THE CARE AND FEEDING OF YOUR RV

by

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INTRODUCTION

The purpose of this Manual is to help you be prepared with spare parts, special tools and the knowledge to minimize any unhappy experiences the next time you use your RV. Even if you are a klutz and have no ability to do any repairs you can usually find several helpers who will be happy to assist you. However, you are responsible for having the spare parts and unusual supplies that are necessary for your RV. A little education can go a long way to minimizing repair costs and providing extra funds to buy that new gadget.

I will address both Trailers and Motor Homes that overlap in many of our most important appliances. I will also examine some of the unique aspects of these two RV types.

It is called Preventive Maintenance and it works. If you always wait until something fails before you repair it, you are doomed to breakdowns, usually at the most inopportune times. **If it ain't broke, don't fix it.** The Service Shops just love these people. Try fixing things before they break for a change. If wheel bearings last 100,000 miles than lets change them at 95,000 miles. I remember a Caravan where one of the tow vehicles lost an entire wheel while traveling on a side trip. The bearing just fell apart. Of course, it was a front tire. The Air Streamer did not understand how this could have happened since he had faithfully repacked the bearings at the recommended intervals for the last 125,000 miles. I tried to explain that this did not insure that the bearing would last forever. Wheel bearings are a constant wear item and will eventually die of old age. I strongly suggested that he have both of the front bearings changed but he was from the "if it ain't broke" school. I hope I am not around when the other wheel falls off since that surely will elicit an "I told you so".

Manufacturers know when things are going to wear out and when routine maintenance is required. Much of this information is in that manual we never get around to reading. Try it you might save yourself a serious problem. The Internet can provide fantastic information on when components might fail. Learn how to use the search engines.

I will cover several tow vehicle areas that directly interact with your RV. This will include batteries, charging, hitch platforms, etc. The manufacturer has done an excellent job on your tow vehicle. Just read the manual and remember you are using your tow car under the most severe operating conditions. Weight limitations, extra cooling requirements, required fluid and filter changes, etc. , enable your tow vehicle to survive these conditions. Be sure your vehicle includes all of the extra towing modifications the Manufacturer has recommended for your specific Trailer configuration.

ELECTRICAL

I started with this area because 3 out of 5 problems are usually due to electrical connections or component failures. **Check the connections first.** After about 15 years, my first motor home was getting more and more difficult to start after the engine was warmed up and then turned off at a rest stop. I checked the chassis grounding strap. You guessed it, corrosion, rust and a loose mounting bolt. Clean, scrape the area, replace the worn terminal, new lock washers and it started like new, hot or cold. Remember Our RV's are in water, rain, dirt, corrosive atmosphere and regularly get a good shake up. They often sit for months at a time, which only exacerbates the corrosion problem. Only a protected and physically strong joint can survive the rigors our RV's are subjected too. The only environment that is more severe is a boat operating in salt water. Boat stores will therefore carry the best hardware, the best Batteries, the best chargers and the best lubricants. If you cannot find the right switch that can handle large current loads, check the local boat store. Probably the finest lubricant you can purchase for protecting electrical connections, in your RV and tow vehicle, is **Silicon Dielectric.** Boat stores, quality Auto supply stores all carry this excellent product. This grease type of lubricant is useable on all electrical joints. It water proofs the joint and insures good electrical contact. Put a thin coating over all your Battery terminals, tighten the connections, cover them with a terminal protection spray and they will never corrode. In fact, coat all of your high current junction points with silicon dielectric.

One of the most important connections is to your Trailer Brake magnet coils. The proper way to do this is as follows:

1. Strip the wire ends (using a proper wire-stripping device for the wire size).
2. Clean the ends and trim to proper length for a butt crimp connector.
3. Put a drop of silicon dielectric in each end.
4. Before crimping, slip a piece of shrinkable tubing over one of the wires.
5. Crimp the connector using the proper size tool.
6. Using a heat gun or hair dryer apply heat to the tubing so it shrinks around the connector and makes a waterproof connection.

Proper connections require wire strippers and crimping tools that are sized for both the wire and connector size you are using. These are inexpensive and mandatory for a good connection.

When changing a terminal use the same procedure as above; strip the proper length of wire, a spot of silicon dielectric, proper crimp and shrink tubing to waterproof the connection (if not part

of the connector). Purchase a supply of different terminal types, butt connectors and shrink tubing. RV's use multi-strand wire for all connections including 120 volt AC plugs. The connections have to be flexible to withstand the RV vibration environment. Single strand solid wire is fine for your home or any environment that will not be subject to shock and vibration.

Harbor freight has a good selection for this stuff including a two-speed heat gun for $10. If the connection is rusted or corroded then change it. This will become one of your most valuable repair tools. Let us review:

Wire Connection Needs

Tube of Silicon Dielectric
Box of different size & type terminals and butt connectors (hook two wires together)
Wire stripper/crimping tool to handle several popular wire sizes
Various size heat-shrink tubing
Heat gun, (your wife's hair dryer in a pinch) or the careful application of matches
Several sizes of stranded wire

Depending on the size of the Silicon Dielectric tube, this should cost about $25 and provide enough material for many repairs.

Using wire nut connections for your electric brakes can be a recipe for disaster unless you regularly check them. As a minimum they should have both rubber locking covers and be wrapped with friction tape.

About 4 years ago, I went out to hook up my RV shore power cable to get everything charged up and ready for my weekend rally. There was no 110 VAC in the rig. OK at the house wall socket, OK at the extension output, OK at the wire box into the Motor Home, but no voltage at the input to the electric panel. I decided to check the connections inside the main RV power input box. This is where the 30 amp input line is connected to the inside electric lines. I turned a wire nut to see if it was tight. It would just turn and not get tight. It turned out (pun) that all three input lines had the wrong size wire nuts. It was one size too big. I changed to the proper size and taped the entire connection with electrical tape and the problem was gone. This was part of the units manufacture and it took 7 years of operation before the problem showed up. Wire nuts are fine in your home but all the shaking, vibration and corrosion make them high failure rate items.

Grounds, grounds, grounds look at the ground connections. Most wiring failures are due to poor ground connections. Rusted, corroded or just loose grounds are always a problem. This is particularly true for the RV appliances that are mounted with the electronics exposed to the outside elements. Always check your 12-volt ground lead to any appliance or light first. If the terminal is corroded, put on a new one. Clean and scrape the area, including any paint, to insure a good ground and add a toothed washer. Use a wire brush and a scotch pad to clean the area. For larger areas with heavy rust a small file may be needed.

If the self-taping screw you removed from the terminal cannot be tightened then throw it away. Put in the next larger self-taping screw and add a little dab of Silicon Dielectric before you tighten it. If this does not work, drill a new hole for the ground and clean the paint away. Just be careful you do not drill into anything important. If it is, a screw and nut combination, be sure there is a lock washer. The proper procedure is a toothed washer between the connector and the ground on the screw head side and a lock washer under the nut. If the connector is under the nut than a toothed washer in contact with the ground area followed by the connector then a regular washer, lock washer and the nut. A connection without the proper washers is a future problem.

Much of the 110 volt A/C wiring in the coach will use wire nuts or screw type clamps. They should either have a special rubber cover that locks the nut on so that it will not vibrate loose, or be wrapped with electrical friction tape (I prefer both).

Running lights that do not work are usually caused by corroded sockets, which should be cleaned and then spread with our famous Silicon stuff.

I recently ran into the best butt connectors I have ever seen. They are available from NAPA and provide both a crimp and a solder connection. There is a low temperature solder inside the connector. After the Crimp, you apply heat to the metal and the solder flows and gives you an unbeatable connection. The entire terminal is then covered with heat shrinkable tubing so the heat gun provides the final weatherproofing. They are expensive, at about $1 each, but will work quite well for Electric Brake connections. You cannot beat a solder joint as long as it is not in an area where it will be subject to severe vibration and is properly done. If you overheat a joint, some of the solder can be drawn up the wire strands (wicking). This effectively turns your wire into a solid conductor and defeats the purpose for using stranded wire. The heat shrinkable tubing provides protection and some mechanical rigidity to the connection while still minimizing the effects of vibration.

After corrosion, the second usual failure mode is the breakage of the wires where they enter the connector. For the best reliability, you should provide mechanical support for your connections and wire bundles with wire ties and/or clamps.

Fuses

Obtain a set of various size fuses for your RV and your tow or towed vehicle. Check your manuals and find the physical location of the boxes. There are a number of different fuse types as well as sizes so be sure you get the correct ones. Do not forget any extra electronics or appliances you have added to the vehicles. Do you know where all of your fuses are? What about the in-line fuse holders behind the dashboard? This is particularly important for Motor Homes where you will have panels installed by both Airstream and the chassis builder. I have fixed many failures by discovering a hidden panel with the blown fuse. Find all of the panels before you have a failure. Trying to trouble shoot a problem without knowing the fuse locations and circuit being protected, can more than double or triple the troubleshooting time and repair costs. Provide this information to the mechanic even if you are not the service tech yourself. My current Motor Home has more than ten major panels and at least another 10 inline or circuit board fuse holders.

You always need at least two of each fuse; the second one is needed after you install the first one and it blows out again, which proves that something is shorted or defective and the fuse is doing its job.

Never replace a fuse with a higher current rated unit unless you know what the circuit does and the operating current being drawn through it.

A fuse is not there to protect the light bulb, circuit board, appliance or computer. Its purpose is to protect the wiring. You can always get a new bulb or board but replacing a burnt out wire or causing a fire in a wall or subfloor can really be expensive. On very rare occasions, a design engineer may not have considered the wide environmental range our RV's have to live in. In this case, a change in fuse size might be needed. I have run into this only 3 or 4 times in over 50 years.

So do not increase any fuse size; bigger is not always better and sometimes it can lead to disaster.

A handy item to carry is a set of ATC automotive type fuses that are actually circuit breakers. These will open up if there is excessive current flow and then heal once the current goes below the fuse rating. These are handy for troubleshooting and determining that you have solved the problem. I carry a 15, 20 and 30 amp set. Once the problem is resolved and the breaker no longer opens, you can replace it with the properly rated fuse. Check Reference (16) for a source of these self-healing circuit breakers. Many trailers use self-healing 12 volt circuit breakers and when there is an overcurrent condition they seem to be buzzing which usually means you have exceeded the current rating and they are just turning on and off.

Led replacements are now available, at reasonable costs, for your interior and exterior lighting needs. These are particularly efficient for replacing incandescent lights. Super Bright Led's (Reference 14) also provides a complete series of automotive replacement led's which have the standard auto bulb bases for easily converting running lights, tail lights, turn signals etc. They are also available for florescent fixtures and can be wired into your existing fixtures in place of the bulbs. Led replacements will considerably reduce current draw wherever they are used thus extending battery life when dry camping.

Hinges, Bearings, Steps

Every year I recommend cleaning all the external compartment hinges on the RV and then lubricating them. Use a small amount of WD-40 for the cleaner and then, dry the hinge with paper towels. Then use a small amount of Silicon spray on all of the metal surfaces that move. You should include the moving surfaces and joints on all of your awnings. Check the Manufacturers recommendations on slide outs and follow them. Failure to do this can result in troubles on the road and major expenditures. Clean, not only looks better but it also works better, for a much longer time. These surfaces should be checked and cleaned every year as part of de-winterizing. Do not forget to clean the awning material (awning manual has all of the instructions). Use a tube of graphite for all of your locks.

For the RV steps, you should have a spray can of grease. Kwikee makes a good product for the steps. This is sprayed on every bearing and moving joint. This is particularly true for electric steps but do not neglect the mechanical steps. If there is, a buildup of dirt and grease than clean the joint first with WD-40, wipe off any excess, let it dry and then apply the lubricant. Corrosion Pro Lubrimatic is a water resistant spray grease that can be obtained at Auto and Marine supply stores that also works well.

You should also have a spray can of PB Blaster, which is used to free up rusted Bolts or fittings. **This should be used before you try to loosen a rusted bolt**. Do not ruin the bolt or screw head first than try to dissolve the rust. Be patient; use the Blaster on a rusted fitting before you get a bigger wrench. If it still will not budge, you may need several applications before the fitting will loosen. See your Auto and Marine supply stores for this product.

Electronic Boards

Another connection area that can cause all kinds of problems is the tiny Molex plugs on your circuit boards. All of your gas appliances that have self-lighting capability have circuit boards to control this function. Some of these are exposed to the elements and pick up dirt as well as corrosion. You cannot use WD-40 to clean these connections since it will leave a film that attracts dirt and grease. You should have a spray can of Electronic Circuit Cleaner that leaves no residue after use. It can also be used on the entire board to remove dirt and prevent short circuits. Most of the appliance vendors have gone to potted circuit boards when they are exposed to the elements so this is particularly important on earlier RV's. On occasion, an appliance will be intermittent, just start, and then stop working. Check the connections to the circuit boards. Carefully remove them, spray with contact cleaner plug in and out a few times and then remake the connection. I have fixed dozens of problems with this simple procedure.

Special Lubricant Needs

Silicon Spray lubricant
WD-40 Degreaser
Corrosion Pro Lubrimatic spray grease or Kwikee step lube
PB Blaster rust remover
Electronic Circuit Cleaner

BATTERIES & CHARGERS

Completely check out both your engine start and coach batteries before you are ready for the new camping year. A battery failure on the road will not only be costly but you may have to buy an off brand with no effective warranty. For this reason, I usually recommend Wal-Mart batteries since they have stores all over the US and Canada. If your batteries are using water every week, they are going bad. Do not buy sealed lead acid batteries that never require water for your Coach

batteries. These have one-way valves to release the pressure when the battery overheats so that it does not blow up. The water vapor escapes through this valve and since the battery is sealed it cannot be replaced. Your Coach batteries go through many deep cycles requiring many recharges during their useful life.

Your engine batteries, however, do not and thus can be the sealed type. Lead acid Batteries must be mounted externally because the gases they give off are toxic. The only truly sealed batteries are either absorbed glass mat (AGM) or Gel Cell. These do not give off gases and can be mounted anywhere in the rig. They are excellent, long life units; however, they are quite expensive. I would recommend Lifeline AGM, which for about 90 amp hours (size 27) cost about $180. A high quality lead acid battery will run about $75 which means you can completely replace the batteries with a second set for less than one AGM set. Unless you are going to mount the batteries inside the rig, it is more cost efficient to stay with lead acid batteries.

One key consideration is the charger (Converter). Most of the trailers have poor chargers that do not maximize the useful life of the batteries. The best chargers are computer controlled and can handle a dead battery as well as allowing ac power to be on all the time without hurting the batteries. These usually have three charge modes including bulk, absorption and float that are automatically selected by the computer control circuits. These chargers will insure that you get maximum life from your batteries. For the Motor Home owners most of the modern diesel rigs have excellent computer controlled charge systems included with the Inverter. However, you should remember that for some gas Motor Home models the engine start battery is not charged when you are on AC shore power. If this is the case, you should obtain a separate inexpensive charger, which can be used when in a campground. Most of the Classic Motor Homes have very poor charging systems and do not provide an engine charge capability. The highest quality chargers will also incorporate a sensor that modifies the charge cycle based upon the batteries actual temperature.

A load test is the best way to check a battery. When you take your car in for a battery test, they wheel out this 3-foot unit on a cart. An engine start battery is load tested to see how many amps (200 to 400) are available to start the engine. This takes a big resister that gets quite hot. You can also get a reasonable idea of the battery condition by monitoring the voltage level on the batteries.

You need a digital voltmeter because 12.6 volts is almost fully charged, 12.0 volts is 25% and 11.9 volts is discharged and on its way to the junk pile. These meters are available for about $15 to $50. If you have a friend with a high quality meter, ask him to calibrate your $15 model and it will work fine. It is best to use distilled water, but if it is not available, use the water from your fresh water, RV filters. Be sure to check all of the batteries every two weeks when on a trip. Keep your battery terminals clean and coated with a thin layer of Silicon Dielectric. Buy a special wire brush terminal cleaner and use it at least once per year. This will insure that you re-tighten the connections. If you develop corrosion, a mixture of baking soda and water will clean it right off, but do not get any in the battery through the filler caps. Be sure and wash everything off after you are done and then clean the terminals and apply the silicon dielectric. Also, check the tightness of all of the major cable connections in particular the ground lead from the battery to the chassis. Finally spray the entire connection with one of the special battery terminal coatings to prevent corrosion.

On a recent Rally, one of the campers drove up in a newly purchased used Land Yacht and turned off his engine. Upon trying to restart, five minutes later, it would not even turn over. He then told me he had just had the starter, generator and battery replaced within the last week. I checked the battery and it was fully charged so I suggested he check the battery ground connection. Sure enough, that was the problem. He removed the wires cleaned everything, greased everything with my silicon dielectric and retightened the bolts. Started right up like a new unit. He was heading back to the repair shop after the rally to see if he could get some of his old parts back. By the way, after he turned on his hot water heater it would light but then go out before the main burner lit. I checked the ground wire and it moved with hand pressure. A little tightening and the heater worked fine. **Check the grounds first.**

You must check each of the coach batteries, which means disconnecting one of the leads so they are not in parallel. Very often, one of them is bad and this will not show up if they are all connected together. Always remove the ground terminal from the batteries when you are going to perform any tests. If you remove, both cables hook up the ground cable last. On a new trailer, we once found that one of the batteries was not even hooked up and that explained why the RV did not last very long on battery power.

Several Land Yachts have three batteries mounted behind the front hood. They were mounted all the way to one side so that it was not possible to check the one farthest to the left without removing two of the three batteries. Guess which one always goes bad first. You can easily remount the batteries in the center with storage on each side of them. That way it will be easy to do a complete battery check.

Particularly for the older trailers, the Univolts cannot restore a set of batteries that have gone into a deep cycle discharge. This is true no matter how long you are plugged into A/C shore power. Some much older units had high current capacity chargers, however, these are the units that boiled batteries and led to premature failures. If your RV charger cannot put at least 10 to 15 amps into a discharged battery then you need an auxiliary automobile type battery charger. One of the smaller units around $45 - $60 is fine. This will allow you to bring back your coach or engine batteries when attached to shore power. A pair of coach batteries that provide about 180 amp-hours will take about 18 hours to fully charge when using a 10-amp charger. You can use this type of charger for your engine battery just to get the vehicle started; however, you really need to put about 400 amps into it for a full charge. Starter battery chargers put out about 50 to 100 amps and are about 3 feet high on a roll around cart. However, once the vehicle is started your engine alternator will take care of the final charging after a few hours of driving, preferably during the day.

During the winter months, you cannot leave uncharged batteries outside in the cold weather. They can freeze and crack the case. Some campers store them inside the house when the weather turns cold. You can leave them outside as long as they are kept in a charged state. A computer controlled charge system will keep a trickle charge on the batteries and start a full charge cycle as needed. You can also use a solar panel system with built in charger to keep the batteries from freezing. This works fine for the coach batteries but does nothing for the Motor Home starter batteries that are not usually connected to the solar panels or charge circuits.

I use a computerized boat charger that has multiple charge circuits (two or three) for several battery banks (one charger for the coach batteries and one for the engine starter batteries). Do not forget to check the water levels several times during the winter months if you use flooded batteries.

AUTOTRANSFORMERS

I am always getting questions about whether these are needed for camping and worth the cost. What this device does is automatically increase the A/C voltage about 10% if it is below a level that could adversely affect some of your RV appliances. This increase is reduced if the voltage rises to a safe value. Lighting, water heater, power jacks, propane furnace, electric heaters are not usually damaged by low A/C voltage. Air Conditioners and microwaves, however, can be seriously damaged. This is particularly true for the air conditioning compressor. When the voltage is low then motors will require more current and run slow thus increasing heat buildup. If you are in a Campground with poor wiring then problem can occur if you don't monitor the A/C voltage. I have only run into this two or three times in my camping adventures and in that case, we turned off the air conditioner and limited our current draw. The autotransformer will boost your voltage and allow you to draw more current to safely run your appliances. However, it will further reduce the voltage of your neighbors. Many years ago, Campgrounds were built primarily for tent campers. Now they typically provide for 20, 30 and 50 amp rigs. In general, I think the cost benefit for an autotransformer is marginal.

SURGE GUARDS

These come in both portable and hard-wired versions. They can protect the RV from electrical surges, incorrect polarity, open neutral, reverse polarity and over/under shore power voltage input. They range in cost from $100 (surge/spike protection only, for 30-amp) up to $400, for all of the above, with a 50-amp line. They are available for hard-wired installation in a Motor Home or a portable device for trailers.

Every camper should have a $5, 120-volt AC line tester, Figure (1), which provides a simple check for any of the defective wired conditions above. This tester will work fine on a 30 or 50-amp outlet box by using the proper 20-amp adaptor.

Figure (1) AC line tester

You can check the AC voltage level with your multimeter and determine if it is adequate for running the air conditioner. For protecting my sensitive electronic equipment, I prefer using a good quality spike and interference circuit strip (computer, phone and tablet chargers, ham gear etc.) which costs in the $15 range. Therefore, unless you want an automatic protection system you can provide a manual system for about $20. Nothing you can put in an RV will protect you from a lightning strike.

TIRES & WHEELS

How much air should I put in my RV tires? For your tow vehicle, there are a few answers depending on the number of passengers and how heavily the vehicle is loaded. Just check your manual. For the trailer or motor home however, there is no easy answer. Get it weighed when it is fully loaded with water, propane and equipment. This should be done for each wheel of the vehicle for a motor home and for each side for a trailer. Now use the manufacturers chart to determine the air pressure versus actual weight for the front single tires, the rear duals and the tag axle for your tire size and type. The air pressure should be the same on both sides for the front tires as well as the rears. Just use the highest air pressure required in any individual tire axle set. References (9) and (15) provide Michelin and Goodyear tire charts for determining the proper air pressures based upon the measured weight of your rig.

Check this at least once per week for proper inflation with a quality gauge. You can always be slightly over-inflated with no problems. As the tires heat up the pressure will increase just be sure you check them when they are cold. Tire blowouts usually cause collateral damage, especially on trailers that is far more expensive than just tire replacement.

After de-winterizing your rig for the new camping season and before you leave for a Rally or start on a Caravan you should torque your wheel nuts. I have seen too many vehicles lose wheels on a trip even after the Caravan Leader had continually recommended checking wheel nut torque. You should have a ½-inch socket set in your tool kit and a torque wrench. For your wheel nuts purchase the correct size, black 6-point socket, that was designed for an Air

driven wrench. Sears has a torque wrench for under $30, which is not the one a mechanic would purchase for his use, but is perfectly suited for our needs. The difference is usually in the accuracy, however, (just as for digital voltmeters) find someone with a quality wrench and calibrate your unit at the proper torque you will be measuring. Be sure, you get your neighbors to check their vehicles as well, and before you know it a crowd will form and maybe everyone will be doing it. The larger Motor Homes require a torque wrench that goes into the 500 ft/lb range. This requires a special ¾" drive torque wrench that can cost in the $500 range. You can add a torque multiplier, which increases a standard ½" torque wrench by a factor of 3:1. This provides a ¾" drive output providing 450 ft/lbs for around $250 to $300. EBay is a reasonable source for these. I picked up a used Snap-On 200 ft/lb wrench for less than $110. Our unit (MAU) actually purchased the wrench, ball mount tightening tools and a Professional Gas Tester. We bring these special tools to every Unit Rally.

On my first Viking Caravan, while driving to a new campsite, I passed several of our units parked beside the road. I stopped to see if I could help and found everyone in the Bush looking for a missing tire. Yes, the entire wheel had come off and disappeared into the bush. It seems it was not torqued properly after a brake job and it had sheared off all of the wheel studs. I drove to the campsite with the wife driving the three-wheel rig and leaving the owner with several helpers searching for the wheel. I checked and found all of the other wheel nuts were under torqued and in fact had been set for aluminum wheels. The trailer had steel wheels with stainless steel covers. A bad mistake by the Dealer who had done the brake job on all of the wheels. A much more severe mistake though by the RV owner who should have checked the wheels within 50 miles of the brake job and at least twice during the Caravan. The Caravan leader had reminded us on a regular basis to check wheel torque. They never found the wheel but fortunately, he had a spare. Not so fortunate, there were no wheel studs to be found in Newfoundland and we had to leave them at the campsite. They had to wait several days before the studs arrived in the mail.

RV tires die of old age helped along by ozone and temperature. They have a shelf life of about 5-6 years especially since they spend most of their life sitting in the driveway. The tire is protected when it is used and the waxes and emollients come to the surface. That means if the tire sits on the dealer shelf for two years before you have purchased it you only get three years of safe life. A full set of tread with a new looking tire is meaningless. When I buy tires, my dealer knows I will not accept anything more than 6 months old. I call ahead and, if none is in stock, he orders me one-month-old tires and sells the others to the truckers. A trucker usually runs the tires bald within a year and gets it re-treaded. How old is the tire; look for DOT followed by numbers and letters. The last group of numbers, either 3 or 4, is the date of manufacture. If it has three numbers, it was made in 1999 or earlier and should be rejected immediately. For a group of four numbers the first two numbers are the week it was made and the last two are the year. For example, 2305 would be the 23 week of 2005. If you are not sure how to read the date, ask the dealer to show it to you when you are buying the tire.

On my first Caravan to Alaska, one of the members had a flat tire on her B-van. I checked all of her tires and they were all 6 years or older. I recommended she purchase a complete new set and just keep the best of the old set for a spare. One of our other Caravan members, who had a Motor Home, said this was a total waste of money and she should just buy one used tire to replace the blown one. He only ran used tires on his RV as long as they had good tread and sidewalls. Fortunately, the B-van owner purchased new tires and had no tire problems on the

rest of the Caravan. Unfortunately, the Motor Home owner became a believer as he had three separate tire blowouts on his way home.

BRAKES

It is a good idea to keep a record of the mileage when you have your brake pads changed. This should be done for trailers as well as motor homes. You should have the pads checked at least every 15000 miles. The friction material should be a minimum of ¼ inch thick. If it is less than 1/8 of an inch then change them ASAP. Be sure and check all of the wheels including the tag axles. On most automobiles, the pads can be checked without removing the wheels. For trailers and motor homes, the wheels will usually have to be removed. When having a tire replaced I have asked them to check all of the brake pads, however, I have found that unless you are there and actually measure the pad thickness you do not get a reliable answer. After many long RV adventures, I have concluded that if I am going across the country and on a Caravan that will travel 10,000 miles or more (Alaska, Newfoundland, South West, Mexico, etc.) I will change the brake pads before the trip. Changing the pads is less than $200 and since I will be on the road for 10,000 miles or more it is good insurance. Having to replace a rotor or caliper on a trip is usually a $1000 job not to mention the difficulty in finding the parts. Listen for strange noises. A grinding sound may mean you have worn out your pads and are getting metal-to-metal contact. This usually means new rotors, calipers and pads. When your mechanic says you have at least 5 to 6000 miles left on your pads that is fine for your car if you are staying home but not if you are on a cross country trip.

For your trailer you should change the entire brake assembly including drums, magnets, springs etc. I know a number of campers that carry both right and left side spare brake assemblies for their trailers. A complete assembly costs about $75 and can be easily replaced on a Caravan (four bolts and two wire connections). For a 2 to 3 month Caravan, this is a reasonable addition to your spare parts kit depending on the age of your brakes. Many of our Caravans spend considerable time in the Rocky Mountains with heavy wear and critical dependence on our braking systems. It is always less expensive to start out with new brake pads then having to change them on the trip.

If you change, a trailer brake assembly make sure you have reliable electric wire connections. The constant vibration and stress makes this a serious failure mode. You should have shrink-wrap tubing over the connection and it should be taped and rigidly supported.

FURNACE & WATER HEATERS

The coach furnace rarely has problems while water heaters are always going bad. Does the water have something to do with this? Nah! The water heater is exposed to the elements since its electronics are outside while the furnace is nicely protected from the weather inside the RV. Both of these units use igniters, which provide a spark to light the propane. Igniters wear out and

have to be replaced depending on usage. You should have a spare igniter for each heater. Other than cleaning the gas nozzle and the burner chamber every year, you usually do not need to worry about the furnace.

As mentioned earlier make sure all of the water heater electrical connections are tight. If you have an older trailer and your circuit, board is exposed to the elements. You should **purchase a new potted board** with the spare igniter so that when cleaning the old board no longer works you are ready to go. Another spare part of value is a **low temperature thermostat** that sets the water temperature. These often go bad and if they open, you will have no hot water. If it fails closed, the water will stop heating when the high temperature thermostat operates. This is much too hot for a human being and you are likely to be burned. By the way, you can usually get good parts discounts from the vendors at the International Rally so pick up your spares there.

A good modification is to purchase a variable (low temperature) thermostat that allows you to set the water temperature to your liking. We reduce the temperature when our grandchildren are aboard and increase it when it is just my wife and I. This is installed in place of the fixed temperature thermostat.

Keep the water heater compartment and the main burner orifice clean. Periodically clean the furnace compartment and its main burner. Learn how to adjust the main burner for the proper flame for both the water and coach heaters. The proper gap for the igniter is 1/8" between the electrode and ground. Clean the burners in alcohol and let them dry. You can use a round toothpick to clean the jets but never use a metal object since it can change the orifice opening. Wet the toothpick and twirl it in the jet. Circuit board contact cleaner will also work since it leaves no residue.

When something is not working correctly, the first thing to check is the wire connections, particularly the grounds. By the way, if the ground screw can no longer be tightened replace it with the next larger screw size. If that does not work than find another ground point. Do not just tighten as much as you can and hope it will hold because it will fail before you reach your next stop. Sometimes you will need to carefully make a new hole for the ground connection. Be careful and do not drill a blind hole into the water tank (unfortunately, I have seen this a few times).

In all my years of camping, I have never found a defective pressure-temperature relief valve. However, I have found many leaking valves. Often the camper is sold a new valve that results in the leak being gone and the assumption that the old valve was faulty. The valves appear to leak only when the heater is operating. Most water heaters are designed to operate with an air gap at the top of the tank that provides for expansion when the water is heated. When the valve leaks, it is usually because this air gap is no longer present. To fix the problem turn off the heater and the water supply. Open a faucet in the RV and relieve the water pressure. Open the relief valve handle and keep it that way until the water stops flowing. Snap shut the valve handle and you will then have the air gap back with no more leaks.

When you are camping in cold weather the water heater cycles quite a bit since the water in the tank cools off much faster. Just before I turn off the bathroom light to go to bed, I also turn off the water heater. This stops the constant cycling during the night and saves propane. Just do not forget to turn it back on in the morning.

REFRIGERATOR

The primary maintenance for your Fridge is keeping the compartment clean, cleaning the burner assembly and cleaning the flue baffle. On gas operation, the spark electrode should be spaced from 1/8" to 3/16" from the burner tube. A separate thermocouple tells the gas valve that the flame is on and it is safe to keep the gas valve open. The thermocouple should be in the flame. The flame should have a clear blue color. The burner jet can be cleaned by soaking it in alcohol and then blowing dry with compressed air. If you do not have alcohol you can soak, it in vinegar except you should leave it in for at least 2 hours. You can also use special contact cleaner (leaves no residue). Do not use anything metallic that could alter the size of the jet. Procedures for cleaning the flue are in your Instruction manual. You should do this maintenance procedure at least once a year.

For spare parts, you should have a 3 amp and a 5 amp cartridge type fuses. The 3 amp is for the control system and is required for gas, A/C or DC operation. The 5-amp fuse is for the heater for A/C operation. If your Fridge operates only on gas then the problem is usually either the fuse or the A/C heating element. However, do not forget to check the connections first and make sure the A/C supply is getting to the Fridge circuit board. If you are operating on A/C but not on gas than check to see if the igniter is sparking and the thermostat is within the flame. If you have a three-way unit that operates on DC, you will also have a 35-amp fuse. Remember for DC operation you are drawing over 25 amps out of the coach batteries and you should only do this with some source of high current DC, in addition to the batteries (like the engine alternator in a Motor Home or a generator) .

The circuit board connectors are a big source of failures, especially for the older units. There are several connectors (Molex connectors) on the board that can get loose and may develop corrosion. Remove each connector separately and spray both sides with the contact cleaner. Wipe the contacts dry and put a small amount of silicon dielectric on the male pins. I have seen many Refrigerators repaired with a new circuit board when all that was required was cleaning the contacts on the old circuit board connectors.

During hot weather if your unit is not cooling too well I would recommend installing a fan in the outside compartment. This should be installed as close to the top of the coach as you can reach and should be exhausting the air. The air across the fins is what takes the heat out of the Fridge compartment and provides maximum cooling. I do not like the fan units that come with an automatic thermostat since they do not come on soon enough. Once you lose temperature, it can take many hours overnight, to regain adequate food storage. I installed a switch inside the RV and turn it on when my thermometer inside the Refrigerator tells me it is getting near 40 degrees.

A little tip: If you lose your Refrigerator on a Caravan and cannot get a fast repair remove as much of the food that does not really need to be cooled (soda, fruit, veggies, cheese, etc.) and put bags of ice in your freezer compartment. Also, fill your vegetable crispers with ice. This should keep the critical food cold until you can get repairs. (You can put the beer in the vegetable crispers along with the ice). I have seen people rush off to buy several coolers when they have a perfectly good temporary icebox installed in the RV. Just put the ice in plastic bags or whatever large Fridge containers you have. Large blocks of ice will last longer. If you use open

containers, like the vegetable crispers, do not forget to periodically empty the water from them. If you can find dry ice, get some for the freezer. This will keep the freezer food in good condition.

AIR CONDITIONERS

There are not too many spare parts needed for your Air Conditioner. Inside the RV you should remove and either clean or replace the air filters. You remove the knobs and then the two nuts/screws from underneath to drop the shroud, which has the filters installed in it. You should do this every two weeks if things are very dusty since dirty filters will severely reduce the efficiency of the AC. I would purchase permanent filters that can be washed, dried and reused. They are a lot cheaper than the replaceable type over a two or three month caravan. Some units have drain tubes, for the AC drain water, that are routed through the walls of the RV. These tend to clog up at the top and the drain water can drip inside the coach. When you are getting gas and checking your tires blow the tubes clean on a regular basis. If you have a compressor in the RV fix up a coiled hose with the proper blower, tool and you can do it yourself. You should also keep the condenser coils clean by climbing on the roof removing the top shroud and using low pressure compressed air.

If your air conditioner just blows air but the compressor is not working, first check the A/C supply and make sure you have at least 117 VAC. If that is ok, then remove the cover on the roof and check that there is 117 VAC at the air conditioner voltage input terminals. These are screw terminals and after lots of mileage on the rig they tend to loosen up, get dirty and may start to arc. Clean the terminals and wires and retighten the connections.

GENERATORS

A reasonable set of spares for your generator would consist of the following:

Sparkplugs and points (for gas generators)
Oil, fuel and air filters
Special oil if required.

Since these are usually unique to your generator, even if you cannot do the repairs yourself, they will be available for any mechanic to use. Be sure you have the proper oil for the generator. All of them will stop running if the oil gets low which of course will occur while your wife is preparing dinner. They are designed so that you will always be left with enough fuel to get the RV to the garage and fill up.

One common failure mode is a loss of AC input voltage from either the Generator or the AC mains. This is usually due to the switchover relay that is used in all RV's that have generators. The relay has three poles (three wire input circuit) which automatically change from Shorepower AC to Generator AC. The relay is wired to be in the Campground AC position and changes once the Generator starts to put out AC voltage. In a 50-amp system, there are two relays with three poles each. Over time, the relay contacts arc and burn. A carbon build up eventually prevents

good electrical contact in the relay. The fix, after turning off the shore power and the generator, is to clean all of the relay contacts with a scotch pad (I don't like using steel wool because of the possibility of getting metal chips in the relay). Make them nice and shiny.

Be sure and check your Manual for recommendations on running the generator during the winter months. More failures occur by just turning it off and leaving it for several months then actively using it. It should be run up to operating temperature on a regular basis and allowed to operate under load to keep the armature clean and remove moisture. Typically, the Generator should be run at least 20 to 30 minutes, under high load, at least once per month.

WATER SYSTEM

A common water system problem that I have run into a few times is the tank drain valve. Many trailers have the drain valve at the bottom of the tank in the center so it sticks out, unprotected. Of course, this breaks off when driving over a high rock, log or other road projection resulting in no more water. I remember when a camper had four spares and he used all of them to save his fellow campers on an Alaska Caravan. We carved a plug from a branch to save another camper. Carry at least one spare if your valve is under the tank. You should also purchase a brass plug, with the correct threads, as a back- up solution. The plug will allow you to at least use the tank until you can get a replacement valve. A better solution is to move the drain valve to a better location that is protected. You should do this anyway to make it easier to drain your tank. I believe it is a good idea to drain all of the water tanks and lines after every rally or caravan.

This results in cleaner tanks that do not have to be dosed with Clorox so often. I had three drain valves in my Motor Home that required me to remove the bedding and unscrew several plywood panels (25 to 30 screws). I installed a new drain valve underneath the RV which could be easily reached from outside. I then permanently opened all of the hidden valves so that the external valve was all that was needed to drain the lines. I also installed a drain valve in my hot water heater in place of the fixed drain plug. Now I open two valves, easily reached from the outside of the RV, to drain all of the water. We are lazy creatures by nature so we should make it easy to do the important maintenance items.

Filtering our drinking and cooking water on a Caravan is of major importance. Most of the rigs have filters on a special kitchen sink fixture. A lot of these use very expensive cartridges that do an excellent job. I replaced mine with a simpler unit where the cartridge case remains and you simply replace an internal filter. I get carbon filters which remove chlorine, odors etc. for about $6 or $7. These last over six months and are so inexpensive that you do not mind replacing them every year. I use these instead of my special kitchen sink faucet filter. I have also added an external RV sediment cartridge filter holder that hangs on my bumper. I use the sediment filter before the water enters my RV or the water tank. There is another filter screen between my water tank and the water pump, which is connected into the water pump. Do not forget to clean this filter at least once per year.

I mounted the external filters on a wooden board that also has a separate water faucet available for washing the RV or any other external water needs. I used quick release fittings for easy and fast hook- up. So part of my RV set-up is hooking up my external water supply system along with leveling and electric supply hook-up. I like to be completely hooked up, sitting in my lawn

chair and sipping some refreshment as fast as possible. You can easily add a second filter holder and have both sediment and charcoal filters on the water supply to your RV. Make sure you get the filter holders that use the inexpensive standard cartridges available at Lowes, Home Depot or Sears.

WINTERIZING

If you live in the cold north and are planning on a Rally to the warmer climates then you should become an expert on fast and sure winterizing for your return trip. Winterizing is not only important but a necessity. If you are in an area that freezes, you will almost certainly blow up a water pipe, water pump and/or a fixture if you do not do this properly. If you are unlucky, you might even have a pipe blow that is under the belly skin that will require drilling rivets to remove large sections of the aluminum at great expense. I have used two methods as follows:

1. Using a special valve and hose input, pump non-toxic antifreeze through your water pump to all outlets in the RV. You turn on the pump and open each individual faucet one at a time until pure antifreeze is coming out. This includes the toilet valve, its spray hose, the kitchen spray hose and any external faucets. You must do this for both the cold and hot water outlets. Then some antifreeze should be poured into each drain and the toilet to keep them from freezing.

Open the hot water heater drain and fresh water tank valves and leave them open during the winter storage. Also leave all the faucet valves open. To be most affective you should have a hot water bypass kit installed so that you can bypass the tank. Otherwise, you will need 6 or 7 gallons of antifreeze to fill the tank so you can fill the hot water lines. With a tank bypass, you will only need about one gallon of antifreeze. In the summer just run clean water through everything and you are ready to go. Every year I get several urgent phone calls/emails about how the water heater failed during the winter and there is no hot water. Make a sign “Heater Bypass Valves”, indicate the direction the three valves have to be turned to disable the bypass and tape it over the switch.

2. You can also use an air compressor to blow the water out of all the lines. I use about 50 or 60 psi and a clamp on air fitting. You can obtain a male water hose connector to air valve hook up. Hook up the air hose and open at least one faucet before you turn on the compressor. Just make sure that there is always one open faucet. I usually start with the hot water heater, after it is blown out, I shut off the compressor, turn off the heater bypass valves and close the heater clean out valve. I then open the bathroom hot water outlet and turn on the compressor. Make sure you open each individual outlet, including the spray hoses and water filter outlets, and allow them to completely drain. You should also blow out your external filter system and all of the hoses that have been used. Throw out your old water filters and add antifreeze to each sink, shower and toilet drain to protect them. This approach is the fastest and if done correctly, will completely protect your water lines, fixtures and appliances. Be sure you have removed all of the water

from the water pump. I use this technique because I camp in the winter and may have to re-winterize several times during the year.

Airstream uses both of the above procedures, blowing out the lines and then pumping antifreeze through all parts of the system, to insure a complete winterization. This is the safest approach but somewhat of an overkill if you have a Trailer. However, if you have a Motor Home with an Aqua-hot heater, fridge with icemaker, washer/dryer, dishwasher etc. you need to pump antifreeze to insure that all of these units are thoroughly winterized. Check each appliance instruction manual for winterizing recommendations.

HITCHES & TOWBARS

If your hitch is installed properly and the bolts are, tight than your major concern is a **loose ball mount**. This should be checked before each trip. You need a very large set of channel lock pliers or a pipe wrench and an adjustable spanner wrench or deep socket. This set could cost in the $50 to $70 range. Again, our local Unit has a set of tools for use by our members to do this.

You should have a ½-inch socket set with an additional 1 ½-foot handle to check all of the hitch platform, A-frame and sway control bolts. For torqueing the wheel nuts purchase the correct size black colored sockets that are 6-point. These are designed for Powered air tools and will not round off the high torque nuts or bolts.

You would be surprised how many hitch platforms are installed incorrectly. During our MAU units, annual maintenance rally we have discovered dozens of incorrectly installed units. There are very good write-ups on this for all of the types of hitches and sway controls. If you are uncomfortable with this, find someone in your Unit that knows or visit your local dealer. Learn the proper method for setting your brake controller and checking for correct operation. These concerns also apply to Motor Home owners who tow cars. An excellent summary with good instructions for both types of towing is included in Reference 7, “RV Repair & Maintenance Manual”.

SEWER SYSTEM

The worst thing you can put in your black or grey water tanks is formaldehyde. This can cause solids to build up, require constant cleaning of the tank and resultin your being banned from using some dump stations. You need an active Bacteria-enzyme product that will decompose solids and paper to produce liquefied slurry that is easily dumped. One of the best products I have found is Eco-Save, which in the solid form, costs about 50 cents per treatment. This product also lubricates the valve seals and cleans the tank sensors. You cannot use any other chemicals with this product since it will kill the Bacteria. You must completely clean both of your tanks if you have been using Formaldehyde before you can use this product.

The first step is to clean both tanks to get rid of any chemicals or solids left over from the previous use. Put about two gallons of water into each tank, a ¼ cup of dishwasher fluid (Joy or Dawn) and a bunch of ice cubes. Drive to your next rally (at least an hour or more) with this in the tanks and they will be well scrubbed. Thoroughly rinse the tanks with fresh water and you should be ready for your first Bacteria treatment. Put a quart of water in the tanks and the recommend amount of Bacteria-enzyme and you should be ready to go. Put a small amount of enzyme in the gray tank to eliminate the rotten egg odor you will get when you cannot dump this tank for several days.

The only barrier to keeping odors out of your RV is water. Each sink and the shower have a trap that holds water and prevents odors from the grey water tank from coming into the RV. The only thing keeping black water odors out of the RV is the water in the toilet. On a recent rally, a fellow camper asked me how they could get rid of the terrible odor that seemed to permeate the trailer during the night. When I went to check, I found that the water had leaked out of the toilet bowl. You must keep several inches of water in the bowl at all times since this is your odor barrier. Of course, the toilet seal had a slow leak. Remember to put antifreeze in the bowl when you winterize. Sometimes, as the seal ages, it will get hard over the winter and then leak. One trick I have found that usually works is to let the water out after you have winterized and put about a ¼ inch of vegetable oil in the bowl. Press the valve several times to work the oil over the seal and then put another ¼ inch of oil in the bowl and let it stand until you are ready to use the RV for your first trip. This has worked for me for the last 16 years. However, I still carry a new spare seal just in case the oil treatment does not work. I do not want to be on a trip with a bad toilet seal and an upset wife.

Every Caravan I have been on has scheduled dumps when you leave the camping area. This is not always the best procedure. Sometimes you should dump after you have driven several hours so that your Bacteria have had a chance to thoroughly decompose the contents of the Black tank. Dump on your way into the new camp area and clean the tank before you use it again. If a hose is available, just stick it in the tank through the toilet valve and give it a good flush. If a hose is not available, after you dump, fill the toilet to the top and flush the tank. Do this twice. The proper procedure is to dump the black tank and then the grey tank. Your tanks should be about ¾ full for the best flush. You do not have to dump at every campsite. Let the tanks fill at least to the ½ level and plan your dumps based upon the Caravan manual. Always keep some grey water in the tank so you can rinse the dump hose.

On occasion, I have solved the mystery of RV odor when the toilet seal was OK, the tank was clean and a good product was used in the tank. The air vent tube had slipped down and was below the tank water level or in one case had actually pulled out of the tank. This tube should be in the tank and above the water level so that it can exhaust the gases at the top of the RV. If everything else is OK, be sure to check the exhaust tube.

To summarize the main spares for this system is a spare toilet seal, Bacteria-enzyme product and of course hoses and fittings.

Many years ago, WSSC, our local sanitation commission, supported a number of dumpsites within several miles of my residence. Over time, they closed all of these leaving the only available dumpsite on route 95 between Baltimore and Washington. This was located several miles from me, with terrible traffic and not easy to use. My solution was to create my own dumpsite using a Macerator Pump.

I set up a "T" connection into my home sewer system available through a basement window. This was about 40 feet from my Motor Home parking spot. The Macerator attaches to my regular Valterra hose outlet and uses a flat 50 foot 1" hose to pump out the tanks. You can also attach a water hose to thoroughly rinse the tanks and hoses. Once hooked up it takes about 10 minutes to completely dump and clean all of the parts.

The hose, being flat, stores nicely with the pump kit. Now I have my own dump station. Since it is portable, I can handle virtually any sewer dump situation I might run into on a trip. At the 2006 International I was parked near a dump station but could not easily hook up to it without buying 40 more feet of the 4" dump hose. I hooked up my portable Macerator Pump System and easily dumped when my tanks got ¾ full. The 1" flat hose and suitable fittings were purchased from a Tractor Supply Store. These stores have the best quality and largest variety of water fittings, hoses and valves for use on farms.

CB RADIO

On a Caravan or Rally, communications among the participants and with the leader is extremely important. You can learn where the best price is for gas or diesel, the location of a good eatery or some great attraction. More important are changes in routing or time of arrival, traffic problems and communicating your needs to the leader. You should be traveling and coordinating in small groups of two, three or four between stops. Once you arrive at a destination, there will always be new information to be disseminated. The principle method of communications will usually be the CB. Yes! This means you should have a radio in both the tow vehicle and your trailer. A hand held for the trailer will also be useful when you are on a Caravan and have Parker Duty. Learn how to properly use the CB and test it before you start on the Caravan.

You do not need a fancy radio with 6 or 7 knobs and switches for good communications. Actually, the most important part of the radio is the antenna. Usually the largest antenna provides the best performance. Half of your antenna is provided by the vehicle (the ground-plane) it is attached too. The larger the ground-plane the better your radio will perform. Usually the best spot for a magnetic mount is the center of your automobile roof. After installing the antenna, it should be trimmed in size for minimum VSWR at channel 16. Campers use channel 14 for communications and truckers use 19 so this will optimize the system for your use. Tuning the antenna is done by changing its physical length. There is usually a setscrew that locks the small wip in place to do the tuning. Find a Ham Radio or CB Operator (lots of them in WBCCI) and they can help you with a VSWR meter and the expertise you will need. Better still, have your local Unit do a tune-up exercise at a rally. For the fiberglass, Motor Home a ground-plane antenna will not work since you do not have a nice aluminum skin. You will need a non-ground-plane antenna. Some of the early Motor Homes had the wrong type of antenna and never where able to get satisfactory CB communications. Again, if you are not sure find a Ham and he can check your antenna.

To set up your radio put your RF gain control to maximum, turn off your noise blanker and make sure you are in CB mode (not weather or amplifier). Set the Radio to channel 14, turn up your volume and adjust your squelch so that you hear a constant noise level. The squelch adjusts your sensitivity and thus ability to hear everyone in range. This is the only adjustment that you cannot just set and forget. Since the background noise changes constantly, you should be checking this setting every 15 or 20 minutes. Just lower the squelch until you hear the noise level and then raise it slowly until the radio gets quiet. This will give you the maximum sensitivity.

If your vehicle or local conditions are causing a high constant noise level, then switch on the noise blanker. Be sure and turn it off when it is not needed or doing any good since it reduces sensitivity. Now you should be able to hear everyone within the range of your Radio. However, can they hear and understand you? When you speak, key the Microphone and hold it about two inches from your mouth. You need to hold it this close to get good modulation and have others understand what you are saying. If your radio has a microphone gain control, you can adjust this so you can get farther away. I do not recommend this because you should get into the habit of keeping a constant distance from the mike regardless of the radio you are using. If you get closer or have the gain control too high, you can overdrive the radio and distort your signal. The best way to check this is to work with another rig and check out your signals and settings before you start a trip. Once everything is working right, all you have to do is adjust the volume and the squelch.

Get into the habit of saying ‘over’ when you are done speaking and be sure and listen first before you start talking. Talk to you down the road.

REST STOPS

When on the road most of us stop every 2 or 3 hours to stretch our legs. We should take this opportunity to check a few things on the RV and tow or towed vehicle. This should become a routine safety check at every rest stop.

1. A quick look at each tire to see if any have low air pressure. Do not forget the inside tire on the dual axels. I like to give these a kick to be sure they still have good pressure. Truckers use a tire iron and listen for the sound.

2. A check of the wheel hubs temperature to see if any of them are hotter than normal. Be careful because they could be extremely hot if you have a defective wheel bearing or a dragging brake shoe. Before actually touching the hub just get close enough to feel the radiated heat. Excessive heat on any tire hub means you have a serious problem that has to be fixed before you can continue your journey.

3. Inspect the hitch, coupling and A-frame for any loose bolts.

4. And finally, check the main electrical and breakaway cable connections.

CONCLUSION

The WBCCI Technical Committee was established to assist the club members. We provide several Seminars at the International Rally and a Round Table discussion. We have expertise in both Motor Homes and Trailers including vintage units. Questions & Answers that we feel are of value to the entire membership are published monthly in the Blue Beret Magazine. All of our Seminars are also published in the magazine. Unless we are on the road, we will usually get back to you within a few days.

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