

Linder Technical Services

# Networking Newsletter



July 2006



Ok you asked, here goes! I have been dragged into this discussion kicking and screaming all the way. After watching the late night news and hearing our Lt. Governor proclaim how the addition of E-85 Fuel will solve all our problems, I finally decided to discuss (at least from my point of view) the real world of Ethanol.

Disclaimer : If you are on the green side of this discussion and want the environment cleaned up at any cost, just stop reading here, purchase a flex fuel vehicle and be one of the first in your neighborhood to do your part. Read No further.

We all know we, as a country, have become very addicted to oil. SUV's are every where often at speeds of 75-85 miles per hour getting 12-16 miles per gallon. I believe if this really was an issue there would be more Hondas and car pools. The CAFÉ ( corporate average fuel economy) has shown little change since the early 90's and even the latest suggested CAFÉ of 28-30 mpg isn't really very good considering the number of years we have had it in place. Now our president has called for reductions on middle east oil of 75% by 2025. This would require not only increases in overall CAFÉ as well as increased production of ethanol and more flex fuel vehicles (vehicles which can run on E85 as well as gasoline).

Ethanol is a fuel produced from corn and other crops and is now used in approx 15% of the gasoline sold in the US. It is blended with gasoline in a ratio of no more than 10% in our state (Indiana). I have fond memories of stuck floats and melted carburetor and fuel parts when we first introduced this 10% blend in the early 80's. The fuel systems of the day were not compatible with this ethanol product and it took a few years for the OEM's to adjust and recover from the problem. Now at 85% we are seeing the same problems. While the evening news in Indianapolis informs the consumers the good side of this new product and proclaims the independence from mid-eastern oil while buying corn from your neighbor down the street, they NEVER discuss that you can't run 85% Ethanol in your older non Flex fuel equipped car. The fuel has major issues with formic and acetic conditions eating away at the entire fuel system, not to mention the engine parts! So much for politics I guess.

The Alternative Motor Fuels Act of 1988 provides an incentive for OEM's to build flex fuel vehicles and mandates that all government fleets purchase flex-fuel vehicles as they replace aging vehicles in their fleets. It wasn't until 2005 that a Renewable Fuels Standard allowed an incentive on Ethanol production and allowed the industry to deliver another start up on product. Today there are 170,000 gas stations with only 600 outlets being E85 ready. This is a very small margin of outlets, all though there have been over 5 million flex fuel vehicles sold in the US.

My experience in Indiana is that the majority of flex fuel vehicles never get fueled with the E85 product. The vehicles were sold to fleets ( for a discount) to allow them to meet the requirements and sales quotas for federal credits.

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## E85 Vehicles (Cont. from page 1)

The 2005 Act mandated that oil consumption be reduced by 80,000 barrels of oil per day by 2012. Sounds good until you see that we are using 20,731,000 barrels a day. That's a .0038 reduction at a (presently) higher cost to the consumer and a lower fuel economy. Doesn't seem worth doing does it?

*For the actual dollars spent, we could give each repair outlet in the US \$1000 and ask them to clean the injectors and service the fuel system on 10 vehicles and get a cleaner over all effect. By the way , if they ever do this , it was my idea and we will do our ten at no charge!*

It appears that now we only have GM, Chrysler, Ford, Mercedes and Nissan making these new flex fuel "green" cars and they will make approx 700,000 of these vehicles. Once again, that's a token amount when you consider there are 26 OEM's producing vehicles in the US. Also it appears that Toyota and Honda (large producers) have no plans to produce any E-85 vehicles in the near future and even GM has stated they believe the ultimate fuel is going to be Hydrogen-powered fuel cells for the future. So where do we stand today on E85 Fueled vehicles?

E-85 is dispensed at pumps with the E-85 logo and *can only be used in flexible fuel vehicles*. These vehicles have stainless (or special coated) fuel tanks and components along with special fuel injectors (higher flow) and special programmed PCM's to handle this new fuel. If you own one of these vehicles, using E85 is helpful to the environment and you may see a slight increase in performance. The fuel economy is expected to drop slightly (5-10% ). The added (maybe 5%) comes from the 100-105 octane of the E85.

So when your customer comes in and asks, can I run E-85 in my non flex fuel vehicle? The answer should be **NO**. A typical E85 problem would be a fuel filter that may only last 400-500 miles (due to contaminants moving from the tank) and a fuel pump replacement to include fuel injector screens being clogged with debris as well.  
—Jim Linder, The Injector "Guru"

### Will You Be Named the Next Amoco Ultimate Golden Mechanic?

BP is searching under the hoods of cars and trucks nationwide for the 2006 Amoco Ultimate Golden Mechanic - a top-notch, independent auto technician who possesses premium auto repair abilities, a charismatic personality and is both active in the community and environmentally conscious. If you or someone you know goes above and beyond in the garage, be sure to enter the second annual Amoco Ultimate Golden Mechanic contest today. BP is accepting nominations from now through August 11. For official rules and regulations, visit <http://www.bpgoldenmechanic.com> .

"Winning BP's 2005 Amoco Ultimate Golden Mechanic contest was a dream come true," said Allendale's own **Ryan Kooiman**, BP's first-ever Amoco Ultimate Golden Mechanic contest winner. "This title has afforded me many great opportunities over the past year, including meeting influential people in the automotive industry and hosting my own radio show."

If you make it to the finals, you'll receive an all-expenses paid trip to Las Vegas where you'll battle it out for the coveted Golden Wrench. The grand prize winner drives away with \$25,000, a year's worth of Amoco Ultimate premium fuel and will be named the Amoco Ultimate Spokesperson for 2007.

## Analysis from the “Sleuth”, Michele Winn



### Information is Priceless!

This month's case study is a 1996 Chevy S-10 Pickup w/ 2.2L engine and over 140K miles on the odometer. The complaint was lack of power and check engine light on. The truck was not brought in by the actual owner, but the person who was “fixing it on the side”. He had decided after replacing spark plugs, wires and O2 sensor that the problem must be in the fuel injection system.

As you might already know, the fuel injectors in the GM 2.2L engine have several problems. They are known for electrically “shorting out” as well as leaking fuel up through the electrical connector. You might also know that getting to them is time-consuming. Choosing to do the easiest thing first, I grabbed the Tech2 and scanned for codes. The only code stored was a P0300 (random misfire). Not a lot of help. The next easiest thing I could think to do was go for a test drive to confirm the problem and see if I could get a “feel” for what direction to take. The truck started easily and idled nicely in the bay, but once I started down the road and tried to accelerate, there was no power. The engine and exhaust made a lot of noise, but I wasn't picking up any speed. At times I even felt like the truck was slowing down. I didn't notice what we would describe as a “misfire” or a cylinder “dropping out”. Just a severe lack of power or lack of response.

The scanner data showed a rich O2 under load (around 900mv), so I ruled out lack of fuel as being the cause. I pulled to the side of the road and set up the Tech2 to record MAP, TPS and RPM data. I remembered getting a lesson from John Thornton last year about graphing these particular pids and being able to pick out an exhaust restriction. I was so excited to learn about a new, EASY way to check for exhaust restrictions, that I wrote about it in a newsletter last year. So, with the scanner recording, I headed back toward the shop.

Once I was back in the bay, I started digging through past newsletters to find the article. The truth is, even though I wrote the article, I couldn't remember exactly what it said. It's been several months since I've needed to check for an exhaust restriction and I had forgotten exactly what to look for. I don't feel bad about saying that I forgot something as long as I know where to find the information I need! That's why it's important to get your hands on all the information you can, whether it's a book, a training class, a CD or DVD, it doesn't matter. Even if it's something you haven't needed yet, you might need it in the future.

AHA! There it was in the April 2005 newsletter, complete with a picture of the Tech2 recording. Armed with the information, I headed back to the truck. As I reviewed the recording, it was almost a mirror image of the picture I was holding in my hand. With just a slight acceleration, the MAP readings shot straight up indicating a drastic change in engine vacuum. As we know, light acceleration should only cause a slight change in MAP readings under normal conditions. The sharp rise in MAP versus slow change in TP indicated an exhaust restriction. Unlike the story in the previous newsletter, I didn't even bother to hook up a backpressure gauge as I was confident after looking at the documentation from the previous vehicle that my diagnosis was correct!

(For more information, you can read and/or download the entire newsletter article by going to [www.lindertech.com](http://www.lindertech.com) and clicking on the “newsletter” link on the homepage. Then scroll down to the April 2005 issue and click to view or print.)

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## CONGRATULATIONS, SCOT!

Many of you in the Chicagoland area know Scot Manna as the owner of MB Automotive. Those who attended our "Tech Day" back in the summer of 2004 or our annual technician training conference in Sept. of 2005 know him as a dynamic, knowledgeable speaker.

Scot recently competed in the AC Delco Technician of the Millennium contest along with many other technicians from all over the country. During the 2nd week in May, he won the hands-on competition in his region which advances him to the National Hands-On Finals, which will be held during the AC Delco National Convention in Las Vegas on Friday, October 27, 2006!

He will be competing against 4 other finalists for some awesome prizes totaling over \$41,000! The 5 contestants are:

- Eric Armstrong of Kennewick WA representing Motoring Services
- Scot Manna of Des Plaines, IL representing MB Automotive
- Bill James of Tulsa, OK, representing Bill's Quality Automotive
- Louis Codianna of Waterbury, CT, representing United Auto
- Craig Newsome of Section, ALA, representing Auto Tech

We know that many of you will be in Las Vegas for the AC Delco convention. If you get a chance, stop by and wish Scot and all the other contestants GOOD LUCK!

Congratulations to all the finalists and GOOD LUCK!