GMC Classics
TECH EXCHANGE

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This record of the Tech Exchange is presented as a service to GMC Classics members and guests. Accuracy is not guaranteed. Independent verification is urged.

First, I would like to express sincere thanks to **Byron Maxwell** for writing this column for the last edition of the Chatter. Sharon and I were away, as we are each summer, somewhere on a salmon stream in the wilds of Alaska. So - a tip of the Stetson to you, Byron.

At Uvalde, we had two tech sessions - one for co-drivers (those who drive the GMC motorhome infrequently, if at all) and a second one in our usual format of discussion leader and audience participation. See "Co-driver" Tech Session after "Regular" Tech Session.

"Regular" Tech Session:

John Harvey, Las Lunas, NM, led a discussion on paint technology as it applies to the GMC Motorhome. John is a professional in automotive paintwork, specializing in custom and collector cars. While he has done beautiful paintwork on his own GMC Motorhome, he says he does not offer GMC Motorhome paint work as part of his business.

Here are notes I captured during the discussion:

John reports that Imron and equal quality paints, including the catalysts, is now about $600/gallon. About three gallons are required to paint a GMC Motorhome. John used an acrylic urethane on his motorhome and says it has excellent resistance to the effects of the sun and is about half the cost of Imron.

Clear-coating is not needed on a single color paint (i.e., not metallic or pearl).

John has had poor success using the abrasive approach in removing aged decals; he recommends using a heat gun and solvent to remove the remaining adhesive.

A Corvette panel repair kit can be used to repair fiberglass panels on the GMC Motorhome. If aluminum needs repairing, use a corresponding aluminum repair kit - similarly for steel etc. "Duraglass" and "Tigerhair" are also used to repair fiberglass panels. Use "Bondo" only in the final finishing process. John emphasized the importance removing all contaminants from the panel to be repaired to insure proper adhesion.

The Eastwood Company is a source for aluminum repair materials. The commercial name is "All Metal Aluminum Bondo". It has resin and aluminum particles in its formulation. Use a self-etching primer on aluminum to be sure paint will adhere properly.

The cost of Imron reflects the environmental regulations that apply to its use. The total cost of Imron and all materials related to its use could approach $2100 for a GMC Motorhome - again materials only.

Remove silicon sealer with a grease and wax remover.

3M # 5200 was suggested as a sealant product; it is available from marine supply houses and is reported to be much more permanent than ordinary silicone sealants. It cures in about 24 hours and will bond to most materials, except glass. It can be sanded and painted.

Use auto body seam sealer along the motorhome rub rail. John said he makes extensive use of epoxy-based seam sealers in his paintwork. The normal cure time is about 30 minutes.

An economy paint is acrylic enamel. Its life expectancy is about three years when exposed full time to the weather. Any name brand catalyzed acrylic enamel will work well and have long life if the vehicle is kept garaged and exposed infrequently to the elements. Do not pay additional for "baked paint" because the paint cannot be raised to a high enough temperature to get the effect of factory baked paint (that is done on vehicle bodies before any temperature-susceptible items are

TECH EXCHANGE

installed). The catalyst in the acrylic enamel accomplishes the same result as factory baked paint. The cost of the paint and associated materials is about 1/4 that of Imron - again materials only.

John concluded with the observation that Chrome illusion (paint that changes color with the direction of viewing) is about $32/ounce - more than $1000/gallon!!

The audience enthusiastically thanked John for a very informative and interesting exchange on paint technology.

After a break, the tech session continued with a discussion on possible factors involved in failures of rebuilt engines used in the Motorhome. **Bill Bramlett** agreed to be the discussion coordinator on this subject. He led off by suggesting that the failures are not likely caused by poor machine work or dimensional inaccuracy; today's shop practices and machine tools are superior to those used when the Motorhome was originally built .

Bill recommended that owners be alert to the risks associated with "overtuning" the engines to extract higher performance from them. That can cause higher than design loads on the structural components of the engines (i.e., pistons, wrist pins, connecting rods, bearings, crankshafts, etc). The result is often a premature failure. Bill suggested limiting the total spark advance (sum of vacuum and mechanical advance) to a maximum of 39 degrees for the 455CID engine.

Byron Maxwell said that the learned informally years ago from a member of one of the GM engine design teams that 36 degrees would be a good guideline for the 455 CID engine to avoid inaudible detonation. He said he can see the inaudible knock sensor screen on his computer for his multi-port fuel injection system and adjusts the timing accordingly.

Note: GMC Motorhome Service Manual 7725S for the Federal version of the '77/78 403 CID engine specifies 24 degrees total advance and 40 degrees for the 455 CID engine. These specifications, however, were based on fuels in use at the time of original manufacture and likely would provide for smaller total advance if based on today's fuels.

A timing light that permits the total advance to be "dialed in" at the correct RPM for total advance yields the most precise result. Two sources for this tool are Craftsman and Snap-On.

Bill cautioned that harmonic balancers can often "slip". When that happens, the top dead center reference point for timing the engine will be displaced. Timing the engine will either be impossible or at best incorrect. Replacement of the balancer is the best remedy but a new TDC point can be established by determining the TDC position of the cylinder used for timing and marking the balancer accordingly .

<u>Tech "Rambles" (post session discoveries and input from owners)</u>

Oil pressure gauge sender part number: Standard PS154 sub number P3A (from **Chuck Ohlhausen**).

"Dirty power" from OEM alternators can damage aftermarket multiport injection system engine management computers (reported by **Byron Maxwell** and **Don Tracy**). The solution is to retrofit the Motorhome with an alternator designed for use with engine management computers. I subsequently learned in a discussion with Jim Bounds that the OEM alternator can be rebuilt to modern specifications for multiport fuel injection electronics. Jim owns the GMC Coop Service Facility in Orlando, FL. See http://www.gmccoop.com/dailypose.asp for more information on this approach to solving the problem; go to the entry for 02Nov04 at the website.

An interesting grille (see picture below): **Ken Rose** modified this grille that was originally designed, fabricated and owned by the late Elam Fayard. Ken added the aluminum bar inserts.

TECH EXCHANGE

Recently Acquired Member Coaches:

Joyce and Willard Murdock's 1977 28' Stretch (formerly an Eleganza II) was stretched 2' behind the rear wheels; acquired about six months ago.

Margaret and Norman Truede's 1977 Birchaven (acquired in March04) is a nearly unblemished, mostly original coach).

"Co-Driver" Tech Session:

The co-driver session was based on the following outline (distributed to participants).

Liquids used in GMCMH (and generally all motor vehicles):

Puddle under coach? What is it? What is the source?

Identify by color, odor, and feel.

- Transmission fluid (red/new; brown/used)
- Coolant (amber or green)
- Engine oil (amber/new; brown/used)
- Final drive gear oil (brown/distinctive odor)
- Brake fluid (amber/new; brown/used)
- Power steering (red; about same as automatic transmission fluid)
- Chassis grease (most is black/thick)
- Windshield washer fluid (blue)
- Fuel - gasoline

Know locations to add fluids and how much:

- Transmission - engine running:

  OK at cold/add 1 qt;
  OK at hot/full - **do not overfill**

  (dipstick:original - under floor/driver side; accessory—access/driver side panel)

- Engine oil (5 qts./6 w filter; OK down to add 1 qt./hot); add only when 1 qt. low

  dipstick: under driver side panel (careful re-turning stick to long housing)

- Coolant (**caution — check only when cold**); maintain at cold level in coolant overflow container or at top of radiator neck

TECH EXCHANGE

- Brake fluid (maintain at ¼" below top of reservoir) - change annually
- Power steering

  OK at cold/lower mark on stick
  OK at hot/upper mark on stick
- Final drive - maintain level at filler hole

Vapors :

- Tailpipe (blue/oil; white/cold engine is steam; black is overly rich carb/fuel injection)
- Coolant (white "steam")
- Tires (blue/black with major failure/destruction)
- Transmission (black/overheated badly)

Handy Tools to Carry in Coach:

- Drivers (flat blade;"phillips"; torx; multiple set; "allen" wrenches; ¼", ⅜", ½"ratchets)
- Open end wrenches
- Putty knife
- Hose clamps (stainless steel)

Miscellaneous:

- Grease fittings ("zerk"; used to inject grease into each of 17 locations; spring-loaded seal to allow grease in but not out)
- Special emphasis:
  1. Bogie pin grease fittings between rear wheels—two each side — "new" grease must be visible at outside AND inside of housing
  2. Two fittings on steering shaft under driver side hood panel
- Brake bleeder fitting (located each wheel back plate.) **NOTE:** brake fluid may **BOIL** if brakes are overused, especially if fluid is not changed regularly.
  Fluid absorbs water!! Therefore, must change regularly.
- Refueling: do so at ¼ level on fuel gauge. Set nozzle at lowest setting. Remove nozzle at first shutoff to avoid overflow.
- Know how to remove engine hatch (between driver and passenger seats)
- Tire pressure: generally maintain at 65 PSI. Check cold. Visually check at each stop or if vehicle handles erratically.
- House water pump and tank vs. RV park hookup. Some owners object to risk of massive water damage if an interior line breaks while hooked up.
- Know location of engine and house batteries. Will need to check electrolyte level if batteries are not maintenance free. Minimum six month intervals for checking.

Acknowledgements:

Faye and Bert Curtis did a similar presentation at the GMC Motorhomes International Spring Convention in Las Vegas, NV in March 2004. Dale Ropp has conducted driving seminars at GMCMI conventions. I reviewed notes provided me by participants at their presentations in developing this outline .

Your club welcomes your comments and suggestions for Tech Exchange subjects. You are also welcome to make a presentation on a technical subject of your choice. Advise what you would like to present and when.

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