

A DIFFERENT KIND OF “CAN” COMMUNICATION

When we think of the dreaded CAN communication protocol, that was introduced a few years ago, it strikes fear into some. New frontiers like these can be intimidating and challenging. Because of frequent advances in our industry, the only constant is CHANGE. So, if change is a given then what we have trouble with is the transition. This is where CAN communication comes in.

Scott and I put on an Internet Usage class this past Winter and part of the class pertained to how we, as techs, need to learn how to network better. This requires some to come out of their comfort zone and for others it requires some time and/or money. Let's start with the later.

This guy or gal has an out going personality, opportunity is the only obstacle that they have to overcome. So how does someone overcome this obstacle? The first way would be to take some time and talk with techs in an Internet chat forum. The second would be to attend some local training and talk with people and exchange email addresses.

Now that you have a local network started, let's consider making that network bigger. The first large scale networking step should include the Linder Conference that is held every September. This is 300+ techs that have a real passion and spend crazy hours outside of class making friends or catching up. The next opportunity is Vision, this training expo is held every

March in Kansas City. Both of these training and networking opportunities are weekend excursions worth the price of admission. My third choice for networking would be the Auto Value/Bumper to Bumper Tech Expo. This is held in Milwaukee and Grand Rapids. All of these events are phenomenal values. Don't get discouraged if none of these events are near you, there are others all around the country also.

Now let's get to the introverted person. This is a person that may attend all the best training events but never talks to anyone else. I can fall into this category until I'm introduced to someone. What I'm going to challenge the introvert to do is: step out of your comfort zone and introduce yourself to someone. For example, if you know that Scott or I are at an event you attend, make a point of saying hello and let us help you meet others.

I can honestly say that after a year of stepping out of my comfort zone, I have met people that I consider friends across the country. Now whether they feel the same is hard to say, but these techs are a valuable pool of resources for the exchange of information. The bottom line is to have CAN communication, as in "I CAN."

- Bob

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Points of interest:

- Join our mailing list. Fill out the form on our contact page go to: www.driveabilityguys.com
- DECS software update coming soon... be sure to register your software.
- Check out some of DECS new features and pre-order your copy on page 5.
- Contact us if you are interested in having us train at your event.

DON'T FORGET THE BASICS

We all have those cars that we spend some time on and realize forgetting one basic step could have saved valuable time. My example today illustrates one of my recent experiences with that very issue.

2002 GMC Yukon 5.3 L Flex Fuel. Complaint: MIL illuminated. A quick check with the Tech2 yields a P0300. Checking history misfire data revealed the following:

Misfire Data	
Cycles of Misfire Data 78	
Misfire History Cyl. 1	3975
Misfire History Cyl. 2	11
Misfire History Cyl. 3	859
Misfire History Cyl. 4	0
Misfire History Cyl. 5	34
Misfire History Cyl. 6	0
Misfire History Cyl. 7	5160
Misfire History Cyl. 8	795
11 / 33	

As you can see, the majority of the misfires are on 1,3, and 7. All of these cylinders are on the left bank of this engine. My next step was to check out the freeze frame data for the P0300.

P0300 Freeze Frame Data	
MAF Sensor	6.46 g/s
EGR Position Sensor	0.00 Volts
EGR Position Sensor	0 %
Desired EGR Position	0 %
Loop Status	Clo
Short Term FT Bank 1	51 %
Long Term FT Bank 1	25 %
Short Term FT Bank 2	-2 %
Long Term FT Bank 2	-3 %
11 / 32	

The fuel trim numbers vary greatly from bank to bank. The right bank (bank 2) looks relatively normal. However, the left bank had positive trim numbers. These high numbers lead me to presume that the misfires were caused by a fuel delivery issue.

My next step was to pop the hood and get ready to get dirty. The first thing that I noticed about this fuel system was that fuel inlet feeds the left bank first and then has to travel up and over the intake to the right bank. Basically, anything heavier than gasoline is going to be mainly distributed throughout the left rail while the lighter fuel travels up and over to the right.

My diagnosis at this point was strongly leaning towards foreign deposits plugging the left bank injectors and/or screens. But... I want proof... so I pulled the left fuel rail.



When I inverted the rail to empty its contents, here is what I found:

My initial diagnosis was correct, the injectors were in fact being plugged with the gunk seen here as the middle layer. But that obviously wasn't the only problem. Further testing revealed that the top layer was indeed gasoline, but the bottom orange layer was not as easily identifiable. Alcohol tests and specific gravity comparisons eliminated many possibilities. However, the most puzzling aspect was the bottom layer's color... orange. When allowed to settle it looked just like Dex-cool. On top of that, the truck still ran!

What did I miss? What could be in this fuel tank?

Continued on page 4.



THE DRIVEABILITY GUYS AND EMS

THE DRIVEABILITY GUYS have consulted with EMS on the latest version of their gas analyzer software. The new software supports Lambda calculations for multiple fuels such as E85, and more. If you have an EMS exhaust gas analyzer, or are in the market for an analyzer, please contact

EMS to find out about their products and the new gas software.

EMS can be found at:

www.emsgas.com

Or contact Jon:
jpalek@emsgas.com

847-854-8483 tel/fax



Thinking about buying a scope?

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Buy a PicoScope through *THE DRIVEABILITY GUYS* in June or July and get a full day of
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ONE PROBLEM CAUSES ANOTHER

Beware of GM Vortec trucks that come in with an ignition related driveability or no start issue. Replacement of the secondary ignition components at fault may solve the initial problem, but odd running issues could continue to happen.

We all know that there are plastic fuel lines located inside the intake manifold. If an ignition related issue causes a backfire the fuel lines could be damaged.

In the picture to the right, a backfire caused a fire inside the intake manifold melting the fuel lines to cylinders 5 and 7. As a result, fuel spraying in every direction instead of being directed to the appropriate cylinders wreaked havoc with misfire counters and fuel trim numbers.

Something as simple as regular maintenance could have prevented this issue, but that responsibility falls on the customer. Our job is to be aware of potential issues, and diagnose them correctly the first time.

-Scott



For more tips such as the one described above visit our friends at www.d-tips.com. Along with tips and forums loaded with information, there are also waveform libraries, a vehicle specific failure database, more photos than you can shake a stick at, and more.

Sign up now and use the promo code: SB42 to get a free month to snoop around. Remember... knowledge and information are key!

DON'T FORGET THE BASICS (CONT)

The key piece of information that caused me to realize the basic step I had forgotten came from my service writer's mouth later in the day. After talking with the customer on the phone, the service writer told me, "It was running fine yesterday, his son borrowed the vehicle last night, and it started running bad (and the MIL illuminated) this morning."

It hit me like a brick. This customer didn't get bad gas at a filling station... his son pissed someone off. I wanted to smack myself for forgetting to check something as simple as the filler neck for evidence of foul play.



My initial diagnosis was correct, but the root cause ended up showing itself later. I could have found the root cause prior to doing all of my fuel testing if I

didn't skip a simple step... opening the fuel door. Live and learn I guess.

I know cars can run on Ethanol, but this type of corn might be taking it a bit far!

Morales:

1. It's good to learn from your mistakes. But, it's even better to learn from other's mistakes. Even mine.
2. Buy your teenager a beater so they don't need to borrow your car.

Let the bio-fuel jokes begin!

- Scott



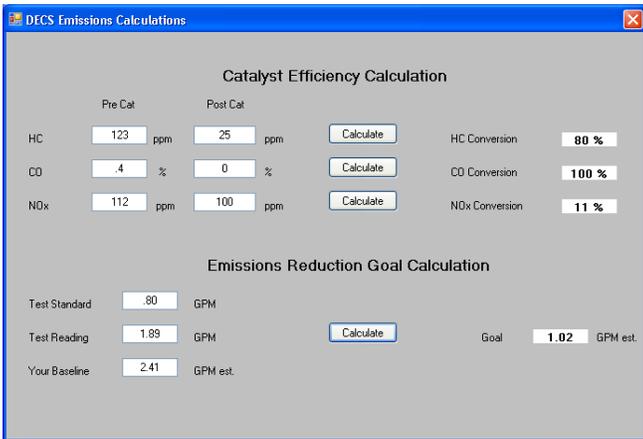
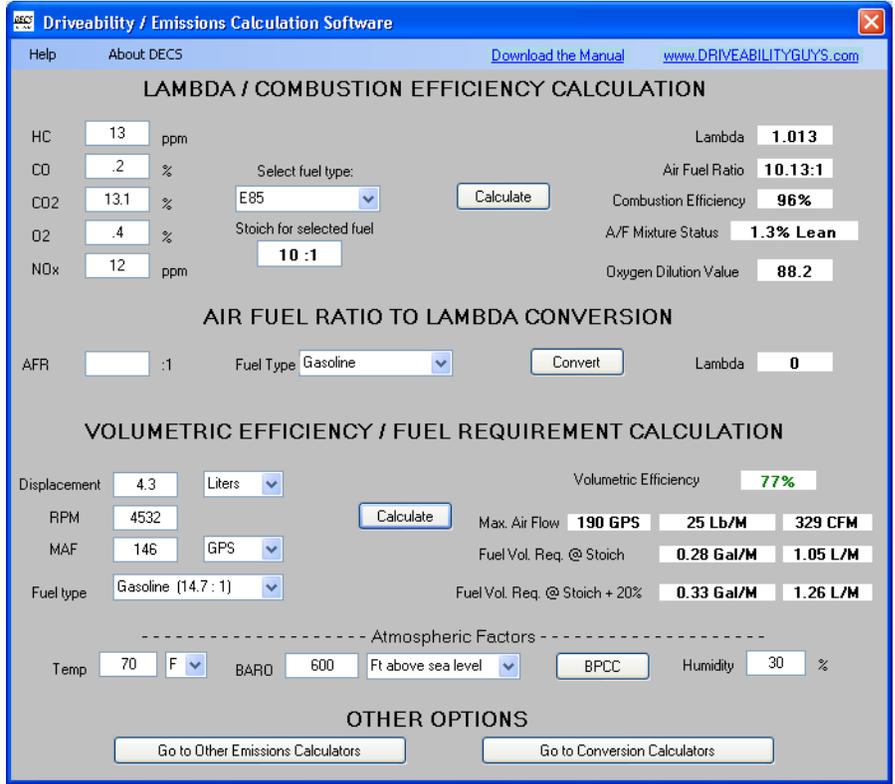
DECS V2.1 TO BE RELEASED IN AUGUST PRE-ORDER NOW AND SAVE 50% OFF LIST.

DECS V2.1 is an improved version of the popular V2.0 platform.

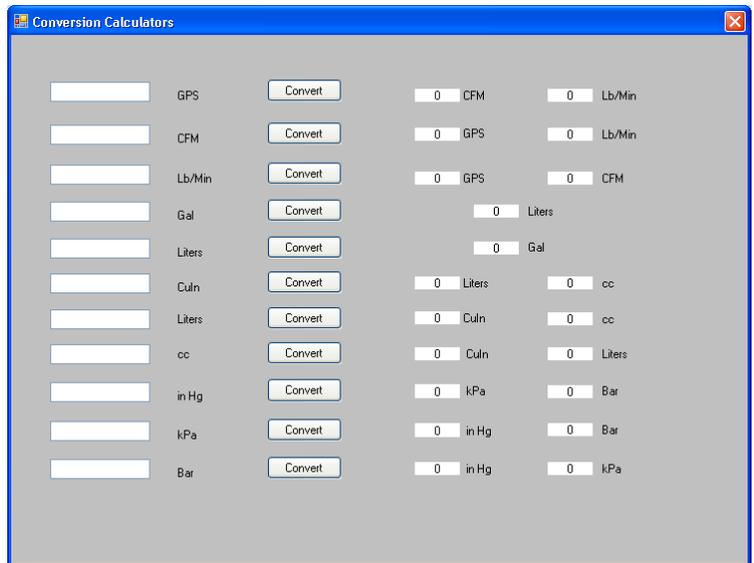
The update includes a slight correction to the multi-fuel Lambda and Combustion efficiency calculator, the addition of atmospheric variables (temperature, altitude, and humidity) to the Volumetric Efficiency and Fuel Requirement calculator, and an expanded number of conversion calculations.

We have also added a BPCC, or **Barometric Pressure Conversion Chart**, to make interpretation of scan tool data easier depending on how a particular tool reports such information.

Other new features include a link to a downloadable users manual in pdf format.



Current users of **DECS V2.0** only need to register their original copies via email to receive the update free. Please include a mailing address to receive your disc. If you did not include a mailing address when you originally registered you will receive an email requesting this information.



To pre-order your copy for \$20 (instead of the regular \$40), mail a check to:

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**JUST FOR FUN...
IT JUST STARTED MAKING NOISE!**

Catastrophic failures can be quite amusing, as long as they don't happen to you. But customer input can always add color to the situation. How many times have you heard "It just started making this noise..." (This truck still moved by the way!)



Some how I get the feeling that this noise didn't "Just start."