuel system and the manual fuel pump mechanism, please.

Stuffing Box

Location / Specifications: Accessed through the hatch in the lazarette. Packed with Graphtex GTU advanced packing. Inspect monthly for proper operation / possible water leak. Adjust every 3 months.



Propeller

Specifications: Two blade right-hand folding prop on a 1 inch stainless steel shaft. Walks to port when going astern.

Replace shaft zincs on yearly basis.

Pre-Sail Checklist for Massilia – June 15,2019

This checklist is intended to be an easy reference guide only. Skippers should refer to the Fairwinds Standard Operating Procedures (SOP) details for the complete procedures and are responsible for all systems onboard. Non-inclusion in this list is not an excuse for improper system or boat use.

Logbook

- Read recent Logbook and Maintenance Log entries
- Complete logbook entries, persons on board, engine hours, weather, departure time
- Obtain relevant tide, current and weather reports
- Verify navigation aids and relevant paper charts are on board

Bilge

- Check water level in bilge
- Pump setting to auto; 2nd electric pump under galley sink off

Engine Compartment

- OPEN engine water intake valve and retrieve engine key
- Visual check of belts, hoses, wiring, leaks (fuel, oil, water). Any chafing, wear, or looseness of hoses or belts?
- Check oil level
- Ensure companionway steps re-seated/secured

Fuel

- Minimum half tank (max = 7/8 – do not overfill)

Plumbing System

- Head intake and discharge valve settings as required; confirm other domestic seacocks
- Top up fresh water tanks as required
- Check holding tank (a) if over half full with waste, make plans to pump in accordance with regulations or (b) if over half full with fresh water and enzyme pump prior to sailing to prevent vent line contamination

Electrical System

- Disconnect shore power (from source)
- Battery switch to starting; never turn switch OFF while engine running
- Turn ON house system and Nav/Com Instruments as needed
- Connect radio mic in cockpit
- Confirm radio, depth sounder and GPS working
- Propane alarm turned ON and tested
- Confirm propane switch in OFF position and tank valve is closed

Above Decks

- Check standing & running rigging (lines, blocks, brakes, winches, cleats, shrouds)
- Check lifelines
- Unlock and inspect lazarette
- Disconnect zinc and secure to dock
- Winch handles to cockpit holders
- Remove canvas boat covers
- Main halyard on
- Close forward hatch to prevent jib sheet snags

Safety Equipment and Procedures

- PFD for everyone; confirm children and non-swimmers wearing PFDs
- Visual check of anchor, tool kit, first-aid kit, signaling gear, MOB gear, fire extinguishers, spare diesel fuel, manual bilge pump handle.
- Attach rescue collar on inside of the pushpit railing.
- Stow disposable propane cylinders ONLY in propane locker
- Secure personal gear and all loose items below deck
- Brief crew on emergency procedures as required; sail plan filed

Dinghy

- If towing: ensure it is secure (oars and oar-locks stowed)
- If left at dock: ensure dinghy does not overhang dock

Departure

- Check engine warning systems
- Start the engine and confirm water discharges at stern
- Re-check engine compartment while running for leaks (fuel, oil, water) or line chafing

Post-Sail Checklist for Massilia – March 26,2021

This checklist is intended to be an easy reference guide only. Skippers should refer to the Fairwinds Standard Operating Procedures (SOP) details for the complete procedures and are responsible for all systems onboard. Non-inclusion in this list is not an excuse for improper system or boat use.

Logbook

- Complete Logbook and Maintenance Logbook entries
- Calculate and enter engine hours and payment made to kitty
- Notify Boat Captain of any repairs undertaken or required

Bilge

- Check water level in bilge
- Ensure bilge pump is in the auto position

Engine Compartment

- CLOSE engine intake valve and attach engine key
- Visual check for any signs of leaks, chafing, signs of wear, loose hoses

Fuel

- Top up fuel as required to maintain tank at least 1/2 full (max 7/8 – do NOT overfill)

Plumbing System

- Pump out holding tank waste in accordance with regulations prior to returning to the marina
- Head configured to pump to holding tank
- Fill holding tank to above highest scum line with fresh water and add enzyme
- Fill water storage tanks
- Close all through hull valves
- Close water supply valves

Electrical System

- Turn OFF house system and Nav/Com Instruments
- Battery switch to OFF position
- Confirm propane switch in off position and tank valve is closed
- Connect battery charger, (and heater if off-season) to shore power (from boat to source)

Above Decks

- Confirm two sheet wraps on the headsail and furling line cleated
- Main halyard to toe rail away from mast, coil and stow all lines
- Visual inspection and lock lazarette
- Stow radio mic, winch handles and flag
- Lock tiller/helm in neutral position
- Replace all canvas boat covers
- Check mooring lines and fenders, position dinghy not to rub hull
- Connect zinc to chain plate
- Flush anchor locker with fresh water and hose off deck and cockpit

Safety Equipment and Procedures

- Remove and stow rescue collar

Below Decks

- Lock forward hatch
- Remove all personal gear and perishables
- Engine key attached to CLOSED engine seacock
- Replace all other keys in port drawer: lazarette, intake caps for deck fittings (water, fuel, pumpout)
- Clean cooler and leave open for ventilation
- Clean and tidy boat; including head
- Cushions arranged for airing out (in standing position)
- Head door secured open for ventilation
- Stow anchor in bow locker to prevent bow line chaffing

Dinghy

- Ensure dinghy is secure and does not overhang doc; oars stowed

Departure

- Lock Cabin