



## Tech Training

### **Conclusion of the E.S.I. Cover article in January's newsletter:**

It was brought to my attention at the recent ASA Vision Training expo in Kansas City that I started a discussion about E.S.I. (Electronic Service Information) back in December. It was continued on into the January issue, but I never finished the story. Those of you who were in my E.S.I. Class in Kansas City already know the rest of the story, but for the rest of you who were wondering what happened, here's the rest of the story.

When we left off, a late model brand XXX vehicle (one that we don't work on very much) came into our shop with a mil light on. Very early in the day we realized that in order to fix the problem, we would need some information and it didn't seem at the time that it could be found from "traditional suppliers".

The customer called and wanted to pick the vehicle up early that afternoon and we had to confess that we kinda knew what the problem was but needed more time (not to experiment) but to find more data. He quickly agreed to drop the car off the next morning on his way to work. Now we have really committed ourselves to fixing this vehicle (you know the kind that keeps you up half the night) and must find a new source of information. OK, let's go the OEM route, jump on the OEM website, flip out the charge card (they work well that way) and order the factory service manual for this vehicle. And, of course, order it next day air to arrive early morning (\$ 32.00 extra). The factory service manual on cd-rom cost \$140.00 plus the \$ 32.00 for early morning next day air shipping, but it will be worth it because we WILL fix this car! (I call this an emotional fix When we puffed out our chest and told the customer that with a little more information we would be able to fix). The following morning we took the customer to work (glad it's close-by) and waited for the OEM manual to arrive. Early in the afternoon the customer is on the phone once again, but this time I have a crutch! The cd-rom had not arrived and it looks like we will need his car again tomorrow. (Good thing for the customer we aren't charging by the day, but unfortunately for us as we haven't made a dime on this vehicle yet) Day #3 arrives and we repeat the process again. This time the cd-rom does finally arrive (lost my \$32.00 btw). I plugged it into my pc and found that the factory manual shows exactly what our traditional suppliers had shown us the first time! Surely the dealer technicians have another book hidden somewhere, as even a seasoned dealer technician couldn't fix this code with just this flow chart! On a side note: the cd-rom may only be installed on **ONE computer.**

#### **Let's review:**

#####We (the service shop) have spent 3 days consisting of 2-3 hours each day on this pretty black vehicle (not counting customer delivery time).

#####We have spent \$172.00 on information (not including calls and faxes to our traditional suppliers)

#####The MIL code will clear but returns right away after driving.

#####We again have the DUH's.

**Concluded on page 2** →

## Tech Training (Cont. from front page)

### Now I want you to stop and explore your options.

- #####Do we bite the bullet and call the dealer?
- #####Do we take the car to the dealer and have it fixed ?
- #####Who pays for this cd-rom package?
- #####Do we feel as if the dealer will fix this car quickly the first time?  
Have we overlooked other help venues?

At this point we still have the need for more information and knowledge on this vehicle. The next step was to consult the “ real service guru’s” on the [www.iATN.net](http://www.iATN.net) web site. Now I know some of you will say, “ I would have done that first”, but that’s not the point of this discussion. We (so far) have followed traditional and the latest proposed methods of fixing the car knowing that IATN could more than likely help. As a sponsoring member of the iATN group, I used the archive search and quickly found that 30 posts had been recorded for this exact vehicle! WOW, this particular vehicle had failed many times before and the IATN dudes had fixed quite a few of them.

### **The fix looked like this :**

Code / DTC P1136 Mixture adaptation, mixture too rich ( Bank 1)

Fix: Clogged Intake screen at the air cleaner. This screen is inside the air cleaner housing below the filter element (1999 VW Passatt) . It may be so dirty that you can’t see it. Be careful when cleaning. It appears to tear very easily.

Ok, now I feel really bad knowing that in all my informational searches, this screen had not ever been mentioned. Could this fix my vehicle? Sure it could! When inspected, this filter was 98% stopped up. Cleaning the filter did in fact fix this car, BUT not without additional problems.

The vehicle was back (with mil on) a couple days later and after again consulting the iATN forums, it was decided that I really should have reset the adaptive fuel trim for this vehicle. This requires a factory scan tool or the tool offered at [www.ross-tech.com](http://www.ross-tech.com). Ross Tech sells a version of the tool called a VAG that works very well on this vehicle. BTW, now I find out that I would also need this tool anytime the battery power is removed as well as to reset the adaptive values. That is another issue I really didn’t expect. We sent this car back to dealer for this function, although Randy Dillman (LTS North) did buy the VAG software and has used it on this same type of vehicle since we did this one. He says it works very well and performs as the factory tool.

By this time I think you have figured out that all the information paths used up to the iATN fix didn’t fix the vehicle! We followed these paths to test the service information matrix and the availability of today's service information. In closing I would like to make a couple statements.

1. The information trail is much better than it ever was with the introduction of the OEM websites and the NASTF Matrix pointing the way to the OEM service tools and information.
2. We (service technicians) must still understand the operation and strategies of the systems we service. That either takes experience (like this example shown) or training (I have taught this car to hundreds of service techs in our seminars). You’ve got to have one or the other and it may not exist in the factory manuals.

Been there, done that ? Sure you have. Send all comments to: [Jimlinder@juno.com](mailto:Jimlinder@juno.com)  
Stay tuned for the next installment of: “Now we’ve caught the information but, what’s next?”

## Fuel Injection Service Update from the “Wizard”



### FUEL LINE VERSUS FUEL INJECTION HOSE

We service a lot of the older fuel injection systems that have fuel hose from the rail to the injectors. Recently the question was asked if there was a difference in the old carburetor fuel line and fuel injection hose. Answer: YES there is.

Standard fuel line hose used with carbureted systems operate at pressures around 10-15 psi. Fuel injection hose is designed to operate at pressures of 80-100psi and if there is a problem, pressures could exceed 175psi. This means that fuel injection hose has a higher working pressure rating (125psi) and minimum burst pressure rating (900psi) as compared to standard fuel line hose which offers only 50psi WPR and 250psi MBPR.

The difference is in the construction. Standard fuel line is a one-fiber braid with a hypalon cover and nitrile inner tube. Fuel injection hose is a multi-fiber braid with a polyethylene cover and fluoroelastomer veneer inner tube. This difference in construction allows fuel injection hose to perform at higher temperatures without premature hardening and cracking. The fluoroelastomer inner tube cannot be damaged by oxidized gas and various additives, such as ethanol and methanol, found in today's fuel.

So how can you tell which hose you are using? Look for an SAE rating on the hose. SAE30R6 and SAE30R7 are low pressure hose and SAE30R9 is a higher pressure fuel injection hose. If your hose has a number between R7 and R9 it is a medium pressure hose.

#### OOPS!!!

In the February issue, there was an incomplete sentence and a blank left on the bottom of the first page.

The sentence should have read as follows:

Our newest employee, Susan Cooper (read about Susan in the **December** issue) attended the cook-out and was introduced to the group.

Sorry about the mistake.

#### Special Note:

One of our Guru graduates, Tom Perkins, is pictured on the cover of the February issue of “Parts & People”. If you'd like to see a copy, you can view the online edition at [www.partsandpeople.com](http://www.partsandpeople.com)

Congratulations, Tom!  
Lookin' Good!!

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## Shure-Step Stool

I think you would all agree that in order to properly diagnose and repair today's vehicles, you need the right equipment. It isn't often that a tool or piece of equipment catches my eye (I guess that's the girl in me), but I recently purchased something I would like to share with you. How many of you are still standing on milk crates to try and reach under the hood of a big pickup truck? And how many times have you busted your head, chin or rib cage because that crate slipped out from under your feet? We now own a step stool that will NOT slip and I've used it several times with great results. It's called the Shure-Step. The regular step comes in 2 lengths, either 24" or 39" and weighs between 8 and 16 lbs. Each, so they are easy to move around. They are also stackable which helps you achieve the perfect height. Even better, they're guaranteed for life! If the non-skid pads ever wear out or if the step ever gets crushed, it will be replaced for FREE! The only downfall is they are a little pricey, but I urge you to order one and try it out. For more information or to place an order, simply call: 801-485-1212.



-Michele Winn, LTS Analysis "Sleuth"