



Airstream Tech Help Group

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This group, part of the WBCCI Technical Standing Committee, has been established 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

CHARGER ON WITH NO BATTERIES

QUESTION: I have A 1998 Airstream 31' Excella Trailer. I store the unit in an attached garage during the winter. While the unit is being stored I remove the batteries and put them on a Battery Minder. Can I connect the unit to 110 VAC shore power, turn on the converter and have power in the unit, so I can use the lights with the batteries removed from the trailer?

I have received conflicting answers on this question from Airstream Tech Support and my local Airstream Dealer. I would appreciate it if you could resolve this for me.

ANSWER: Both could be correct because it depends on which converter (charger) you have in your rig. As an example:

14.6. MYTH: Test an alternator by disconnecting the battery with the engine running.

False! A battery acts like a voltage stabilizer or filter to the pulsating DC produced by the alternator. Disconnecting a battery while the engine is running could **destroy** the sensitive electronic components connected to the electrical system such as the emission computer, radio, audio system, cell phone, alarm system, etc., or the charging system, especially with internal voltage regulators, because the peak voltage can rise to 40 volts or more. In the 1970s, removing a battery terminal was an accepted practice to test charging systems of that era. **That is not the case today.** Static electricity and spikes from connecting and disconnecting batteries or test equipment could also damage sensitive electronic components.

Some early converters were based on using a Ferro resonant transformer, which required the battery load in order to keep the ripple and spike voltages at a reasonable value. In this case if you remove the batteries you could damage other components in the rig. Some converters are designed and filtered so there are no transient AC voltages on the output and they are completely regulated to provide no more than 14 or 15 volts with or without the battery load. For these you could run the converter with no batteries present without damaging any other components. When you put voltage on the 12 volt supply line it is going to feed into lots of electronics and circuit boards in the rig and that is the concern.

This is not a simple yes or no answer because the penalties can be severe. The converter manufacturer has the answer. Airstream used a number of different kinds of converters over

the years. If you have purchased a used RV then check to be sure which converter you have. In either case you should check with the converter manufacturer to get the right answer.
Howard

BUYING A USED MOTORHOME

PROBLEM: My wife and I have owned 5 Airstream trailers since 1978 and I have the "fever" for a motorhome. We like the Land Yacht series 26' and 30' motorhomes, my question is could you point out some important aspects of a motorhome that could result in major dollars in replacing or repairing after we purchase it? For example, I wonder about things like the air bags and shocks, after how many miles of average driving should these be replaced, and what transmission did Airstream use, etc. Anything you can point out will be greatly appreciated. Thank you. Bill

ANSWER: Here is a very good site that can help with buying a Land Yacht. (www.rvforsaleguide.com/motorhome.htm) If you get a unit from the 90s it will usually have a Chevy engine, chassis and truck transmission. From about 2000 on you will get a Workhorse usually with a Vortec engine. The transmissions are usually solid and relatively trouble free as long as they are adequately cooled. A unit with an add-on cooler, in addition to the built in one, will keep the temperatures low and extend the operating life. The Land Yachts in the 26 and 30 foot range are low in weight and are likely to have minimum transmission wear. The engines are also relatively trouble free and just need regular oil changes and maintenance. A unit with good maintenance service records is always preferred. Any good mechanic can do a thorough check of the running gear and the fluids. Air bags and shocks are relatively inexpensive and easily changed by your local auto mechanic.

The appliances are essentially the same as in your trailers. The one area that can really cost big bucks is damage due to water leakage. This does not necessarily show up in a careful examination of the interior. Small leaks will allow rotting and eventual delamination of the body skin or roof. I have a friend who has that problem right now on a slide-out and the estimate for repair is \$4500 to \$5000. Motorhomes are constantly vibrating and putting a strain on joints and screws. I would suggest you get this checked by a Service Shop that specializes in finding water leaks. On the East Coast I have

used Parkview RV for this and have had them test my Class A unit for leaks. They pressurize the coach and then look for bubbles on the outside and roof. They use the Sealtech 430R. Their charge for the test is \$100. Check <http://www.rvleaks.com/> for the location of other dealers. You get a report on the leaks and can either have the dealer fix them or do it yourself.

To summarize, the running gear and appliances are very similar to a tow car and trailer. The potential biggest and costliest problems could be those caused by water leaks. In addition, check all of the mounting hardware throughout the Coach interior and exterior especially missing or loose screws on cabinets. Also, check for any manufacturer re-calls on the unit and make sure they were done. Good luck. Howard

MY FUSE KEEPS BLOWING

PROBLEM: When I am parked my water pump and several other DC circuits work fine. However, when I drive the fuse for this circuit blows so that it must be changed when I stop again. This has been going on for several months in my Classic Motorhome and I have tried to find the wire that is shorting out but have not been successful. Any suggestions? Jerry

ANSWER: This, unfortunately, is a relatively frequent problem for our aluminum trailers and motorhomes. As our units age the constant vibration and bouncing of the wires/wire bundles can wear through the insulation and cause short circuits. The coach wiring goes through holes drilled into the aluminum ribs, end shells, roofs, belly pans etc., which usually have plastic grommets to prevent the shorts. Occasionally a rivet or mounting screw will be close to a wire or actually pierce some insulation. Any of these could result in intermittent short circuits. Trying to find these in the walls or under the belly pan is usually a fruitless undertaking.

The first step is to identify all of the circuits that are on the particular fuse that is blowing. Usually the circuits in an RV are wired in a chain (called a daisy chain) starting at the fuse box and connected from each item to the extremities of the RV. If you can get at the connections for the various items that are not working, you can disconnect parts of the chain and see if the short goes away. You then run a new wire to replace the part of the circuit that is causing the problem. This only works on rare occasions.

Never increase the size of the fuse! The fuse is sized to protect the wires so that a 10 amp water pump might have 20 amp rated wires. By using a 15 amp fuse if the pump motor shorts out the fuse will blow before the wire rating is exceeded. The worst and most expensive problem you can have is burning up the wires inside a wall.

Since you are getting the short circuit only while you are traveling you could simply remove the fuse and reinsert it when you stop. You have an automotive ATC type fuse with two prongs on the end in your DC fuse panel. A better solution is to purchase an ATC style circuit breaker. These are available from amazon.com and made by Imperial or Bussman. They are the same plug in size, but are just a little longer and are available in 10, 15, 25 and 30 amperes. These will open when the short is present and close when it is gone and you are

stopped. Essentially, they automatically remove the fuse while you are traveling and reinsert it when the short no longer occurs. Considering the costs involved in trying to find the actual short this is a reasonable approach. Resettable ATC circuit breakers are also available, which require you to physically reset them when a short has occurred similar to an AC voltage panel. I have used these ATC breakers for years as an aid in troubleshooting DC circuit problems. Good luck. Howard

MY ELECTRIC STEPS CLOSE BY THEMSELVES

PROBLEM: Every once in a while my electric steps will just decide to close. This has happened with my motorhome parked and the door open. Several times the steps have closed with my wife standing on them while trying to enter the coach. Help!

ANSWER: I have run into this problem a number of times. In each case they would close when the RV was parked with the steps in the extended position and the door was either open or closed. There is a magnetic switch mounted in the door frame of your motorhome. On the door is a magnet mounted opposite the switch. When parked, with the door open, the magnetic switch is in its open position. If the engine is not running and the interior override step switch is turned on the steps will be open regardless of the position of the door. If you turn off the override switch and close the door the steps will retract.

What happens is the magnetic switch (normally open) is activated by closing the door that effectively grounds the step circuits and closes the steps. There is a wire in the door frame going from one side of the magnetic switch to ground. What usually happens is the wire from the step circuit board is being grounded through some means other than the magnetic switch. Usually, the problem is one of the rivets that are used to mount the interior door frame cover has pierced the step wire and is intermittently grounding the circuit board. This is effectively bypassing the magnetic switch and telling the steps to close.

You can drill out all of the rivets and attempt to find the one causing the short. Or you can do it the easy way by cutting the wire and running a new one through the frame. Remove the magnetic door switch (this is either a pry-out or remove the screws) so you can get to the wires that are attached by mounting screws. Under the frame you will see two wires, one going to ground and one going to the covered circuit board mounted underneath the top step. This is usually a #16 gauge brown wire. Run a new wire through the magnetic switch hole and fish it down the frame. The easy way to do this is to remove the hot wire from the switch and securely tape it to a new wire of the same size. Pull the old wire down the frame with the new one attached. Cut the old wire off and, using a butt connector, attach the new wire to the step circuit board wire. If the old wire will not move because it is being held in place by a door rivet just cut the ends off and leave it in the frame. In this case use a wire coat hanger and fish the new wire through. Howard