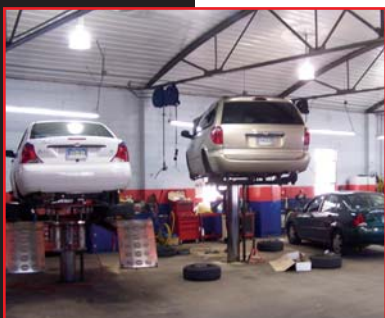




NEWSLETTER

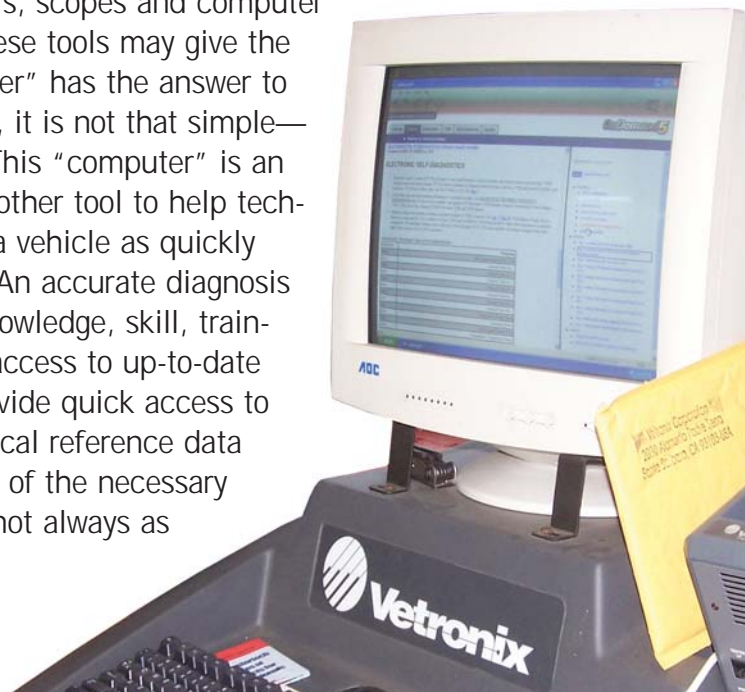
www.suddethauto.com



Won't that computer tell you what is wrong with my car?

The "check engine" light is glowing on your dash board. Your vehicle is not running properly: the fuel mileage has dropped and the idle is rough while you are waiting in traffic for the stop light to turn green. Clearly it is time to get your vehicle in the shop so a technician can perform an analysis and identify the problem.

In this age of modern high-tech, low-emission vehicles, the testing and diagnostic procedures involve an array of tools including electronic scanners, engine analyzers, digital multi-meters, scopes and computer data streams. The use of these tools may give the impression that the "computer" has the answer to every problem. Unfortunately, it is not that simple—much as I wish it were so. This "computer" is an electronic box that is just another tool to help technicians diagnose and repair a vehicle as quickly and accurately as possible. An accurate diagnosis requires a combination of knowledge, skill, training and equipment. Having access to up-to-date information systems that provide quick access to thousands of pages of technical reference data related to your vehicle is one of the necessary tools. Let's look at why it is not always as simple as it may seem.



continued

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Computer Diagnostics (continued)

In the 1980's, we saw the first onboard diagnosis (OBD) systems appear on production vehicles. This system has evolved into a very sophisticated monitoring system that varies by make, model and manufacturer. This system uses various sensors positioned throughout the vehicle that report data such as vehicle and engine speed, manifold pressure, coolant temperature, throttle position, etc., to a central computer (sometimes known as a PCM or ECM) in your vehicle. This data input is used by the computer system to make adjustments to optimize the vehicle's performance, fuel economy and emission levels. The first vehicles to use an OBD system had only one computer; today systems use multiple computers, and the number grows every year.

Computer technology is used in almost every system in your car today. It is no longer just for engine management. So the next time one of the turn signals does not work properly, most likely the problem is a burned out bulb; BUT it could be computer related problem.

The networking of the computers in your vehicle rivals any office computer networking. Just like the computer at home or the office, the network and software can have a big effect on how well the system works. In most cases the networking is very stable, but the software is a different issue.

Before 1996, all of the software was in a chip called a PROM (program read only memory). When you needed to update or change something in the computer's operating system, you had to replace the PROM; or, in cases where the PROM was not replaceable, you had to replace the computer. In 1996, the systems changed to what is called OBD II (On Board Diagnosis II). With this change, updates to the operating system are done in a similar manner to the way you update your PC based



computer. With the PC based computer, you are able go to Windows Explorer and click on Windows Update and update at no charge; however, updates are not free to auto-mechanic shops. They must subscribe to the vehicle specific information and have the proper pass-thru electronic equipment for that vehicle in order to download and install the information into the vehicle's computer. All that is to say the problem you are having with your vehicle may not be a mechanical or electronic issue, it could be a software issue. Although most repairs are not completed by just updating the software in the computer, we are seeing more and more software issues.

Let me give you an example. Suppose one of

your car sensors sends a signal that is out of the normal range, or perhaps there is no signal at all. Recognizing this as a sign of possible malfunction, the computer will do one or more of the following

depending upon which of the vehicle's systems appears to have the problem:

It may store a fault code or diagnostic trouble code (DTC) in its memory.

It may illuminate the malfunction indicator lamp (MIL) on the instrument panel (sometimes known as the "check engine" or "service engine soon" light). This alerts the driver that a possible malfunction has been detected.

If the missing or corrupted signal is one that is essential for the engine to operate, the power train control module (PCM) may decide to switch to a fail-safe or "limp" mode. This allows the computer to ignore the faulty signal and use preset generic data instead. (On some vehicles, this may be called the limp-in mode.) Once the vehicle has switched to this mode, the engine may perform poorly, but at least it will run. (This may explain

your rough idle and reduced fuel economy.)

However, in rare cases, loss of a sensor signal may disable the engine completely. If the PCM has no way to monitor engine speed, for example, it may have no other choice except to shut down the engine.

Okay, so now your OBD system has caused the MIL to light up, your PCM has stored a DTC and your engine is running in limp mode. Are you thoroughly confused yet? Don't be. It is simply time to "limp" to Suddeth Automotive Service where a technician will identify and solve your problem! We usually begin the troubleshooting process by connecting your vehicle's computer to an electronic code scanner or diagnostic computer. Putting the OBD system in diagnostic mode allows retrieval of any stored fault codes. The method for retrieving the codes may vary, but the important thing to realize is that a fault code seldom reveals exactly what's wrong with your vehicle. Instead, it gives the technician a starting point from which to begin an analysis. A fault code only reveals that something abnormal has occurred in a particular circuit. It does not reveal exactly what caused the abnormality. Was it a bad sensor? A failed part? A short in the wiring? A loose connection? A false code that should not be there at all, or perhaps a malfunction in the PCM itself? These are some of the questions the technician must answer.

Armed with the DTC codes, your technician can then refer to a diagnostic chart that lists step-by-step tests and procedures to follow in sequence so the faulty component can be identified and either replaced or repaired. Depending on the nature of the problem, testing procedures may be time-consuming; and it often involves an analysis of the data stream from the sensors while the engine is running. This may require a "flight test," in which the car is driven on the road while connected to portable hand-held diagnostic equipment. The process is complicated even when it works exactly like it is supposed to do. And when it does not, that is when our trained technicians' skills and information resources are taxed to the fullest.

When troubleshooting a specific problem, a variety of mysterious "glitches" may hamper the diagnostic process. Let me outline some of the challenges that may need to be overcome.

A fault code may not be present either because it was never stored or was already been erased by the PCM. The technician may have to get it to reappear before the problem can be isolated.

If a "false" code is found, it may be caused by a voltage spike, an improperly grounded circuit or a failure to erase an old code. If this is suspected, the solution may be to erase the code from memory, and then test drive the vehicle to see if it reappears.

If a problem occurs intermittently, there may not be any codes or clues to follow until the malfunction occurs again. ("Gee, I'm sure it was doing it last week!")

Sometimes a problem cannot be detected by the OBD system. For example, a timing belt that has "jumped" slightly out of position may be unrecognizable to the PCM. Some vehicles have problems that may not appear until they've been driven for a few years. If these problems generate false codes in a particular model of car or truck, the manufacturer may issue a technical service bulletin (TSB) to alert technicians about the glitch and save them from hours of fruitless testing. Your technician may need to check a TSB information source to check for bulletins pertaining to your car's problem.

So remember that computers are an essential part of the diagnostic process, but they do not provide all of the answers; and that is precisely why you bring your car or truck to us.

When you see the "check engine" or the "service engine soon" light up on your dashboard, remember it is telling you something important. Whether or not the vehicle is performing any differently, you need to get the vehicle checked. Just like any problem with your vehicle, it will be less costly to address the problem early than to let it go and risk further damage.

Diagnosis: Ten Steps to Customer Satisfaction

One of the things I enjoy about my profession is that there are almost no two jobs exactly the same, and that keeps things interesting. One of the main components in a quality automobile repair is the proper diagnosis of the problem. In years past, diagnosing a problem usually involved a visual inspection or a test drive and performing a few simple tests. Since then, the diagnosis process has not changed, but some of the steps and resources needed to reach that diagnosis have.

Listed below are ten basic steps in the process. As you read the steps, note that diagnosis is a team effort involving you and the technician.

Two-way communications.

Communication is the first step to successfully diagnosing any vehicle problem. Hearing the customer's concerns and asking questions to clearly identify the problem are the most important steps in the diagnosis process.

Verifying the concerns. This may involve an inspection and/or a vehicle test drive to duplicate the concern. If the concern is an intermittent problem, it can become difficult to identify the cause making customer/technician communication even more important.

Advanced technical training. It is estimated that an automotive technician needs up to 100 hours of technical training a year to stay current with today's vehicles.

More training. Technicians also need 20-30 hours on hands on training each year. This would be more mechanical, new product or new equipment training. Each new model brings with it a new technique and equipment.

Up-to-date service and repair information. Computerized information systems and online libraries are essential diagnostic tools. Without computerization, this resource would be unmanageable and the automotive repair shop would look like the county library with walls of automo-

tive service and repair manuals.

Systems understanding. Complex wiring diagrams and electrical systems must be understood by technicians. Before 1980, the basic wiring and electrical system on most cars was similar and may have taken one or two pages in a service manual. With the introduction of computers and all of the electronic systems, a wiring diagram takes multiple pages and grows with each year and model change.

Sophisticated diagnostic equipment. To analyze and repair modern vehicles state-of-the-art equipment is needed. As the different systems in a vehicle have

become more sophisticated, the testing and repairs require more computerized and electronic based test equipment. Just as the technician needs to update his skills, the equipment must also be updated.

Consulting with experts.

Technical hotline services enhance speed and accuracy of diagnosis. These services are telephone or web based and offer

great resources especially with a difficult or unusual problem.

Testing. Successful diagnosis and repair always include retesting and/or a test drive to verify the repairs are completed successfully. It is a quality check.

Customer satisfaction. Completed test results and repairs are reviewed with the customer. This goes back to step one in this list. Communication is key to a successful diagnosis and repair.

As you can see, the interactions and resources required to perform quality diagnostics are extremely valuable and begin long before the vehicle enters the shop. It involves the customer as well as the technician, shop support staff, etc. If you learn anything from this article, I hope it is that quality diagnosis is a team effort involving you and the technician, and that communication is the key to your satisfaction.



Mike's Corner

In the last newsletter, we invited you to participate in two special events that were forthcoming: the April Car Care Month inspections and the Women's Car Care Seminar scheduled for the end of April. Well, I am glad to report that both events were successful! Let me give a short report on both.

During April, we performed over 300 free Car Care Month inspections, and the information compiled from those inspections has been sent to the National Car Care Council to be used in their yearly vehicle reports. Since this is a voluntary program, I am particularly excited that we had such great response and look forward to the program growing each year. This is a program that benefits everyone involved. The information from these inspections, which take place across the United States, has an impact on the automotive industry by creating reports that are used for planning and training purposes; so I want to extend my gratitude to everyone who participated in this event. Special thanks go to the vehicle owners for allowing us to perform the inspections and to my staff who performed the inspections and handled all of the paperwork.

On Saturday, April 28th, two Car Care Seminars for Women were held at the shop. The primary focus of these seminars was basic car care and what you need to do to properly maintain your vehicle. We also discussed vehicle safety and safety items, had a question and answer session and a hands-on demonstration at the end of the seminar. There was a great turnout for both the morning and afternoon seminars; and, judging from the comment cards filled out after the seminar, everyone enjoyed this event. I know my staff and I did! You can see some of the comments and photos on our web page on the WIS TV site (www.wistv.com). Just look for the BizNOW section and click on the Suddeth Auto logo, it will come up on the right side of the page. I would also like to thank Jessica and Scott from WIS TV for helping us promote the seminar.

There are a lot of people I want to thank for helping make the seminars such a success.

The food and refreshments for the seminars were provided by Tiffany's Café and Bakery on Devine Street, and were enjoyed by all.

Patrick Barr owner of MATRIX Neuro Muscular donated two massage therapy sessions for door prizes. I have known Patrick for several years both professionally and personally, and I am sure the winners of these door prizes will enjoy them. If you would like more information about MATRIX Neuro Muscular or to set up an appointment, you can reach Patrick at 463-7447.

My Favorite Place, a women's clothing store located at 3000 Devine Street, is owned by one of our long time customers, Kathy Richardson. Kathy donated a French purse for a door prize and items for the goodie bags. Somehow I knew the photo of me holding the purse would wind up on the internet! All kidding aside thank you to Kathy and "My Favorite Place." We appreciate your participation!

In addition, several of my suppliers donated door prizes and items for the goodie bags including Hertz Rental Car and Frank's Car Wash for the free car wash coupons. (I am not sure how, but a clean car always seems to run better.)

In addition to donating several door prizes and goodie bag items, Cliff at All Pro Bumper to Bumper, made a special effort to support us with car care material and setting up a parts table with worn and new parts during the seminar.

To my staff here at Suddeth Automotive, I would like to say: "Job well done!" Thank you for all of your efforts before, during and after the seminar. Your participation helped make it a success. Also, I would like to thank two special people for their help: Karen Procopio and Judy Waters. They are the wives of two of my staff who volunteered to help that day. Their help was greatly appreciated. Thank you!

Lastly and most important of all, I would like to thank all of the women who attended the seminar. I hope each of you found the information and materials presented valuable and that this information will be helpful in future care, maintenance and safety of your automobile. If you have car care questions now or there is something we did not address during the seminar, please pick up the phone and call us or send us an e-mail.

We will be happy to help.

Personally, I liked the question and answer and hands-on demonstration at the end of the seminar the best. One of the key points of the seminar was communication. It is important to ask questions so you can fully understand what it takes to properly maintain and care for your vehicle.

We are planning another seminar in October and are working out the details now. If you have any suggestions on how to improve upon the April one, please let us know. We appreciate your input!

Again from the staff and me here at Suddeth Automotive Thank You! We are looking forward to the next Women's Car Care Seminar in October!

—Mike Suddeth



"Great information and very patient when answering my questions."



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Spotlighting Mike Waters



Mike joined the Suddeth Automotive team in January 2007 as a Service Advisor. His previous automotive experience includes over twelve years with Wynn Oil Company as a Sales Representative and Area Manager. He was my Wynn's representative for several years during which he trained our technicians on several of the service tools and equipment we use to maintain our customers' vehicles. Mike is highly aware of the maintenance requirements of today's vehicles, the importance of monitoring fluid life and the benefits of performing preventative maintenance

A native of Richmond, VA, Mike graduated with a BS degree in 1974 from Virginia Commonwealth University in Richmond. Upon completing college, he entered the U.S. Marine Corps and served 20 years in the infantry and logistics fields. He and his family were stationed at Parris Island, SC, Kansas City, KS, Fayetteville, NC, Jacksonville, NC and Iwakuni, Japan. Mike retired from active duty and moved to the Irmo area of Columbia in September 1994.

When not at the shop you can normally find Mike outdoors. He enjoys playing golf on the weekend year around and boating on Lake Murray during the warm summer months. Mike also has been active with the scouting program at Ashland Methodist Church where he got to know my dad, Joe.

Mike & his wife, Judy, have two children: a daughter, Mandy, and a son, Jesse. Both of their children are on active duty with the U.S. military. Mandy is in the Navy and stationed at Portsmouth Naval Hospital in Portsmouth, VA. Jesse is currently serving with the Army near Kabul, Afghanistan.