

Linder Technical Services

# Networking Newsletter



September 2006

## The Road To Bonneville.....

**9-2-06:** Here it is, only 11 days from blast off. We just test ran the spare motor for the last time and re-torqued the heads and drained the coolant. Got it on the stand and saw there was no pilot bushing in the flywheel. Another one hour job to get done! Looks like we may have it trimmed down to 6 large tubs of stuff, parts, sealers, liquids, tools, uniforms(driver) and misc. comfort items. Our latest creation is a 1993 International 66 passenger school bus conversion. (I wish I had one of these when I was younger, might have been a Californian??) Better homes and buses just called and are wanting to feature our interior on the cover of the trailer park magazine they publish each spring. And yes, the wife did get a new couch out of the deal. The old brown recliner belongs to Donnie and he won't travel without it.



**9-3-06:** Looked at the calendar this morning and we leave in just 7 days! WOW, it's Sunday on a holiday weekend and I am working (enjoying every minute of it). Took the truck down to the truck stop and topped the fuel tank off (65 gallon tank), checked all fluids and went shopping at the auto parts store for more trans and rear end lube, and some other little stuff I had on my list. Terry Engle came by and finished the bed trim from our paint job the other day. I loaded some heavy stuff using the winch (pretty cool unit) and welded the generator to the frame (Bubba Anti-Theft) and built a box for the spare transmission. Terry and I took turns wearing the vintage pit helmet to keep the salt racin' mood going.



**9-6-06:** What a day! With the conference getting near, (opening tomorrow evening with the cookout) books are being made and I still have a small list of tasks to complete before our Sunday evening trip to the salt flats. I feel blessed with a great group of people both employees and friends.



The entire week has been a zoo around here but overall very smooth (tempers actually have been very good all week). One of my remaining tasks was to calibrate our 140 mph Steward Warner speedometer on our chassis dyno. Our dyno has a neat little program where you run the vehicle at 30mph on the speedo and then at 60mph on the speedo and it does a printout telling you how correct or incorrect you are. Ours was off 6 mph. My dyno was built by Mac Vandenbrink and this feature is a cool deal. A small adjustment (we used an adapter that was adjustable) was made and it was correct and on the money. Next, I took the truck next door to check the loading ramps and we (Donnie Basala and I) decided that we should take one more shake down drive to verify the new front sway bar and additional leaves in the springs had stabilized the front end. Also, we had changed the header collectors and tail pipes to 3" and the truck actually sounded better as well. Off we went on interstate 74 to Brownsburg with somewhat light traffic and only one visible radar cop right as we left speedway and headed west toward Brownsburg.

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## The Road To Bonneville (Cont. from page 1)

The truck pulls well with the 350 rear axle and cruises at 80 mph really good. When the traffic allowed, we got on the throttle and the truck pulls pretty steady up to 102-103 mph. We did this a couple times with a top speed of 104 mph at 4200 rpm. There was more there but the traffic wouldn't allow the run to last that long. We blew by one older lady in a white van and when we slowed back down, she went by and shook her finger at us with a grin.

Back at the shop, we loaded the truck on the bus for the first time and strapped it down. Once loaded it was almost lunchtime and we decided that a ride to Lebanon, Indiana would be a good test drive. Plus, there was a great buffet up there for lunch! The ride was good and the bus will cruise at 65-70 mph with some slow down on a long grade to 60-65 with the other Semi's in the lane. On the trip I remarked that I thought the brakes felt a bit odd but with no experience it may not be a concern?? After the 50 mile round trip, Walt cleaned the radiator and noticed a small brake fluid leak at the master cylinder brake switch. It appears that fluid is coming out of the brake lamp connector. We cleaned it up and washed the area and took the bus out again for some wood at the lumberyard for out pits on the salt. At the 3rd red light, the brakes went to the floor and I had to use the emergency brake to stop the truck!! WOW, what a feeling! I limped the bus to a friend's shop down the street and we checked the brake fluid to find the master cylinder was empty and when filled, it ran on the pavement out a broken, rusted-out front brake line. Even though it would cost us extra time and effort to get the bus fixed and ready to go, We both were really happy to see it here and now instead of the middle of IOWA or out west on our trip. While we limped the truck back to our shop, the decision was made to go get a new brake line and brake switch. Walt did the new line while Topper and I went to International and bought the new switch. Once installed, the new line worked well the brakes felt better but still leaked thru the new switch. Another trip back to International for a complete assembly. After installation and bleeding, the truck now has perfect brakes. While all this was going on, my son, Scott, installed a new CB radio and a satellite car pack so we could use Scott's satellite radio on our trip. WOW, what a day! BTW, after one test drive to a breakfast shop down the street, I love the radio set up already.



9-11-06: WOW, here it is almost 26 hours after leaving Indianapolis. Sounds like an awful trip to most, but actually with the bus it hasn't been that bad and has been somewhat of an adventure. Leaving Indianapolis at 4:00pm Sunday afternoon we all knew that to get to the salt by tech day (Tuesday), we would need to drive straight thru. Scott, Stan and I are in the bus with me driving and Donnie and Ed are in the Dodge dually pulling the tri-axle support vehicle. I drove the first leg into Illinois toward Iowa and as darkness come upon us, the trip was going very well. The big ole bus (now called the Tennessee Toter home) ran very well, but appears to have a very short fuel range and smaller than advertised (by previous owner) as we were showing empty before we got into Iowa. We stopped for fuel, cleaned off the bugs and it only took 30 gallons of fuel. Stan took over the driving chore and Scott and I started watching "Smokey and the Bandit" on the DVD player. Pretty cool sitting on a couch and a recliner at 65 mph laughing at the movie. Stan could hear and watch a little bit thru the reflection in the side windows. (still safer than a cell phone) Ed and Donnie tracked us very well and off into Iowa we went getting darker as we went. Our second stop was again short as the fuel gauge read empty, but it only took 30 plus gallons of fuel. If you look at a map, we were crossing states the long way and each state is approx. 400+ miles wide. We cruised along in the night with some hit and miss rain. I looked once at the weather map of the USA on my laptop internet and the only rain in the entire USA was where we were! Scott was at the wheel on into Nebraska and our next fuel stop I took over and Stan fueled us up. I noticed that now the fuel gauge reads full and the bill was for 48 gallons. It appears that we (Scott and I) hadn't been filling the tank!

## The Road To Bonneville (Continued)

What a difference that made with our range just to know we actually had 65 gallons of fuel and the gauge was actually very accurate!! Somewhere in Wyoming, we experienced our first issue of the trip. We fueled at a stop and started to leave with Ed and Donnie behind us when Ed yelled into the walkie talkie STOP, STOP! I was driving and stopped just outside the station, when Stan said "Holy Bleep" a wheel fell off Ed's trailer! Sure enough, Donnie was driving and Ed was rolling an aluminum wheel and tire across the parking lot! Beats the hell out of all us how this happened, but it did. Ed found 3 of the lug nuts in the lot next to the diesel pump and Scott actually found the other 3 (it's a six lug) at the entrance to the lot. It took a few minutes to rethread the lugs and roll the trailer up on blocks to replace the wheel. We had loctite in the bus and we re-torqued the lugs and hit the road. If this had happened earlier in the evening, the tire & wheel would have just shot down the highway and we wouldn't have ever been able to find it. We cruised pretty well thru the evening. All of us had by now taken a nap on the couch and the recliner with one guy driving and the other two snoring to the country music!! Then we hit Wyoming. Not only is it a long state, but it has some pretty big mountains and long mountain grades. Our dinner stop in Wyoming turned up another flat tire on Ed's trailer. We replaced it with a new spare and tried to repair the old one with a plug but the belt was broken and it knotted up. Asking around the stop, we found a Snap-On dealer who took us down a back road to a tire center. They mounted up a new tire in only minutes and away we went! We finally got to the top of the continental divide and started our down hill trip. It was a welcome relief to the long dragged out up grades I looked over once and Stan has us going 80mph with Ed and Donnie in front of us heading over the grade. What a beautiful part of the country. At this point we have been on the road 25 hours and are about 150 miles from the Utah border. Our friend Larry Bilbee just called and he has already driven thru Salt Lake City and will meet us sometime this evening before we arrive in Wendover. The sign says Salt Lake City 50 miles. Scott is asleep and Stan says to me, "do you smell burning rubber?" I did, but didn't think it was from us and then we saw Ed put his flashers on. Dang! It was another blown trailer tire. This makes our 3rd gremlin today with the trailer tires. All the tire issues took a little bit of time, but we were happy to finally arrive in Wendover at 3am. We should be one of the first vehicles in tech tomorrow morning. The bus is a traveling machine and performed very well, even if we did hit the slow lane a couple times in Wyoming.

**9:12-06:** Made it to the track today and the salt looks the best it has in many years. We set up our pit area and towed the truck over to the tech line for tech inspection. Tech went well with some discussion on using NASCAR lug nuts next year. Actually, the rule book doesn't require them on tires less than 29 inches tall and ours are 28.5, but we do plan on using them next year just for safety. We spent most of the day checking and discussing our run set for sometime tomorrow. Ed Starr (owner of Magtech in Speedway, IN) got out the computer he uses on Sprint cars and calculated the altitude density ratio and we all had a discussion in regards to the changes here on the salt. It appears our set up with a good air fuel ratio (in Indianapolis) is approx 20% too rich here. Ed feels that we need to jet down three sizes to run the best we can. At this point we have decided to get in a run and see where we are before trying a jet change. I put in new plugs and warmed up the engine while Donnie and Ed worked on the extra hood with the scoop. Donnie also got the fuel cooler hooked up to the fuel tanks and we drained all fuel out and headed out to the fuel truck that was supposed to open at 4:00pm. We tanked up with 8 gallons of EMC 111 octane racin' fuel, they sealed and dated our tank and we towed back to the pits. We left the track about 5:30 and headed for the Rainbow buffet in Wendover and had some dinner and hit the hotel for some much needed showers and sleep. Tomorrow is the big day and we should get in an early run that will really tell it all!!

*Find out what happened during their Bonneville runs and whether or not they broke the record in an upcoming newsletter.....or log onto: [www.gasolinealleyshops.org](http://www.gasolinealleyshops.org)*

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## Fuel Injection Update From The “Wizard”

### INTERNET INJECTORS

I think I should have titled this article “Buyer Beware”. It’s the typical story, well we hear it a lot. Someone buys a set of injectors over the internet. They put them in their vehicle and find out that there is something wrong with the injectors. This may be that they are the wrong application, flowing to rich or lean. It could also be that the resistance of the injectors is not compatible for the drivers in the PCM. In some cases they have the right injectors, but the injectors are not performing properly. Here is one of those cases.

The customer had us look up the casting number he got off a set of injectors. It matched his application. He said the truck would start and die. If he added some carb cleaner to it, the truck would stay running, but ran rough. I suggested sending the injectors in for evaluation.

When we got the injectors, I noticed they looked to be almost new. I put the injectors on the ASNU machine and thought the spray looked fairly uniform. One of them did spray to the side a little but I couldn’t see this causing the problem he was having.

What a surprise I got when I flow tested them. They were all over the place. No two injectors flowed the same and only one flowed to our specifications.

I gave the injectors a cleaning in the ultrasonic tank and they cleaned right up. Now the customer can install a Flow Matched set of injectors with no more dying or rough running problems.

There isn’t a day that goes by that we don’t get asked, “Do I need to replace all the injectors” and “What are the advantages of a Flow Matched set of injectors?”. We tell each and everyone the same thing.

- € All of the injectors have been operating under the same conditions, using the same fuel, for the same amount of time. If one or two are failing now, how much longer will it be before others will follow!
- € Replacing all the injectors with a Flow Matched set ensures that the PCM is in full fuel control and the engine is operating at its most efficient.
- € Replacing all the injectors prevents comebacks, unwanted down time for the customer and additional labor cost.

**LTS is always available to test your injectors, at NO CHARGE, if you suspect a problem. All LTS Flow Matched sets of injectors are within 2% of each other.** Remember: Most injector manufactures use a 5% tolerance. This means that eight new injectors off the shelf could have a 5% difference right out of the box.

