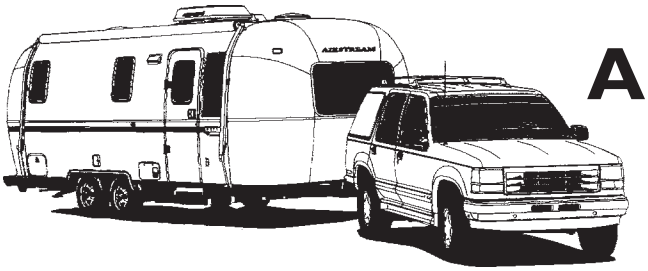

AIRSTREAM TECH HELP GROUP

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This new group has been established by WBCCI to help the membership with any of their technical RV problems. Examples of questions that might be of interest to many members will be published in the *Blue Beret*. We will respond directly to you, in response to your email or letter describing a problem you are having. We hope you will find this new service of value in the care and feeding of your RV. You may contact us as follows: techhelp@wbcci.org or by mail: Howard Lefkowitz, 11508 Colt Terrace, Silver Spring, MD 20902

THE CARE AND FEEDING OF YOUR RV

by Howard Lefkowitz
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INTRODUCTION

The purpose of this column is to help you be prepared with spare parts, special tools and the knowledge to minimize any unhappy experiences the next 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 which overlap in many of our most important appliances. I will also examine some of the unique aspects of these two RV types.

It's 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 then lets change them at 95,000 miles. I am reminded of a Caravan where one of the tow vehicles lost an entire wheel while traveling on a side trip. The bearing just fell apart. The Airstreamer could 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 have a constant wear on them and will eventually just die. I strongly suggested that he have both of the front bearings changed but he was from the "if it ain't broke don't fix it" school. I hope I am not around when the other wheel falls off.

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 die. Learn how to use the Google Internet search engine.

I will cover several tow vehicle areas, which directly interact with your RV. This will include batteries, charging, hitch platforms, etc. The manufacturer has done an excellent job on your auto. Just read the manual and remember you are using your tow car under severe operating conditions, so be sure to include the extra things recommended in the manual.

So let's get started.

ELECTRICAL

I started with this area because 3 out of 5 problems are usually due to electrical connections. I cannot overemphasize this. Check the connections first for almost any type of malfunction. For the past two years my Motor Home has been getting more and more difficult to start after it has warmed up. Recently, I checked the chassis grounding strap. You guessed it, corrosion, rust and loose mounting bolt. Clean, scrape the area, replace the worn terminal, new lock washers and it starts like new hot or cold. Remember our RVs 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 RVs are subjected too. The only environment that is much more severe is a boat operated in salt water. So guess what? The best hardware, the best batteries, the best chargers, the best lubricants are available in the boating world. 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 use all over your RV and tow vehicle is **Silicon Dielectric.** Boat stores, quality Auto supply stores all carry this excellent product. This grease type of lubricant can be used for all electrical joints. It water proofs the joint and insures good electrical contact. Put a thin coating over all your Battery terminals and they will never corrode. In fact, coat all of your high current junction points.

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 your size wire).
2. Clean the wire ends and trim to proper length for a butt crimp connector.

3. Put a small piece of silicon dielectric in each end before crimping to protect against corrosion.
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 melt the tubing so it shrinks around the connector and makes a waterproof connection.

Proper connections require wire strippers and crimping tools that are designed 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 proper length of wire, spot of silicon dielectric, proper crimp, shrink tubing to waterproof connection. Purchase a supply of different terminal types, butt connectors and shrink tubing. 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's review:

- Wire Connection Needs
- Box of different size and type terminals and butt connectors
- Tube of Silicon Dielectric
- Wire stripper tool to handle several popular wire sizes
- Special connector crimping tool
- Various size heat-shrink tubing
- Heat gun or careful application of matches

Depending on the size of the Silicon Dielectric tube this should cost about $9 and provide enough material for many repairs as well as battery and other electrical connections.

Using wire nut connections for your electric brakes is 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 to electric to get everything charged up and ready for my weekend rally. 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 the wire nut to see if it was tight. It turned round and round. The wire nut would not get tight. It turns out that all three input lines had the wrong size wire nuts. It was one size too big. I changed to proper size and the problem was solved. This was done when the unit was manufactured 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 for the ground connections. Most wiring failures are due to poor ground connections. Rusted, corroded or just loose ground connections 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 first. If the terminal is rusty put on a new one with your new terminal kit. Clean and scrape the ground area, including any paint, to insure a good ground. Use a wire brush and a scotch pad to clean the area. For larger areas with heavy rust a small file may needed.

Grounds, grounds, grounds look for the ground connections. Most wiring failures are due to poor ground connections.

If the self taping screw you removed from the terminal cannot be tightened throw it away. Put in the next largest self taping screw and 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 don't drill into anything important. If it is a screw and nut combination make 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. They should either have a special rubber cover that locks the nut on, so they will not shake loose or be wrapped with electrical friction tape. The best joints are the ones that have been properly soldered.

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 connectors I have ever seen. They are available from NAPA and provide both a crimp and soldered 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. All of the terminals are covered with heat shrinkable tubing, so the heat gun provides the final weather proof connection. They are expensive at about $1 each but these would be great for your 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. Remember, the heat shrinkable tubing provides mechanical rigidity to the connection since the usual failure mode is breakage of the wires where they enter the connector. For the best reliability provide support for your connections with wire ties.

Obtain a set of various size fuses that are used in your RV, towed or tow vehicle. Just check your manuals and fuse boxes be sure to get several of each size. There are number of different types so be sure you get the correct ones. Don't forget the extra electronics you have added to the vehicles.

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 got the problem solved. I carry a 15, 20 and 30 amp set. Once the problem is resolved and the breaker no longer opens

Continued on page 23