

Cu Na Mara

Hound of the Sea

Charter Manual

Ver. 0.4.1

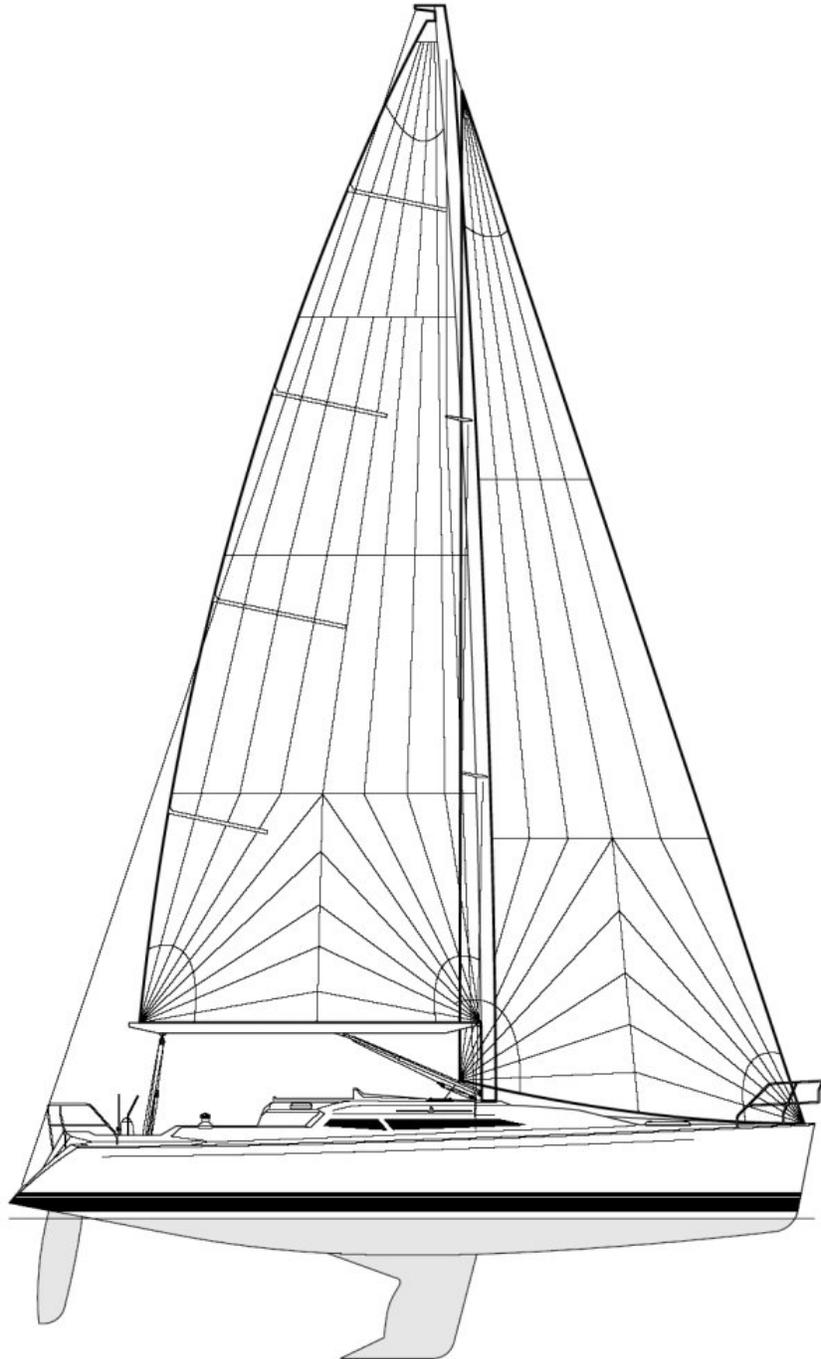


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SPECIFICATIONS

Make	C&C
Model	115
Year	2009
Length	37 ft 9 in / 11.51 m
Beam	11 ft 11 in / 3.63 m
Draft	6 ft 8 in / 2.03 m
Bridge Clearance	61 ft / 18.6 m
Displacement	11,800 lb / 5,352 kg
Ballast	4,200 lb / 1,905 kg
Engine	Volvo Penta, 28 hp
Fuel	Diesel
Fuel capacity	26 gals / 98 L
Water capacity	70 gals / 264 L total, 2 tanks
Holding tank	20 gals / 75 L

ENGINE OPERATION

Starting Engine

1. If it is the first start of the day check the motor oil, top off oil if needed.
2. Turn the battery selector (to the left of the navigation table) to “Engine”. [Figure 1. Battery Selector.](#)
3. Put the throttle (starboard side of helm) in neutral (handle pointing straight up). [Figure 2. Helm station.](#)
4. At the bottom of the helm there’s a small panel with 4 buttons. Press “Power” and wait for a beep (approximately 10 seconds). [Figure 2. Helm station.](#)
5. Press and hold the “Start” button until the engine starts.

Running Engine

- The engine likes to run about 2600 to 2700 RPM.
- When shifting from forward to reverse or the opposite, always pause at neutral, this will help save the transmission.

Stopping Engine

1. Put throttle (starboard side of helm) in neutral (handle pointing straight up).
2. Press and hold the “Stop” button until the engine stops. Note: you will not hear an alarm when the engine stops. [Figure 2. Helm station.](#)
3. After you are sure the engine has stopped press the “Power” button. To verify the power is off check the LCD is off on the helms tachometer. Note: it is important to turn off the power after the engine has stopped otherwise it will drain the battery.
4. Turn the battery selector (to the left of the navigation table) to “House”. [Figure 1. Battery Selector.](#)

Under Sail

- Be sure that the engine power is off when the engine is not running.
- Put the throttle in reverse when under sail. The propeller has a folding prop and folds from the water flowing over it. If left in neutral the prop will spin putting wear on the transmission, while also reducing the sailing performance. **Remember** to put back in neutral before starting the engine again.



Figure 1. Battery Selector.



Figure 2. Helm station.

FENDERS

Inventory

Cu Na Mara contains 7 fenders:

- 4 medium sized fenders
- 2 oversized fenders
- 1 bow fender

Storage

- The side fenders (cylindrical) should be stored in the aft port locker. Do not just drop the fenders into the locker. If you do you will have to crawl down into the locker to get them out, it is very deep. Instead lower each fend into the locker and attach the line on one of the black jam cleats on the locker door. This makes it much easier to retrieve the fenders. [Figure 3. Cam cleats for easily stowing fenders.](#)
- The bow fender will fit snugly into the anchor locker after the fender is folded together. Please do not forget to stow the bow fender once out of the marina. [Figure 4. Anchor locker.](#)

Placement and deployment

1. When docking, place 4 side fenders on the dock side just above the waterline.
 - a. It is best if the larger fenders are closest to the stern and bow with two medium size fenders in the middle.
 - b. The dock side fenders should be tied around the bottom of the lifeline stanchions. Wrap twice around the stanchion with a clove hitch back on itself. [Figure 5. Two round turns and a clove hitch at base.](#)
2. When docking, place 2 side fenders on the opposite of the dock even height with the gunwale.
 - a. The gunwale height fenders should be tied lower on the lifeline stanchions using a clove hitch.
3. The bow fender MUST be deployed before docking and anchoring (see docking and anchoring section for explanation). The bow fender lines should not need to be adjusted. Deploy the fenders by attaching the fender hangers on the port and starboard of the bow pulpit just below the red tape. [Figure 6. Placement of fender hangers.](#)



Figure 3. Cam cleats for easily stowing fenders.



Figure 4. Anchor locker.



Figure 5. Two round turns and a clove hitch at base of stanchion for fender.



Figure 6. Placement of fender hangers.

DOCKING - A must read!

WARNING: It is very important to understand that Cu Na Mara does not handle like most sailboats with docking. Traditional sailboats have a direct straight shaft with a prop on the end. Cu Na Mara has a saildrive engine whose propellor is positioned just aft of the keel. The ramifications of this are that you will get very little prop wash or prop walk (what little prop walk is moves the stern to the starboard). This is most noticeable when docking with any wind off the stern. To mitigate these differences please follow these guidelines:

1. Deploy the bow fender. The bow has already taken several hits from docking and anchor. The fender will mitigate any further damage.
2. Be very aware of the wind and current especially if they are coming from astern.
3. Enter slowly and under control. Experiment with how the boat behaves with a sudden burst of thrust in both forward and reverse.
4. Never feel you're so committed you can't retreat and take another pass. There is no shame in making as many attempts as possible before you feel you've got it right.

Dock lines

There are 4 dock lines. Two are thicker. The thicker lines should be used as spring lines. The thinner lines are bow and stern.

Dock line storage

The dock lines can be stored in the same hatch as the fenders (see [Fenders - Storage](#)). Run the bungee cord through the coiled lines and then attach the bungy to the hook. [Figure 7. Fender and dock line storage.](#)



Figure 7. Fender and dock line storage.

ANCHORING

Windlass Remote

The windlass remote is stored in the nav table. When using the remote be sure to not let the remote's cable get sucked into the windlass.

Bow Fender - Must Deploy!

Before reaching the anchoring area deploy the bow fender as described under the "Fender - Placement and deployment" section, step 3. Do not attempt to lower or raise anchor without deploying the bow fender. The plumb bow and dark hull are a perfect mix to grossly display any contact from the anchor.

Windlass

The windlass is pretty straightforward to use, just be very slow when initially dropping the anchor and when raising it out of the water. The plum bow makes it really easy to contact it with the anchor.

Note: if the windlass is not working with the remote it is most likely that the circuit breaker was tripped. Find the circuit breaker and reset it. It is located in the main cabin in front of the mast just below the starboard settee and aft of the forward cabin door. It's about 8 inches off the floor. [Figures 8 & 9. Windlass circuit breaker.](#)

Rode Markings

The anchor rode is marked every 30 feet with tape or chain markings. The total rode length is 220 feet.



Figures 8 & 9. Windlass circuit breaker.

COMPANIONWAY HATCHES

Storage

The companionway hatches are stored in the slots in the port lazarette.



Figure 10. Empty companionway storage hatches..



Figure 11. Stowed companionway storage hatches.

NAVIGATION AND ELECTRONICS

Anchor light

The anchor light is labeled “Mast Light”

GPS

Above the nav table there is a Furuno GPS instrument. It is fine to turn this on but none of the other systems use this GPS so it is not needed. It is handy if you want your SOG visible at the nav table.

Cabin Lights

The control panel has 2 switches that control the cabin lights

- Cabin Lights
- Dimmer

The cabin light switch controls most of the lights in the cabins. These lights are LED. The Dimmer switch controls the lights embedded in the main cabin’s ceiling. There is a dimmer switch about 2 feet to the right of the radio on the “end cap”. [Figure 12. Dimmer switch on end of nav table.](#)

Note: the dimmer lights are incandescent and not as efficient as the cabin lights.

Cockpit Mood Lighting

On the back and bottom of the helm there is a toggle light switch above the engine controls. This will illuminate the helm station in soothing red light.

Amp meter

The amp meter has settings for 3 batteries. Only selections 1 and 2 are valid. The 3 selection is not connected as there is no third set of batteries.

Inverter

There is an inverter but it is not recommended to use. Like all inverters it is inefficient and will drain the batteries like nobody's business. If you do attempt to use it you must have the battery selector on “House”. If you are using it, it sometimes gets confused. You can tell this because the inverter control panel starts flashing. If this happens you need to reset the controller. Remove the cushions from the nav table seat (I’m not making this up) and open the seat compartment. You will see a large blue box (the inverter). There is a small white ethernet looking cable going into the front of the box on the left hand side. [Figures 13 & 14. Inverter under nav table bench.](#) Just disconnect the cable and plug it back in. The controller should now be happy. But the main point is... don’t use the inverter.

Auto Pilot

Although the boat is equipped with autopilot it is against club policy for members to use it. That said, if you want to see the SOG on the instrument in the cockpit above the companionway you need to turn on the autopilot.

Battery Management

The battery power is not unlimited. Be very frugal with the use of electricity when sailing or on the hook. If you manage it correctly it should last through the night.

NOTE: A good indication that the batteries are low when sailing is when the instruments start to give obviously falter readings. The wind instrument usually goes first.

The following are some tips for battery management.

1. When the engine is off (sailing or on the hook):
 - a. Turn the battery selector to “House”.
 - b. Verify that the engine power is off when the engine is not running. This means pressing the “Power” button on the helm station and checking the LCD in the tachometer to make sure it is not lit.
 - c. Turn off as many instruments and lights as possible.
 - d. Turn off the refrigerator as it will drain the battery very quickly.
 - e. Do not charge anything on the 12 volt outlets. Charging phones and such takes a quick toll on the batteries.
2. When motoring or plugged into shore power:
 - a. Turn the battery selector to “Both”.
 - b. Turn on the refrigerator.
 - c. Charge USB devices with 12 volt outlets.
3. At night on the hook reduce the use of cabin lights:
 - a. Everyone should have a headlamp and extra batteries.
 - b. Use a battery operated camping lamp.



Figure 12. Dimmer switch on end of nav table.



Figure 14. s 13 & 14. Inverter under nav table bench.

GALLEY

Propane Stove and Oven

Below are the steps for using the propane stove and oven. Propane is a convenient fuel to use on a boat but it does have its hazards. Propane is lighter than air so it will accumulate in the bilge. Since propane is combustible this condition can be very hazardous. The steps below will help prevent this condition.

Lighting the stove:

1. Verify that all of the stoves knobs are off.
2. On the electronics control panel turn on the LP Control. **Note:** above the stove the propane control is activated. [Figure 15. Propane controller.](#)
3. In the cockpit open the hatch that is just above the throttle and turn the knob counterclockwise one revolution. **Note:** when the propane tank is full the gauge will read about 1500 psi. [Figure 16. Propane tank.](#)
4. Find a lighter, should be in the 2nd drawer to the right of the stove.
5. On the propane control, above the stove, press the “start” button.
6. Ignite the lighter.
7. Turn the knob for the burner you want to ignite to light and press in on the knob. At the same time hold the end of the lighter about 2 inches from the burner.
8. You should hear gas exiting the burner and then it will light. **Note:** It can take about 15 seconds for the propane to get from the tank to the stove.

Turning off the stove:

1. In the cockpit open the hatch that is just above the throttle and turn the knob clockwise to close value. [Figure 16. Propane tank.](#)
2. When the burners go out the propane has been removed from the line. On the electronics control panel turn off the LP Control.



Figure 15. Propane controller.



Figure 16. Propane tank.

RUNNING RIGGING

Raising Mainsail

The mainsail can be difficult to raise the last twenty five percent. It helps a lot if you jump or sweat the halyard at mast. “Sweating” or “jumping” a line is the process of a second person hauling sideways (away from the mast) on a halyard where it comes out of the mast as another person takes in the slack in the halyard. This is to gain more tension than is possible when pulling parallel with the load of the line.

Backstay Tension

The stay is a hydraulic backstay. There is a straight handle in the nav table. That is inserted into a knob on the front of the helm pedestal below the main traveller. To tighten the back stay turn the secondary knob to the right. Then pump the handle until the stay is at the correct tension. To release the tension turn the secondary knob to the LEFT. **Always release tension after sailing.** [Figures 17 & 18. Hydraulic backstay controller.](#)

Storing Boom

The boom should never rest on the dodger.

- Release the main sheet and boom vang.
- Use the main halyard attached to the back of the boom as a topping lift to raise the main so that the sail is not touching the dodger.
- Tie a line to the end of the boom to one of the spinnaker blocks. This will pull the boom off to the side. There's a 6 foot line with a snap shackle that's good for this. [Figure 19. Tether to pull boom to the side to](#)
- Tighten the main sheet.



Figures 17 & 18. Hydraulic backstay controller.



Figure 19. Tether to pull boom to the side to keep it off the dodger.

WATER

Tanks

There are two water tanks. One is under the v-berth and the other is under the port settee.

Water Tank Values

Under the sink in the galley there are two knobs that control the flow for each tank. There are two oddities about the tank controls:

1. The forward knob controls the aft tank and the aft knob controls the forward tank.
2. Turning the knob to the right (clockwise) opens the valve, to the left (counter-clockwise) closes the valve.

Water Management

The order in which you empty the water tanks is important. After both tanks have been filled you want to open the valve to the aft tank (see [Water Tank Values](#)). Once that the aft tank is empty close the aft tank valve and open the bow tank valve. [Figures 20 & 21. Water tank controllers.](#)

There are two indicators that a tank is empty:

1. The electric water pump continues to run after the faucet has been closed.
2. The faucet sputters out water continuously without a steady flow.

Manual Water Pump

The faucets in the galley and head need to have the water pressure power on in order to function. You also use the manual pump.

1. In the sink there's a little goose neck faucet. That needs to be open to use the pump. Turn the white knob on the faucet to open. [Figures 22 & 23. Manual water pump faucet.](#)
2. On the floor in front of the sink there is a foot pump, pump away and you should get water. If no water comes out of the faucet you probably turned the white knob the wrong way. Repeat step one and two.

Hot Water

There are two ways that water is heated. One is when the engine is running it will heat the water in the water heater. The other is by turning on the AC water heater when the boat is connected to shore power.



*Figures 20 & 21. Water tank controllers.
Aft knob controls the forward tank.*



Figures 22 & 23. Manual water pump faucet.

EMERGENCY EQUIPMENT

Emergency tiller

In the case the steering fails it may be necessary to use the emergency steering tiller. The tiller is located in the aft cabin in a compartment under the port cushion toward the stern. There's also a "wrench" that is needed to gain access to the emergency tiller post.

1. Use the wrench to remove the circular plate just aft of the helm. [PICTURE]
2. Place tiller on emergency tiller post and steer.

Cable Cutters

There are a few emergencies (disasters) where there is a need for cable cutters. The main event would be if the boat was masted and the mast was sinking. The rigging may need to be cut from the boat to free the mast from the boat. The cable cutters are located in the aft cabin in a compartment under the port cushion toward the stern.

A message from the owner

I hope you enjoy your charter of Cu Na Mara. The Seattle Sailing Club and myself spend many hours maintaining her. To help us with this endeavor we ask that you report any issues immediately upon her return. Finding broken equipment that was not reported makes it difficult to keep the boats to high standard. Even reporting minor issues is greatly appreciated. And lastly please be sure to go over the checklist before and after the charter.

This document is a work in progress. If there's anything you'd like to see added or any edits feel free to add them below or directly markup the text itself.

Thank you so much and we hope you enjoy your sail.

Roger Williams