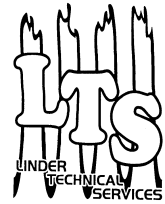


Networking

Newsletter



TECH TRAINING

Jim Linder
The Injector "Guru"

The year 2000?

Who ever thought we would write this one away in history?

This year has come and gone very, very fast! Faster than any of us ever imagined. **LTS (Linder Technical Services)** trained a few thousand technicians this year and will do even more next year.

Our **DATA (Dynamic Auto Test Analysis)** Center group finished a one year **GM Specific Fuel Injection Service** class that went very well. Our newly formed daytime groups remained full all year. Another level 2 group received **ICERT (Indiana Certified Emission Repair Technician)** status. Congratulations!

Besides our local year-long training, we completed five one-week "**Guru**" classes, a weekend "**Guru 2**" class (for those completing Guru 1) with 50 technicians, a two hundred technician "**Service Conference**" and as many out of state seminars as time would allow. We were pretty busy to say the least! And yes, we have scheduled "**Guru 3**" for February of 2002.

Our schedule for 2001 is now complete for our local classes. We have once again added new daytime class sessions to the schedule.

(All of our technician training is now available during daytime hours!)

We have added additional "**One Week Guru**" sessions to meet the demand and designed two new "**One Week BMW Guru**" sessions for the Independent BMW Association. Our newest "**Fuel Injection Service**" class will be available at remote trade shows and seminars along with a new trade show display from the Fuel Service Section of our company.

Our 6th annual Technician Service Conference is scheduled for September 14th, 15th & 16th and promises to be bigger and better than before.

Michele Winn (*the Analysis "Sleuth"*) has joined the ranks as an Instructor and will handle our daytime level 2 sessions. Michele brings her day to day analysis experience to the class as well as a high level of enthusiasm for the electronic service business. Welcome Michele!

Our **Gasoline Alley training facility** will receive some changes for the new year. All of the chairs in the classroom are being replaced with new roller chairs with arms. Each work table will have a built-in DSO and be wired with circuits. A new class limit of 12 seats per class has been established (down from 15). All white boards are being replaced with a new single wall "media" center which will include a large screen video display with built-in Internet and Computers for the latest ESI (Electronic Service Information).

One of our 2000 goals is almost complete. We now have "Flash programming" available for GM, Ford and Chrysler to include Off-Board for the GM product line. A new flyer is being developed to explain this new service from LTS.

Look for all this to be completed by the start of new classes in February 2001.



Analysis from the Sleuth (Michele Winn)

The case study this month is a 1995 Buick Roadmaster with a 5.7L engine, automatic transmission and approximately 52,000 miles. (Fig. 1) The customer complained that the vehicle would intermittently misfire at idle and sometimes on acceleration. The vehicle had been to several other shops in the area who could not duplicate the problem.



Fig. 1

A lengthy test drive only confirmed what others had said. The vehicle was running great! I pulled into the stall and hooked up the Allen SEA for a full system test. As expected, no problems were found during the test. While I was un-hooking the vehicle from the scope, I felt the engine start to misfire. Jim had been teaching a GM class while I was working. He decided to take a break just as the vehicle began to run badly. One of the guys walked over to the car, looked around under the hood and said, "I think I see the problem. Injector #7 is unplugged!" He plugged the harness back on to the injector and the car seemed to smooth out. Jim suggested checking for codes with the Tech-2. Only one code was found.....Code 18, Injector Circuit. This was not a big surprise to anyone. We assumed this code was set because injector #7 had been unplugged. The code was cleared and everything seemed to be ok. A few minutes later, the car stumbled and started missing again. The Tech-2 was still in the front seat, so we ran an injector balance test. Sure enough, injector #7 was dead. The harness was plugged in solidly this time, but I removed it to take a closer look. I noticed the terminals were bent and probably not making connection with the injector. (Fig. 2) I consulted the injector "wizard" and he had a replacement connector. A couple pieces of solder, some shrink tubing and we were ready to go. I started the engine this time sure that the problem would be fixed. No such luck. The car was still missing. I checked for new codes and I had a Code 18 once again.



Fig. 2

It was time for Jim to go back to class, so I was on my own. Jim plugged in WebTV and decided to check out this problem on iATN. He did a search of the e-mail archives and came up with some interesting information. It turns out that this same problem had been discussed by three different people. All were Buick Roadmasters with the 5.7L engine, all had an intermittent misfire and all of them had set a Code 18. Apparently there was a TSB for this condition (# 43-81-48). The models effected were 1994-1995 Roadmasters and Caprice's. The customer complaint may be flickering instruments or lights or engine hesitation or stalling. What causes this to happen? Under certain conditions, the battery cable connection at the underhood electrical center stud overheats, melts the plastic cover, the plastic stud housing and/or the stud itself and results in intermittent loss of power. The condition is more likely to occur if extra electrical loads have been added to the vehicle. In this case, everything appeared to be stock.



Fig. 3

I called the customer and advised him of the bulletin and of our findings on iATN. He quickly agreed to the repairs, even though I did not give any guarantee that this would definitely fix his problem.

The fix called for several parts (available only thru the local dealer). When I began taking everything apart, I could definitely see marks on the bus bars where they were discolored, probably from heat. (Fig. 3) The plastic cover that protects the stud was also melted. (Fig. 3) The job called for one hour labor and it can easily be done in that length of time.



Fig. 4

The customer was happy to pay for the repair and has not been back with a complaint. In this case, the iATN was a valuable diagnostic tool!

IGNITION SYSTEM CURRENT RAMPING “the project”

MISSION STATEMENT :

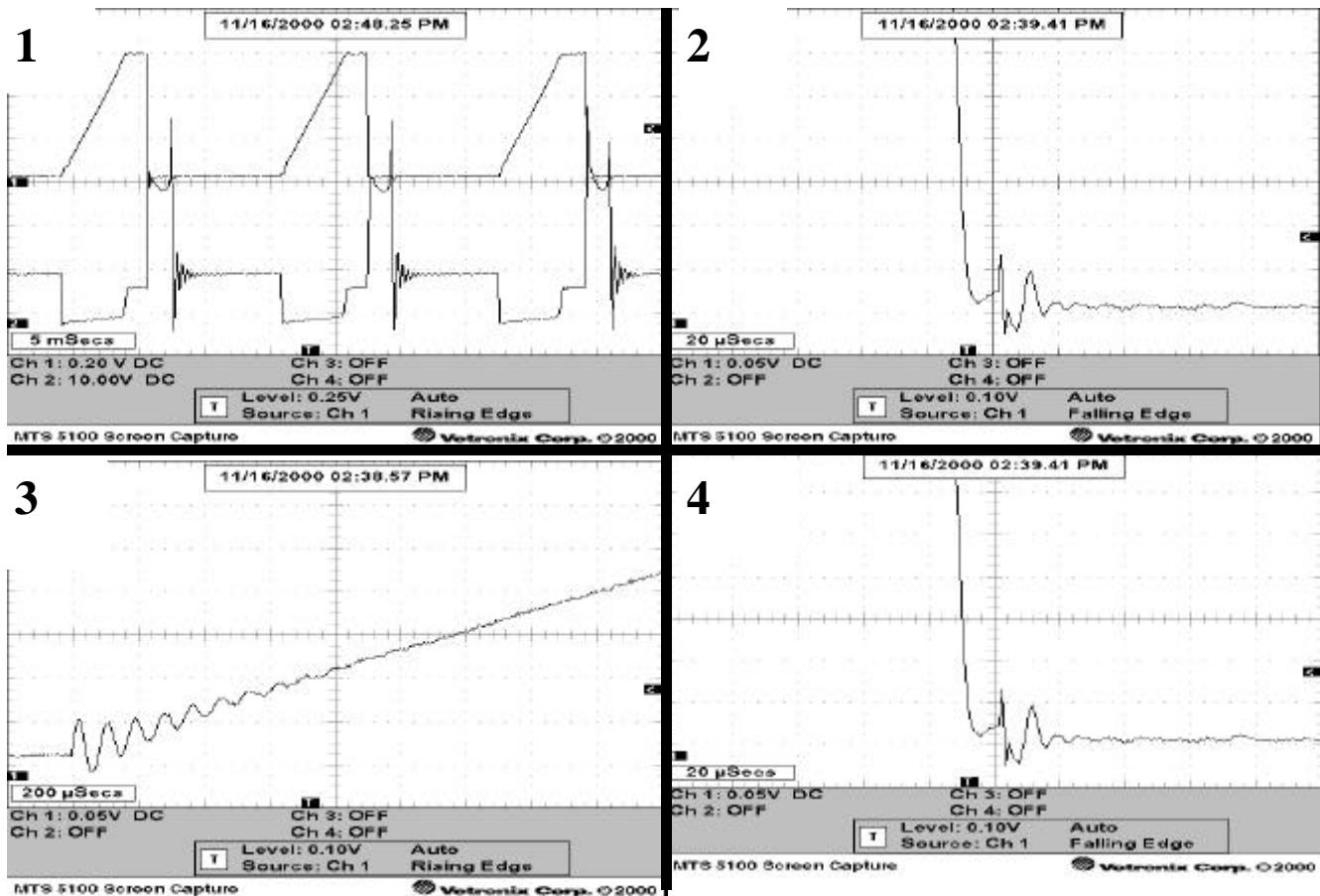
The overall mission is to establish a useable “standard” method of exploring the automotive ignition system using a low current probe and a dso hooked to the primary feed circuit.

This “standard” should include the utilization of any and all test equipment currently available to the technician in lieu of buying more test equipment.

For the sake of discussion this current waveform will be viewed in four distinct patterns and viewpoints.
(voltage and time may need to be changed based on equipment)

1. **MULTIPLE CYCLES OF IGNITION...** a setting that displays all the ignition coil firing events on a single screen...i.e: a six-cylinder distributor-equipped engine would display six current events, a four-cylinder would show four, etc. A late six-cylinder would show three coils on a distributorless system.
2. **SINGLE CYLINDER CYCLE OF IGNITION....**a setting that displays a single coil firing event of the ignition system. This waveform should fill the entire screen for best overall viewing of the total cycle of the ignition coil operation.
3. **ON SIGNAL–ZOOMED-....**a setting that would positive trigger a very much enlarged view of the actual ON signal of the ignition cycle. Again maximum equipment viewing should be used.
4. **OFF SIGNAL–ZOOMED** ...a setting that will negative slope trigger the OFF signal of the ignition cycle, again for maximum viewing .

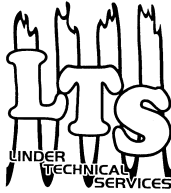
EXAMPLES OF PROPOSED STANDARD VIEWING ONE THROUGH FOUR:



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TECH TIP FROM THE GURU

ESI SERVICE INFORMATION REPAIRS ???



ESI (electronic service information) takes on many very different looks as we enter into the next level of service repairs.

ESI (at least in my mind) refers to any and all methods of gaining information from cd-roms to the internet. In this newsletter Michele (the analysis "sleuth") explains a somewhat unusual fix to a complex problem on a 1995 Buick Roadmaster.

Last year we added Internet training to almost every class session and it has become a very vital part of our on-going technician training. From the IATN (International Automotive Technicians Network) to Jim Wilson's "**flatrater.com**" web page, this type of information is every where.

Using this information in class is a MUST to train technicians for the next level of automotive service.

The 1995 Roadmaster fix came from the archives of IATN using a search engine and typing in 1995 Roadmaster misfire. Right away the archives showed us three separate matches with the exact problem of an intermittent misfire, hesitation and a code 18!

Never would we have (*at least using conventional thought processes*) come up with a burnt buss bar (*which happened to be the main injector fuse feed as well*) to cause this problem.

Using the network we quickly printed the fix, ordered the parts and fixed the car.

Many say that driveability isn't a profitable experience, but I can honestly say that this was a very profitable repair that resulted in a very happy customer!