

eAir REPAIR

April 2010 edition



Dashboard Forum a Valuable Tool

By: *Bob Haines from Bob's Garage, Waukegan IL*

Everyone remembers life before the Dashboard. When you had an issue, you had to pick up the phone and waste valuable time. Now we can do a lot on our own, and more is coming. Personally, I'm looking forward to the day when we can unlock vehicles that have had too many rejects or fails!

One virtually unexploited feature of Dashboard that I want to point out is the Forum. There are a lot of vehicles that are driving shops nuts out there. Any situation with any vehicle problem that is out there has been experienced by other shops. Using the Forum will put you in touch with someone in our vast pool of technicians who have the solution to your problem.

Case in point: A very competent shop in the Western Suburbs of Chicago was having trouble with monitors on a Mercury Sable. It seemed that this vehicle was not repairable! Why? It was a classic monitor readiness reject. It had already been seven months since the first reject. You know the situation, rejected so many times that it had to go to a shop. What was weird about it was that the EGR monitor would always set to ready and stay ready. No other monitors ever set to ready. The shop had done all they could do within their capacity. IAT and ECT were above the minimum temperatures, and it was not a FFV. A misfire issue was repaired and plenty of drive cycles were run. A lot of time was lost on this vehicle!

The frustrated technician came to the Forum looking for help. A couple of ideas were tossed around by some technicians who offered help. This gave him some ideas to check out. I had run into this before and was able to fix the same issue quickly. I had heard about it at an Outreach seminar given by Scot Manna about two years back. I fixed the vehicle because someone else made me aware of the issue. I was more than happy to use the Forum and pass that tip on to the technician. As it turns out, my idea hit the nail on the head. A day later the vehicle was fixed.

It was a FTP sensor that was faulty. This particular problem suspends monitors (except EGR) and does not set a code. This is why it is almost always overlooked when monitors will not set to ready. The technician replaced the FTP sensor at his shop. After a test drive, all monitors but EVAP set to ready. I suspect the cold weather was the issue with EVAP. The technician knew he could have one monitor not ready and got the vehicle passed ASAP.

Would this vehicle have been fixed without the Forum? Possibly, however how much longer would the technician have spent? What about the customer? Would he have been able to endure being without his vehicle much longer? Would you agree that the Forum, in a sense, repaired this vehicle?

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Got a Case History

- » Share your case history and tips.

Mode \$06 Data Can Be Tricky

By: Scott Shotton from The Driveability Guys

Using Mode \$06 data can be a bit tricky when you first start digging in your heels. The important thing to remember is that it is just another tool in your diagnostic arsenal. Sometimes it will solve problems, other times it will point you in a diagnostic direction, and many times it will do nothing for you. The key to using Mode \$06 with some success is knowing when it can be used and when it should be put back in your tool box.

The tangled web of PCM strategies, the ocean of grey area, and the multitude of numbers that need to be deciphered can be overwhelming at first. We can make sense of this tool if we take the time. My initial tip for using Mode \$06 data is simple: Check readiness status first.

Mode \$06 is the actual result of a monitor or test that has run to completion. It can be thought of as a grade as opposed to a simple pass or fail (a DTC.) If a monitor has not run to completion, then its results, or grade, will be worthless to us. Quite often irrational numbers can be displayed and are usually attributed to an incomplete monitor or can even display a result for a monitor that the actual vehicle does not support. Checking readiness status for the monitor we wish to investigate is important in determining if its Mode \$06 data can be trusted for diagnosis.

To learn more about Mode \$06 data, log into the dashboard and sign up for "Using Mode \$06 for Diagnosis and Repair" next time it is offered in your area.

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John Thornton Joins the Outreach Training Team

From: the Illinois EPA Repair Industry Outreach Team

We are pleased to announce that John Thornton has joined us this year. His expertise and knowledge is a welcome addition to the Outreach training team. His training will focus on Toyota EVAP systems and Four Wire Air: Fuel Sensor Diagnosis. Be sure to check out this year's schedule in this newsletter.



A Picture of John Thornton's Toyota EVAP Seminar at Technology Center of DuPage.

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Thanks Car-X !

From: the Illinois EPA Repair Industry Outreach Team

Many thanks for the support that Car-X has given us through the years. In the past, Car-X made sure that every Car-X location was IM240 trained. They have always worked with their shops and technicians to improve their emissions skills, to make sure they were in the Report Card, and to attend seminars offered by Repair Industry Outreach. Recently several Car-X shops have joined the testing program as Appointment Only Testing Stations filling the gaps in the testing network.



Pictured above from left to right are: Mark Larsen (Training Manager), Ron Thomas (VP of Chicago Area Franchise), and Scott Lettow (Field Trainer) at the Car-X Dealer

Manager Meeting.

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When My Phone Rings

By: Dave Alder from Applus Technologies, Inc.



"Keep Alive" Memory

I had a call from a shop with a monitor reject. The vehicle was one of those with difficult to set monitors. After driving around for a few hours, all monitors would set except for the EVAP monitor. The EVAP monitor on this vehicle is a two trip monitor. When the technician went to take the vehicle out for its second trip, he

hooked up the scan tool and started the vehicle. Now all of the monitors reset to

not ready. Without taking the vehicle for the second trip, the shop decided a new catalytic converter would fix the problem. Again, all monitors reset to "not ready." Now the shop decided to throw a used PCM in the vehicle as a desperate attempt to fix it.

I asked the shop how they thought a CAT would fix a "keep alive" memory issue. The response was a new CAT usually fixes emission failures. I asked if they could put the original PCM back in the vehicle and start over with a solid diagnostic strategy. I suggested they check the condition of the battery, the fuses, and the power feed and the ground to the PCM. Obviously, this shop did not have a good diagnostic strategy. I suggested that they attend the free Outreach seminar, Diagnostic Techniques for OBD Failures presented by Ken Zanders.

Driving Around to Set Monitors

The next call I want to share with you is about a vehicle that failed and after some repairs were done, and after 4000 miles of driving in an attempt to set monitors, the shop called me. I explained to the technician the importance of following the drive cycle and not just driving around. I asked for year, make, and model. This vehicle happened to be on the exception table where we do not reject for monitor readiness status. I can't imagine how much time it took to drive a customer's vehicle 4000 miles and who paid for gas, one oil change, and the technician's time. All of this could have been avoided with a little research. This and other valuable information is available on the Dashboard. If monitors do not set in a reasonable amount of time, you should spend your time diagnosing and researching. Also, check the Dashboard for upcoming seminars that will help you with your repair strategies.

That's it for this month. Please call me at (847) 616-6064 or email me at dalder@aplustech.com if you have any questions. If you have a good question, it may appear in a future issue to share with fellow technicians and shop owners!

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Dashboard Tip of the Month

From: the Illinois EPA Repair Industry Outreach Team

Check Real-Time Station Wait Times

Do not waste your valuable time sitting in queue at a busy station. Use the online station queue cameras before you head over to have the vehicle tested. This can be done by simply clicking on the station number in the test history panel of vehicle lookup. To view other stations, click on the "Helpful Links" located at the top of the page, then click on <http://www.illinoisairteam.com>. There you can click on "Check Station Wait Times" to select any station you want to view. The first time you use the cameras you will have to download an Active X control.

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2010 Seminar Schedule

All seminars are from 6 pm – 10 pm on dates below.

They are sponsored by the Illinois EPA for the repair industry and they are free!

[2010 Complete Seminar Schedule Registration](#)

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Location

NORTH

SOUTH

EAST

WEST

METRO
EAST

OBD Code Repair Using Labsopes

This seminar is devoted to helping technicians develop a plan for successfully repairing OBD emission failures using labscope testing strategies. OBD testing will be reviewed and actual failure case studies will be looked at to help understand the test capabilities of scopes and probes. Using computerized information systems and code charts will be discussed to make diagnosing OBD code problems easier.

Presented by: [Scot Manna](#)

| ID | Date | Location |
|------|----------------------|--------------------------|
| M703 | April 7, Wednesday | Oakton Community College |
| M704 | August 25, Wednesday | Truman College |

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OBD Repairs Using Scan Tools

This seminar will show repair technicians the capabilities and enhanced functions of a variety of aftermarket and factory scan tools for system testing and OBD vehicle repair. Emphasis will be placed on bi-directional controls for testing and diagnosis found in many of the scan tools available today. Graphing, scan data analysis, and testing strategies will be discussed. The goal is to get the most from these tools and shorten diagnostic times. Actual vehicle case studies will be shown to illustrate these points.

Presented by: [Scot Manna](#)

| ID | Date | Location |
|------|---------------------|--------------------------|
| M803 | April 8, Thursday | Oakton Community College |
| M804 | August 26, Thursday | Truman College |

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Communication Protocol Testing for OBD Failures

This seminar will review proper testing techniques for communication issues with the PCM and various modules as it relates to OBD failures. The communication topology that will be discussed will focus on GM, Ford, and Chrysler systems. This is a "must attend seminar" for serious OBD repair technicians.

Presented by: [Ken Zanders](#)

| ID | Date | Location |
|------|------------------------|------------------------|
| Z503 | May 3, Monday | McHenry County College |
| Z504 | September 8, Wednesday | Prairie State College |

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Diagnostic Techniques for OBD Failures

This seminar will focus on the use of OBD scan data, freeze frame, and failure records as a means to a successful OBD repair. The Illinois "Dashboard" website will also be included in the diagnostic process. The overall goal of this presentation is to emphasize efficiency in testing and repair techniques for OBD failures.

Presented by: [Ken Zanders](#)

| ID | Date | Location |
|------|-------------------|----------------------------------|
| Z203 | May 4, Tuesday | Moraine Valley Community College |
| Z204 | June 9, Wednesday | Technology Center of DuPage |

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Enhanced Toyota EVAP Systems (NEW)

Toyota enhanced EVAP systems are significantly different than the systems found on domestic vehicles. This seminar will explain the operation of the most common Toyota OBD EVAP systems, both early and later systems. The seminar will also cover the new Key Off Vacuum Pump system and will discuss in detail the system operation and most importantly the system testing. Testing techniques will include the use of a scan tool, manometers, smoke machine, and a lab scope. Scan tool bi-directional controls will be covered as well as manual test methods.

Presented by: [John Thornton](#)

| ID | Date | Location |
|------|-----------------|-----------------------|
| T401 | May 6, Thursday | Prairie State College |

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Using Mode \$06 Data for OBD Diagnosis and Repair (NEW)

Monitors are the key to OBD emissions testing success. Mode \$06 displays the monitor's results beyond a simple pass or fail. Using Mode \$06 data can expedite some emissions repairs and can even make diagnosis of some readiness rejects possible. This class starts with a brief overview of Mode \$06 data and how to decipher its meanings. Time will be spent on the do's and don'ts including the grey areas of invalid data. Many actual vehicle case studies will be used to illustrate the practical applications of using Mode \$06 data for successful OBD diagnosis and repair. Different scan tools and information resources will also be discussed.

Presented by: [Scott Shotton](#)

| ID | Date | Location |
|------|-----------------------|---|
| S903 | April 20, Tuesday | Lake County High School Tech Campus |
| S904 | May 25, Tuesday | Kennedy-King College |
| S905 | August 3, Tuesday | State of Illinois Complex, Collinsville |
| S906 | August 10, Tuesday | Morton College |
| S907 | September 14, Tuesday | Technology Center of DuPage |
| S908 | October 19, Tuesday | Joliet Junior College |

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Mass Airflow and Fuel Trim Diagnostics (NEW)

This seminar will help the driveability and emission technician make accurate decisions regarding diagnosing Mass Airflow sensor problems and fuel trim issues. A three-step procedure for testing Mass Airflow sensors will be illustrated. Fuel trim operation and strategies will be discussed as well as using fuel trim values to help diagnose driveability problems. Vehicle repair case studies will be used to enhance understanding.

Presented by: [Scot Manna](#)

| ID | Date | Location |
|------|------------------------|---|
| M602 | April 28, Wednesday | State of Illinois Complex, Collinsville |
| M603 | May 11, Tuesday | Oakton Community College |
| M604 | June 17, Thursday | Kennedy-King College |
| M605 | September 16, Thursday | Joliet Junior College |
| M606 | September 21, Tuesday | Morton College |
| M607 | September 23, Thursday | Moraine Valley Community College |
| M608 | October 13, Wednesday | Lake County High School Tech Campus |
| M609 | November 15, Monday | Technology Center of DuPage |
| M610 | December 13, Monday | Prairie State College |

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Advanced Communication Protocol Testing for OBD Failures (NEW)

This seminar will take a more in-depth look into communication issues. Case studies will be reviewed with a strong emphasis on labscope and advanced techniques leading to repair. This class was designed for the serious emission and driveability specialists.

Presented by: [Ken Zanders](#)

| ID | Date | Location |
|------|-----------------------|---|
| Z101 | June 7, Monday | State of Illinois Complex, Collinsville |
| Z102 | August 2, Monday | Oakton Community College |
| Z103 | August 5, Thursday | Prairie State College |
| Z104 | September 9, Thursday | Lake County High School Tech Campus |
| Z105 | October 4, Monday | Kennedy-King College |
| Z106 | November 8, Monday | Truman College |
| Z107 | November 9, Tuesday | Morton College |
| Z108 | December 6, Monday | Moraine Valley Community College |
| Z109 | December 8, Wednesday | Technology Center of DuPage |
| Z110 | December 9, Thursday | Joliet Junior College |

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Four Wire Air:Fuel Sensor Diagnostics (NEW)

Over the last ten years, four wire air:fuel sensors have slowly started to replace oxygen sensors. While these sensors look similar to a conventional oxygen sensor, operation and testing techniques are significantly different. This class will discuss operation and testing of air:fuel sensors used by Toyota, Nissan, Honda, and Subaru. The class will discuss in detail air:fuel sensor operation and air:fuel sensor testing. Testing techniques will include the use of a labscope, scan tool (fuel trims and rear oxygen sensor), and a gas analyzer.

Presented by: [John Thornton](#)

| ID | Date | Location |
|------|-----------------------|----------------------------------|
| T102 | September 2, Thursday | McHenry County College |
| T103 | October 7, Thursday | Morton College |
| T104 | November 4, Thursday | Moraine Valley Community College |
| T105 | December 2, Thursday | Oakton Community College |

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Articles Needed for eAir Repair

From: the Illinois EPA Repair Industry Outreach Team

We are always looking for short articles of interest for eAir Repair. Many of you have gathered information for successful emissions repairs. It is time to share those tips with your fellow technicians. Please help us out by writing a brief story (a couple of paragraphs) about your success or fix.

Those tips can be e-mailed to epa.repair.outreach@illinois.gov.

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