GMC Western States

Tech Center Number 43 – *November 15, 2004*

From our Technical Vice President
Gene Fisher
On the Way Out The Door

I am leaving the job of the Tech Person for the GMCWS. As I go, I would like to introduce Jerry Work, the new GMCWS Tech VP. Jerry comes to the GMC community for all the right reasons. After years of driving an SOB Diesel Pusher, Jerry has spent several years improving his GMC motor home. Jerry has an extensive technical and analytical background and excellent presentation skills. Jerry will bring a new look to the GMCWS organization. Welcome aboard Jerry!

Jerry Work, New Tech VP

The Balloon Fiesta Rally was busy, exciting and a scheduling nightmare. It was amazing that Al was able to pull it off in his typically excellent fashion. The schedule was as unpredictable as the weather, which turned on and off the balloon activities every day. This was an activity driven rally but we were still able to have some great technical presentations as you can read from Donna Prishmont's review below.

I want to thank all of the GMCWS members that helped me over the last two years with the technical presentations. We have made some milestone advances in the GMCWS organization, which you should review on the GMCWS.org web site.

Thanks again for everyone's help, and I am looking forward to contributing technical information to this great organization in the future.

Gene

Balloon Fiesta Rally Seminar Reviews by Donna Prishmont

The Road to Enlightenment – Making Your GMC Lighter

Darren Paget at TZE Plus, www.tzeplus.com,
403-807-1136
Tuesday, October 05, 2004, 11:00 am – 12:00 pm

Darren's coach weighed 11,000 lbs when he bought it. Five years ago it was totally stripped inside. It then weighed 6800 lbs. The old Onan generator had 8,700 hours on it and weighed 512 lbs. Darren put in an Onan Microlight 2800, which weighs approximately 110 lbs.

There are 260 lbs of cabinets total under the old configuration. You can save 220 lbs altogether

when using aluminum cabinets throughout the motorhome. The aluminum cabinets over the galley and sofa weigh 29 lbs. He removed all the particleboard bulkheads and replaced them with aluminum except for the bathroom module. Darren used half-inch plywood surrounded with fiberglass for over the bathroom. The dinette base, walls, and raised floor are aluminum wrapped in fabric and carpet.

Less weight means better gas mileage, better acceleration, and better braking for safety. Alcoa wheels will save you 250 lbs over the steel wheels; but it's low weight which is not bad for center of gravity. The Dometic Penguin air conditioner weighs 110 lbs vs. 200 lbs for the old air conditioner.

Edelbrock manifold and headers save you weight. Aluminum flared wheel wells and aluminum bumper save more weight. The roof pod is aluminum. The aluminum engine cover weighs 1/3 the weight of the wooden one. In the generator compartment Darren removed the plywood floor and put in aluminum and an aluminum battery tray.

Fully loaded he now weighs 9800 lbs.

Vendor Introduction – October 5, 2004, 3:00 – 4:00 pm

Allen, Denny - gmcnot@shaw.ca, www.bdub.net/dennyallen/, Macerator Kit +++ contains a special T that removes everything from the bottom of the holding tank. The kit contains wiring, hose, etc. Box of light bulbs and fuses for the GMC available. Robert Shaw thermostats. GMC repair service.

Berry, Gary - duallycc@hotmail.com, Onan after market, replacement mufflers. Contains everything from the exhaust manifold to the tailpipe.

Burkhart, C. Paul - bon-burkhart25@myexcel.com, Bath Shelves. Extension shelves for the medicine cabinet. Side shelves that go under the towel racks on the sides of the sink. You put them on with double sided tape.

Carter, Joanne - Italian Glass Jewelry. Stained glass artist. Red Hat pins, etc.

Cerrina, Pat - pyewacket2@prodigy.net, Represents Ragusa products.

Clement, John - 951-737-0969 -- Air compressor parts. Rebuilds Dana Air Compressor original equipment compressor. 1750 RPM motor. 951- carry a spare belt with it. Change your filters every so often. Don't make your own sponge rubber filter.

Curtis, Burt and Fay - curtisunlimited@aol.com, www.bdub.net/curtis-unlimited, Lots of Toys. Steering column boots. Upper and lower boots. Frame to body isolator pad kits. Stainless steel T-skirt mount brackets. Travel logs to keep track of your maintenance. Denim, polo shirts. GMC carpet pieces. Fiberglass products.

Fisher, Gene – mr.erf@escapees.com, www.gmcmotorhomeinfo.com/APC.html, APC Alternator Protection Cable.

Hayward, Greta and Nortje, Dorothea - gretahay2@aol.com, African baskets

Henderson, Ken - Electric Windshield Wiper kit. http://www.bdub.net/kenhenderson/index.html

Paget, Darren - pagetd1@telus.net, www.TZEplus.com, TZE plus toys. Bearing pullers, stainless battery trays, raised and flat engine covers, aluminum cabinets.

Sandia Computers - Supplied the WiFi for the rally.

Seals, Margie - Margie@myfavoritemechanic.com, www.MyFavoriteMechanic.com, Mechanical seminars, T-Shirts.

Simmons, Duane - simmee@juno.com, www.bdub.net/duanesimmons, Battery trays, KN Filters for the Onan, boards, priming switch, freshwater and holding tanks. Tail lights. All electric cruise control unit.

Smith, Jim - Smith's Ultimate Linings Spray on bed liner. Spray bras on the front of the motorhome or tow car.

Trimble, Don – Dominoes.

Trovao, Manny - Manny@travao.net, Switch pitch and regular transmissions.

Van Dyck, Peter - Engine conversions.

500 cid Caddy Engine Swap by Larry Weidner

Wednesday, October 06, 2004 9:00 – 10:00 am, WeidnerL@wwt.net, 715-135-7422

Larry's handout, courtesy of Jim Wagner, was of great help in the presentation of this seminar. It included comprehensive information and pictures he downloaded from the Internet.

This seminar is about the installation of the 500, not the rebuilding of the engine. The 1967 to 1976 Cadillac Eldorados are used for peripheral parts for installation such as motor mounts, transmissions, carburetors, etc. The 1971-72 Cadillac Eldorado are the best years to use as a donor vehicle for all the necessary parts for installation in your GMC. The 1971-76 motors are the same. You need the 1968-72 Eldorado motor mount. You need to drill new holes in the frame to attach the motor mount.

You need the correct oil pan, axle bearing support bracket (replace the bearing at the same time), right and left exhaust manifolds, buy a set of headers from Cad Co., brackets (alternator, lower alternator/air pump, A/C and double pulley), belts, power steering pump and filter, oil cooler adaptor and hoses (contact JR Slaten, jrslaten@aol.com), water pump, radiator hoses, fuel pump (add electric fuel pump), lines and relays, modified throttle bracket, transmission kick down switch, Q-Jet Power valve spring, and distributor.

You will need an engine lift frame. You need to raise the engine cover (1 ½ inches), get an aluminum one from TZE plus or make your own. You need to have the torque converter in place before you put the engine in. The bolt patterns for the 455 and the 500 Cad are the same.

There is a great list of names, numbers and web page/email addresses for parts and technical help. http://www.gmcmhphotos.com/gallery/showlist.php?uuid=weidnerl&dowhat=user

GMC 454 & 8.1L Motorhome Conversions

Dyno Sources, Inc., Jim Rosenburg , 1-360-582-9743, www.dynosources.com

Want a brand new GM engine that will go 200,000 miles with no maintenance required other than normal oil, filter and plugs?

Check out the 8100, 8.1L Vortec engine built for 200,000 miles with 600 ft/lb of torque. Or the 454

that has about the same torque as the 455 Olds; about 525 ft/lb. The 8.1L costs about $15,000 with fuel injection and the 454 costs about $12,500 including fuel injection. The 8.1L conversion requires a raised doghouse (3" higher with a flat top that is stronger than stock, and will support 1500 lbs). The 454 uses your stock doghouse cover.

Additional costs will be: heavy duty torque converter $750; Shuttleworth muffler with complete new exhaust system, $750. The 8.1L with the works is $17,500.

The 454 is currently going through California emissions approval. It is expected to be approved shortly. There are approximately a dozen 454 conversions and a dozen 8.1L conversions on the road. Your new GM engine and GM injection system can be serviced at any GM dealer and most shops in North America!

GET THE REPAIRS YOU WANT (How to get the Most from a Shop)

By Margie Seals, Everyone's Favorite Mechanic
Wednesday, October 06, 2004, 1:00 – 2:00 pm
Email: info@myfavoritemechanic.com, 404-307-0464 www.myfavoritemechanic.com

Margie began her talk with a very colorful and informative biography of her life and how she came to be known as "everyone's favorite mechanic."

Yesterday's shop: You go in with 3 problems and drive out with 4. Shop management has stayed the same. Most of our vehicles were mechanical. You talked with the owner of a small shop who was usually a male mechanic. You were given a guesstimate for time and cost. Most mechanics came in from high school and apprenticed and were paid hourly.

Mid 60s to early 70s HEI (electronics) turned mechanics on its ear. Shops began clamoring for repair manuals for about $100 each. On board diagnostics began going through phases. Computerization meant you had to be able to read schematics and work a computer. The vehicle became the same as driving your laptop computer down the road.

Some things that haven't changed in shops and need to change:

1) Appointments (dropoffs OK), ballpark time to analyze what's needed
2) Walk in repairs
3) Telephone estimates
4) Free estimates
5) Free anything
6) Coupons
7) Cheap parts
8) Discount pricing
9) Customer supplied parts
10) Unrealistic promises to customers
11) Technicians kept hungry and on the bottom

Finding a good shop:

1) Get friend and family opinions.
2) Get a referral from the Snap-On or Mac tool truck for that area
3) Choose a shop with a regularly updated computer for keeping up with TSBs, recalls and repair methods
4) Ask for a tour of the shop. Do the techs look happy? Observe the technicians' tools; look for Snap-On or Mac tool chests and tools.
5) Inquire about employee turnover. Check on comeback (redo) ratio. Ask how long each employee has been there. Ask what their repair limitations, weak areas are.
6) Find your advocate and ally within the organizational structure. Commonly the

shop manager or owner, this person has authority over the repair techs.

This along with tips to being a good customer and danger signals are included in Margie's "Get the Best Vehicle Maintenance Bang for your Buck" pamphlet. Margie has a 6 hour workshop that teaches you to create your own maintenance records, customize your maintenance plans to spread out costs, learn to "speak mechanic", and you will learn how to walk in to a shop and say "this is what I want to do today" and "this is what I want to do in 3,000 miles," etc. You can get more information on line and find out the schedule for workshops and schedule one in your town.

Torque Converter - Manny Trovao

Thursday, October 07, 2004 10:00 – 11:00 am

Beefing up the torque converter: Allison came out with a hub that is all one piece welded together at the strongest part of the converter. Allison is now the standard for torque converters. Sonax is making a lot of after market parts. A plastic stator comes in the torque converter and Manny removes it. The switch pitch uses pressure to move the stator blades to give you more torque. The switch pitch converter is 13 inches also. 1966-67 Toronados and 1967 Eldorados have the switch pitch tranny. It gives you more torque and lower RPM when you need it. It gives you 3-1 ratio as opposed to 2-1 ration for the regular transmission. Manny says it's just another toy and he has it in his vehicle.

There are a lot of other parts that need to go with the switch pitch especially for the earlier models. Manny recommends synthetic transmission fluid, and he uses Mobil 1. You'll only get ½ of the fluid out when you change the fluid.

Running with the temperature in the range from 100 degrees (best) to 160 degrees running down the road is OK. The lower the temperature, the better. The torque converter runs hotter, 300-400 degrees. That scared Manny so he doesn't monitor it anymore!

Lockup converter:
It must be machined for our application. It works when you are in third. It doesn't need oil to spin it because it's locked up. Your regular torque converter gives you 92% efficiency when you're running down the freeway at 55. The lockup TC will give you 100% efficiency, but that's a small increase for the expense of machining, etc. It eliminates the variable stator.

Prices.
The cost to build a lockup converter will be over $1,000. The transmission has to come down. Manny doesn't know if the cost is worth it.

GMC Ignition Systems by Duane Simmons

Friday, October 08, 2004

Duane gave a very comprehensive seminar on the GMC ignition systems. This seminar included a pamphlet prepared by Duane and Bob Lamey. You can read this pamphlet at http://gmcws.org/Tech/dsimmons/ignition/ignition.html.

Duane suggests staying with HEI/Delco for your distributor. The parts are readily available. Other types of ignition systems are described with detailed drawings and compared to the HEI. Many charts and specifications are included as well as trouble shooting for point type and HEI ignition system failures. Finally, there is an HEI General Test Procedure and Preventative Maintenance schedule.

Do It Yourself Fiberglass

by Fay Curtis, Friday, October 08, 2004

Fay ground both damaged areas; one was the flange area on a wheel well and the other was impact damage on the front left side below the windshield and above the headlight. In the grinding process she angled the grinder into the damaged area.

She roughed up the flange area on both sides so she could apply fiberglass to both sides for strength. Fay used old hacksaw blades to brace and clamp a broken area. Fiberglass doesn't adhere to metal, so you can just pull them out when finished. Fay also attached mat to the bare edge flange that was broken off and used saw blades on both sides of the mat to make the missing flange.

Fay prefers mat over cloth for the extra strength it contains; which she tears as opposed to cutting. On the impact damage area she laid in several layers with different widths in the area that is tapered. She saturates both sides of the mat with resin before applying to the damaged area. Fay uses polyester resin (miracle resin) which you can obtain from a bath shop, counter top shop, etc. If you contact some of these places, you can get samples so you don't have to order a 50-gallon drum!

Fay offered many helpful hints along the way. Wash your brushes with 100% acetone. Use a grooved roller to get bubbles out between layers. If you have hole damage, use a piece of cardboard covered with foil as a backing before applying the mat and resin. This will not stick to the foil after curing.

What I Have Done

Hosted by Gene Fisher

Saturday, October 09, 2004 9:00 – 10:00 am

Bob Martin - Smart Tire – Installed a sensor inside the tire that gives you a readout in the cockpit on the pressure and temperatures of the wheels. From Darren Paget. Installed the MSD advance/retard ignition.

Larry Frear - Clearance lights – Purchased from Peterson Mfg, 4200 E 135th St, Grandville, MO., 64030 $7.50.

Den Clark - LED lights for clearance lights less than $10 per light. Contact Den for the name of the company at dacarc@telis.org.

John Sue – enlarged the step from the cockpit. Enclosed it in a box that he now uses for small tools.

Carol Gray – Installed a Pergo floor. Just sweep it out and it doesn't scratch. Don't use water on it other than a damp mop or towel.

Harold House – Uses a 3/8" dowel rod to push the old grease out of the bogie pin.

Dan Winchester – uses micro fiber rags (Costco). You can use a can of water to clean the whole coach. He also installed a keypad entry from a Ford Taurus. Northwest RV, in Eugene, OR has many keypad entry pads $60. A hydraulic boat lift was installed to lift the rear bed.

Larry Weidner – If you want to know how to check your speedometer for accuracy with a bicycle speedometer go to: http://www.gmcmhphotos.com/gallery/showalbum.php?aid=470&uuid=weidnerl

Gene Fisher – Duracool – is a propane/butane mix which replaces Freon – put in 3 cans of Duracool; the kit costs $34, go to

http://www.duracoolky.com/index.html. To buy it go to the Western States Website: http://www.gmcws.org, for the links to purchase: from Worthington AG,

Gene Fisher – electrical access door opener – gas spring. For more information go to: http://www.gmcmhphotos.com/gallery/showalbum.php?aid=506&uuid=mrerf

Bill Brown at carguy@clover.net, is making a vacuum/tachometer gauge combination 740-622-1768.

Ask the Experts

Duane Simmons, Frank Condos, Denny Allen

Saturday, October 09, 2004, 1:00 pm

Where is the best place to mount supplemental fuel pump?

- Duane – don't put anything in the primary gas line. Use it for short periods of time. You might need a bypass.
- Denny – agreed with Duane
- Frank – back by the fuel tank, but he has fuel injection with a return line so he can put the fuel pump in primary gas line. When your engine stops, you want the electrical fuel pump to stop at the same time.
- For a discussion on a comparison on the different brands of pumps and their installation go to gmcws.org and click on links. gmcmotorhome.com and gmcmi.com also have links to information on many different fuel pumps.

How long do you leave your engine belts on?

The length of time belts are safe depends on how many miles you drive, how well the belts are aligned to their connecting devices, how well the tension is adjusted, whether the climate is hot or cold, and whether they are the proper width. Every five to eight years might be a good rule of thumb if the above factors are considered.

- Duane - Gates belts do not fit any longer (9 ½ mm). They're too skinny. The best is the 11 mm wide belt – you will find that in the Goodyear brand (auto zone).
- Frank - Take along a 10 mm open end wrench to the parts store; and, if it slips over the belt then it's too skinny.

When climbing mountain grade, what's happening when he has to shift down into 1st?

- Frank - You may need to adjust your carburetor or go to a different final drive.
- Denny - Maybe your torque converter is a problem.

Do you downshift or use brakes on the downhill grades?

- Denny - Always use your transmission.
- Frank - Manny Travao believes that pressure on the bands in the transmission which are smaller is more harmful and costly than the bands on brakes. He says it's cheaper to change brakes than transmission.
- Duane - OEM brakes are almost as good as disk so the cost isn't worth it. Better brake fluids are available on the market today than DOT 3 and compatible than DOT 3 & 4. Synthetic DOT 5 is compatible with the others.

Does the synthetic brake fluid absorb water like the petroleum based brake fluids?

- Denny – The synthetic is not as absorbent as regular. If you haven't had your brake system flushed, you should.

Where do you find asbestos linings for brakes?

- Duane - Cinnabar and GM Canada. AC/Delco has them, but you have to have the correct part number.

My engine got hot and blew the radiator into the overflow tube. On the radiator, the 9 lb cap is hard to find. I changed the fan clutch, changed the water pump, but maybe it was the thermostat. How did the thermostat do that?

- Duane - Robert Shaw has a full flow with 3 legs and is the best thermostat. GM designed 190 thermostat, 195 in cold country, in Southern California run a 180. Low voltage somewhere in the system can cause problems.

What temperature for the thermostat and a reset switch on the suburban house furnace with electronic start?

- Duane - There is a little switch that is replaceable to make it light. If your furnace won't run: Start the generator and charge your batteries. If charge is too low, the fan won't get up to speed so it won't fire up. If you can't get your generator to start, start the auto engine and the alternator will charge it right up so the generator will start.
- Frank - If your furnace doesn't light in 3 seconds, you need to have a good ground at the igniter point in order for the furnace to run.

What is the difference between a steel crank and a cast crank?

- The steel crank has an "N" on the counterweight.

Editor's Note: Many GMC owners have been interested in making the bogie greaser tool that Gene Fisher has talked about lately. For those who are interested in making one for themselves, directions are given on the website listed below.

http://www.gmcmhphotos.com/gallery/showalbum.php?uuid=mrerf&aid=576

Someday soon maybe I'll have the software (Power Point) and the capability (cheaper prices) to print the newsletter in color. Then I'll be able to show articles such as the above in these pages. Until then, this will have to suffice. – Judy Cherry

Note: Technical seminars and other technical articles printed in this newsletter are provided for information only. What you do to your coach and how you do it is your responsibility.

Please send your comments and ideas for the Tech Center to:

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