

GMC Western States

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From our Technical Vice President
Gene Fisher

Osoyoos was a fun Rally. Not that we were ever able to pronounce it. You can tell from the following reviews that there was a lot going on. There were only a few vendors that were able to attend, but they were showing some great additions to our GMCs and they enjoyed the Vendor Night at the rally. The vendor pull-out in this Tech News issue is a result of the planning for the Rally. We have some excellent vendors and I encourage you to use their products. We need all of the vendors we can get. Thanks to Billy Massey for pulling this vendor list together, keeping it up to date, and posting it on the net. Pull out this section and keep it in the GMC. You might need it on the road sometime.

<http://www.bdub.net/GMCSupplierLinks.html>

Is your Dash Air conditioning getting tired?
Do you think your Freon is getting low?
Would your AC shop want big bucks to convert your AC to a new Refrigerant?

We have an answer for you. Read the article in this issue on “Charging the Dash AC” on page 3.

It is time to start thinking about the Spring Rally. Send me your Cards and letters (well maybe emails) on what technical presentations you

would like to see presented. Come to a Rally, there is nothing like seeing 90 GMCs in a row, and all of the clever upgrades that have been added to our coaches.

There are many pictures of this rally on the Billy Massey GMCPhoto site.
www.gmcmhphotos.com/gallery/dlisting.php

Seminar Summaries from Osoyoos Rally

Marlene Meineken at the Osoyoos Rally took notes to help us assemble these technical seminar summaries:

1. New Owners Seminar.

Jerry Work presented the seminar to a well-attended session. There were more than 15 first time attendees and most of the old timers at the session. Jerry gave a light and informative talk about the history, cost, and maintenance issues of owning a GMC. You could invite him to talk at your rally.

2. Regulations on Crossing the Border into the United States:

US Customs Agent Rory Morrison and Agriculture Agent Marcy King handed out pamphlets and explained the regulations as to what items can be brought into the US from Canada, and then answered questions from those attending the seminar.

3. Alternator Protection Problem:

Gene Fisher identified a design problem in GMC coaches that results in a burned wiring harness behind the dash caused by a reverse voltage surge. Six GMC owners reported they had this burned wiring harnesses. The wire in question is a nichrome resistor wire which comes from behind the dash to the fuse box and through to the alternator. Evidence of this problem may be a dimly lit alternator light on the dash while running the coach. GM knew about this problem

in 1974 and they identified a diode to be installed on the wire, but they put the diode in the wrong place to fully protect the resistor wire. Gene Fisher has assembled an alternator protection cable (APC) to be installed in the coach that will fix this problem. In the event that the resistor wire does burn, fire behind the dash can result, and the wiring harness may be ruined. The resistor wire will have to be repaired. 73s and 74s are easier to fix, but 75s through 78s are tougher. The APC should prevent the failure, but will not repair a burned wire or harness. The APC can be installed in a couple of minutes. Gene had 40 of his alternator protection cables for sale at the seminar for \$15 each, and he sold them all! For more information, go to

<http://gmcmotorhomeinfo.com/APC.html>

4. Ask The Experts: There were two lunchtime sessions for this seminar. Jim Anstett, Emery Stora and Denny Allen led the Tuesday session. Topics covered included roof air conditioners, Duo Therm heaters, the Alcoa wheel recall, and for new owners, a list of spare parts to carry with you. More topics were fuel separator leakage, transmissions, the emergency brake, and the thermostat on the hot water tank. Duane Simmons, Manny Trovao, and Chuch Botts led the Thursday session. Topics included, Onans, tires and transmissions.

5. Fantastic Fan Installation: George Baxter gave a brief overview of fan installation, and then proceeded to install one in the living area of the Meinekens' coach. George first removed the old OEM fan, cut the power supply, and cleaned the roof area of old caulking to be sure he had a good surface for the new gasket to seal against. He cut square corners from the original rounded roof hole and screwed the ground wire to the room beam. He placed the closed cell gasket on the roof and put the fan on that. He screwed the fan into the roof, using the infamous c-clamps in the corners. He hooked up the power and ground and screwed the inside trim in place. Finally he caulked around the fan edges and screw heads.

The job was finished and the fan worked wonderfully.

6. What have you done that is Neat?

A fun evening session invited owners to stand up for 10 minutes and tell what they have done to their coaches that was neat. The session was very well received, and we will do it again in the future.

7. Do It Yourself Disk Brake Conversion:

Heinz Wittenbecher gave a seminar on installing disk brakes all around. Having made a couple of panic stops, he decided he needed a better braking system.

His first conversion was with a kit by TSM. This kit was developed on a GMC Western States coach at a cost of \$400 to \$700 per axle. Heinz found that installation was not difficult. He talked about the several different systems he used to bleed the brakes after installation. Later he decided to try the Lee Harrison system for even greater braking capacity. It cost around \$3,000 and he has been very satisfied with it.

8. Do It Yourself Air Conditioning Service:

Emery Stora gave a seminar on installing an auxiliary AC unit in the cab of the coach as booster to the dash AC. He used an 1800 BTU Danhard evaporator unit. Installation required making some minor changes and adding additional hoses. The unit was installed between the accelerator and glove box. It does not interfere with the removal of the engine cover. Total cost was about \$400.00. At the same time Emery switched over to DuraCool refrigerant in the entire system. DuraCool is environmentally friendly, is compatible with R-12, and requires no change of hoses, o-rings, and oil.

9. DuraCool Demonstration

After lunch there was a demonstration with a DuraCool representative, Aime Beaulieu from Global Truck Retrofit. Aime spoke of the advantages of DuraCool and then gave a demo on

charging GMC dash units with DuraCool. He had a real hard day, and was only able to charge one of five GMCs attempted. The other four had leaks, stripped threads and other problems that prevented them from getting a simple recharge. We want to give Aime a lot of thanks for sharing his technical expertise and showing us how to work on our Dash AC units.

10. High Speed Wireless Rocks: Heinz Wittenbecher did a demo with 4 or 5 laptops hooked up to a WIFI connection from the club house to his coach where he had a broadband cell type of connection that he could share. He noted that wireless connections are increasingly available at airports, hotels, and campgrounds, and that the price of equipment has come down substantially. Several GMC owners were able to use this connection to surf the Internet while at the Rally. Heinz also put up a Web Camera several days, so the GMCnet users could watch the rally live. The speed is faster than a dialup connection, but slower than a DSL or broadband wired connection. Also you give up some security in that anyone can cruise your neighborhood and you would need to implement security measures to keep them from tapping into your wireless connection.

Charging the Dash Air conditioning with Propane

At the Osoyoos Rally, we learned about Hydrocarbon refrigerants from the DuraCool Manufacturer.

Most of the GMC Dash AC units are not operational. Many Owners are afraid to work on the Dash AC because the cost of Freon (R-12) and the EPA rules make it prohibitive to experiment with repairs and feeding refrigerant to an old leaking system.

The original GMC maintenance manual has excellent descriptions of how to diagnose and repair your AC components. Every time you see

the word Freon (R-12) in the manual, use the word DuraCool, you can use the original GMC documentation and do your own AC work. In fact, it is even easier than that. You do not need a vacuum pump, or a gauge set. You can use your digital tire gauge, two adaptor connectors, a tapper hose; three cans of a hydrocarbon refrigerant (propane) and you can recharge your original system. No oil changes, no hose changes, no compressor change, no o-ring changes, no dryer change, just \$18 of refrigerant and you might be back in business.

The EPA rules say that it is illegal to discharge CFC refrigerants into the atmosphere. It is probably too late, most of our Dash AC units have already lost their R-12 and that is why they are not working. If you use your tire gauge (a digital one is more accurate) and measure the pressure at the AC connections (see the maintenance manual), out front by the radiator, you will probably find no pressure, to 10 pounds, which says you have no R-12 remaining. **Then you will not have to reclaim the R-12 in your system, there is none.** If you have R-12 in your system after measuring it several times, you can go to an AC shop and have them reclaim the R-12. There's no need to have them leave the system at any pressure. Hydrocarbon refrigerants require no vacuum during recharge. You can also recharge an R-134 system, but it is cheaper to stay with the R-134 if the conversion is already done.

The EPA rules say that it is not legal to convert from R-12 to Hydrocarbon refrigerants. But it is legal to convert from R-12 to R-134, and it is legal to convert from R-134 to Hydrocarbons. So what the AC shops do is install the adaptors from your local parts store that convert the R-12 connectors to R-134 quick release connectors, and then add the Hydrocarbon refrigerant. Mark the system with a label that says you are using Hydrocarbon, and the system is ready to test.

One down side of using Hydrocarbon refrigerants is that most US shops do not service these systems. So you will have to find a shop that does, or do the work yourself. You can look on the Internet and find shops that will service this system.

The system will run with only one can of DuraCool added to a system at atmospheric pressure. The low-pressure switch will operate and the compressor will run. Measure the pressure over several days and if it will not hold, you have a leak. You can leak check with soap bubbles or leak checking fluids just like we do on the propane system that runs the stove and refrigerator. When your system holds pressure, or leaks very slowly, add more refrigerant until you reach about 30 lb on the low side, with the compressor running. Do not worry about the refrigerant that leaks out. Lighting your home BBQ vents much more Propane than this system does.

Here are some bits of information that we learned at Osoyoos:

- 1 AC technicians do not like to use 134, it is harmful to their health.
- 2 You do not need a vacuum pump to charge with Hydrocarbon refrigerants like DuraCool (Propane).
- 3 In fact they work better if you do not pull a vacuum.
- 4 Propane will mix with whatever you have in your system. There's nothing to change.
- 5 Recover the existing refrigerant (most of our systems are already empty).
- 6 Add 3 cans of DuraCool
- 7 Use Glacier Gold if you have a leak, every can has a dye for leak detection.
- 8 Run the compressor, and measure the low side with your tire gauge.
- 9 You should have 30 lb of pressure. If it's too high let some out, a little low will be ok.
- 10 Put on the 134 adaptor connections, and the system is legal.

- 11 Mark the system as filled with DuraCool or Propane.
- 12 You are done, no gauges, no pump, no changes.
- 13 Propane is more efficient. Your compressor will use 40% less horsepower.
- 14 The head pressure is lower with Propane, the compressor will last longer.
- 15 It will cost you \$30 for the Propane and taper hose.
- 16 Propane has a higher auto ignition temperature than 134.
- 17 Propane leaks less than R12.

It has never been easier to do your own AC work. It is interesting to note that there is also a hydrocarbon mixture that works on a home or coach AC to replace the R-22 with the more efficient refrigerant.

Note: The EPA has issues with Hydrocarbon refrigerants. You should read this link and make your own decision:

<http://www.epa.gov/ozone/snap/refrigerants/hc-12a.html#q9>

The above information and more technical detail are available on these web pages:

<http://www.delsupply.ca/data.htm>
<http://glacier-gold-refrigerants.com/index.html>
<http://duracoolky.com/refpage.html>
<http://www.duracoolusa.com/>
<http://www.duracool.com/>

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