



Technicians Service Training

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"Taking Care Of Today's Vehicles"

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Upcoming

***TST Big Event
Saturday, April 6th 2024***

Bernie Thompson

Wayne Colonna

Sherwood Cooke

Mark Warren Keynote

Registration is OPEN

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Adam Roberts Part 2

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Editor

"G" Jerry Truglia

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"Taking Care Of Today's Vehicles"

Today's cars can go longer and harder than those of even a decade ago. But that doesn't mean we can treat them less kindly. In this article, I'll talk a bit about everything from the routine oil change to the diagnostic problems that were caused by the lack of proper maintenance.

Not So Routine

Recently, I got a rude awaking being back in the shop doing simple tasks such as oil changes and maintenance. Now, I am not complaining about the maintenance or diagnostic work. That's no problem since I always keep my skills up to speed working on problem vehicles. The area I want to focus on is oil changes. Not that it's so hard to change oil, but resetting the oil lights or messages are another story.

If you have been around a while then you know most of the domestic and Asian vehicles are not that hard. But if you work on European vehicles, you know what I am talking about. Let's take a look at some of the helpful information sources that you can utilize.

The information systems ALLDATA, AutoData, Identifix, Mitchell and MotoLogic have very helpful information, but you need to follow the steps

(Con't on page 2)

"Taking Care Of Today's Vehicles" (con't from p. 1)

very carefully until you do a few of the tough resets and get them down. Let's not forget that there is very helpful information on YouTube and Google when someone has gone through the process of documenting the procedure, or better yet videotaping the process. The other solution is from Launch Cresetter and CanDo Reset + that offer a small handheld oil reset tool that plugs into the system similar to most scan tools. The Launch Cresetter and CanDo Reset+ (**Figure 1**) units offer an automatic or a manual reset. Having the handheld units are very convenient since you have all the information right in front of you without have a laptop or tablet.

Let's talk about oil; it's not your father's motor oil any more. Specifications for motor oil are extremely important in order for an engine to operate properly. Besides using the correct weight oil, the oil needs to meet one or more of the follow specifications; API, SAE, ILSAC, ACEA and Dexos to name a few. The following is an example out of ALLDATA: VW Oil Quality Standard VW 502 00. Other than heading over to your local VW dealer to buy the approved oil, what do you do?



Figure 1

You know how I preach checking the Technical Service Bulletins (TSBs), right? Guess what? For a list of engine oils that meet Volkswagen oil quality standards refer to the most current TSB "Engine oils which meet Volkswagen Oil Quality Standards." Use only engine oils that expressly meet the Volkswagen oil quality standards specified for this vehicle. Using any other engine oil can cause serious engine damage that will not be covered by any Volkswagen Limited Warranty. Other OEs have similar warnings on the use of oil in their engines.

(Con't on page 6)

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The following are some of TST’s regular instructors:

Bernie Thompson of ATS

John Thornton of Autotrain Inc.

Wayne Colonna of ATSG

Jorge Menchu the “Labscope Guru,” AES Wave

John Anello of Auto Tech On Wheels

Mark Warren of World Pac / Motor Magazine

Brandon Steckler of CTI & Motor Age Magazine

Peter Meier of Motor Age Magazine

Ken Zanders of Illinois Air Team

"G" Jerry Truglia of A.T.T.S. Inc.



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Currently there are **TST chapters in Connecticut, Massachusetts, New Jersey, New York** and membership continues to grow. For more information you can call **TST** headquarters at:

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“Taking Care Of Today’s Vehicles” (con’t from p. 6)

“What’s the big deal?” you might ask. “Oil is oil, right?” Engines today are the high-performance sons and grandsons of years past and run much tighter tolerances with less room for errors. Variable Valve Timing (VVT) actuators use oil pressure to function properly and the use of improper oils will impact, even damage, VVT components. This ain’t your granddaddy’s Buick Roadmaster, anymore!

In addition to having to adjust your oil change habits of yesterday to keep up with the technology of today, other areas we once considered “routine” have changed. Not all are new, but many of these are still giving technicians fits from lack of information and training. One example is Tire Pressure Monitoring System (TPMS) reset. It’s something we all need to deal with, even if we are just rotating tires.

Some TPMS systems are very simple, while other vehicles need a special tool to reset the system or program new locations into the Electronic Control Unit (ECU) in charge. Another “routine” service area that isn’t so routine anymore is brake service. With more electronic braking systems coming into play, and electronically-actuated parking brakes installed, beginning a routine reline could end up costing you a lot more than a set of brake pads to fix.

Why Should I Perform Maintenance Work?

It’s time to move on to problem vehicles that came in with issues that could have been avoided if the proper maintenance was performed. Our first vehicle is a 2002 Saturn SC1 1.9L that came in with a P0341

(Figure 2) cam sensor Diagnostic Trouble Code (DTC). This DTC can be confusing for the tech who is not familiar with this vehicle. The 1.9L engine does

not have a cam sensor, but rather uses the Electronic Ignition (EI) that has capacitive pickup plates located under the 1-4 coil pack that determines the polarity sequence for a cam input.

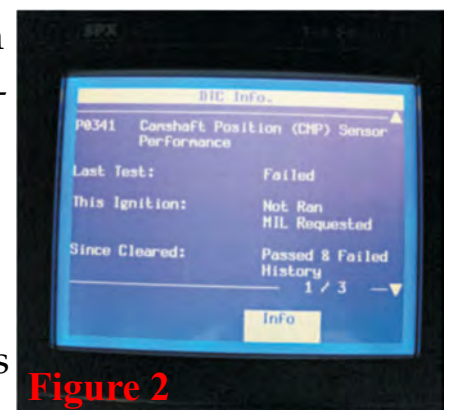


Figure 2

(Con’t on page 8)

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“Taking Care Of Today’s Vehicles” (con’t from p. 8)

The cause for this problem was a neglect of maintenance on this vehicle that had not seen routine service in a few years or more. How is that related? Worn spark plugs lead to wider plug gaps. This, in turn, leads to a higher energy demand in order to fire. And while coils are more than capable of meeting the demand, they are not designed to do it all the time. They overheat and the secondary insulation breaks down, leading to a shorted coil. This fix for this vehicle was new spark plugs, wires and the No. 1-4 cylinder ignition coil.

Our next story is about a 2008 MB GL450 4.6L with air suspension that came in with a message “AirMatic Service Required” after the vehicle was serviced at another shop. The owner of this Benz went for the cheapest oil change he could find which wound up costing him more in the long run. This wasn’t exactly caused by lack of maintenance as it was by lack of knowledge and training.

The problem occurs if the vehicle is lifted without first turning off the air suspension system. Any trigger, like a door opening, could activate the system with no load on the suspension. The air suspension spring can be damaged or moved off its seat. Ford products with air suspension systems had a switch in the trunk (or at the passenger’s side lower trim panel) to turn off the air suspension, but the Benz has to be turned off via a scan tool or may be turned off on some models by the control module automatically. Make sure before you lift up a vehicle, you check if it has air suspension and know how to turn it off and don’t forget to turn it back on when you let the vehicle down.

How about a 2004 Ford F150 XLT 4.6L with 186,000 that has not seen ignition maintenance in more than 90,000 miles? Well you probably know where I am going with this one if you have had the joy of removing the spark plugs **(Figure 4 on page 11)** on this engine.

Because the plugs have a tendency of breaking there are

(Con’t on page 11)



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"G" Jerry Truglia
Instructor/Owner
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"G" is a ASE World Class Technician who has been in the industry for 48 years. He is recognized by the US Environmental Protection Agency as one of the foremost OBD II experts, technicians, and trainers in the country. He is an experienced presenter and trainer, and has presented at Mobile Air Conditioning Society conferences, five SAE World Congresses, the Clean Air Conference, and for many years at I/M Solutions conferences. He has extensive experience in the automotive field as a technician, service manager, shop owner of twelve different repair shops (five at once), and technical writer. This was his response after using our unit for months.

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“Taking Care Of Today’s Vehicles” (con’t from p. 8)

a couple of things that you can do before removing them. The following are a few things that you can try before removing the plugs. First, warm up the engine; second, perform a fuel system cleaning/decarbonize before remove the plugs; and third, pray and make sure you have the special tool (**Figure 5**) that removes the broken plug along with an air vacuum to suck up any small debris that may have been left behind.



Figure 3

Or a 2002 Cadillac Escalade 6.0L with 80,000 on the odometer with a brake problem that could have been avoid in two ways. The first way she could have avoided a costly repair was when she first heard the noise (**Figures 6 and 7**). She should have brought the vehicle right in rather than continue to drive.



Figure 4



Figure 5

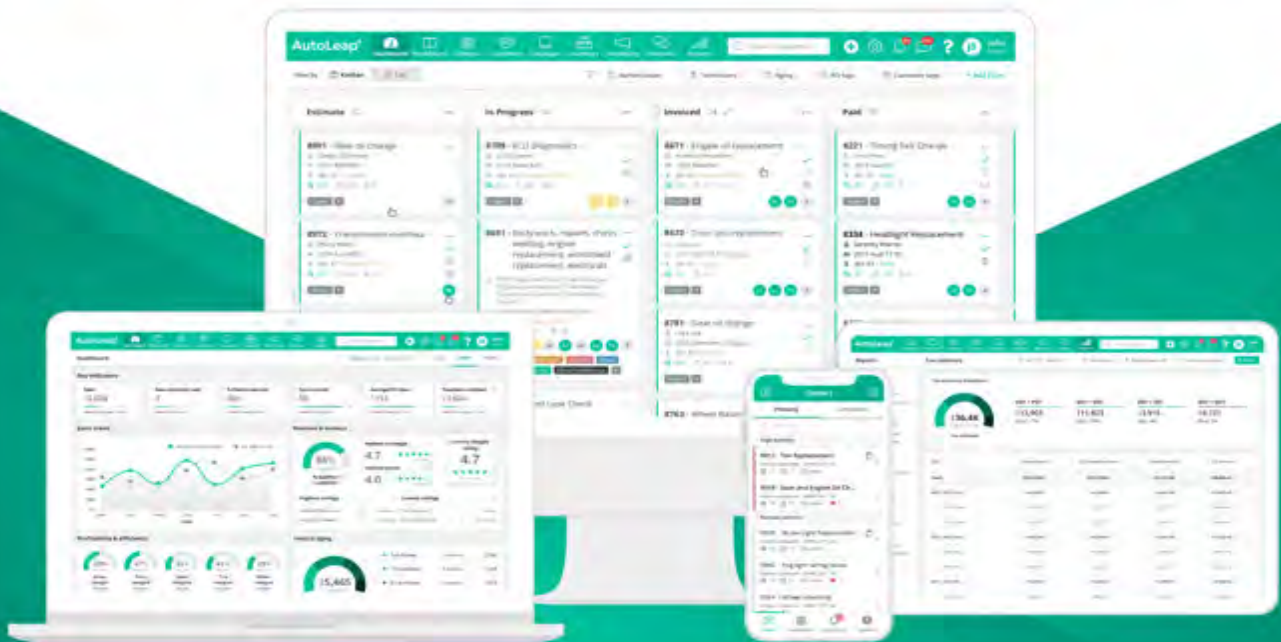
You’ve never had a customer like this one, have you? As you can see, she drove the vehicle until the caliper blew out. The other way she could have saved a boat-load of cash was to have had the service done when the shop first recommended the brake work.

“Worn spark plugs lead to wider plug gaps. This, in turn,

(Con’t on page 15)

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“Taking Care Of Today’s Vehicles” (con’t from p. 11)

leads to a higher energy demand in order to fire. And while coils are more than capable of meeting the demand, they are not designed to do it all the time.”

Wait, There’s More!

On to a 2007 Ford F350 6.0L diesel with a P0401 (EGR Insufficient Flow) DTC detected. I encountered this problem vehicle as I was teaching a class. The shop I was at

had installed a new EGR valve that did not resolve the problem. You can go to MotorAge.com/egrvalve to see the EGR valve operating by scan tool bi-directional control on the TST YouTube channel.



Figure 6

The problem with this EGR system as well as many others is that the EGR passages clog up and need to be cleaned. I recommended that they contact their local BG representative and purchase the special EGR cleaning kit along with the chemical. Once they ran the BG cleaner through the system the problem was solved. This is a great service that needs to be performed on diesels as well as gas engines such as Honda motors that are known to clog EGR passages.

A lack of routine oil changes brought a 2005 Subaru Legacy 3.0L 75K into the shop. It came in with a P0011 (Intake Camshaft Position Timing Over Advanced Bank 1) and P0021(Intake Camshaft Position Timing Over Advanced Bank 2) long with an idle and stalling problem. This engine had clogged VANOS (**Figure 7 on page 19**) screens that are inserted in the solenoid’s oil passages. The problem most likely would have not occurred if the regular maintenance along with the correct oil was used during regular oil changes.

(Con’t on page 19)



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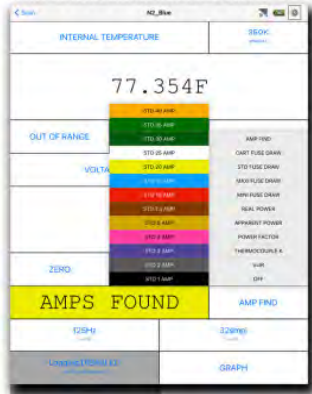
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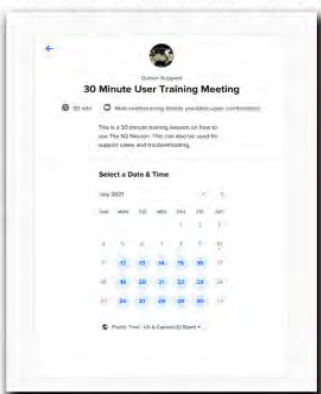
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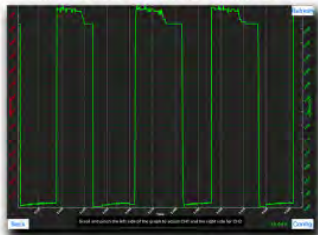
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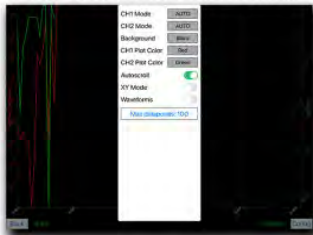
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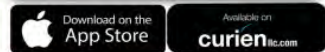
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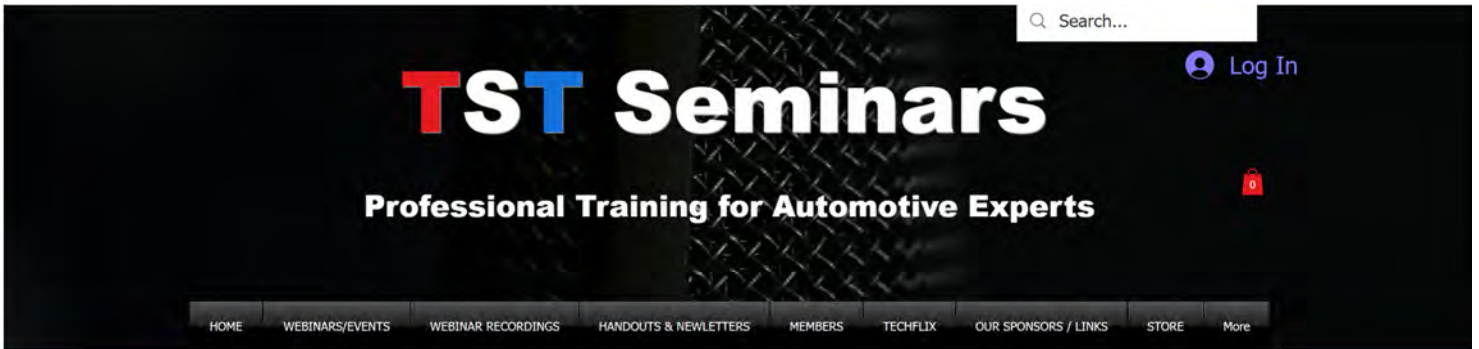


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About the Event

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Bernie Thompson
- **"Is the Transmission to Blame?"**
Wayne Colonna
- **"Cracking The Case"**
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Keynote Speaker: Mark Warren

“Taking Care Of Today’s Vehicles” (con’t from p. 15)

Some The 5w30 oil required for this engine is an ILSAC (International Lubricant Standardization and Approval Committee), GF-3 with an API SJ standard. The use of the wrong oil, low or dirty oil can cause the above DTCs. To test the system, use your scan tool’s bi-directional ability to actuate the valves.



Figure 7

An alternative procedure also can be used by connecting a Power Probe or fused jumper wires. The caution is to make sure you index the terminal to make sure what side has power and ground in case the solenoid uses a diode. Turn the key off followed by disconnecting the wires to the solenoid, followed by turning the key back on and touching the Power Probe point very carefully without jamming it in the terminals to see what side has power and ground. Your next step would be to apply power and ground to the solenoid to see if the engine makes an rpm adjustment as the phaser adjusts one way or another.

Our last story of the day is a 2006 Chrysler 300C 5.7L with a NAG1 transmission and a complaint of a vehicle that will not move until the engine is shut off and restarted. This vehicle is one that I owned and at the time was under warranty. I noticed that the transmission developed a leak and returned it to the dealer. They installed a new connector plug and wiring harness that is usually a problem but was not in this case. The vehicle was returned to me and still leaked transmission fluid that I found was leaking from the front pump seal.

I returned the vehicle to the dealer where they replaced the front seal and now that all the leaks were fixed I thought the problem would be solved. Anytime the vehicle was driven for more than three hours, the vehicle

(Con’t on page 20)

"Oil Loss And What To Do About It" (con't from p. 19)

exhibited the same problem it had before. I would be driving anywhere from 5 mph to 75 mph and suddenly experience no forward speed until I coasted the car over to the shoulder of the road, placed the selected in park, followed by shutting it off and restarting it. The final fix for this vehicle was a complete transmission replacement.

The moral of this story is to make sure a transmission leak gets repaired as soon as possible as not to cause a low fluid level that will overheat the electronics in the transmission. It seemed that the leak went on way too long, causing an internal problem that put the unit in limp mode.

As professionals, we see cases just like the ones I shared here today everyday in our shops. We share these stories with our customers in every effort to help them save money in the long run. Why, then, do so many customers refuse to perform routine maintenance? No matter, I guess. I'll fix it either way!

***Article By
"G" Jerry Truglia
TST Founder and President
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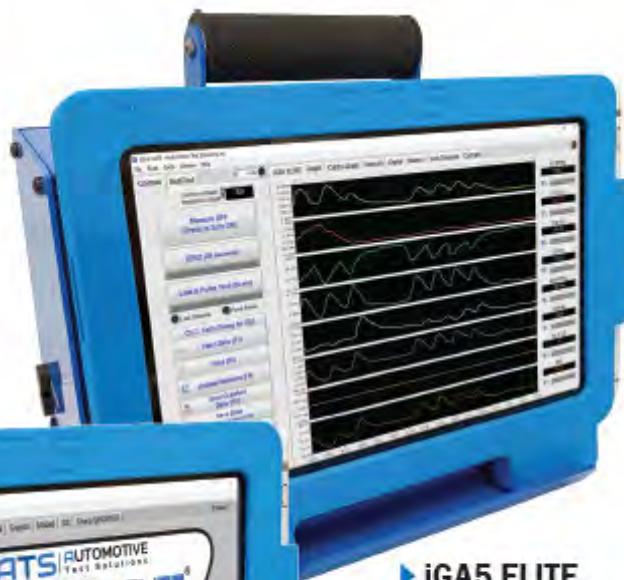
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