COMMUNICATION AND RESPONSE TRAILER MANUAL (2011)

OVERVIEW: GENERAL OPERATION AND FEATURES

TOWING

Towing a Communication and Response Trailer (CRT) differs from towing a boat or a small utility trailer because of its weight and dimensions. The trailer itself is approximately 12 feet tall and weighs an estimated 5,000 pounds before it is outfitted. The CRT's total tongue weight is approximately 1,500 pounds when both the propane tanks and water tanks are full. You will need a tow vehicle that is capable of pulling a trailer with the aforementioned weight specifications; a vehicle that is equipped with an electronic brake controller. While the CRT is not difficult to tow if you have the suggested vehicle, it is recommended that you tow it several times before using it in an emergency situation, just to get used to the process. Please take caution when towing to allow for extra stopping distance and make sure that any low-hanging awnings or enclosures can accommodate the CRT's height specifications before attempting entry. At almost 12 feet in height, the unit can easily be damaged if

you strike any low-hanging obstructions. Always test brakes and the CRT's brake lighting before entering public roadways.

EXTERIOR FEATURES

- **Retractable Awning** [See included manufacturer's manual for details on operation.]
- **Wheelchair Accessible Door** – a ramp is included but is not warranted for wheelchair use.
- **Exterior 12-volt light** located near the front curb-side door
- **Removable 110-volt halogen area-light**. This light can detach from the trailer and convert into a tripod-mount light. The light will also detach from the tripod stand and convert into a floor-standing work light.
- **Wind Generator Mount** located to the right side of the rear door

INTERIOR FEATURES

- **Refrigerator**

  The refrigerator can be powered by propane, 12-volt power or 110-volt power. It is very important not to use 12-volt power for initial cooling. This type of power is only meant to maintain temperature of the contents inside after the onset of initial cooling. Always use propane or the 110-volt power supply on initial startup. The refrigerator uses the circulation of the air across the cooling fins located in the rear of the unit to maintain a consistent temperature. It is important when packing the unit that you leave adequate space around the contents to allow for proper air flow.

- **Water System / Bathroom Facilities**
  - There is a city water hookup if the facilities are available. In the event that you are not connected to a city water supply, there is an internal 12-volt water pump that needs to be turned on prior to operating your CRT. The power breaker has a light next to it and becomes illuminated when it is in the "ON" position. This breaker is located on the 12 volt panel.
  - Both the city hook-up and the fill for the water tanks are located to the left of the generator door near the front of the trailer.

- There is a 6 gallon hot water heater that runs off of propane. You must have water in the system before lighting the water heater. WARNING: You can damage the hot water heater if you light it without water in the system. More detailed instructions regarding hot water heater activation are located on page 43.
- There is a 40 gallon fresh water tank with a 32 gallon grey water tank and a 24 gallon black water tank.
- There is a 17 inch height manual flush toilet

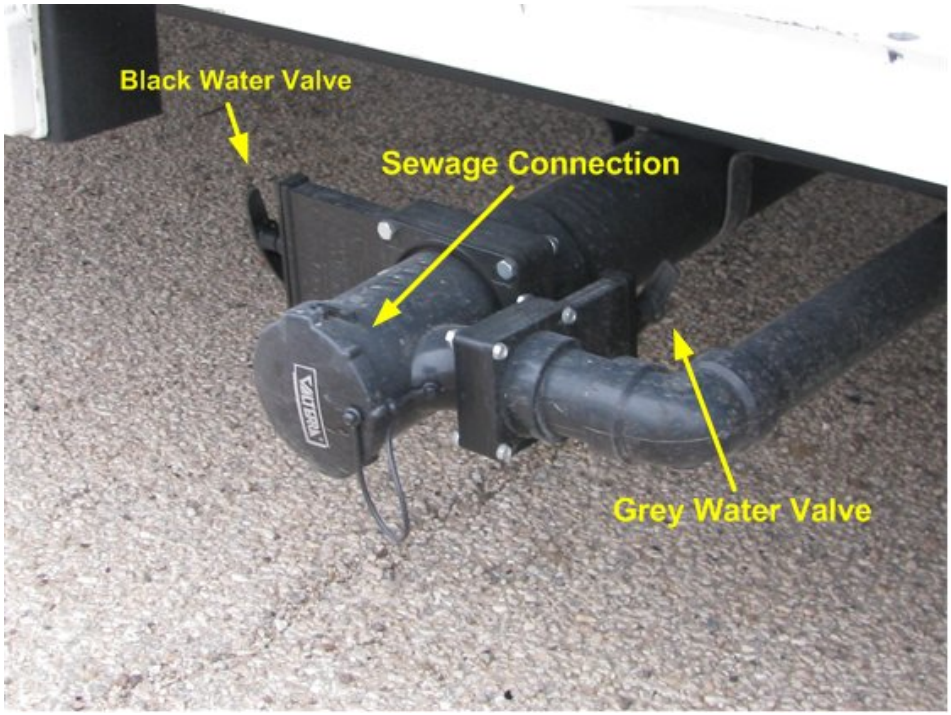
Emptying the Waste water system

Avoid dumping tanks that are not at least 2/3's full. If you have to dump, add water to the tanks till they become at least 2/3 full. This will help promote all the solids and particles to become suspended in the water and flow out of the tank. If you are going to travel before dumping, you can add some dish washing detergent (1/4 cup to a tank) and let it slosh around. Caution: Too much soap may cause excessive foaming!

- Start by pulling up to the trailer dump station and placing your black holding tank drain valve as close to the opening of the dump station as possible. This will ensure that if there is an accident, it will be contained in the dumping area.
- Put on latex or other disposable gloves (to avoid any contamination) and get your sewer hose out. Before removing the cap to the holding tank drain opening, ensure both the gray and black water valves are both closed.
- Always use an elbow and a hose ring to connect the sewer hose to dump station hole as this will hold the hose in place and avoid any splatter. If the ring or the elbow is not available, insert the end of the sewer hose into the dump station's hole about eight to twelve inches .Use the hole's cover, a brick, or

something heavy enough to hold the sewer hose in place so it doesn't pop out of the hole (**Do not** use an object that could fall into the hole, you don't want a plugged dump station).

- Check your sewer hose to ensure the hose is securely clamped to the adapter that attaches to the holding tank drain outlet. Remove the cap with the sewer hose underneath to catch any drips (open end up), when any drips have stopped, attach the sewer hose ensuring the adapter is completely attached. You can tell if it is when the tabs on the adapter are lined up with the stubs on the tank drain. A partially attached hose is more common than you think.
- Once you are certain everything is secured, pull open the Black water tank valve first. You will hear the effluent rush through the hose, start to slow down, and finally become a trickling sound. Some solids may still stay lodged at the bottom of the tank as well as on the tank sidewall.
- Next, you can fill the toilet bowl with water using the internal pump and water from your fresh tank. Flush the toilet several times to help rinse out the tank
- Now open the gray tank valve. As in the step above, you'll hear water flow, then slow, and stop. Close the gray tank valve.
- If there is a fresh supply of water you may want to rinse you tanks again by filling them at least ¼ to ½ full and dumping the tanks again.
- Recheck that both your black and gray water tank valves are closed and then disconnect the sewer hose from your tank outlet.\
- Lift the end of the sewer hose (the end you just disconnected) to completely drain the hose into the dump station. If a non-potable water hose is available, run water through the sewer hose to rinse it out. Remove the sewer hose from the dump station hole and rinse the outside of the hose. Rinse the area around the hole to ensure that any spillage has been cleaned up and cover the dump station hole. Replace the tank outlet cover.
- Now add about three to three gallons of water (about three full bowl flushes) to your black tank and then add the appropriate amount of holding tank treatment. If you use a treatment for your gray tank, do that as well. This will ensure that everything stays moist and healthy in the tank till your next trip.



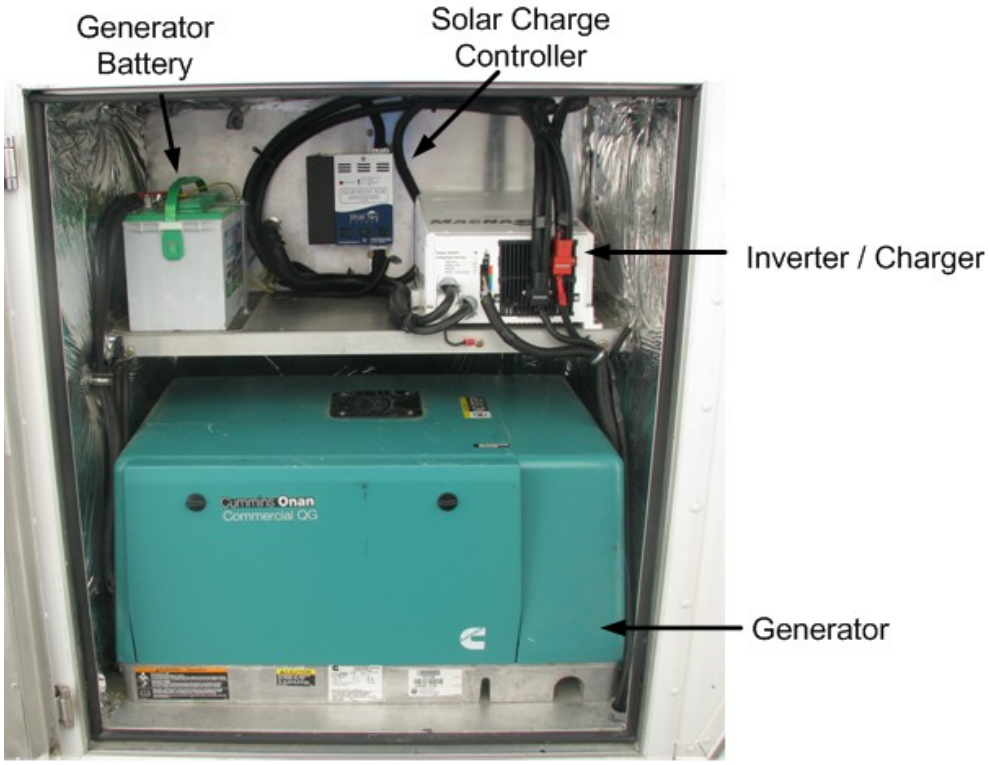
- **Propane System**

  There are two 40LB propane tanks mounted on the tongue of the trailer. These two propane tanks provide enough fuel to run the generator for anywhere between 28 and 32 hours continuously, depending on the load. The propane tanks also supply propane to the refrigerator and hot water heater, so this must be taken into account for total run time. The propane hose connections are standard connections found on the most common portable propane tanks. There is a central valve that both regulates the pressure as well as determines what bottle the propane is being drawn from. Flip the lever towards the tank you wish to use for fueling the system, or straight up and down to draw from both tanks. In the picture below the propane would be drawn from the right tank only.

POWER SYSTEM

The trailer can be powered from three sources:

- On-board 5500 watt Onan natural gas (LP) generator
- A lead acid battery in the generator compartment. This battery is for starting and running the generator. There is not a charge system on the generator like many small gasoline motors. If this battery is disconnected during the generator operation, it will shut down due to lack of electrical power to the generator. The battery is attached to the solar charge controller. The Controller provides the battery with a 2 amp trickle charge when needed and under normal conditions will keep the battery at full charge. However it is recommended that the battery be checked regularly to assure it is in good working order.



- Battery bank located in the rear floor hatch provides up to 2800 watts continuous power rated at a capacity of approximately 850 Amp Hours.

- An external power connector that can handle up to 30Amps of “shore” power supplied from a building, external generator, etc. If connected to a 30Amp circuit, this connection will supply up to 3600 watts. Connected to a 20A circuit, it provides up to 2400 watts. On a standard 15Amp house circuit, only 1800 watts can be accessed.

- A renewable energy system consisting of both solar and wind power generation elements. This system is for recharging the batteries ONLY, and should never be used in calculating how much total energy load can be pulled by the trailer loads. Both of these sources feed into charge controllers and ONLY charge the batteries.

The above elements make up the trailer Power system. There are three separate components of the power system, AC power and DC power. Both systems are integrated through the AC/DC power panels located immediately below the equipment rack. There are three panels that make up this system. First is the 12 volt panel. This panel controls all the 12 volt equipment. This includes the all interior lighting, refrigerator, and exterior porch light. The second panel is the main 110 volt panel. This panel is run off or the generator OR shore power only. This panel includes all heavy load equipment and non essential equipment. This includes the exterior flood light, the air conditioner and Microwave. Additionally this panel feeds the auxiliary 110 volt panel.

The power source is selected by sliding the safety slide to the opposite side of the desired breaker and flipping the breaker to the up position. This will energize the main panel only. To send power to the auxiliary panel the breaker on the right side bottom labeled Aux panel will need to be activated.

THE INVERTER MUST NOT BE ON WHEN ENERGIZING THE AUXILLARLY PANEL!!!!

The auxiliary panel is fed either by the primary AC panel or the 2800 watt inverter. This panel only feeds the interior and exterior plugs. This panel is meant to feed all critical systems for basic operation of the trailer. This includes the equipment rack, the television, and the interior and exterior wall plugs, and the floor plugs.

To energize this panel you have two choices, either by the turning the inverter on, or feeding it through the main AC panel. You must turn off the inverter before you energize the panel through the primary 120 volt panel. There is a UPS on the equipment rack that will keep the equipment running during temporary periods of power interruption. This is included in the trailer to allow you to switch between power sources safely and if needed switch out empty propane tanks. But please note that the UPS will only run the equipment for between 5 and 10 minutes.

This is an overview of the Power panels.

The AC only auxiliary panel is energized using either shore/generator power panel **OR** power supplied from the inverter. This is also true during battery charging. This is further described in the section titled AC Power System This is determined by the position of bottom right breaker on the primary panel, labeled “Aux Panel ”. The inverter must be turned off before switching power to the auxiliary panel from the primary AC panel.

It is important that you understand how these two systems operate.

AC Power System

The AC portion of the power panel is the left panel and the top panel. Each circuit breaker is labeled as to what it controls.

You will notice that the air conditioner, microwave and battery charges will only run off the Primary panel. We consider these "High Draw" devices and we do not want to run them off the battery pack. You can run all two of the three high draw devices at the same time. If you attempt to run all three at the same time you may trip a circuit breaker and risk shutting down the entire trailer. Power to the battery charger is controlled by a circuit breaker located in the Primary AC power panel and are labeled "Battery Charger". When it is energized it will automatically turn on the charger. The inverter/Charger features an automatic transfer relay and an internal battery charger when operating in the Standby Mode. The Standby Mode begins whenever AC Power (Shore or Generator) is connected to the inverter's AC input via the "Battery Charger" breaker. Once the AC voltage and frequency of the incoming AC power is within the AC input limits, an automatic AC transfer relay is activated. This transfer relay passes the incoming AC power through the inverter to power the AC loads on the inverter's output. This incoming power is also used to activate a powerful internal battery charger to keep the battery bank charged.

DC Power System

The DC power Panel is located just to the right of the Primary AC panel. 12 volt power is supplied to the system from the battery bank located in the main battery compartment under the floor in the rear of the trailer. This portion of the panel controls all the 12 volt DC devices. These include, the overhead lights, bathroom light, outside porch light, and reading light. Each one of these circuit is protected by the use circuit breakers. Each Circuit breaker is labeled accordingly.

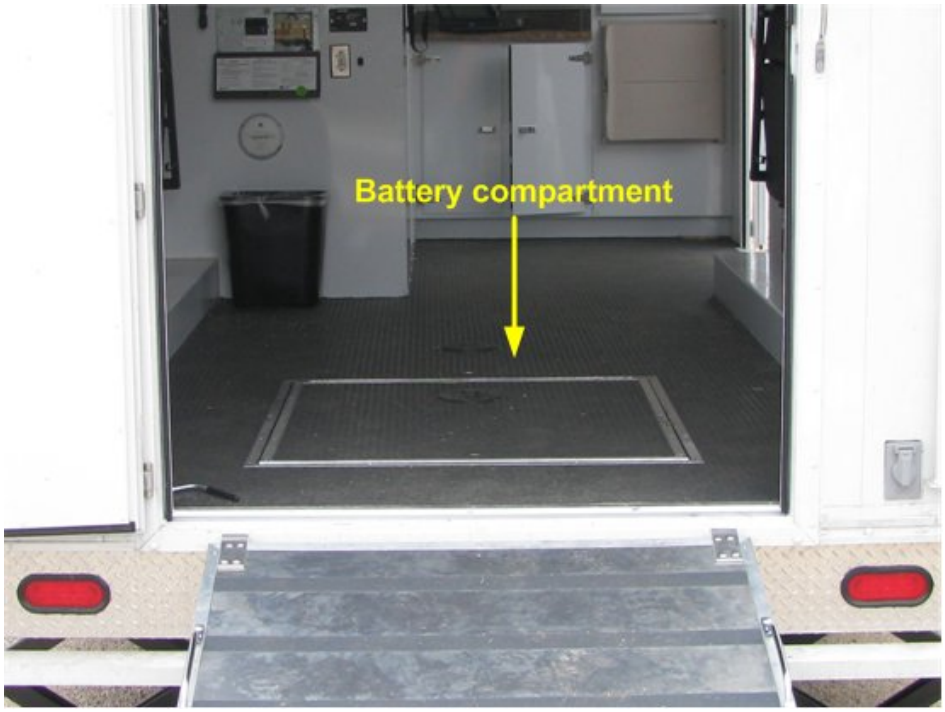
This system is charged by using the charger built into the inverter, solar charger and wind. The charger is described above and we will not detail it in this section.

The Solar charge controller is located in the generator compartment and provides continuous charge to the battery bank when exposed to daylight. While this alone will not normally charge the bank from full draw during usage it will help slow the rate of discharge.

Additionally there is a wind generator supplied. This will also charge the batteries when enough wind is present to start the internal charger. Please refer to the documentation for the wind generator for more specific information.

Main battery compartment

This compartment is located in the floor of the trailer towards the rear of the trailer.



It is accessed by lifting up the access panel in the floor. These batteries supply power directly to the DC components and to AC power inverter located in the generator compartment. Power is supplied through 2/0 cables.

The batteries housed in this compartment are Lithium Iron Phosphate batteries. While the basis of the chemistry is the same as traditional “Lithium” batteries, this chemistry (LiFePo4) is safe from oxidation, and overheating. The real advantage of these batteries, besides the safety, is the exceptional life expectancy, power to weight ratio and ability to supply exceptionally high output currant as compared to traditional lead acid or lithium chemistry batteries.

DC to AC inverter

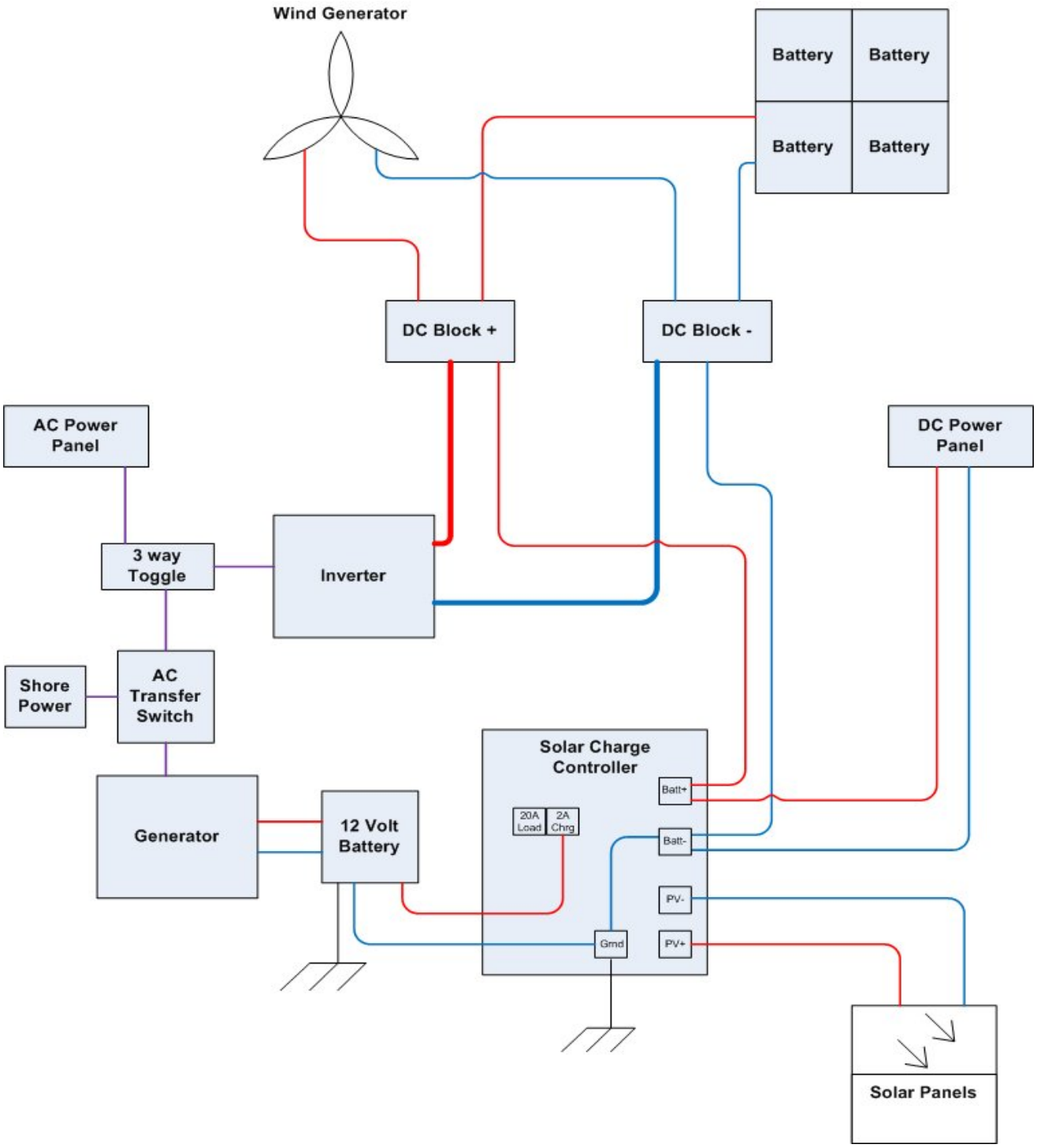
The DC to AC inverter is located in the generator compartment. It is supplied 12 volt power from the battery compartment and then inverts the power to 110 volt AC power. The inverter is capable of running all critical equipment as well as additional equipment. However it will not run the Air Conditioner, Microwave, or battery chargers. Any additional equipment must not exceed the rating for the inverter, in this case 2800 watts. It is critical that the users to add up the power draw and make sure it does not exceed 2800 watts total on the

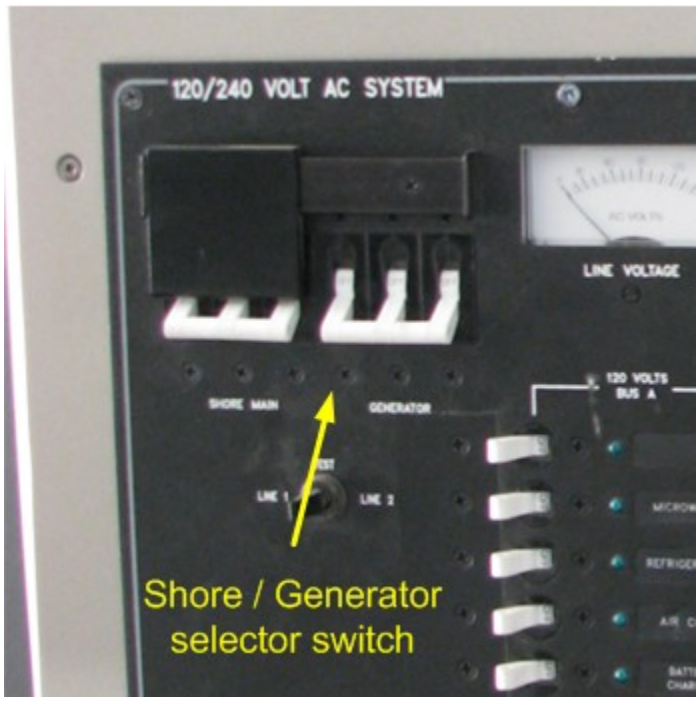
battery system. Also remember that the more power you draw the shorter time you will be able to run without the generator. There is more detailed information on this as well as the normal draws of the equipment below.

Battery Charger

The battery charger is built into the inverter and is configured to charge the specific batteries in the trailer. The charger can only be run while running the generator or connected to shore power. The charger can pull up to 1750 watts, so plan accordingly.

Wiring Diagram


Wind Generator
Battery
Battery
Battery
Battery
DC Block +
DC Block -
AC Power Panel
DC Power Panel
3 way Toggle
Inverter
Shore Power
AC Transfer Switch
Solar Charge Controller
Batt+
20A Load
2A Chrg
Batt-
Generator
12 Volt Battery
PV-
Gnd
PV+
Solar Panels



There is a manual switch on the Primary 120 Volt panel that switches between generator and the external "shore" connector. Notice that there is a safety mechanism that only allows one master breaker to be activated at a time. The trailer will operate on shore power OR generator power. NOTE: the generator can be running on idle while the primary panel is pulling power from the external shore power connector. In this case, the generator should be turned off to conserve fuel.

This external power line can be used even if the generator is on

To run off battery power, it will be necessary to ensure that the inverter is turned on. To activate the inverter simply locate the control panel inside the trailer below the equipment rack. Press the inverter on / off button. You will see "Inverting" displayed on the control panel. Additionally you will see the current voltage of the

battery bank. Please note that if the voltage on the bank drops below 11.5 volts the inverter will turn off automatically. This is to protect the batteries from damage by draining them too low. Anything below 11.3 volts will damage the battery cells and void the manufacturer's warranty.

Charging

- Charging the battery bank is a constant process as long as the trailer is stored outside, and in the sun. However this may not be adequate at times and you will need to use the charger built into the inverter. To activate the charger simply turn on the breaker that supplies power to the inverter. This breaker is located on the primary 120 volt panel and is labeled "Charger". Once this switch is turned on the inverter / charger will automatically sense the current and start the chargers if needed. **Remember, never run the microwave and air conditioner/heater while the battery chargers are running. Only two of these high-load systems can run at a time. The charger can be turned off via their dedicated breaker in the main AC panel.**

Additionally you will notice the Auxiliary 120 volt panel will become energized. This is by design. The inverter / Charger will automatically pass current through the unit and supplies power to the 120 side of the inverter, in turn powering the circuits on the auxiliary panel.

The trailer has a number of systems that require power, some more hungry for energy than others:

High current Draw Devices

- Air Conditioner / Heater – By far the biggest drain on power. RV Products model 8333E876. 13,500 cooling BTUs, 5600 heating BTUs. This unit consumes between 1500 and 2000 watts while cooling and 1800 watts when heating. Consider that this unit, while cycling cooling or heating, could be taking up half your available generator/shore power
- Microwave – An LG model LMA1180ST. It draws a peak load of 1450 watts. **Remember, never run the microwave and air conditioner/heater while the battery chargers are running. Only two of these high-load systems can run at a time. The charger can be turned off via their dedicated breaker in the main AC panel.**
- Battery Charger – The battery charger is wired on a dedicated circuit, with its own breaker on the main AC panel. These chargers can deliver a maximum of 2000watts of power to the batteries when recharging them on a "bulk" charge. A bulk charge occurs after heavy battery usage. **The batteries can charge whenever shore or generator power is available.**

The battery system is an advanced, lithium iron phosphate system capable of charge capacities 2.5 times higher than traditional lead-acid batteries. These lithium batteries are made with a new lithium chemistry that is not susceptible to catastrophic failure under overcharge or undercharge conditions, as are most lithium batteries. Also, the number of charge/discharge cycles is much better – 2000-3000 rather than 500-1000. There are four 12V batteries with about 220 Amp Hours charge capacity each. Lead-acid batteries of the same size and weight have only 85 Amp Hours.

To ensure the health of these batteries, they should be inspected every six months. Fully charged voltage is approximately 13.6V. Any reading under 11.3 is considered unhealthy. The chargers will charge with a "bulk" charge if the voltage is under about 13.0V. After coming close to their 13.6 V nominal voltage rating, they will limit the amount of current pushed into the batteries. This type of charging is called a "top-off" or "maintenance" charge. A bulk charge is usually between 20 and 40Amps. A "top-off" charge is usually below 5 Amps.

If supplied with a sufficient power source, the batteries will bulk charge at 125Amps/14V. Since Power equals Voltage times Amperage, P=VA, it can be seen that each charger is capable of pulling around 1750 watts. This is important to keep in mind, in light of the other heavy loads on the trailer power system.

Exterior Halogen Flood lamp – 660watts

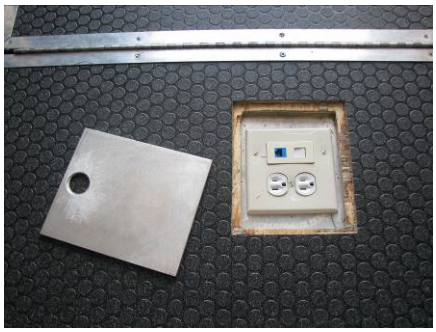
The flood lamp should always be plugged in with the cord running behind the awning support. This light is also a very high power device. Its use should be considered carefully in light of other electrical loads that might be present.

Other electrical loads

- Television – A 46" Sharp Aquos LCD. Average drain of **150 watts**
- Communications Rack – Peak consumption of 400watts when UPS is charging, approximately **220 watts** in normal operation.
- Refrigerator – **150 watts** - NOTE: the Refrigerator can run off any of 3 power sources- DC, AC and natural gas. Refer to the Refrigerator manual for operating instructions.
- Exterior Lamp (next to door) – **30 watts**
- Interior lighting – **17 watts**
- Reading Light – **2 watts**

Power can also be consumed by plugging loads into the various electrical outlets available within the interior and on the exterior of the trailer. These standard electrical outlets are located in the following places: behind

sink, on either side of back door, in a hidden panel under the table, on the exterior next to the side door. **Be sure to account for any loads plugged into these outlets when calculating the full wattage load pulling from the trailer's electrical supply systems.**



Don't forget about the receptacles next to the side door or the one in the floor.

While running on batteries, the total load can be no more than 2800 watts. The air conditioner and microwave will be inoperable while running on batteries.

While on generator or externally connected shore power, the trailer can support a total load of up to 3600 watts for shore power and 5500 watts from the generator. If this threshold is exceeded, the generator's built-in breaker will trip. Or, if running on shore power, the circuit coming from the building or other external power source may be overloaded.

To turn the generator on and off, use the rocker switch located near the main AC panel inside the trailer.

When starting the generator for the first time it is important to prime the system before attempting to start it. This is done by pressing the rocker switch to the stop/prime position until the light illuminates. You may have to prime the system up to 5 times to purge all air out of the lines. After the generator starts for the first time you will not have to prime it again, unless you disconnect the propane tanks.

To reset the generator breaker, turn off the generator and access the internal generator control panel. Refer to the owner's manual for complete procedure and location. Additionally, Refer to the generator manual for maintenance procedures, including inspection of and replacement of oil. NOTE: The generator has its own 12V battery that requires regular inspection and maintenance.

Communications System

While deployed, you are able to access the internet

The communications system utilizes a satellite uplink in order to get online. In order to use the system, you must follow these steps:

1. Ensure the Communications rack within the trailer is powered up.
2. Verify that the black "Ground Control" unit has the "stowed" light is illuminated, and the "error" light is not.
3. Press the "find satellite" button. The dish on top of the trailer will now begin to self align.

4. Open your browser and enter the url http://192.168.xxx.3 (where X is the first 3 digits of the trailer's phone extension). This will bring up a status page of the alignment process.

5. Once the "Signal Quality" area shows "passed," you should have internet connectivity.

6. Verify that by try to go to http://www.google.com.

Once the system is no longer in use and you wish to stow it, just press and hold the "Stow" button. Once the dish has been completely stowed, the "stowed" indicator will light up. At this point it is safe to power off all the devices you wish.

Accessing the Internet

Access to the internet can be achieved by either connecting to the wireless network or by traditional wired network. DHCP is provided so there is no IP configuration needed. Once connected you will connect to the resources you desire in the same ways you would at your home or office.

Telephony

Your trailer has been outfitted with phones that utilize Skype telephony service, with phone numbers assigned to each phone. The phones have been configured and tested prior to delivery of the trailer. The accounts are managed through Skype's online manager, where you can add and change features, add credits etc. A list of usernames and account information will be supplied to you with the trailer.

Video Conferencing

Each trailer is supplied with a software based video conference system. The system runs on the server on the rack and utilizes a USB camera and external microphone. This system also uses the Television as a monitor for the system. The software is operated the same as any traditional Polycom unit. You are able to connect to any Video conferencing unit accessible to the internet, as well as any on the TALHO network.

To use the video conferencing, you must follow the above steps to get internet connectivity. Once connected, on the server double click the Polycom PVX icon on your desktop. This will bring up a preview screen on the trailer's camera. To the right of that preview, you will see a directory and a speed-dial icon. There have been some entries pre-entered for you to use. Click on speed-dial and select an entry. Make sure the entry you selected is prepared for your call. This should automatically connect you via video conferencing to that location.

Mobile ThreatNet XM Weather service

Your server comes preconfigured with XM's Master Mariner service and Baron Services Mobile ThreatNet application. You do not have to have internet connectivity in order to use this. To begin, double-click the "ThreatNet" icon on your desktop, when prompted, choose "normal" mode, not demo. The system will take 30 seconds to 2 minutes to download the latest weather information. On the left side, you will see some buttons. If you press the "radar" button the radar information should appear. Other useful buttons are "fronts," "winds," and "strikes" For more detailed information you may refer to the online manual by selecting "help" and then "Manual"

ACU-M radio interoperability device

If your trailer is equipped with a radio interoperability unit, you can connect up to 4 dissimilar radio systems. Due to the complexity of the system it is best to consult the user's manual for further instruction on how to use the system.

AM radio station

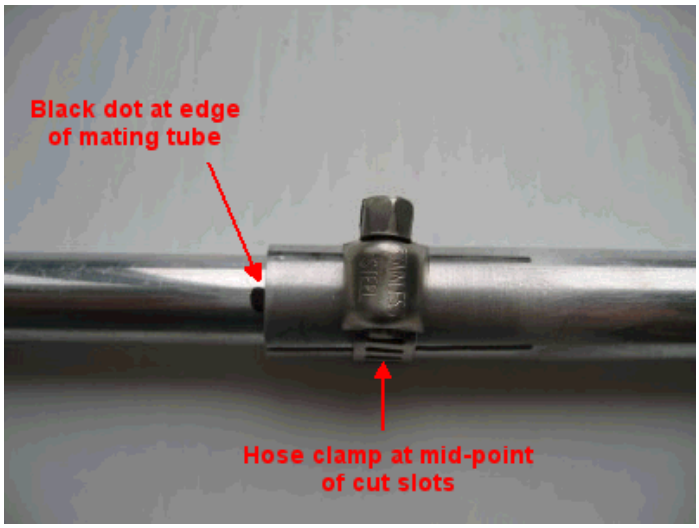
Your trailer comes equipped with its own AM radio station. The default frequency is 1680 AM. If that channel already exists in your area, we will need to change that frequency.

1. Choose a Quiet Channel (if an alternate is required): Drive around your chosen broadcast area and listen for clear channels. Note: car radios are usually more sensitive than portables, so that should be

considered too. If you want to broadcast at night, you would have to check if the channel is clear then. It's more difficult to broadcast at night because skywaves from higher-powered radio stations reach into your broadcast area and will reduce your effective transmit range; so bear that in mind. Try to choose one of the highest 43 channels available for the Procaster™ by setting the option switch accordingly. The higher the frequency, the better the range because of the restrictive short antenna length.

2. Once you choose a channel (if required), we must locate the unit on the roof of the trailer.

3. Raise the Antenna: loosen the wing nut holding the unit in place enough to clear the locking mechanism. Rotate the unit until the locking tab lines up in a vertical position and tighten the wing nut back down.



4. Configure the Channel settings (if required): Using the 10-position option switch, choose the desired broadcast frequency and other features. Note: always choose the highest clear frequency possible. The short length of the antenna is more efficient at higher frequencies and you will get better range.

Switches 1-6 select the channel. All the others should be left at their default positions. Use the table below to set the switches to your desired channel.

Freq kHz	S1	S2	S3	S4	S5	S6
1290	ON	ON	ON	ON	ON	ON
1300	OFF	ON	ON	ON	ON	ON
1310	ON	OFF	ON	ON	ON	ON
1320	OFF	OFF	ON	ON	ON	ON
1330	ON	ON	OFF	ON	ON	ON
1340	OFF	ON	OFF	ON	ON	ON
1350	ON	OFF	OFF	ON	ON	ON
1360	OFF	OFF	OFF	ON	ON	ON
1370	ON	ON	ON	OFF	ON	ON
1380	OFF	ON	ON	OFF	ON	ON
1390	ON	OFF	ON	OFF	ON	ON
1400	OFF	OFF	ON	OFF	ON	ON
1410	ON	ON	OFF	OFF	ON	ON
1420	OFF	ON	OFF	OFF	ON	ON
1430	ON	OFF	OFF	OFF	ON	ON
1440	OFF	OFF	OFF	OFF	ON	ON
1450	ON	ON	ON	ON	OFF	ON
1460	OFF	ON	ON	ON	OFF	ON
1470	ON	OFF	ON	ON	OFF	ON

1480	OFF	OFF	ON	ON	OFF	ON
1490	ON	ON	OFF	ON	OFF	ON
1500	OFF	ON	OFF	ON	OFF	ON
1510	ON	OFF	OFF	ON	OFF	ON
1520	OFF	OFF	OFF	ON	OFF	ON
1530	ON	ON	ON	OFF	OFF	ON
1540	OFF	ON	ON	OFF	OFF	ON
1550	ON	OFF	ON	OFF	OFF	ON
1560	OFF	OFF	ON	OFF	OFF	ON
1570	ON	ON	OFF	OFF	OFF	ON
1580	OFF	ON	OFF	OFF	OFF	ON
1590	ON	OFF	OFF	OFF	OFF	ON
1600	OFF	OFF	OFF	OFF	OFF	ON
1610	ON	ON	ON	ON	ON	OFF
1620	OFF	ON	ON	ON	ON	OFF
1630	ON	OFF	ON	ON	ON	OFF
1640	OFF	OFF	ON	ON	ON	OFF
1650	ON	ON	OFF	ON	ON	OFF
1660	OFF	ON	OFF	ON	ON	OFF
1670	ON	OFF	OFF	ON	ON	OFF
1680	OFF	OFF	OFF	ON	ON	OFF

1690	ON	ON	ON	OFF	ON	OFF
1700	OFF	ON	ON	OFF	ON	OFF
1710	ON	OFF	ON	OFF	ON	OFF

*Note: frequencies in shaded area are recommended for best range

5. Once the channel has been configured, you may close the lid and return inside the trailer.

6. Find the black box mounted to the right of the server rack. You should have a 3.5mm audio jack to plug your audio source into. On the back of that box is a power connection, very that is connected and the unit is powered on. Connect an audio source and begin streaming. A good example would be an MP3 player or a NOAA radio.

7. In a car, tune to the station to the default 1680 and verify you can hear your audio source.

DEPLOYMENT and STOWING

Upon reaching your destination you will follow these steps to setup and deploy the trailer.

1. Level the trailer:

You will use the front jack and the two back scissor jacks to level the trailer. You will want a slight tilt to the back street side of the trailer to aide in the runoff of the roof top air conditioner condensation. The Jack Handle is stowed under the sink. We advise that after you level the trailer you place the jack handle on the steering wheel of your tow vehicle as a reminder to lift the jacks before you leave the site.

2. Pull out the Step

Under the front Curbside door is a step that needs to be manually deployed. There is a locking pin that secures the step in an open and closed position.

A. Grasp the pin handle and rotate it until it is unlocked and pull out the step.
B. Rotate it back so the pin rubs against the step, and pull the step out. The pin should snap into the hole locking the step into the out position as seen below

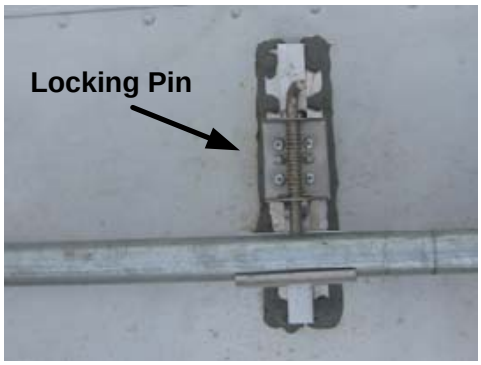
3. Deploy the ramp on the back door

Open and latch the back door open. Remove the roll up ramp from the trailer. Remove the securing strap from the ramp and unroll on the ground. Be careful not to pinch yourself while handling the ramp. Place the ramp in the slot provided at the bottom of the door frame.

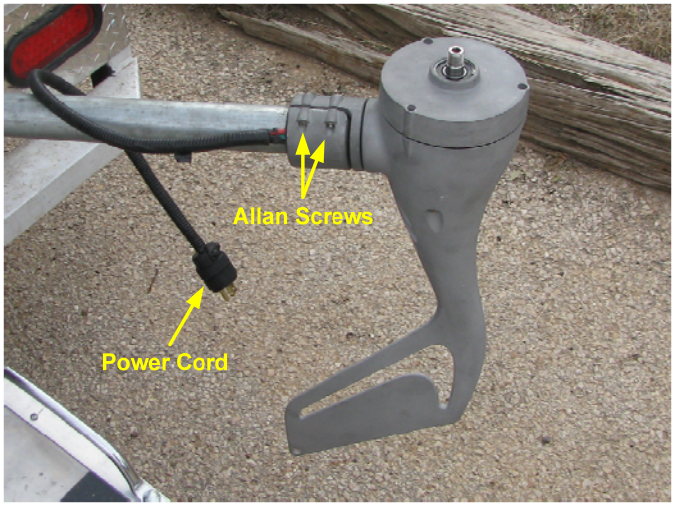
4. Deploy the Wind Generator

A. The wind generator body, and all the needed allan wrenches, extra bolts and nuts are located in the preformed foam tray located in the front right storage compartment.

B. Remove the mast from the mount on the top of the trailer by un latching the locking pin and hand it down to someone on the ground.

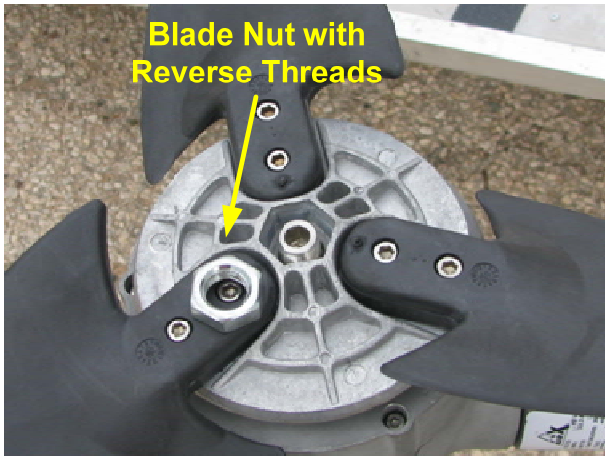


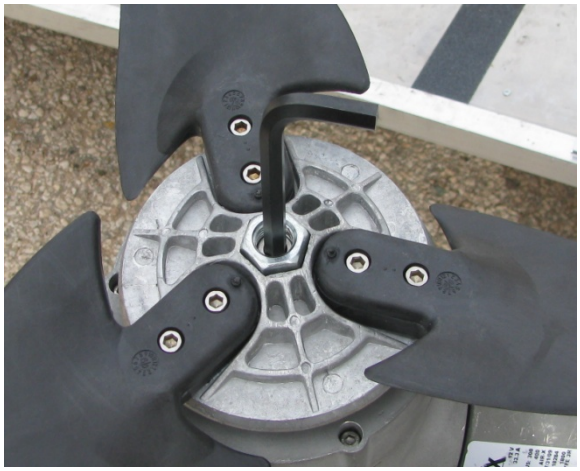
C. Lay the mast in the trailer with the generator end hanging out the back door. If the ramp is deployed you will have to angle the mast to clear the ramp. Slide the wind generator on to the end of the mast with the single slot, using the slot to pass the power wires through from the wind generator. Tighten the four allan screws to secure the generator to the mast.



D. Plug the supplied blank plug into the wind generator power lead. This plug simply makes a connection between the positive and negative leads and activates the internal breaking system on the generator.

E. Remove the wind generator blades form the mount in the bathroom. Install the blades on the wind generator using the proper allan wrench. **NOTE: the threads on the blade mount are reverse threads.**





F. Next place the plastic nose cone on the generator. This is done by lining up the slots in the nosecone and snapping it in place.

G. After the generator and blades are mounted on the mast lean the unit against the trailer using the mast holder to hold up the wind generator. The unit can then be lifted up from the top of the trailer and inserted into the mast holder. However the preferred method is to have a helper on the ground to help guide the mast while it is being lifted from the top.

H. Next run the cable down to the ground. Secure the cable to the mast holder using the Velcro straps that were used in securing the power cable in the storage area. Plug in the twist lock plug into the

receptacle and feed extra cable behind the rear bumper to eliminate any possibility of tripping on the cable lying on the ground in the open.

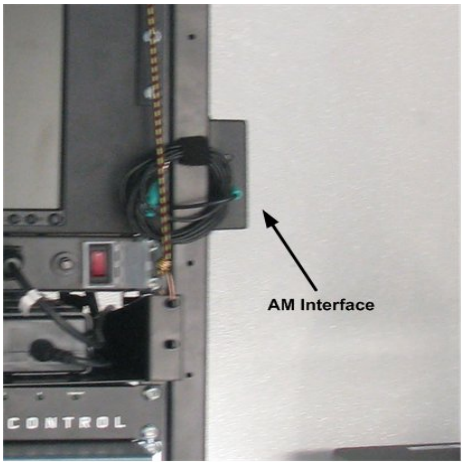
I. Next remove the plug on the power lead of the generator and plug it into the extension cable you previously secured to the mast. NOTE BE EXTREAMLY CAREFULL!!! THE BLADES ARE EXTREAMLY SHARP!!!ONCE THE PLUG IS REMOVED FROM THE POWER LEAD THE BLADES CAN TURN AT A HIGH RATE OF SPEED AND WILL CAUSE GREAT BODLY INJURY IF YOU COME IN CONTACT WITH THE ROTATING BLADES. WHENEVER APPROACHING THE WING GENERATOR APPROACH FROM THE BACK IF POSSIBLE AND HOLD ONTO THE REAR OF THE GENERATOR TO KEEP IT FROM SWINGING AROUND UNEXPECTANTLY. ONLY RAISE OR LOWER THE WIND GENERATOR IN LOW AND PREDICTABLE WIND CONDITIONS.

5. Deploy the AM Radio

If desired you may now deploy the AM radio station antenna.

A. First loosen the wing nuts holding the antenna horizontally to the unit mounted to the roof of the trailer. Rotate the unit to a vertical position until the locking tab lines up and re tighten the wing nut.

B. Next go into the trailer and locate the internal interface box affixed to the equipment rack as shown below

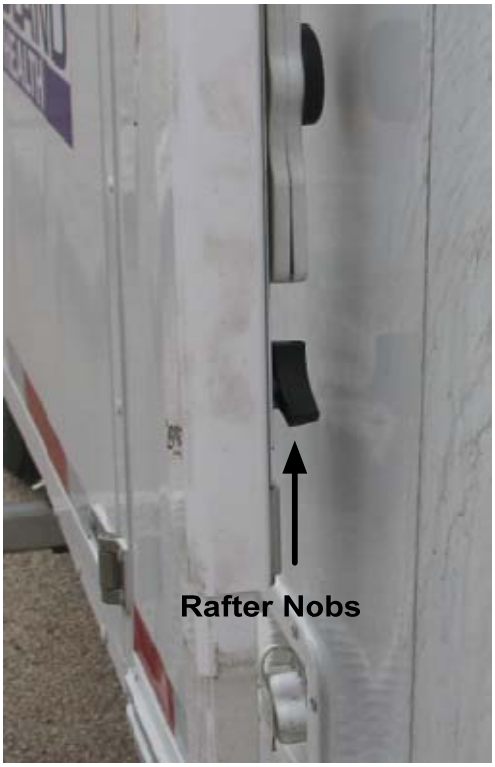


C. Attached is a 3.5mm stereo interface cable. Insert this into your audio source and start you audio.

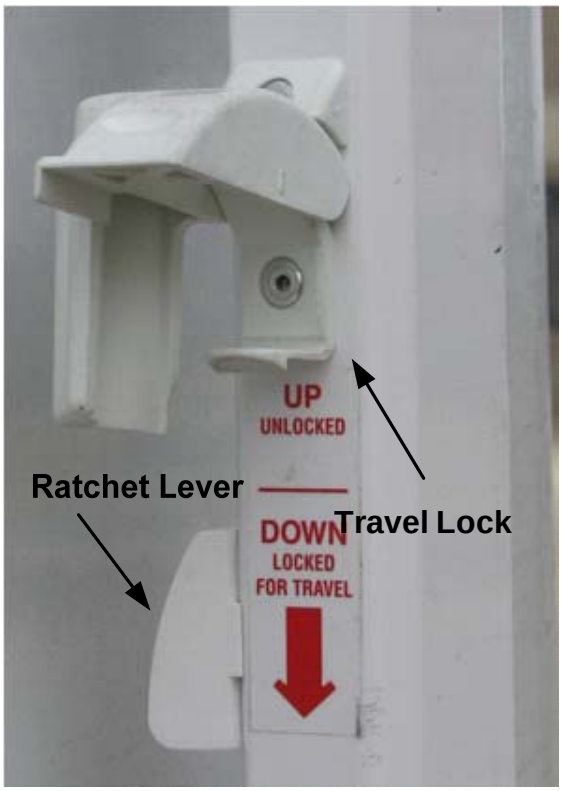
D. Test the broadcast by tuning into the appropriate AM frequency on any nearby vehicle.

6. Deploy the awning.

- Loosen the rafter's knobs on both awning support arms.



- Release the travel locks on both awning arms.



- Switch the ratchet lever on the support arm to roll out by sliding the lever on the left arm to the up position. Note: the “Up Unlocked” is referring to unlocked for travel. The awning can roll out in this position. This is the position you want the slider to deploy the awning.
- Hook the pull strap with the awning rod and roll out the awning.

- Slide the rafters up into position on the awning arms. Use downward pressure on the main support arms, to tighten the awning in the frame while tightening up the rafter arms locks you loosened in the first step.

- Raise the awning to the desired height using the handle on each support arm.

7. Supply power to the Equipment

A. Connect Shore power if available select Shore power on the Primary 12o volt panel. Next turn on the breaker on the panel to supply power to the Auxiliary panel.

B. Start generator if desired, select generator on the primary 120 volt panel. Next turn on the breaker on the panel to supply power to the Auxiliary panel.

C. If you desire to run on the battery bank turn on the inverter and you will not need to do anything else to supply power to the necessary outlets. Remember never energize the auxiliary panel while the inverter is running. This could cause damage to the inverter or equipment.

D. All the equipment in the communications rack is supplied power by the UPS supplied. This eliminated the need to restart the equipment if the power is transferred from one source to another e.g. from generator to shore power. Simply press the on button on the top of the UPS to supply power to the rack. If the UPS beeps, it is an indication that there is not power to the unit. Then check that all the proper breakers are in the "on "position, and the "supply" transfer switch it in the proper position for the desired power supply.

E. Turn on the rack mounted power strip

8. Deploy the desired interior configuration

Depending on the desired use you will now set up the couches, and table. If you want the benches laying flat the table will not be used.

A. To assemble the table remove the legs from the table and set them aside.

B. Remove the table from the mounting bracket and install the legs into the table

C. Place the table into the mounts in the floor of the table

D. Put the benches into the sitting position.

E. Refrigerator Settings and

A. On the intside panel and make the selection for the desired power source. You can select from 110, indicated by a plug icon, 12 volt indicated by a car battery icon, or Propane indicated by the flame icon. If you are going to use propane you will need to purge the line of air the first time you light the pilot light. To turn the power off turn the selector to the "O" icon all the way to the right.

B. To the right of the valve assembly locate the on /off valve for the propane.

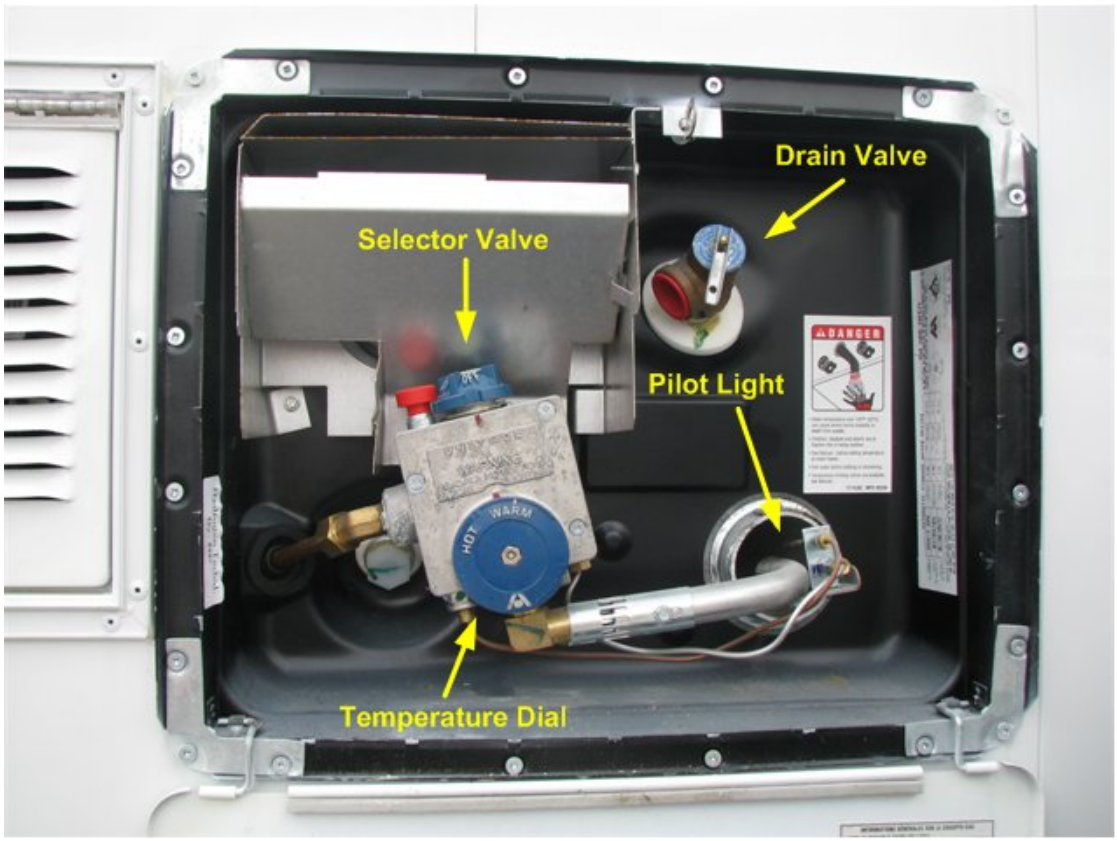
C. Turn the valve to the on position. Press down the igniter and hold it down for 15 – 20 seconds to prime the system. Let go and press the igniter in again. You should hear a clicking sound.

D. Check to see if the unit is lit by sliding open the small pilot light cover, over the ignition area. If you can see the flame. Then nothing more needs to be done. Please note that it can be difficult to see on sunny days and the pilot is much smaller than you would expect. The flame is about the size of peanut.

E. If it is not lit repeat the ignition process until it is lit.

F. Light the Hot Water Heater

On the hot water heater select valve to the “Light” position. Hold down the red button and light the Pilot light with a fireplace lighter. The red button will only go down when the selector valve is in the Light position. Once lit let go of the red button and turn the selector to the “On” position. The hot water heater should ignite the main burner almost immediately. You will have hot water in about one half hour. You can set the desired temperature using the temperature dial on the control unit.



STORAGE PROCEDURES

Unplug any cords from wall outlets - behind sink, on either side of back door, and in the floor

Turn TV off and secure remote control to side of TV.

Stow table and table legs properly

Fold couches against wall and secure with provided latches

Stow dish using the dish controller

Turn the power off on the rack-mounted power strip

Turn the UPS off.

Turn off the line conditioner behind the rack

Ensure that refrigerator is turned to Off.

Turn off both gas tanks. And set the selector switch to the neutral position.

Turn inverter off.

Ensure that windmill is stored properly, to include the mast, windmill body and blades

Stow the ramp on the floor

Make sure water pump is off.

Disconnect shore power

Turn off all lights - bathroom, reading, main LED lights, exterior door light, exterior flood lamp

Lock all doors, including generator compartment

MAINTENANCE

Generator Battery

On a monthly basis the water level of the battery should be checked. Additionally, there is a 2 amp charger connected that is feed by the solar panels. If the trailer is stored inside a building and does not have sunlight on the panels then the battery voltage should be checked as well and charged by traditional means when needed.

Main Batteries

Do not allow the main batteries to discharge. It is best to fully charge them at least once a month. If trailer is left outdoors, solar charger unit will keep batteries maintained and you do not have to check the batteries. However if the Unit is stored indoors it is important that it is hooked up to shore power and the batteries are allowed to charge for one day a month.

Solar Panels

Over time the solar panels will accumulate dirt and dust reducing the light that can reach the PV cells. Upon deployment if you notice there is a buildup on the panels you can simply wipe them down with a damp cloth to remove any buildup. This should be done at least once every six months as well for good measure.

Generator Oil

The generator oil should be checked every time the trailer is deployed **BEFORE** starting the generator and every eight hours of operation. See the recommended maintenance schedule below

Igniter

MAINTENANCE PROCEDURE	MAINTENANCE FREQUENCY							Page
	Every Day or Every 8 Hours	After First 20 Hours	Every Month	Every 50 Hours	Every 150 Hours	Every 250 Hours	Every 450 Hours	
General Inspections	X							3-2
Check Engine Oil Level	X							3-3
Clean and Check Battery			X[3]					3-5
Clean Spark Arrestor				X				3-6
Change Engine Oil		X[1]			X[2, 3, 4]			3-4
Replace Air Filter Element					X[2]			3-5
Clean Engine Cooling Fins						X[2]		–
Replace Spark Plug							X[5]	3-6
Replace Fuel Filter							X[5, 6]	–
Adjust Valve Lash							X[6]	–
Clean/Replace Cylinder Head							X[6]	–

1 − As a part of engine break-in, change the engine oil after the first 20 hours of operation
2 − Perform more often when operating in dusty environments.
3 − Perform more often when operating in hot weather.
4 − Perform at least once a year.
5 − Perform sooner if engine performance deteriorates.
6 − Must be performed by a qualified mechanic (authorized Onan dealer).

Warnings and Precautions

Towing and Hauling

1. The gross weight of the trailer is approximately 5000 pounds with a tongue weight of 1500 pounds. Make sure your tow vehicle is capable of these specifications.
2. Make sure your tow vehicle is equipped with an electronic brake controller.
3. Check the brake controller for proper operation and check for proper braking prior to towing the trailer on public streets.
4. Check that all lights are in working order.
5. When pulling the trailer leave plenty of room to stop. The trailer is heavier than most and will take a longer distance to tow.
6. Check the tire pressure before hauling the trailer and inflate the tires to the manufacturer recommended pressure
7. Make sure the safety chains and runaway break cable are attached to the vehicle
8. Make sure the latch for the trailer hitch is locked down in position and has either a lock or bolt through it to help ensure it will not come unlatched during towing.
9. The trailer is 12 feet tall. Keep this in mind while towing the trailer. Pay close attention to overhanging awnings on buildings and gas stations.
10. When loading the trailer with equipment load the heavier equipment from the middle of the axel back. Light weight equipment can be stowed in the front of the vehicle if needed.
11. Make sure all equipment inside the trailer is secured and will not shit during transportation.
12. The calculated tongue weight is with full water tanks. After each use it is recommended that all three tanks be drained. This includes fresh water tank, grey water tank, and black water tank.
13. After stabilizing the trailer with the scissor jacks we recommend that you place the jack handle on the steering wheel of the tow vehicle. This will ensure that the driver is reminded to lift the jacks before driving off. Failure to stow the jacks will result in damage to the jacks and possibly the trailer frame.
14. When traveling, be sure to check the Propane tanks that they are secured in the mounts and the valves are off. And the regulator valve is in the off position as well.

Setup and Stowing the Trailer

1. Level the trailer with a slight tilt towards the rear street side corner. This will aide in the runoff of the air conditioner condensation.
2. IF you are going to deploy the awning you will need two people to set it up. If you use it in high wind make sure to secure it.
3. When setting up the wind generator pay attention to the blades they are sharp.
4. When using the built in ladder on the trailer make sure you hold on to both top handles while climbing up or getting down.
5. When on top of the trailer be careful not to get too close to the edge of the trailer.
6. During wet weather the roof of the trailer is very slippery and special care and attention should be taken while on the roof.
7. While on the roof pay attention to where you step. There are cables and equipment mounted on the roof that can cause you to trip and fall.
8. If you leave the doors open during operation make sure to use the provided latches to secure the doors in an open position.

Propane System

1. There is a fire extinguisher on the curb side wall immediately in front of the sitting area.
2. Check the carbon dioxide detector for proper operation prior to deployment.
3. Make sure tanks are in good working order.
4. When lighting appliances for the first time after turning on the tank valves it will be necessary to purge air out if the lines.
5. If an appliance fails to start make sure that the propane flow to the ignition module is turned off. On the refrigerator there is an on/off valve. On the hot water heater there is a valve that must be turned to the off position. On the generator it is electronic.
6. Absolutely no smoking around the front of the trailer or the generator compartment.

7. When removing the tanks from the system make sure that either the selector valve on the regulator is turned to the off position or to the other tank.
8. The appliances get hot during operation. Avoid contact to hot surfaces as they will cause burns.

Electrical System

1. No open containers should be allowed around any electronics. This includes the sitting area in the trailer as well as the area that holds the electronic equipment.
2. Never run the microwave while the air conditioner/heater or the battery chargers are running. Only one of these high-load systems can run at a time. The chargers can be turned off via their dedicated breaker in the main AC panel.
3. Be careful if you are working in the battery box. If you accidently short out the batteries you will disable the entire 12 volt system.
4. If there is a short in the 12 volt system there is an ANL type fuse that will need to be replaced. At a minimum it will need to be 150 amps. The 12 volt system will not function until this fuse is replaced.
5. Pay attention to the load you put on the system. If you overload the system you will trip a breaker and possibly loose power to all equipment.
6. When connecting to shore power make sure the extension cable you are using is rated for the proper amperage. Not adhering to the minimum required wire gauge could cause a short in the system and possibly fire.
7. When using the halogen lights be careful not to touch the light as it will become hot during operation.