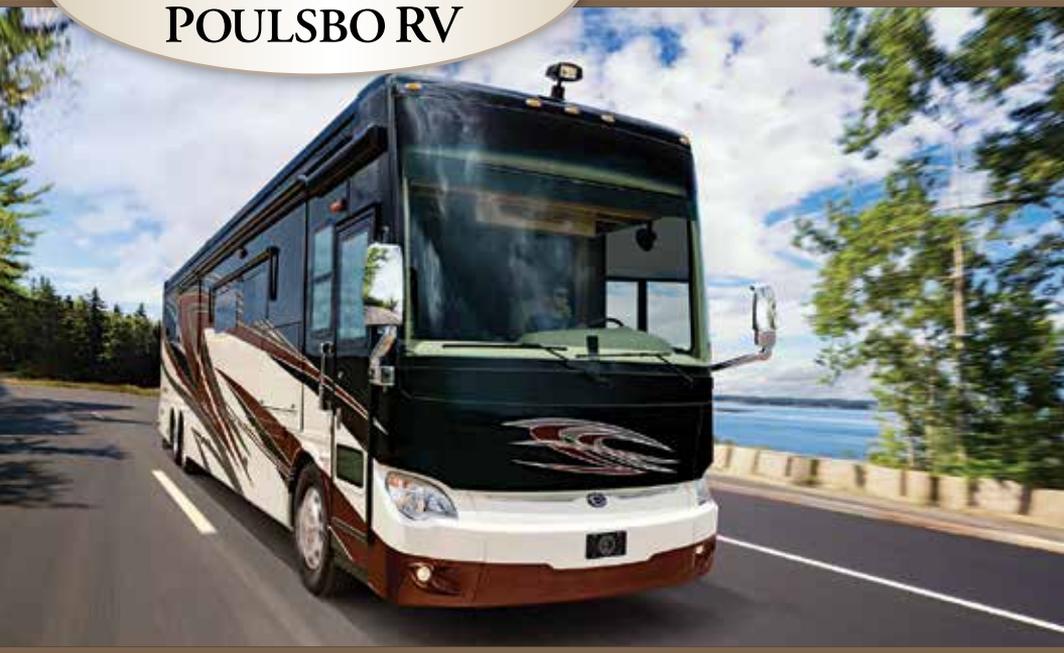


Customer Care

AT

POULSBO RV



**HELPFUL
MOTOR HOME
HINTS**

PARTS & SERVICE

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Introduction

Hello,

All of us at Poulsbo RV would like to welcome you to recreational vehicle ownership. We are excited to have you join the Poulsbo RV family! The staff of Poulsbo RV is here to assist you with any need you may have, big or small, so please feel free to call us if you have a question and cannot find the answer.

The Poulsbo RV **Helpful Motor Home Hints** booklet was created to help you understand the basic functions of your recreational vehicle. This booklet is in no way a complete guide to everything that could possibly happen on the road but is a great resource to start looking for answers to questions, or issues that may arise while you are enjoying your RV. This booklet is a great companion to our walk-thru process, which gives you uninterrupted time with a service technician to obtain an overview of how your RV works.

Helpful Motor Home Hints is broken down into 11 different sections to better help you access the information included. The aim of each section is to give you information that easy to find and simple to understand.

Sincerely,
The Poulsbo RV Team

SAFETY MEASURES

Your RV is an amazing machine but, as with any vehicle, there are some safety measures which need to be taken in order to ensure that you, and your family have a safe and happy trip. RV manufacturers include many safety features in their units but improper usage of any one system can cause safety issues, or dangerous conditions. There are some things of which everyone should be aware before going out on their first trip in a RV. In this section, we will give you tips on how to avoid falls, fires, fumes, and electrical shocks while using your RV.

There are several ways that falls can happen on, or in your RV. Make sure that you are looking out for tripping, or slipping hazards at all times. When you are parked at the campground try to keep something, like a grill or a patio chair, on either side of the stairs to limit the possibility of hitting your shins on the stairs and falling down. Be mindful of the automatic stairs when opening the door of the RV from the outside. When the RV door is opened and the steps begin to extend they can catch you off guard and hit you in the shins. Get in the habit of checking the position of the stairs before you exit the RV. Make sure the steps are in the down position to avoid falling from the doorway to the ground below.

Falls can occur when the floor of the RV gets damp. This can happen from tracking in the wet from outside, still having wet feet after using the shower or from spilling water in the kitchen. It is important that you keep a towel handy and wipe the floor down to eliminate any moisture, and the possibility of slipping or falling. Water on the floor of your RV can also happen from condensation, leaks in the seals and weather getting in through open vents that do not have vent covers, or if your vent covers are leaking.

The roof is another area where slips and falls can happen. This is especially scary because most RV roofs are about 12 feet off the ground. We recommended that you only get on your roof if it is absolutely necessary, and that you wear soft-soled shoes while on the roof. Children should never be allowed on the roof, or to play

Safety Measures

with or on the ladder. **If you need your roof to be inspected, Poulosbo RV offers a free Quarterly Inspection to all our customers. We are more than willing to inspect your roof for you.**

RVs are tightly enclosed spaces, making it very important that you have functioning detectors in your RV. Every RV should have not only a carbon monoxide detector, but also a smoke alarm and a propane detector. Your detectors should be tested every year, or before every trip, and have the batteries replaced at least once, if not twice a year. You will also need to keep an eye on the expiration date of your detectors and make sure they are replaced in a timely manner; most detectors have a five year life span. When any of your detectors goes off, evacuate the coach immediately and turn off the main valve to the propane until the source of the alarm has been identified. It is better to be safe than sorry.

Fire can be especially dangerous because of the confined space of the RV. While on the road you may not have access to, or the ability to call the fire department. In the case of a fire, it is very important to make sure that you have a fire extinguisher on board at all times. Before leaving on any trip, no matter how short, check your fire extinguisher to make sure it has a proper charge. If you are unable to check the fire extinguisher yourself, then you should replace it every year. It is a good idea to time the replacement with a preventive maintenance appointment, such as de-winterization, so you do not forget to replace the fire extinguisher.

When using your RV, make sure you are not traveling down the road with the stove, oven, water heater or furnace burners lit. The area around the stove should be free of all flammable materials. The oven exhaust, found at the rear of the burners, should be free and clear of clutter to allow for proper venting of fumes. When filling your propane tank, make sure that you have shut off the main valve. When refueling your RV make sure you have turned off all the propane appliances, and have turned off the engine.

Safety Measures

The electric power in your RV is no different than the electric power in your home. The biggest difference between your home and your RV is over the course of a single vacation you could hook-up and unhook your RV's electricity more than a dozen times. Each time you connect, or disconnect the power cords you are at risk for an electrical shock. When you arrive at your campsite, check the polarity of the campground receptacle before plugging in; if the polarity is not right then do not plug into the power and notify campground staff immediately. To check polarity, you will need a circuit analyzer that tests for and indicates open grounds, open neutrals, and correct polarity. You will also need to monitor the voltage coming into the unit from the hook-up. One safety measure is to turn off all your breakers before hooking into the campground power. Once you are safely hooked up you can turn the breakers back on. If you need to use an extension cord to reach the power source, make sure the extension cord has three blades, two flat and one round. Make sure your extension cord has the proper amp rating. You need to make sure the power cord has a large gauge, and is not too long. You do not want the power cord to be coiled on the ground. There will be occasions when you might have to connect or disconnect your power cables in the rain or when the ground is damp. Make sure that you are wearing rubber gloves and dry, rubber-soled shoes.

NOTES

Getting Ready for the Road

Check-off List

It is a good idea to have a check list of items that need to happen before you leave on a trip or before leaving the campground. We recommend you keep a laminated list in your RV, so you can check items off as you go and make sure you do not forget anything. The list should include checking to make sure awnings, water hoses and electric cables are stored, hood latches and compartment doors are locked, jacks are retracted and antennas are lowered or disconnected. Once you make the list all you need is a dry erase maker to check everything off before you leave.

Emergency Equipment List

Before leaving on any trip, make sure all your emergency equipment is present and accounted for. We recommend you have flares, jumper cables, reflective triangles, emergency phone numbers, tow chains, fire extinguisher, wheel chocks, lug wrenches, rubber boots, a rain suit with a hood, wheel jack and safety glasses. Check to make sure all of this equipment is loaded into your RV, and is in working order before you leave on any trip.

Personal Phone Numbers

In case of an emergency, it is important you have all your important phone numbers written down on a piece of paper. We recommend you include the contact information for close relatives, doctors, insurance agents, and credit card companies. You never know when you might need this information, your cell phone battery is dead, or the computer is not working.

The Exterior of Your RV

Awnings

There are many types of awnings. Most RVs have a patio awning, but you can also have windows, door and slideout awnings on your RV. Awnings offer you protection from the sun and give you an outdoor room while you are camping. Your awning will last for a long time with some basic yearly maintenance, and by following some simple rules when you are on the road. It is critical you read the owner's manual, as each manufacturer will have slightly different instructions for the proper usage and care of the awnings.

Before you leave for the travel season, you need to inspect the awnings on your RV. Once a year they will need a good cleaning. Open up the awnings and check the fabric for any mold, mildew, rips or tears. Awnings are made from one of two fabric types: vinyl or acrylic. Vinyl awnings will show some signs of mildew after being stored. After checking the fabric, inspect the bottom awning brackets and lag screws to ensure they are properly mounted to your RV, then inspect the arm pivots for enlarged holes or broken rivets. Once your inspection is done, wash the awning and hardware. All you will need is soapy water and a soft bristled brush. Do not use any oil based or abrasive cleaner. Wash both sides of the awning, and then the hardware. Rinse off the awning and hardware, allowing the awning to dry completely before rolling up. Never store your awning when it is wet. Storing a wet awning will allow mildew and mold to grow.

There are a few very simple guidelines to keep your awning functioning correctly. When setting up your awnings, make sure one end of the awning is at an angle. This allows any water to roll off the awning. If water pools on the awning, it can cause the fabric to sag due to the weight of the water. The excess weight of the water can possibly snap the support arms. If you are leaving your RV for an extended period of time, stow the awnings. This will protect them from wind gusts or vandalism. You should also stow your awnings if the weather starts to get windy. High winds can rip your support arms off the RV, or even tear the fabric and cause damage not only to the awning but to the RV itself. If a rainstorm hits and

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you must stow the awning while it is wet, extend the awning and dry it off as soon as possible to prevent mold and mildew.

When leaving the campground, make sure the travel lock for the awning has been engaged. The travel lock will keep the awning from moving or flapping against the RV while you are on the road.

Compartments & Compartment Doors

The outside compartments on your RV give you additional storage. Compartment doors have one of three types of door locks: a key lock and a thumb lock, two key locks, or one handle lock. Remember to ensure the compartment doors are securely closed and locked when you finish loading or unloading the compartment. Be careful not to put too much weight in the compartment. Once a year, clean and lube the door hinges and locks. If you travel to areas that are dusty or near the ocean, you should clean the hinges and locks twice a year.

Entrance Step

Entrance steps come in 2 or 3 step styles and are electric or hydraulic powered. There is no manual mode of operation for RV entrance steps. Your entrance steps have a master control switch, normally located on the dash panel, which allow you to turn the steps “on” or “off”. When the master control switch is in the “on” position, the steps will extend when the main entrance door is opened and retract when closed. While this is great when you are traveling it is not very convenient when you are parked at a campground or are loading for a trip.

If you need the entrance steps to remain extended for a long period of time, you will need to move the master control switch into the “off” position once the stairs are fully extended. It is important to remember to move the master switch control back to “on” before leaving the camp ground. If you drive off with the steps extended, you might do quite a bit of damage to the steps, the RV and possibly the campground. Most entrance steps systems

The Exterior of Your RV

do have an ignition bypass that will retract the steps when the ignition is turned on. Checking that the entrance steps are retracted before driving away should be part of your check-off list.

The entrance steps have friction points on each side which need to remain lubed to function properly. These friction points should be checked at least once a month during the travel season and before you leave on your first trip of the season. Your steps can also experience a bad ground connection that will cause them to stop working. The ground connection is located next to the steps just inside the door of the coach, in most RVs. Check the grounds for corrosion or loose connections if the steps are not working. It is a good idea to know where the fuse for the entrance stairs is located if the grounds are good and the stairs are not functioning correctly.

Main Entrance Door

One of the biggest tricks about an RV is learning to close the door and keep it closed. You can shut the door but it may not always catch and while the door looks closed it is still open. Most RVs have a handle/lock combination that is flush to the body of the RV. You pull the handle to open the door and you will turn the key clockwise for $\frac{1}{4}$ rotation and then back to vertical to unlock the door. Closing the door seems simple enough but it is important that you ensure the door has latched and is closed. When locking your RV, pull on the handle after you have locked the door to make sure that it is locked. If the door is locked, the handle will not pull out. Ensuring that the door is securely closed and locked is one of the most important items on your checklist. You should also have it locked while you are driving to prevent someone from trying to enter the RV while you are at a stop light.

Lock the door from the inside when you are retiring for the night. Locking the door at night will help you make sure the door

The Exterior of Your RV

is firmly closed. There is a small pin above the inside handle that locks and unlocks the door from the inside. If the door is not properly closed, the pin will not push down and you will be unable to lock the door.

The striker plate allows for two dimensional adjustments. If you make an adjustment to the striker plate, such as loosening it, you will need to go back and tighten the striker plate when you are done. If the lock stops operating smoothly, spray some WD-40 in the keyhole to keep everything lubricated.

Outside Shower

Outside showers are great for helping to keep dirt and debris out of your RV. If you need to rinse off your feet or the pets, you can do it all from outside of the RV. You can even take a shower outside if you want to. Most outside showers come with a circular tube that holds the shower curtain up. Run your outside shower occasionally to keep debris and obstructions from clogging up the tubing. When you winterize your coach make sure the outside shower is drained of all water. Leaving water in the outside shower can lead to frozen pipes. The pipes can leak inside the walls and possibly delaminate your RVs wall.

Windshield & Windshield Wipers

As you put miles on your RV, you may notice the occasional rock chip in the windshield. All chips and cracks should be filled as soon as possible. Windshield wipers should be inspected and replaced every couple of years. If you store your RV or live in a colder climate make sure your windshield wiper fluid is rated for colder temperatures. You do not want the wiper fluid to freeze during the winter and crack or break the reservoir.

Convection Microwaves

Some RVs have a convection microwave instead of stove. It is important you read the owner's manual for your convection microwave. Each manufacturer has different specifications for what type of dishes can be put in the microwave. Most convection microwaves come with a high rack allowing you to broil food, and a low rack, used for baking. The racks should be kept clean and free of food particles. The microwave does not need to be serviced, but should be kept in good working order.

Furnace

Your furnace is fully automatic, and is controlled by a thermostat. You can control the furnace by using the on/off switch that is connected to the thermostat. Furnaces do not run on AC power, so you will need to watch your batteries to make sure you have enough power to keep the furnace functioning. The blower draws anywhere from 8 to 10 amps of power, and possibly more in severe conditions. The furnace will not be able to function properly if the battery voltage is low. It is important to watch the charge on the batteries while operating the furnace.

The operational process of the furnace is quite simple. When the thermostat signals, the furnace will light and begin to produce hot air. The blower, powered by 12V, will move the air and you can expect to start feeling hot air in about 60 seconds after the furnace lights. When the RV reaches the desired temperature, the furnace will turn the flame off. The blower will continue to push hot air into the RV until the furnace chamber cools down to a preset temperature. There is no pilot light. The furnace will go through the lighting process every time the thermostat signals. **You should not keep the furnace turned on while you are sleeping. The furnace emits carbon monoxide and running the furnace while sleeping is a safety hazard.**

There are some simple maintenance chores you can do to prolong the life of your furnace. RV furnaces have a combustion

Appliances

air intake and carbon monoxide exhaust located on the outside of the coach next to the furnace. Ensure both of these are free of debris and there are no obstructions to the flow of air. Insects like to build nests inside the protected areas of the furnace which can cause the furnace to stop functioning. Remember to keep all outlets covered when the furnace is not in use, especially in warm weather. You should have your furnace serviced once a year. At the beginning of the spring travel season is best. Any debris in the burn chamber can be cleared away. The furnace ducts should also be cleaned once a year for better air distribution and cleaner air.

Propane

Propane, or LP, is vital to the operation of most appliances in your RV. Propane is a liquefied version of petroleum gas, stored under pressure in a ventilated external tank. Your RV has permanently installed pipes that deliver LP to the refrigerator, stove, oven, furnace, and water heater. Depending on your RV model, you may have LP pipes that run to an auxiliary generator. All propane tanks have a manual shut off valve. Some propane tanks have a gauge on the side of the tank that tells you how much propane is left in the tank. If your tanks do not have a direct reading gauge, you can purchase a similar device.

The refrigerator in your RV will run colder when it is working on propane. If your refrigerator does not work on 12V, then propane is essential to maintain refrigeration while you are driving. The only other source of energy that the refrigerator will operate on is 110V AC, which is provided by the auxiliary generator. The pilot lights for the stove and oven can also use up your propane very quickly if they are left on for extended periods of time. We recommend you only turn on the pilot light for the stove or oven when you are using them.

Propane tanks should be refilled when they are down to a quarter tank. If you are dry camping or if you are using your RV in severe weather, the propane tank should be refilled when half empty. All pilot lights should be turned off when you are refilling

the propane tank. The 20% valve on the propane tank should be left open during the refilling process. You will know that the tank is full when liquid starts spraying out from the 20% valve. The purpose of the 20% valve is to ensure that there is enough room in the tank for the propane to expand. Not all campgrounds, state parks, national parks or cities have propane to purchase. Check out the availability of propane before settling in for the night.

When using your coach in severe cold weather, you will go through propane faster. You may need to get a bigger propane tank, or an extended stay assembly. The extended stay assembly allows you to have additional propane tank(s). When using propane in extremely low temperatures, be aware that the propane vapor pressure may be too low and the flames cannot be kept lit. Check the tank to determine what the minimum usable temperatures are. If you must operate your coach in severe weather conditions, look into purchasing electric tank warmers.

All RVs should have a LP detector inside the coach. In some RVs, the detector is hard wired into the coach. In others, the detector was added after the coach was built. For your safety, it is very important you have a functioning LP detector. Some RVs have a vapor detector which will electronically cut off the propane and sound an alarm when vapors are detected in the RV. Your LP detector can be triggered by vapors other than a buildup of LP gas in the RV. Hair spray, lotions, shaving creams, gas fumes and LP fumes can set the detector off. If the LP detector goes off for no apparent reason, DO NOT touch any switches. Just remove everyone from the RV, turn off the propane at the tank and leave the door open. If you smell propane inside the RV for **any** reason other than lighting the stove or oven, immediately exit the coach and leave the door open. Once all the LP fumes are gone, you can reenter the RV and assess the situation. It is always best to err on the side of caution.

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Refrigeration

RV refrigerators come in many styles. Most refrigerators run on propane or 110V power. Some models have a computer that will automatically choose 110V when available. A heat exchange process that takes place in the sealed evaporator, keeps food cooled. The heat exchange process works by utilizing the difference in temperature between the two mediums and the amount of cooling is directly related to the temperature outside the RV.

If you are camping in hot weather, try to keep the back side of the refrigerator shaded to help improve the performance. You may also have to move the thermostat to a colder setting to keep the food cold. If you are using your RV in really cold weather, you will need to turn the refrigerator to a warmer setting to avoid freezing the food. It is a good idea to have a small fridge fan, kept on the bottom shelf, to help circulate the cold air from the bottom of the refrigerator to the top. Some people open the external access vent door to increase air flow to the refrigerator. When you are setting up at the campground, remember the refrigerator must be fairly level to work.

Temperature control is very important to the operation of the refrigerator. Most refrigerators have a colder or warmer setting. Your refrigerator may have a knob with a white line that gets bigger when the knob is rotated. Newer refrigerators have a temperature control that ranges from 1 to 5, with 1 the warmest and 5 the coldest. The temperature of the refrigerator determines how thick the frost and ice in the refrigerator will get. The colder temperature produces thicker ice, and the warmer temperature creates thinner ice. An inexpensive thermometer can help you monitor the temperature. By having a thermometer in the refrigerator and freezer, you can avoid food spoilage. You do not want the frost to get too thick in the freezer because it can keep the refrigerator from cooling properly. If you need to make ice, you should make it at night. The refrigerator will be working more efficiently and you will not have unfrozen water sloshing around, making a mess while you are driving. Before you start driving for the day, check to

be sure both doors on the refrigerator are latched. If not, the doors can fly open on a bumpy road, or during a hard turn.

If the refrigerator stops operating properly, there are a couple of things to check. The roof vent is a great place for birds to create a nest. But this obstruction can have a negative effect on the cooling of the refrigerator. The propane burner can become clogged with rust flakes and carbon particles. If the burner will not stay lit, or you have trouble getting it to light, use a bottle brush to clean out the burner. If the burner will not light or blows out, the gas control will automatically shut off the flow of propane to the refrigerator. The 110V heater can burn out. If this happens unplug the 110V cord and the refrigerator's computer will switch the refrigerator to propane operation. The light in the refrigerator runs on 12V and cannot be used as a way to gauge if there is 110V power available to the refrigerator. All of the appliances in the RV should be serviced once a year, usually before the spring travel season. If you smell ammonia around the refrigerator, there may be a leak in the sealed cooling loop. You will need to monitor the temperature of the refrigerator very closely. If the temperature starts to drop you should have the refrigerator inspected as soon as possible.

During winter storage, try to run the refrigerator at least one day a month. This will keep the chemical contents of the cooling system from settling, and failing to remix when the refrigerator is started again. When getting ready for a trip, allow the refrigerator to run for several hours before storing food in the refrigerator.

Roof Air Conditioners

Depending on their sizes, RVs can have from one to three air conditioning units. Air conditioners are rated on the BTU scale and are limited to a BTU of 13,000, or a 15 amp circuit. Air conditioner units are a combination of multi-speed blowers with a thermostat controlled compressor. Some air conditioners have heat strips that work the same way. Depending on the age of your RV, the controls for the air conditioner can be in one of two locations. Older RVs

Appliances

generally have the controls on the ceiling next to the units. Newer RVs have the controls mounted on the wall, usually within or near the master control panel.

The air filters need to be cleaned or replaced often. If your air conditioner has ducts, the ducts should be sanitized ever year at the beginning of the spring travel season. Newer RVs have air ducts allowing the cold air to be dispersed all around the coach instead of just below the air conditioner. To help your air conditioner run better try to shade the roof and walls to reduce the load that has to be carried. Keeping your awning extended, the shades down, and the drapes closed will also help to reduce the load that is carried by the air conditioner. Should you notice a roof leak that you cannot attribute at another source, you may need to have the seals of the air conditioners inspected.

You will need to watch the amps coming into your coach from the campground. The incoming amps will dictate how many air conditioners you can run while you are camping. If you are only getting 30 amps from the campground, you can only run one air conditioner. Running a single air conditioner will take up to 15 amps of the incoming power, so that means you will only have 15 amps leftover to run everything else in the coach. If you are getting 50 amps from the campground, you can run both of the air conditioners. Do not run either air conditioner if you are only getting 15 amp power. Make sure that all the air conditioners are turned off when you are plugging into the campground power. You may need to monitor the incoming power to avoid blowing the campground breaker or overheating the air conditioner's motor by running it at low voltages.

Air conditioners can be run off the auxiliary generator power. If your generator has more than 5000 watts of power, you can run both air conditioners and still have additional amperage available for other items in the coach. You cannot run the air conditioner on the auxiliary generator while you are plugged into the campground. The generator will not assume the load. If you want the generator to run the load, you will need to unplug from the

incoming power before you start up the generator. In the winter, it is a good idea to run your air conditioner occasionally to keep the generator functioning properly.

Stove

RV stoves use propane. The stovetop and burners should be kept clean and free of debris. Do not use steel wool to clean the burners because pieces of the wool can get caught in the burner orifices and possibly cause a fire. The stove's burners should only be lit when they are in use. Once a month, check the stove for any possibility of a propane leak. At least once a year the stove should be serviced, which includes cleaning out the burner area.

Water Heater

The basic RV water heater has a capacity of six gallons and is fueled by propane. Water heaters draw outside air into the combustion chamber through a grill and exhaust the combustion gases through the same grill. There are several features on water heaters that vary by manufacturer. It is important to read the owner's manual so you are familiar with how your water heater operates. Some water heaters have an anode rod, which prevents the corrosion on the outside steel shell of the water heater. Some have electronic ignition with an ON/OFF switch on the master control panel. Others have the option of selecting 110V heating options.

Water heaters have a thermostat on the unit. You should not set the thermostat higher than needed as this will waste propane and can cause scalding injuries. Your water heater can heat water very quickly. You will not have to keep it lit for long periods of time. If you have problems with the water heater failing to light, check the propane hook up and make sure it has not been turned off.

In preparation for winter, you will want to manually drain the water from the tank. The water heater will not automatically drain when you drain the fresh water tank. **You should never light the water heater when it is empty. The steam pressure buildup**

AC Electric Power

AC power comes to the RV via the 30 amp or the 50 amp power cable that is hooked up to the campgrounds power supply, or from the auxiliary generator. There are circuit breakers for all the 110V or 12V functions of the coach inside the Power Distribution Panel. Your RV should have an automatic switch relay preventing the coach from drawing AC Power from the hook up, and the generator at the same time. The relay switch will divert to the outside source of power first. For safety reasons, you should not plug into a hookup while the generator is carrying the load of the RV. Turn the generator off before plugging in and you will avoid blowing the switch relay.

When hooking up to power, you need to be careful. You are dealing with live electricity. Never use an ungrounded power cable. Poulosbo RV recommends that you carry a polarity tester with you at all times. Test the polarity of the incoming power before hooking your RV up. Along with a polarity tester, you will need an assortment of “dogbone” adaptors that will allow you to be ready for any power hookup situation. Adaptors come in 30 to 15 amps, 15 to 30 amps, 30 to 50 amps and many other varieties. It is impossible to know every kind of hookup you will encounter on the road. You should also carry an extension cord for when the hookup is too far away from the coach. As a safety precaution, always use the shortest power cord you can and never coil the cord. If you are plugged into 15 amp power do not run the air conditioner, it will use all the incoming power.

Auxiliary Generators

The auxiliary generator allows you to dry camp by having the RV run independently of any external power source. Generators run on gasoline, diesel or sometimes propane and require a battery to get them started. Power generated by the auxiliary generator will feed the Power Distribution Panel. Power from the generator will keep the house batteries charged, the 110V appliances running and ensure that you have heat or air conditioning.

Electrical System

Generators can be managed from inside the RV through a remote ON/OFF switch and an indicator light. The indicator light has a meter to tell you how many hours of operating time you have on the generator. Never plug into power while the generator is running. If you want to hookup to power, you will need to turn off the generator and then plug into power.

Auxiliary generators need an oil change every year or every 200 hours of operation, whichever comes first. During the winter storage season, you will need to run the generator at least once a month under a heavy load. This will keep the generator from seizing or freezing due to lack of use. Generators will produce carbon monoxide when they are in use. Make sure the wind is not blowing the carbon monoxide back into the coach. The generator's exhaust should be checked every quarter for leaks. The carbon monoxide detector inside the coach should also be inspected to ensure that the generator is functioning properly.

Battery Power

RVs have two sources of battery power; the vehicle battery and the house, or coach, batteries. The two battery systems operate independently from each other. Vehicle batteries power the electric fuel pump, lights, radio and horn. House batteries power the interior lights, blowers, fans and pumps. The two systems are similar and share several features. Both systems have isolators; the batteries for both systems will charge while the vehicle is running and both have an emergency start switch. Should you be operating the RV in cold weather, the batteries should be fully charged at all times. The batteries drain faster and take longer to charge in cold weather.

The biggest load for the house batteries is the gas furnace blower. When dry camping, do not leave lights on unnecessarily because you will drain the house batteries faster. When the battery indicator light on the master control panel is amber, you will want to use the auxiliary generator to power the coach.

The water level of the house batteries needs to be checked once a month. If the water level is low, use distilled water to fill the batteries. The battery terminals need to be kept as clean as possible. Build up on the terminals can cause a loose connection and loss of power to the RV. Disconnect the house batteries during storage to help them keep their charge. The batteries should be fully charged when they go into storage.

Fuses and Bulbs

Fuses and bulbs come in a variety of sizes and styles. Your RV will have fuses and circuit breakers for all original equipment in the Power Distribution Panel. Fuses for add on accessories can be located in some unusual places. You should label the fuses for the fresh water pump, electric step, propane furnace blower and auxiliary generator. If one of these fuses blows while you are camping, you could be in for a very uncomfortable trip. Before leaving on a trip, make sure that all your light bulbs and fuses are working. It is a good idea to carry an assortment of spare light bulbs and fuses in the RV. Light bulbs for RVs are now available in LED, which are brighter than regular bulbs, do not get as hot, and use less energy.

Master Control Panel

The Master Control Panel is the brain of your RV and will help you manage your consumables when you are on the road. The master control panel is usually located in the kitchen or the hallway of the RV. On the master control panel, you will see a series of labeled switches with one or more LED lights next to the switch. The lights will report the status of the tank, fullness or emptiness, or other devices when activated. Master Control Panel monitors the fresh water supply, fresh water pump, water heater, propane supply, gray water tank, black water tank and coach battery condition. You will also find the exhaust fan ON/OFF switch on the master control panel.

Fresh & Waste Water Systems

Fresh Water System

The fresh water system for your RV will supply you with fresh water for daily use. There are only two sources of fresh water available to the RV; the fresh water tank and water delivered from the campground faucet to the RV via a hose. When you are on the road it is important that you practice conservation of fresh water. A full fresh water tank may contain 30 to 40 gallons of water. When you are at home you use several hundred gallons of fresh water a day. You will want to create some water conservation habits for when you are on the road. Just remember, the more water you use, the more trips you will have to make to the dumping station to empty the grey water tanks.

For safety's sake, it is very important to keep every part of the fresh water system clean. This includes the hoses, fittings, and pressure regulators. You should have two 25 foot hoses used only to deliver fresh water into the fresh water tank. These hoses should never be used for any other purpose. Fresh water delivery hoses should always be the special, tasteless, non-toxic coiled hoses, which come in white or blue. Each hose will also need a threaded plug to close off each end of the hose. These plugs keep insects, dirt and other contaminants from getting inside the hose and from contaminating your fresh water supply. After filling the fresh water tank, make sure that the hoses are thoroughly flushed and clean before coiling them, attaching the threaded fittings, and storing.

Filling the fresh water tank is done through a spout on the side of the RV, via the gravity fill method. You will need to monitor the master control panel when filling the fresh water tanks. Do not take on more weight than the RV can safely handle. It is best to only carry the amount of water you will need until you are able to fill up again. Through water conservation, you can make half a tank of water last 4 to 5 days. Hooking up to water at the campground is a great way to make the fresh water tank last longer. Before you add any water to the tanks, make sure you taste the water. It is really hard to get bad water out of the system. When you are not filling the fresh water tank, the compartment door for the spout

Fresh & Waste Water Systems

should always be closed and locked.

If there is a good source of water at the campground, or wherever you are parked, you may decide to hook up to the water. Make sure the incoming source of water goes through the pressure fitting. The water coming in through the pressure fitting will not be filling your fresh water tank, but will be available for use throughout the coach. The internal water system of an RV is only rated for about 50 pounds of water pressure. It is best to have a water pressure regulator to control the water pressure from the incoming water. Simply install the regulator on the end of the fresh water hose, outside the coach. Remember to turn the water pump off before you pressurize the system with water from an external source.

RV water pumps will only run when a demand is made on the fresh water system. If you open a faucet, the demand style pump will draw water from the fresh water tank to the open faucet until the faucet is closed, the demand for water has ended, or the supply of fresh water from the tank is gone. The pump is powered by 12V DC. There is a switch on the master control panel that tells you if the pump is on. Just because the pump is on does not mean it is running. Some motor homes have a second on/off switch in the bathroom. Either switch can be used to turn the water pump on. A leaking can cause the water pump to run for a few strokes and then stop. If you hear the water pump starting and stopping for no reason, you should check all the faucets to make sure they are closed properly. Don't forget to check the toilet and pressure fittings. If, after checking all the faucets, you are unable to find a leak, the water pump may need to be serviced.

Fresh & Waste Water Systems

RV Toilets

RV toilets are a marine-style toilet that operates similarly to the toilet in your house. There are a couple of differences of which you will need to be aware. The biggest difference is RV toilets use considerably less water than your toilet at home. Also, you need to use RV/Marine toilet paper in your RV. Using any other type of toilet paper can ruin the black water tank and possibly force you to replace the tank. RV/Marine toilet paper is made specifically to break down in black water tanks and not to cause clumps or to build-up on the side of the tank.

RV toilets have a handle or pedal that opens the bottom to drain the waste into the black water tank, which is located directly below the toilet. Pressurized water is used to rinse the toilet bowl when you flush. Most RV toilets have two valves: one opens the drain and rinses the bowl and the other adds water to the bowl. When you release either valve, the water will stop flowing to the bowl. Due to space constraints, RV toilets use the bare minimum of water for the flushing process. Do not hold the valve open hoping that more water will help the flush. All you are doing is filling up the black water tank and depleting your fresh water tank. Some toilets come equipped with a hand held sprayer. The sprayer will give you pressurized water to help you clean the bowl.

Most RV toilets are made of plastic with a highly polished finish that helps move waste into the black water tank. When cleaning the toilet, it is vital that you do not scrub off the finish. Dulling the finish will make the toilet harder to clean. You will want to make sure that you are not flushing excessive amounts of water down the toilet. Using too much water will cause you to reach holding tank capacity sooner. You will end up making more trips to the dumping station and filling up with fresh water more often. You will also need to keep foreign items from falling in the toilet. If you are traveling with children, remember they are really good at flushing items down the toilet. It will be a major project if you need to retrieve something from the black water tank.

Fresh & Waste Water Systems

While you are traveling, you will need to keep an eye on the paddle seal between the toilet and the tank. If anything builds up on the seal and causes it to leak, odors from the black water tank can infiltrate the RV. The other thing to watch for is any type of leaking from the toilet gaskets. If you improperly winterized your RV, the fresh water ball valve could start to leak. As with any gasket replacement in the toilet, you will probably have to remove the entire toilet to fix the problem.

Sewer Hook-Up & Dumping

Every RV should have a flexible sewer hose and a clear fitting that connects the RV to the ground sewer connection. The sewer hose should be 15 to 20 feet long. You may want to carry an additional hose and attachments in case the sewer is located too far from the waste outlet on your RV. You should wait to dump the black water tank until it is more than half full. If you are dumping sooner than half full, you are going through a lot of chemicals.

Start the dumping process by taking the twist-on waste water cap off the waste outlet of the RV and attaching the clear coupler to the outlet. The hose is attached to the clear coupler at one end and to the ground level sewer at the other. Once you are properly connected at both ends, you can start the dumping process. The black water tank is always dumped first. When no more water is moving through the clear coupler the black water tank is empty. Once the black water tank is empty you can open the valve to the grey water tank. When the water stops running from the grey water tank, you can close both of the valves. Next, disconnect the clear coupler and sewer hose from the motor home and rinse the inside of the sewer hose with clean water. Do not use the fresh water hose to rinse out the sewer hose. Once the sewer hose is clean, you can drain the hose and disconnect it from the ground sewer connection.

The grey water tank dump valve can be left open if you are hooked up to the ground sewer connection. The dump valve for the black water tanks should only be opened when you are dumping.

Fresh & Waste Water Systems

Never leave the black water valve partially open; the deodorizer will drain away and leave all the smelly solids behind. Those solids then harden on the sides of the black water tank and cause all sorts of problems. If waste hardens on the sides of the black water tank, you may have to replace the entire tank.

When you store your RV for the winter, dump both tanks and make sure that both dump valves are closed. If you are storing in a warmer climate, leave one gallon water and some tank product in the gray and black water tank. If you are storing in a colder climate, add antifreeze to the gray and black water tank. You should also pour a couple of inches of antifreeze into the toilet to cover the gasket and keep it from freezing or cracking.

Waste Water Holding Tanks

There are two waste water holding tanks. The gray water tank holds waste water from the sink and shower. The black water tank holds waste from the toilet. The waste water holding tanks have separate drain pipes that run into separate sliding gate valves. Open the valve and the contents of that tank will start to drain out.

The cleaner the tanks are the better. Keeping the gray and black tanks clean will help to control odors. A clear coupler that connects to the RV's waste outlet and then to the sewer hose is vital to the dumping process. The clear coupler helps you to ensure the tanks are completely empty. You do not want to drain all the water but not all of the solids out of your black water tank. You will then have to deal with hardened waste stuck to the sides of the black water tank.

There are three types of cleaning devices you can use to help clean the waste water holding tanks. The first is a spray wand that is placed into the tank via the toilet. It sprays pressurized water onto the walls of the black water tanks to remove debris. The second is a clear coupler with a hose attachment that allows you to spray fresh water into the tanks while the coupler is attached to the waste outlet on the RV. The third option is a device that con-

Fresh & Waste Water Systems

nects to the valve and flushes fresh water into the system while cleaning the exit to the tanks.

It is very important that you use RV/Marine toilet paper in your coach. RV/Marine toilet paper breaks down differently, and will not clog or obstruct the dump valve. Do not allow any waste in the black water tank to dry out. This will cause trouble and possibly lead to having to replace the entire black water tank. Unless you are dumping the black water tank, the valve should be closed. The grey water tank may occasionally need a deodorizer to control smells. You can use the same deodorizer that you use for the black water tank. Enzyme based deodorizers help keep the p-traps under the sinks and showers clean of debris.

Waste Treatments & Odors

Waste treatment products come in two varieties: chemical based products and natural enzyme based products. Chemical based products tend to be cheaper, but have a perfume smell that can be irritating. Enzyme based products are great at controlling the odor, and have the added benefit of helping to keep the tank clean. The enzymes ensure the quick dissolving of paper products and waste in the black water tank. If you use a chemical based product, be aware that some are formaldehyde based. Many campgrounds will not allow you to dump when you use a waste treatment product that was formaldehyde in it.

It is very important that you read the instructions on the waste treatment product that you purchase. Different products will require different doses. Some doses are good for an entire tank while other products require you to add more treatment to the tanks every few days. Please do not assume that all waste treatment products work the same. Try not to mix different products in the waste water tanks. You could create a very dangerous chemical mixture.

If you keep the waste water tanks clean and the roof vent clear of debris, then you should not have any issues with odor. If

While on the Road

Backing Up Your RV

At some point, you will have to back your RV into a parking spot. Most campgrounds have sites where you pull into one end of the campsite, and pull out the other end. There will be the occasional campground where you will have to back into the site. The entire process of backing up can be made simpler by following these guidelines.

Good communication is the key to success when backing up your RV. Even if you and your spotter use hand signals, walkie talkies or headsets, you need to make sure that all parties involved understand the code words and hand signals. It is always a good idea for the driver and the spotter to walk the site before backing the RV in, so that everyone knows where the unit should end up. Walking the parking spot allows both people to see any possible obstacles that may hinder the parking process.

After the driver and spotter have established a game plan, the driver needs to follow the directions of the spotter explicitly. The driver needs to make sure that all possible distractions have been eliminated before they begin to back up the RV. Radios and televisions should be turned off. The driver's full attention needs to be on the road, and the spotter's directions. The spotter is not only responsible for making sure the vehicle is properly positioned in the site but also watching out for pedestrians, small children and pets. The spotter needs to make sure that nothing gets in the path of the RV while it is backing up.

Backup cameras and extended side mirrors offer additional assistance when backing your RV, but a spotter is always the best choice. If you must back up unassisted, make sure you have walked the parking spot. You will want to know exactly where the RV is to go within the parking spot. Using traffic cones or some other place marker to show where the back of the RV should stop is always a good idea.

Driving Skills

Driving an RV is relatively simple; almost anyone can drive an RV. You will need to make some adjustments to your daily driving habits to accommodate the increased length and weight of your RV. Remember that you have reduced maneuverability and decreased visibility to the sides and the rear of the RV. You should drive in the right lane and practice slower acceleration. The RV will also have increased stopping distances.

RV drivers need to drive defensively. There is always someone who will do anything to avoid being behind an RV on the road. People may try to cut in front of your RV while merging or changing lanes. Give yourself plenty of room and turn your indicator light on early. You should make sure that all the lights on your RV are functioning properly before you leave on a trip. Check for burnt out bulbs at every gas stop and replace as needed.

Driving downhill, or on a decline can be tricky. You do not want to let the speed build up. The best practice is to shift the engine into a lower gear and let the engine do the work. Do not ride the brakes as they will overheat.

Backing your RV can also present a challenge. You do not want to do any backing when you are towing a car. Unhook the tow car before you start to backup. The car can jack-knife and damage the RV, hitches or the tow bar. If you are not towing a car, you can back up with ease. We recommend you have an outside spotter help with the process. The spotter will keep people from walking behind the RV and make sure that the RV is backing into the spot properly. You should also watch where the front fender of the RV is going while you are backing up.

When coming to a stop light or a stop sign, begin to reduce your speed well in advance of the stop. If possible try to catch the signal after it turns green again. This will save fuel and help you keep up with the flow of traffic. You will need to compensate for the increased length of the RV and for the “swing” of the RV when

While on the Road

making turns. Right hand turns will need to be made wide. Think of a semi-truck making a right hand turn. You will also need to make sure that the backend of the RV does not hit anything when it “swings” out to make the turn.

Gasoline or Diesel

Today’s RVs are powered by either a gas or diesel fuel. Most have a gas or diesel powered auxiliary generator. Depending on the model, your RV may have one single large fuel tank or two smaller fuel tanks. If you have two tanks, the smaller tank will power the generator. RVs get anywhere from 6 to 10 miles per gallon so it is crucial that you know what the total fuel capacity of your RV.

Fuel management is critical. You need to know when to plan refueling trips for the RV while making sure that you have enough fuel in the tank to run the generator. In a two fuel tank system, fuel will travel through an open ended vertical pipe to the generator. When the fuel level drops below the top of the vertical pipe the generator will quit working. When you refuel your RV, make sure that you have turned off all flames and pilot lights.

The octane of gasoline can vary across the county. Consult the owner’s manual to know what octane gasoline you need to keep the engine running properly. Using a lower octane gasoline can cause your engine to “ping”. When storing your RV, remember to keep the tanks full. By storing with full tanks, you are keeping water vapor and moisture out of the fuel tank. Moisture can cause water rust, which will ruin the fuel, and rust chips, which will clog the fuel filters.

Leveling Jacks

Leveling jacks for RVs come in one of three varieties: manual, electric, or hydraulic powered. Leveling jacks increase your comfort while you are sleeping or walking in the coach. Leveling jacks help keep the RV level but will not solve all your leveling issues. Try

to park where the ground is as level as possible.

Keeping the RV level will enhance cooking safety. It also helps the refrigerator run better. Some refrigerators have a bubble level inside. If the refrigerator is not level, the computer in the bubble level will keep the refrigerator from working. If this happens, you will have to go to the repair shop and have the refrigerator reset.

Leveling jacks should be cleaned, and lubed once a year to keep the shaft functioning properly. If you spend a lot of time camping in dusty places or at the ocean, the jacks should be cleaned twice a year. If you live in your RV, and keep the jacks down all the time, they should also be cleaned twice a year.

Managing Your Consumables

Consumables are the fresh water, waste water storage, propane, battery, refrigeration and gasoline or diesel. You will need to watch the level of gasoline and diesel in both the auxiliary generator and the RV. It is important to manage your consumables properly. If you are dry camping, you will be dependant on the consumables you can carry in the RV. The Master Control Panel gives you all the information you need on most of your consumables. Gasoline or diesel is the only thing not monitored by the Master Control Panel.

Slideouts

Slideouts have dramatically changed how people can travel and live in their RVs. The ability to slide the walls out and create more room has allowed RV manufacturers to increase the square footage of the RV without increasing the length. Almost every RV sold today has at least one slideout. It is important that you know how to properly operate and care for the slideouts.

Slideouts are a powered segment of the floor that extends out from the sides of the RV. Slideouts are 12 volt powered and have a hydraulic, cable or rack and pinion gear that allows the slideout to extend or retract. Once the slideouts are fully extended

While on the Road

they are self-supporting. You will not need to try to jack up or level the slideouts when they are extended.

When storing items for your trip on slideouts, it is important to ensure that the weight is distributed evenly. Weighing down one side of the slideout can cause misalignment when the slideout is extended. Misalignment causes uneven wear on the gears and slideout motor. Be cautious of is over-extending the slideout. Over-extending the slideout can cause the ram to come off its track, causing issues when you try to retract the slideout. You can damage the slide topper and the seals by over extending the slideout. Misalignment can also cause the slideout to jam when it is being retracted.

It is important that you not try to fix any issues with your slideout yourself. For warranty and safety reasons, it is always best to have a trained professional make any adjustments to the slideout or the slideout ram. Occasionally, owners have tried to fix slideout issues themselves and ended up causing hundreds of dollars of additional damage to the RV and slideout. Attempting to fix the slideout yourself will void any warranty on your slideout parts or RV. No warranty company will cover parts that have been tampered with by a non-certified person doing repairs.

When you are ready to extend or retract the slideouts, thoroughly inspect the area first. Check for obstacles that can impede the slideout. It is important that all drawers and cabinets are closed. Check for low hanging tree branches or other obstacles that can cause damage to the slideout. Never allow anyone to be on, or in the slideout while it is in motion. If the slideout stops or starts suddenly, they could be seriously injured by the sudden change in direction.

Proper Maintenance is important. During the quarterly inspection of the roof and seals, make sure the roof, awning, slide topper and slideout seals are inspected as well. You'll want to be sure that they are still supple and are not cracking due to excessive exposure to the sun. You can buy slide lubricant at most RV parts stores to help keep the seals supple and weatherproof.

Tires

Tires must be properly maintained in order to ensure the safety of you, your passengers and your RV. All tires have a rating for specified gross vehicle weight. You need to take this GVWR into account when loading for a trip. When calculating the weight of your fully loaded RV, keep in mind that water weighs about 8 pounds per gallon and gasoline about 6 pounds per gallon. You'll want to factor in this weight along with food and supplies so you don't overload your RV.

Accelerated tire deterioration is caused by under-inflation, overloading your RV, and driving in high temperatures. Have your tires inspected professionally at the beginning of the spring travel season. Also have your spare tire inspected and check to ensure that your tires are balanced. At least once a week while on the road, check the tire pressure. Make this a habit while you are filling up with gas.

Overloading your RV adds a tremendous amount of stress to the tires, especially if they are under-inflated. When packing for a trip, prioritize the basics. Don't worry about having everything you might need at some point down the road. A full water tank, water heater, and waste tanks can weigh anywhere from 700 to 800 pounds. Evenly distribute the weight of your gear throughout the RV. The tires wear unevenly if there is too much weight on one side.

When driving in high temperatures, slow down to reduce the stress on the tires. The sun is capable of doing quite a bit of damage. Too much direct sunlight can cause the side walls to break and the tread to harden. It is a wise idea to use tire covers when camping in high temperatures or when the tires will receive direct sunlight for several hours. As you shop for a roadside assistance policy, make sure it includes tire service. If you have a flat tire during your trip, do not use liquid sealer or inflator devices on the tires. These are not permanent repairs, and can even make the tire un-repairable. It is better to put the spare on then drive to a tire shop to have it repaired or replaced.

Preventive Maintenance

Maintenance Logs

Maintaining your RV is very important. Poulsbo RV recommends that you keep an expandable file with all your maintenance information in your coach. We also recommend that you follow the service schedule outlined in the owner's manual of your unit. It is important to service your RV at regular intervals and that you have a record of all the maintenance done to the vehicle. If you are completing some of the maintenance items yourself, keep all the receipts and include those in your maintenance log. A copy of the maintenance history of your RV may be requested when filing a claim for factory warranty or extended service contact repairs. Most RV/Trailer parts stores offer maintenance logs for purchase.

Quarterly Inspections

Poulsbo RV recommends that you have your RV inspected once a quarter. Quarterly inspections are also a requirement of your factory warranty and most extended service contracts. Poulsbo RV offers all of our clients a seasonal inspection every quarter. This includes: inspection of the roof, LPG leaks, LPG pressure, furnace, refrigerator, water heater, stove and oven checks, adjustment of tire pressure, exterior lights, a battery hydrometer and load test, 12 volt charging system check, ground fault interrupter test, 110 volt polarity check, torque lug nuts and brake check for towables and a chassis fluid level check for motor homes.

Winterization & De-Winterization

Failure to properly winterize your RV can lead to frozen or cracking pipes. Poulsbo RV offers winterizations and de-winterizations. As part of the winterization process, our service technicians will blow all the water out of the pipes, add antifreeze to the p-traps, empty the fresh water tank, bypass and empty the water heater, open the low point drain lines, and remove or bypass the water filter. When it's time for de-winterization, our service technicians will put all the filters back, remove any bypass kits, close up the water heater and put it back in-line, and introduce water back

Prepping Your RV for the Spring Travel Season

After a fall and winter of sitting in storage, it is important that you take all the necessary steps to ensure that your RV is ready for the spring travel season. If you lived in your RV during the winter, it is especially important that you ensure all systems are operational before traveling. Make a checklist that you leave in your maintenance log to make sure your RV is prepped for the upcoming travel season. We have enclosed some suggestions to ensure a smooth start to your travels.

DE-WINTERIZATION & QUARTERLY INSPECTIONS:

Tires

- Checked for cracks, low treads, and life span

Detail the RV

- Deep cleaning of the carpet
- Exterior wash and wax
- Remove any debris or black streaks

Clean Air Recovery Service

- Have the air in the RV purified
- All mold and bacteria spores killed

Appliances Serviced

- Ensure the water heater, refrigerator and furnace are functioning correctly
- Have appliances serviced once a year.
- Make sure appliances are blown out to remove debris and insects
- Check to see if you have an appliance recall; take care of recall before you leave

Prepping Your RV for the Spring Travel Season

Drapes & Sheets

- Wash drapes, sheets, blankets, or towels

Water Tank Sanitization

- Sanitize water systems
- Flush the water heater

Air Conditioner Sanitization and Inspection

- Ensure air conditioner functions properly
- Clean ducts and filters to improve air quality

Steering, Brakes & Transmission

- Take the RV on a drive to ensure the steering, brakes, and transmissions are functioning correctly

Detectors

- Test all detectors
- Ensure none of your detectors have expired; there are dates stamped on detectors
- Replace the batteries promptly, as needed

Engine Maintenance

- Have all fluid levels checked
- Have an oil change
- Check all the filters, hoses and belts for wear and tear; replace as necessary

Generator

- Run the generator with load at least 1 hour a month
- Have the generator inspected yearly
- Have an oil change done every 60 to 80 hours of operation or yearly

Prepping Your RV for Winter Storage

Once the travel season is over, it is time to get your RV ready to be stored for the winter. Take care of any outstanding maintenance issues before putting your unit away for the winter. Leaving outstanding maintenance issues unattended can lead to more costly repairs in the spring and a possible delay in your ability to leave on a trip.

Whenever possible, store your RV in a climate controlled building. This is best for the RV and will greatly reduce the weathering and wear your RV can experience during winter storage. If you are not able to store your RV inside, it is a good idea to invest in an RV cover to protect it from the elements.

Before you cover your RV, there are several items that need to be taken care of. Wash your RV to remove any road grime or black streaks. You will also need to have your unit winterized. This important step needs to be completed before the first freeze of the season to ensure that your RV does not suffer any damage due to frozen pipes or frozen water in the holding tanks and toilet. Have the winter quarterly inspection done while the RV is being de-winterized. The sealant and roof should be checked to make sure that you will not suffer from water infiltration during winter.

Once your RV is in storage, you will need to run the generator at least once a month under a load. While the generator is running, check the water level in the house batteries and inspect for any signs of condensation. If you are using a de-humidifier or a Dry-Z-Air to control excess moisture, you will need to dump out the water catches every two weeks.

The ability to control the moisture in your RV is critical. If there is excess moisture in your RV, it can manifest itself in many ways. You may have condensation or frost on the windows. Excess moisture may cause water stains on the walls and ceiling panels. You may also see warping or delamination of the wall panels. If the excess moisture is not controlled, you could end up with mold in your RV.

There are several products which control excess moisture in the air. If your RV is hooked up to power over the winter, you can

Cold Weather Operating

At some time, you may need to use your RV in cold weather. Moderately cold weather will not seriously affect or alter the operation of your RV. Severely cold weather will affect how your RV operates. Cold taxes all the systems in your RV, making them work harder to produce the same results. Some manufacturers offer cold weather packages. These can include tank heaters and other upgrades which you may need if you are going to go camping in severe weather or live in your RV year round. If you are using the RV in temperatures lower than 32 degrees you may want to seriously consider these upgrades.

To keep cold air and animals away from the warm underside, we suggest using a skirt around your RV. You may want a removable stick-on light under your RV so that you will be able to see under the unit. Several companies make RV skirts that snap onto and off of your RV and can be used year after year. Skirting your RV helps keep the floors warm and the pipes and holding tanks from freezing.

The batteries in your RV have a harder time operating in severely cold weather. With higher loads, they will drain faster and take longer to charge. The amount of load on your batteries can affect how your furnace functions. The furnace blower is the biggest drain of battery power; if the blower cannot operate fast enough, then the furnace will not be able to work. This occurs with low voltage. Be sure the batteries are fully charged before storing the RV. Batteries can freeze when discharged.

Your RV's water systems may also suffer in severe weather. Many water heaters have plumbing that is exposed to the outside air. If the weather is cold enough, these pipes may freeze and burst. Your water supply hoses can also freeze if left unprotected in cold weather. If you need to have a prolonged fresh water hook-up during winter, use a stiff, high pressure hose, wrapped with a low voltage "heat tape" to keep it from freezing. Depending on where you winter, you may need to swap your sewer hose for some insulated PVC piping. Insulated PVC takes longer to freeze, keeping you from having to thaw your sewer hose when trying to dump your water tanks.

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