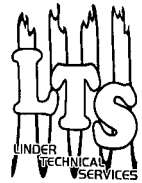


Networking

Newsletter



Dodgester “Krylon Special” Road Trip

Previously we talked about the 1918 Dodge roadster in the July newsletter. Since then, the car has had a few short trips just to check it out and shake it down. After a hundred miles or so, the front spring was hitting the axle, the gas tank had a leak at the filler neck and the carbs kept getting some foreign material in them. (all my fault I am sure :)

The Midwest’s largest show the “Hunnert Car Pile up” was coming up and I had committed to my friends that I was going to drive the Dodge the 209 miles to Morris, Illinois rain or shine.

A few last minute repairs completed my list of stuff to be fixed prior to the trip and I was ready, or at least I thought I was! Three days before departure I noticed the rear axle had developed an axle seal leak and grease was all over the wheel. Also, the rear carb began to flood over when hot causing a very hard hot start problem. Wow, I really didn’t have time to fix any of this as I was heading out to teach a two-day OBD-II class in Evansville, Indiana. I took a short drive up the street to Walt at Indy Auto Specialists (a fellow hot rod dude) and he agreed to take the car, fix it and drive it for a couple days to check it out.

Thanks Walt!

Friday I had a goal of a 3:30pm departure with the guys for the trip North. John and Dustin Cooper (Susan’s husband and son) were both driving up as well. John was driving his 1955 Chevy Truck and Dustin was in his 1955 Desoto named Pricilla. Tom Culberson would follow us in his 440-powered custom Lincoln named Loretta. Remember when people named their cars? Just for the record, all of these guys had heat and a top. My car was loaded with a couple days worth of jeans and winter wear as I expected the trip to get kinda cold, at least in the evening. I also expected rain on the way up towards Chicago as well after watching the weather forecast. I met up with the guys in Brownsburg, Indiana (just a few miles west of our shop on Gasoline Alley) and the route chosen was I-65 North, then turn off on highway 30 over to Morris, Illinois. Once on the interstate, we cruised at about 60/65 mph most of the trip and my 225 slant six ran really great the entire trip.

Rain started to fall around Lafayette, Indiana and didn’t stop for the rest of the drive. I have a new respect for roadster drivers in the rain now, and all in all it wasn’t as bad as I expected! I did decide after over an hour in the rain that maybe I needed another 5 inches of windshield or lose 50 lbs to allow me to get lower in the front seat! I never ever got cold and with some gloves, goggles and a hat pulled really low on my head we proceeded on. WD-40 on the ignition system kept me running right along in the rain.



Ever hear of a “nail head Buick” engine?



How about this 1939 Oldsmobile straight 8 with 3 carbs and straight pipes

Analysis from the “Guru”, Jim Linder

Some of our readers may have seen this story on the technicians forum on iATN located at: <http://members.iatn.net/forums/read.plex?f=forum12&m=19782>. I wrote this post for 2 reasons:

1. Part of what is being taught across the country is just plain wrong as many automotive instructors bad-mouth current testing as a valid test. (That’s their problem I guess. If you don’t understand it, bad-mouth it)
2. I felt the technician theory section of iATN would make a nice reference for anyone wishing to actually learn how to use current ramping as a tool and add another bullet to the gun needed to fix some of these vehicles we see from time to time. So with that said, let’s discuss this vehicle.



The vehicle is a 1994 Infiniti with 104,000 miles on the odometer. The customer complaint is the engine runs rough at all times. The car has been diagnosed a couple of times by a local dealer as needing injectors. (Don’t they all? >) Also, the quoted price to repair the vehicle has been very high at each repair shop. The owner of the vehicle owns a business that is nearby and I happened to discuss this car with him one day and said I would be more than happy to look it over if he wanted another opinion. After some time had passed, he dropped the car off at our shop and agreed to leave it with us for a couple of days.

When I started the engine to drive into the service bay, I noticed that it really does run rough as if one or more cylinders are in fact missing! I raised the hood and used a procedure I call “the path of least resistance”. What this means is using the easiest methods of testing first and then resorting to the hard stuff only if needed.

Example of “the path of least resistance” testing:

I would never test the fuel pressure first on a car that didn’t have a test port, and I would never use an ignition scope on a system where I can’t even see the ignition coils! A scan tool is useless on a vehicle that doesn’t have a data stream and some DIS ignition systems don’t lend themselves to scope testing as well. There has got to be some common sense used here somewhere. For years I have sat in classes and listened to people teaching voltage drop etc., knowing there was no way that particular test would ever be used based on the difficulty of the hook up alone. Get real! You know what works and what doesn’t.

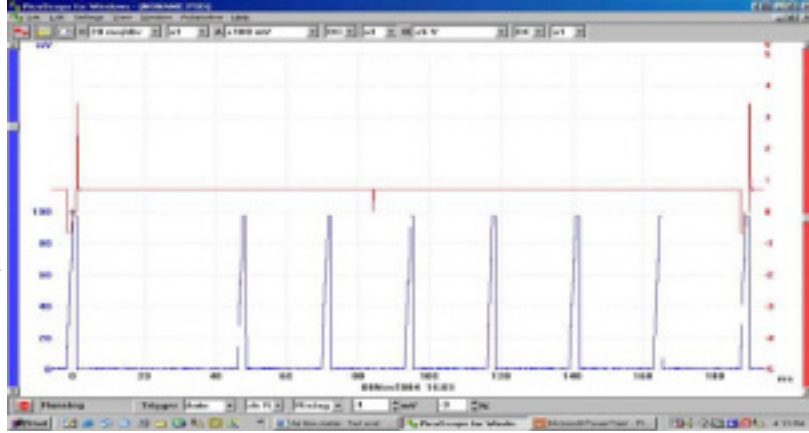
Raising the hood on this vehicle shows a V-8 engine with coil on plug ignition (covered and concealed), individual fuel injectors (also covered very well) and an underhood relay panel (passenger side fender well). Every part looks pretty well concealed with little test positions exposed. At times like this, I often wonder why I took this job in the first place! Now system knowledge and pattern failure analysis thoughts start taking place. This car uses a very problematic fuel injector and seems to have very few (if any) ignition failures. (The C.O.P. ignition system on these engines has been very, very good) Knowing the injectors could be open or shorted on a couple of cylinders and seeing the fuse and relay panel made the “bullet” of choice the low amp current probe and my Pico scope cabinet.



The fuse and relay cover came off easily and the underside of cover shows the fuel injection relay location. I removed the relay, placed my fused jumper lead across the fuse, zeroed the low current probe and set up the Pico scope to see the injector current. In this case, I also grabbed the one injector I could see sticking out under the plenum and triggered my scope with that injector.

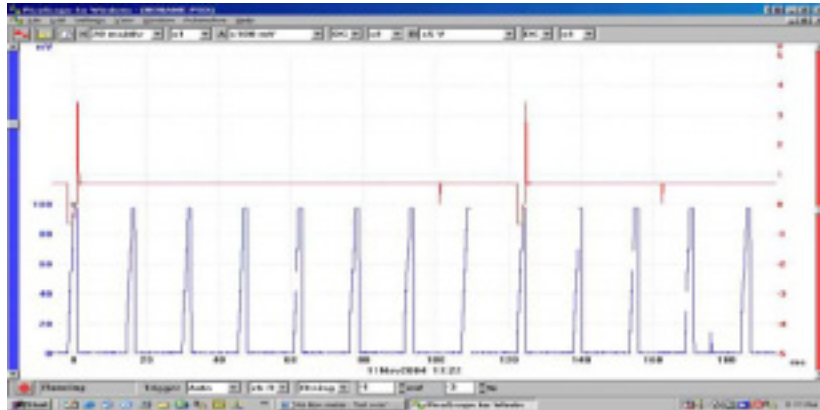
Analysis from the “Guru” (cont. from page 2)

WOW! After start-up we can see that one injector is not showing on the waveform at all. Not only that, but we can also use the sync injector and determine that the open spot (based on firing order). It happens to be on cylinder #2. Must be my lucky day. Not only did we find the problem pretty quickly, but it also happens to be one of the only fuel injectors that we may be able to change without removing the intake plenum! Not only did I luck out here, but Mike Grogan (from Grogan’s Master Auto Care) just happened to walk by at that point volunteered to change the injector! Since Michele is off for a couple more weeks and I have been pretty busy, it sounded like a good plan to me. A new injector had to be ordered (as we don’t find very many good Nissan cores) and when it came in, Mike installed the unit. The old injector was open as we had thought.



Now after the IATN post many questions (which led to good discussion) came up:

Why didn’t we scope the ignition system? We didn’t scope the ignition system based on difficulty and concealed parts. Also, I never once felt this was an ignition system problem. A good ignition waveform would have told me nothing other than we had a very lean cylinder on #2. We knew that from the injector waveform.



Why wasn’t a scanner used? I wouldn’t even know where to hook a scan tool on a 1994 Infinity and certainly wasn’t looking for a code etc. This engine shook, lets fix it!

Why only one injector? That’s a tough question when you own a fuel injector reconditioning business. We all know that a set of new injectors should be used whenever it is possible. We all know the reality of the vehicle coming back soon with another defective unit, and we really wish to sell a set to the customer. In this case at 104,000 miles, the engine only needed one to run smoothly and I explained the process and drill to the customer in detail. He elected to gamble on replacing only one. After all, I charged him labor to install plus analysis time to find the defective unit. That really wouldn’t change if it comes back, in fact the labor would be much higher, as the next time I might need to pull the intake top.

Summary of repair:

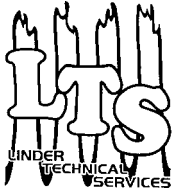
This problem was common on this type of vehicle and these units fail quite often. Based on the ease of use the low current probe, in this case it was the weapon of choice!!

—Jim Linder

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Dodgester Road Trip (Cont. from page 1)

Another issue that proved to be a bit interesting was the bias ply tires scooting around in the rain, no weight (very light car) and the traditional bias tires were a challenge from time to time, not to mention the lack of fenders. We arrived safely in Morris, I wasn't too wet and the entire adventure was something I would do again if needed.

The "Hunnert Car Pile Up" is a *Traditional Hot Rod show*. That means that the cars that are admitted into the show are traditional 50's style hot rods. This means no billet, digital wonders are allowed in the show area. It sounds mean, but it really makes a great group as the usual trailer queens are not allowed at the show. 99% of the vehicles are driven to the show, not brought in on trailers (some from the east coast and further). This has got to be one of the coolest shows I have ever attended. Period engines, old cars, hand built out of old car parts (not the usual 1-800 buy some stuff) and most didn't even bother to wash the cars shown at the show. Over 600 cars all parked side by side (I couldn't have left if I wanted to) with spectators crawling all over each vehicle for the entire day. No lawn chairs with car owners sitting next to the cars because everyone was checking out all the cool ideas and methods used to construct each car! I took over 200 camera shots of just cool ideas! How about a V-12 GMC engine made in the early 60's for the big GMC trucks! This engine got 2 mpg, but would pull anything of the day. How about a few carbs added and some serious headers in a old car?



More pictures can be found at: <http://www.hunnertcarpileup.com/main.html> I am making plans for next year's show. Maybe I'll see you there?? —Jim Linder