

BLUE MOON

Ops Manual

Welcome Aboard Blue Moon!

Preparation for Shoving Off

When getting ready to begin your cruise each day, take a few minutes to make sure all systems are up and functioning properly. Your first check should be to take a quick look around the engine room looking for any oil or water leaks that were not there either during the Check-Out or from the prior day's activities.

If you do find something has changed, try to find where the oil or water has been coming into the bilge.

Assuming there is little or no change, now is the time to run the engine room blowers for a few minutes before engine start-up.

ENGINE START

First item of business to make sure there is power to the Micro Commander controls. In the panel find three switches marked Engine Control and make sure all three are switched to the ON position. The top switch is for the Micro Commander Controls, then one each for the Port and starboard Engine.

Be sure the Micro Commander controls are in the Neutral Position at both stations. Turn each ignition key to the Start position and the engines should start without much delay. Do Not crank engines for longer than 5-8 seconds. If the engine does not start within that time, allow about 30 seconds for the starter motor to cool down. If you find that the engine is cranking slowly, you should stop and go to the panel and run the engine start batteries in parallel. (Location of this switch is found just above the main electrical panel. You must depress the red button to activate).

Once the engines have started, you may find it wise to warm up each engine by slowly increasing the RPMs. This can be done by pressing and holding the CONTROL button on the front of the Port Micro

Commander control and slowly moving the control arm forward. The light on the control will be blinking. Once you have moved the control arm forward you may let go of the CONTROL button and the engine RPMs can be increased without engaging the transmission. When the control arm is brought back to Neutral, this function is no longer in effect.

**NOTE: THE STARBOARD ENGINE MUST BE RUNNING FOR THIS FUNCTION TO BE OPERATIONAL.*

PROPER ENGINE SHUTDOWN

Prior to shutting down each engine, allow for approximately 5 minutes of slower to idle running to allow each engine to cool down slowly. Usually the close quarters maneuvering within a marina or approaching a mooring buoy will be sufficient.

**NOTE: To properly shut off each engine, Depress the STOP switch found just above the ignition switch, DO NOT simply turn the ignition switch to the Off position. When properly shut off, the engines will stop after a short delay at which time you then should turn the ignition switch to the Off position.*

GETTING UNDERWAY

It is very helpful to have a properly trained crew to assist the Captain for both casting off and docking from any moorage. Spending a few minutes with your crew can save one from chaos and lots of yelling!

First duty is to properly disconnect shore power. Be sure to turn off the breaker BEFORE disconnecting the shore power cable. Blue Moon has a 50 AMP shore power cord and this, by nature, is a heavy cable. If you have been using the 50 AMP additional cable, now is the time of properly coil and stow the cable out of the way for easy access for Blue Moon is equipped with both Bow the Stern thrusters which make

casting off and docking quite a bit easier. To activate the thrusters, press both the ON buttons on the Thruster Control simultaneously and the light will come on which shows these have been activate. Test in a short burst that both controls are functioning.

Also, it can be very helpful to have marina staff standby to assist in releasing lines at this time. This is their job, so be sure to ask! Especially if wind and current conditions are going to make getting off the dock a bit more difficult.

The captain should take a moment or two to make sure all the crew aboard understand what will be happening, which lines are to be released first and which to be released last.

For best visibility around Blue Moon, all close quarters maneuvering should be done from the upper station. (Both stations have a full complement of controls, just make sure that the upper stations controls have been designated the Master Control for the Micro Commanders).

**NOTE: Blue Moon also has a designated SLOW ENGINE switch that slows the engine RPMs to about 75% of normal idle. By engaging this toggle switch when underway in close quarters, you will find that the boat does not “jump” in and out of gear and makes for smoother shifting. Once away from the dock and out of the marina, turn this toggle switch to the Off position by shifting to neutral, turn toggle switch OFF and then move forward.*

Once away from the dock, crew can coil and stow all dock lines are the days cruising. Next, crew can begin to raise and stow any mooring buoys in their designated location.

PREPARING FOR DOCKING

One could say, read above in the reverse order and your pretty close to the truth.

Some additional hints when getting ready to dock Blue Moon:

Again, call ahead to get your moorage assignment for the evening and also request one of the marina staff stand by to catch lines.

Blue Moon has Shore Power Aft on the Port side of the boat. When possible, either a bow in port side tie or stern in port tie is best.

Don't forget to switch Blue Moon to the Slow Vessel Mode when approaching the moorage. It just takes a few seconds to idle down, switch engine controls to Neutral and move the toggle switch to the On position.

If marina staff are not readily available, with mooring buoys already dropped, maneuver the stern of the dock close enough to the dock so that a crew member may easily stop off the transom and begin to take moorage lines.

The thrusters make these close quarters maneuvers much easier, don't hesitate to use them. Reminder: Each thruster should not be engaged for more than 5-8 seconds at a time.

If you have engaged Trim Tabs while cruising, it will make slow maneuvering easier if those are moved to the Bow UP position by holding both switches in the UP position for 10 seconds.

Always center the wheel so that rudders are not angled either to Port or Starboard for slow speed docking.

ENGINE SYNCHRONIZERS

Blue Moon's engines can be synchronized when underway to allow for the best fuel economy and to harmonize the engines drone while underway. When out of synch, the engines tend to make a much more unpleasant sound.

To synch the engines is quite a simple process. You will find a switch marked SYNCH at each helm station. At the lower helm it is on a panel next to the wheel. The switch has three positions: when the switch is in the center position, each engine is working independent of the other. When depressed in the top, the Port Engine is the "Master", when depressed in the bottom, the Starboard Engine is the "Master". Whichever engine is the "Master", that Micro Commander Control arm is adjusting both engine RPMs until the switch is returned to the Neutral Position.

To properly disengage, both controls should be moved to the Neutral Position then turn off the switch. The Synch will NOT disengage until both controls closely match positions.

CHANGING HELM STATIONS

Always put engine controls in the Neutral Position when changing stations. If either the Synch or Low Speed Switch is On, turn those OFF at the helm station you are leaving, otherwise you will not be able to make those change from the new helm station.

Move to the other station and push the Control button. A red light should then let you know that the controls have been changed to that particular station and you can get underway and make any helm changes at that time.

FUEL

Blue Moon has two fuel tanks. To make fueling the easiest, approaching the fuel dock Portside to is ideal since both fuel fills can then be easily accessed.

Tank One holds 200 gallons of DIESEL fuel that can be determined by a fuel gauge mounted below the lower helm, top gauge. The Fuel Fill for this tank is located on the Port Side of Blue Moon, mid-ship. It is found right next to a Waste Cap, be careful to not fill the waste tank with Fuel!

Tank Two holds 400 gallons of DIESEL fuel that can be found on a fuel gauge mounted below the helm, lower gauge. The Fuel Fill for this tank is located midship in the aft of the Blue Moon.

To switch from Tank One to Tank Two you must access the engine room. The valve can be found adjacent to each engine and by swinging the handle from position one to position two, the tanks will be switched. You must make sure to have both handles in similar positions so that fuel is always being drawn from the same tank.

If taking on several hundred gallons of fuel, have someone check the fuel gauge from time to time so you are aware of how close you are getting too full. As you approach Full, slow the fill speed to allow for air to escape and to listen for a change in gurgle/pitch. Be aware of the Overflow Vent and top off carefully. Catch any overflow before it has a chance to get into the water!

Replace the fuel cap(s) and run the engine room blowers prior to starting each engine.

ELECTRICAL SYSTEM

Blue Moon has both 110-volt AC power (Shore Power or off the Generator) and 12-volt DC power from the ship's batteries.

The 110 panel is found in the companionway, Port Side, while the DC panel is found to the Starboard.

THE DOT SYSTEM

Anacortes Yacht Charters uses a colored dot system to identify those breakers on each panel that are usually ON, OFF or used intermittently.

GREEN DOT signifies ON or usually ON

RED DOT signifies OFF or usually OFF

BLUE DOT signifies items like water pumps that should be switched on only when being used.

YELLOW DOTS signifies electronics or items to be used with caution

NO DOTS signifies those breakers for very irregular use with discretion

110 VOLT SYSTEM

Shore Power, Generator or the Inverter supply the 110 system aboard Blue Moon. This also supplies power to all outlets and will charge all the batteries aboard.

Blue Moon's 50-foot Shore Power Cord is found in the aft cockpit, Port side. To POWER UP the shore power cablemaster, the CABLEMASTER switch on the 110 electrical panel must be ON position. This will allow for the cable to be extended or retrieved by a toggle switch located below the rail adjacent to the power cord.

When plugging into shore power, or disconnecting from shore power, TURN OFF the breaker at the point of connection. Hopefully you have a 50 AMP shore power supply and you will simply plug into that service.

Be sure the AC Panel has Circuit Breaker in the SHORE position. Turn ON appropriate breakers for Yellow Dot items like water pumps, shower sump pumps, etc. that may be used that evening.

If only 30 AMP service is available, you will find adapters, pigtails, etc. in a tote box next to the rail mounted BBQ. If you have only 30 AMP service available (or sometimes even 20 AMP service) you must be very cautious regarding which circuits to power up at one time. If you "POP" breakers, turn off certain items that are drawing high amperage. Pick and choose wisely what of have ON at any one time. Water Heaters take a high draw for example.

INVERTER

Blue Moon is equipped with an inverter than can, for a limited period, provide 110-volt power by converting 12-volt DC power (from ships batteries) to 110-volt power. This is a finite amount of power and does deplete the ships batteries over time. The inverter does NOT provide power to the water heater or battery charger.

To turn ON the inverter, go to the AC panel and move the selector switch to INV. This will power up the AC circuits except for noted earlier. Use this power sparingly! Hair dryers, toasters, coffee pots will draw down power very quickly.

Inverters are best used for short periods of time when at a quiet anchorage and using the generator would become a noisy nuisance.

GENERATOR

Blue Moon also has a Generator, that can run all the AC circuits, charge batteries and send power to the hot water heater. The generator itself is located aft of the engines.

Prior to Generator Start, turn off all AC circuits so that there is no load on the AC system.

To Start the Gen Set, at the lower helm in the small panel forward of the wheel you will find the Generator Start controls. First, above the DC Panel you will find a series of battery selector switches. Find the switch marker GEN, slide the bar down and depress the red button. It will light up. Then depress the Pre-Heat switch for approximately 20 seconds, while still holding the pre-heat switch in, depress the start switch. Hold that until the generator catches, usually within 20 seconds. Do a quick check to make sure the generator is pumping raw water from its exhaust.

Once running you can then go back to the 110 Volt panel and turn on the breakers which you would have had on when connected to Shore Power.

When turning off the Generator, take to load off by turning off the AC breakers, turn off the main AC distribution switch and then turning the Generator switch to the Off position.

12 VOLT BATTERY SYSTEM

Blue Moon has multiple batteries for powering up various independent systems.

The battery selector switches are located on a separate panel found immediately above the 12 Volt DC panel. These switches can be

confusing: there is a slide bar that allows access to the various battery switches. The bar must be slid so that the switch can be depressed. Just sliding the bar does NOT activate the switch, so be sure to depress the switch, a red light should come on when the switch is properly activated.

Port Engine Start Battery

Starboard Engine Start Battery

House Bank of Batteries

Generator Start Battery

Dedicated Thruster Battery

When a battery bank is being charged, the voltage will read 13.1 to 14.4 volts. When the battery bank is at rest, the voltmeter can provide a rough idea of the level of charge in the batteries.

The batteries are under a charge by the engine alternators while underway, the engine/house batteries are charged by the inverter/battery charger when connected to shore power. The battery charger and inverter circuit breakers should be "ON" at the electrical panel. Finally, operating the Generator will also provide a charge to the various banks of batteries.

Level of Charge in a Battery

12.5 Volts	75%
12.25 Volts	50%
11.95 Volts	25%
11.70 Volts	0%

Parallel Battery Switch's allow the starboard and port engine battery to be combined should you find that the single dedicated battery has insufficient charge to start the engine. That switch is found on the battery panel above the DC electrical panel. Again, slide the bar so that the parallel switch can be active. As soon as the engine(s) engage, return the switch to the Off position.

MARINE HEADS

Blue Moon's heads are VacuFlush. Simply depress the lever below each toilet bowl to evacuate the head. There is a Tank Tender that will APPROXIMATE the level of the holding tank, it is critical to be aware how close each tank is to being full.

The forward head has a ___ gallon holding tank, while the aft head has a ___ gallon holding tank. Overfilling either one can cause serious damage, clogging vent lines or worse. It is strongly recommended that you empty the holding tanks every other day.

Holding tanks can be emptied at a Marine Pump Out Station.

Remove the Waste Caps located on the port side of Blue Moon. One is adjacent to the fuel cap, the other just aft of there. Insert the pump-out nozzle into the waste opening and hold the nozzle firmly against the deck to allow for a tight seal. Marina staff will usually then turn on the pump-out system to empty the holding tank. Once emptied, replace the Waste Cap and move to the next tank.

NOTE: If possible, when fresh water and time permits, rinse each tank by running fresh water into the tank for about two minutes, then repump. This helps to eliminate head odor.

Marine heads can become clogged/plugged quite easily. Each head will be operated at check-out to ensure proper operation and function. Plugged heads are YOUR RESPONSIBILITY. It is not enough for 5 out of 6 aboard the boat to be “head savvy”. The captain should take a few minutes at the outset of the cruise to have the entire crew be aware of proper head use.

Never put paper towels, Kleenex, tampons, household toilet paper or any food into the marine head. Marine toilet paper should be the only type used during your trip.

MACERATOR PUMP DISCHARGE

An alternate method of discharge is by the use of a macerator pump.

THIS METHOD CAN ONLY BE USED WHEN IN CANADIAN WATERS

To operate the macerator pump go to the DC panel. You will note that both Macerator Pump switches have red dots next to them, meaning to be used only by discretion. To active each macerator, simply move the toggle switch to the “ON” position. Listen to the sound from the pump and when the pitch increases, the holding tank has been pumped out. It will take several minutes for these pumps to clean a full or nearly full holding tank.

Y – Valve

The Y-Valve directs waste effluent either to the holding tanks or directly overboard. The Y-Valve is located in the engine room and unless specifically directed by AYC staff for emergency, you should have no need to reposition this valve. Y-Valves are wire-tied to the Holding Tank position in accordance with Coast Guard guidelines. Hefty fines can be assessed for Y-Valves found in the overboard discharge position.

WATER SYSTEM

Blue Moon has two water tanks that are typically plumbed together. Combined there is _____ gallons of fresh water for consumption. Fresh water (grey water) is drained overboard thru various thru-hulls located around the boats. Often the grey water will go to a sump and then pumped overboard.

Fill the water tanks thru deck fittings found in the aft cockpit on the steps.

The fresh water pressure pump is located in the engine room. To activate the pump simply switch on the Water Pump switch on the DC panel. Should the pump continue to run you may be out of water or possibly have an air lock. Bleed the system by opening a faucet, typically at the highest point. If you do run out of water, be sure to **TURN OFF THE HOT WATER HEATER** on the AC panel to avoid serious damage.

Blue Moon does have a 110-volt hot water heater with a capacity of _____ gallons. The water is heated with shore power, generator power or via a heat exchanger when underway. When on shore power or generator, switch **ON** the water heater circuit in the AC electric panel. Be aware of your water levels and avoid turning the heater on when low on water. The water heater is located in the engine room.

“Boat Showers” are highly recommended to minimize the amount of fresh water used. Turn off water between initial soap down and rinsing, and to keep showers and baths tidy, wipe down after showering. Keeping drains free of hair and other debris will help keep sumps clear and pumps from clogging.

GALLEY

Stove/Oven

Blue Moon has an electric stove and oven. The breaker on the AC panel must be ON for the stove/oven to work. Since this is 110 Volt electric, the power source is Shore Power or running the Generator. Operating the stove/oven off the inverter is not possible.

Refrigerator

The refrigerator is dual voltage (12 volt and 110 Volt power). It will use 110 volt whenever possible and only switch over to 12 volt when 110 is not available. Monitor the use of 12 volt battery consumption when at anchor or moored away from shore power and consider switching OFF the refrigerator just before retiring for the night and back ON the next morning.

BLUE MOON APPROXIMATE NUMBERS

<u>GPH</u>	<u>RPM</u>	<u>KNTS</u>
3.7	1000	9.0
5.8	1200	11.0
9.7	1400	13.0
13.1	1600	16.6
17.8	1800	20.5
21.9	2000	24.2
24.9	2100	25.7
27.9	2200	26.7
33.4	2330	29.0

Many factors can enter into this equation, full fuel and water tanks, number of people aboard, tides and currents all will have some effect on these numbers. This is provided simply as some guide to help in trip planning.

ANCHORING

Blue Moon has a Main Anchor plus a spare for emergencies. The main anchor breaker is in a small panel found just below the lower helm wheel, port side. This will power up the UP and Down switches for the winch at each station as well as the foot switches on the bow of Blue Moon.

The anchor chain is marked at ___ intervals to help determine the amount of chain that has been used. Under normal conditions you should plan on a 3 to 1 scope, or 75 feet of chain in 25 feet of water.

Approach an anchorage upwind or into any current and bring the boat to a stop or dead slow and begin to let out anchor chain. Drop the anchor by depressing the foot switch or windless switch at helm station. Let out chain beyond the depth of your anchorage by 10 to 15 feet. "Kick" the boat in and out of reverse while still dropping chain until the minimum scope has been reached. Increase the scope when you are in locations of heavy wind or current locations, heavy weather is expected or other conditions may dictate.

"Set" the anchor by first allowing Blue Moon to come to rest as the anchor and chain have been released. Then test your anchorage by "kicking" into reverse again to ensure the anchor is holding. Do this several times.

To retrieve the anchor and chain, Blue Moon's port and starboard engines should be started. The anchor windlass motor has a big draw on the electrical system. There is a hose and nozzle in the port anchor

hatch that should now be attached to a fitting in the bow. A small cover can be swung out of the way and the hose can be attached by inserting the fitting and turning about a quarter turn to engage. At this time flip the wash down pump switch found toward the bottom of the DC panel. It is helpful for a crew member to be at the bow of the boat to direct the captain to position the boat so that the chain is being retrieved directly over the bow. Again, “kick” the boat slowly forward to retrieve the chain, DO NOT use the anchor windlass alone for this task. It is not unusual for this maneuvering to take place several times. As the chain is retrieved, the crew should use the wash down to spray with fresh water. Once the anchor has “broken loose” and chain and anchor is being retrieved the captain should use caution with maneuvering Blue Moon. As the anchor comes into sight continue to spray. Depending on the bottom, the anchor could be heavily encased in mud, kelp or simply clean. It may take several minutes of spraying to clean up an anchor before finally returning to the bow and ensuring the locking arm is engaged.

Once retrieved, disengage the hose and nozzle, switch off the wash down pump and switch off both windlass controls in the small panel below lower helm station.

DINGHY

To launch the dinghy, access the dinghy via the swim step thru the transom door. You may be at first confused by this launching and retrieving system, but once tried you will find it fairly easy.

First, locate the two pins that are held together by a small cable. There should be little tension on the top pin, so remove that to begin the launching sequence. Towards the bottom of the mechanism, you will see a black knob, SLOWLY turn to release pressure and the dinghy will

begin to drop towards the water. About halfway down, the second pin will be released from tension and can now be removed.

Finally, continue to release pressure until the dinghy is “floating” and a third pin can now be released as the motor mount engages with the transom of the dinghy. You may need to nudge the motor mount into place. There is a screw type mechanism that must be firmly engaged to lock the motor mount onto the transom of the dinghy. Once engaged you can slip the swim step dinghy mounts forward to disengage the dinghy.

To retrieve the dinghy, engage the mounts on the swim step, unscrew the motor mount locking mechanism and insert the lower pin. At this time make sure the pressure relief knob is closed and drop down a foot pumping lever. Begin pumping this foot pump and when about half way up, engage one of the pins that is part of the two-pin cable, then continue to pump until it is possible to engage the third and final pin.

NOTE: The outboard fuel tank is located under the seat and secured in place with straps. Before retrieving the dinghy, be sure the outboard tank is secure. Also, close the air vent on the fuel tank so that no outboard fuel is lost when the dinghy is loaded on the swim step, but be sure to open that prior to using the dinghy.