

# Inspection Update

A Publication of the Massachusetts Enhanced Emissions and Safety Test Program

Volume 4, Issue 3, September 2003

## Advanced OBD II Technical Training To Be Offered at Four Sites this Fall

Massachusetts Bay Community College, acting as a sub-contractor to Agbar Technologies, Inc., will be offering Advanced OBD II Technical Training to emissions repair technicians this fall at four convenient locations around the state.

Based on an ASPIRE curriculum, the course will consist of 12 hours of classroom instruction over three nights at each of the four locations and a final four-hour Saturday morning session of hands-on instruction at one location, the MassBay Technology Center, Ashland. *See related article for course highlights.* The hands-on instruction will be offered only at the MassBay Technology Center.

Here's the schedule:

- MassBay Technology Center, 250 Eliot St., Ashland, **Sept. 30, Oct. 2, 9 and 11.**

- Automotive Career Development Center (ACDC), 19 Wells St., Worcester, **Oct. 15, 21 and 22, and Oct. 25** in Ashland.

**Register by Fax  
with Form Inside**

**See Page 3**

- Woburn Diagnostic and Training Center, 10-V Gill St., Woburn, **Oct. 28 and 30, Nov. 6, and Nov. 15** in Ashland.
- West Springfield Diagnostic and Training Center, 33 L Street, West Springfield, **Nov. 12, 17 and 19, and Nov. 22** in Ashland.

The night classes will all begin at 6 p.m. and end at 10 p.m.; the hands-on sessions

will all be on Saturdays, from 8 a.m. to noon.

Registered emissions repairers may take the course for only the cost of the manual, \$50. Non-registered repairers will be charged \$350, a fee that includes the price of the manual.

This will be the second time that Advanced OBD II Technical Training will be offered under the auspices of Massachusetts Bay Community College and in conjunction with the *Enhanced Emissions & Safety Test* program. The first time it was offered, in 2002, the course did not include hands-on training.

To assure that all Massachusetts automotive technicians have every possible training option open to them, MassBay Technology

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## A 'Dedicated Environmental Pro' Takes the Helm at DEP

The Massachusetts Department of Environmental Protection has a new leader, Commissioner **Robert W. Golledge, Jr.**

Mr. Golledge, who was named DEP commissioner in June, has extensive experience in environmental management in both the public and private sectors. Prior to becoming commissioner, Mr. Golledge worked as the Massachusetts Director of Environmental Sciences for the national consulting firm Vanasse Hangen Brustlin, Inc.

"Bob Golledge is a dedicated environmental professional who has spent the past 17 years as an enthusiastic advocate for the rights of all citizens to enjoy an environment free of pollution," said Massachusetts Secretary of Environmental Affairs **Ellen Roy Herzfelder.**

Mr. Golledge spent 13 years with the DEP, serving as director of the department's Central Regional Office in Worcester, DEP chief



**Robert W. Golledge, Jr.**

of staff, and director of the Division of Wetlands and Waterways.

"The commissioner of DEP plays a vital role in protecting the environmental quality of life for all Massachusetts residents", said Mr. Golledge. "As commissioner, I will focus on targeting our compliance and enforcement efforts toward high-risk areas. I also intend to maximize the use of new tools and technologies to ensure our regulatory processes are efficient and effective. I look forward to the challenges ahead."

While at DEP, Mr. Golledge managed the implementation of the Massachusetts Wetlands Protection Act, as well as the State Clean Water Act and the Chapter 91 Waterways Program. He also developed the wetlands and waterways training curriculum for Conservation Commissions and environmental consultants and taught Massachusetts Continuing

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# Registration a Must for Everyone Taking this OBD II Training

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Center will allow any technician who took Advanced OBD II Technical Training in 2002 to participate for free in the newly offered hands-on sessions. Those who took the training in 2002, therefore, have a choice of four dates when they may receive the hands-on instruction at MassBay Technology Center: **Oct. 11 and 25, and Nov. 15 and 22.**

Registration is required for everyone taking this advanced OBD II technical training, even those who were trained last year and just want to attend a hands-on session. Walk-ins are not allowed.

You may register by calling Massachusetts Bay Community College, or by faxing or

mailing a completed registration form to the college. This edition of *Inspection Update* contains a blank registration form for this purpose. *See Page 3.*

Contact points are:

- Massachusetts Bay Community College main course registration line, 781-239-3030.
- Massachusetts Bay Community College fax, 508-881-9210, Attn: Charles Pearson.
- Charles Pearson, special assistant, MassBay Technology Center, 781-239-3048, and [cpearson@MBCC.mass.edu](mailto:cpearson@MBCC.mass.edu).

If you contact Mr. Pearson by e-mail, be sure to include your name, address, phone

number and registered emissions repair technician number.

Each class will be limited to 25, or fewer, technicians, so reserve your spot early. ■

## Getting to Training Sites

Directions to Mass.Bay Technology Center, Ashland:

[www.mbcc.mass.edu/about/where.asp](http://www.mbcc.mass.edu/about/where.asp)

Directions to Automotive Career Development Center (ACDC), Worcester:

[www.auto-careers.org/directions.html](http://www.auto-careers.org/directions.html)

Directions to Woburn and West Springfield Diagnostic and Training Centers:

[www.vehicletest.state.ma.us/](http://www.vehicletest.state.ma.us/)

[DTC\\_directions.html](#)

## OBD II TRAINING HIGHLIGHTS

The upcoming Advanced OBD II Technical Training will consist of 16 hours of classroom and hands-on training. *Be sure to bring your scanner.* All instructors are ASPIRE-certified Master Trainers. They will be using the most advanced training materials available from ASPIRE.

Highlights of the course will include:

- How to use a scientific approach to diagnose and repair OBD II-equipped vehicles
- Learn the mechanical problems that trigger OBD II codes
- Using freeze frame to troubleshoot vehicles
- Thinking like manufacturers think (It's not what you'd think)
- Finding out where manufacturers put "the rest of the story"
- When to ignore pending codes...and when to pay attention to them
- How to unleash the power of your scan tool
- How to get past that box that says, "Replace with known good part"

*Inspection Update* is published quarterly and distributed to the automotive service and repair industry in Massachusetts by the Department of Environmental Protection and the Registry of Motor Vehicles, in association with Agbar Technologies, Inc.

Our mission is to help foster the success of the enhanced vehicle inspection and maintenance program by providing news and useful information to vehicle inspectors and repair technicians in a timely fashion.

We also want to facilitate the sharing of helpful information among people within the industry. Toward that end, we encourage our readers to contact us with their suggestions, observations

and constructive criticism. Ideas that would benefit the industry as a whole will be presented in subsequent editions of *Inspection Update*, as space allows.

To register your comments, please e-mail or phone:

**John Haesy**  
The Minahan Companies  
617-451-8600

[jhaesy@theminahancompanies.com](mailto:jhaesy@theminahancompanies.com)

The Vehicle Maintenance Initiative Committee (VMI), composed entirely of volunteers from the repair industry, serves as *Inspection Update's* editorial advisory board. William Cahill, of B.C. Auto Repair, Randolph, is chair of the VMI Committee.

## New DEP Commissioner

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Legal Education courses on administration for the City of Lowell and for the Town of Dartmouth.

"We're thrilled that the Secretary has chosen such a strong environmentalist to lead the state's key environmental protection agency," said **Vivien Li**, Executive Director of the waterfront advocacy group, The Boston Harbor Association.

Mr. Golledge holds B.S. in Natural Resource Management from the University of Maine, Orono and served for two years in the Peace Corps in Costa Rica. He has received Public Service Awards for his environmental work from the Massachusetts Association of Conservation Commissions and the Cape Cod Cranberry Growers Association. Mr. Golledge resides in Canton with his wife, Susan, and their three children.

"We had the highest respect for Bob when he was with DEP before," said **David Begelfer**, CEO of the National Association of Industrial and Office Properties.

"His in-depth knowledge of the issues and the agency will enable him to be an effective leader and reformer during these challenging times."

DEP is responsible for ensuring clean air and water, safe management of solid and hazardous wastes, timely cleanup of hazardous waste sites and spills, and the preservation of wetlands and coastal resources. ■

Fill Out and Fax Today

# OBD II Training - Registration Form



**MassBay Technology Center**  
 250 Eliot Street  
 Ashland, MA 01721  
 Email: [cpearson@massbay.edu](mailto:cpearson@massbay.edu)

Phone: (781) 239-3048  
 Fax: (508) 881-9210  
[www.massbay.edu](http://www.massbay.edu)

## REGISTRATION FORM

Semester:  Fall  Spring  Summer

Today's Date: \_\_\_\_\_

Social Security Number: \_\_\_\_\_ Technician R# \_\_\_\_\_

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Middle Initial: \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Male/Female: \_\_\_\_\_

Program: **OBDII** Shop RO#: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Home Phone: ( ) \_\_\_\_\_ Work Phone: ( ) \_\_\_\_\_

Business Name: \_\_\_\_\_ Business Address (City) \_\_\_\_\_

Reason for Attending:  1. Associate Degree  2. Associate Degree with Transfer  3. Certificate  4. Transfer  
 5. Enrichment  6. Visiting Student  7. Other (please specify) \_\_\_\_\_ VISA Status \_\_\_\_\_

Residency:  Resident of Massachusetts  Non-Resident of Massachusetts

Ethnic Group  White (Non-Hispanic Origin)  Black (Non-Hispanic Origin)  Hispanic  American Indian or Alaskan Native  
 Asian or Pacific Islander  Other (please specify) \_\_\_\_\_

### COURSE SELECTIONS

ID	Section	Course Title	Credits	Day/Time	Campus	Check One
7263	AU109 085	Advanced OBDII	X	Tu 9/30, Th 10/02, Th 10/09 6-10PM	Ashland	
7264	AU109 086	Advanced OBDII	X	Tu 10/14, Th 10/16, Th 10/23 6-10PM	ACDC Worc	
7265	AU109 087	Advanced OBDII	X	Tu 10/28, Th 10/30, Th 11/06 6-10PM	Woburn DTC	
7266	AU109 088	Advanced OBDII	X	Wed 11/12, Th 11/13, Th 11/20 6-10PM	W. Springfield DTC	
	Hands On:					
7267	AU110 085	Advanced OBDII	X	Saturday 10/11 8AM-12PM	Ashland	
7268	AU110 086	Advanced OBDII	X	Saturday 10/25 8AM-12PM	Ashland	
7269	AU110 087	Advanced OBDII	X	Saturday 11/15 8AM-12PM	Ashland	
7270	AU110 088	Advanced OBDII	X	Saturday 11/22 8AM-12PM	Ashland	

Check One: Registered Repairer \$50.00  Non-Registered Repairer \$350.00

\_\_\_\_\_ Signature

\_\_\_\_\_ Date

Payment Options:  
 By Mail send registration form with check, money order, or  
 Visa/MasterCard/Discover to:  
 MassBay Community College  
 MassBay Technology Center  
 250 Eliot Street  
 Ashland, MA 01721

Those who registered by mail, Fax or in person, and fail to attend are still subject to full charges. You must officially withdraw from the class in order to be reimbursed according to the refund schedule. Cancellation notice must be at least 72 hours prior to class date. All courses must be paid in full at time of registration.

Check Number: \_\_\_\_\_ Amount: \_\_\_\_\_

By fax, fill out information below and fax to: (508) 881-9210



MasterCard/Visa/Discover is accepted for payment of course and bookstore charges. A minimum charge of \$25 is required.

MasterCard  Visa  Discover Amount to be charged: \_\_\_\_\_

Credit Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Signature \_\_\_\_\_

# Comparison Of Gram Per Mile Emissions

## (Or ... Why do Massachusetts and Rhode Island ...)

By Bert Cox

In Massachusetts, we benchmark our emissions test readings to the EPA standard IM 240 test. Not all states do. Massachusetts chose to grams per mile and federal references primarily so that repair technicians could relate emissions readings to certification standards and not just to cutpoints. The general formula for adjusting the measured emissions to actual emission is as follows:

$$\text{IM240 emissions} = \text{Measured Emissions} \times \text{Emission Correction Coefficients}$$

The Vehicle Inspection Report (VIR) reports the IM240 emissions. The software automatically applies the emission correction coefficient to the raw measured emissions. This article outlines how the factors were developed for Massachusetts and how raw emissions readings are processed. Additional correction factors are also applied to compensate for variations in temperature and humidity but are beyond the scope of this article.

There are two primary differences between the Massachusetts test (MA31 trace with Mass99 equipment) and EPA's IM240 test. IM240 lanes typically cost \$300,000, run a test with speeds as high as 58 mph, and are offered at a few centralized testing locations. To meet the needs of motorists, the automotive industry and the environment, Massachusetts chose to use the Mass99 test which is operated on equipment costing less than \$50,000 at speeds up to 30 mph and is offered at over 1,500 locations throughout the Commonwealth.

### Equipment and Technology

First, the analyzers use different technology. IM240 uses flame ionization detection for HC and CO, and chemiluminescence for NOx. Mass99 utilizes non-dispersive infrared and fuel cell technology to measure the respective exhaust constituents. Vehicle exhaust composition is especially challenging to measure because it is a complex mixture of many different hydrocarbons (aromatics, aldehydes, ethers, and oxygenated derivatives, etc.), oxides of Nitrogen (NO and NO<sub>2</sub>), Carbon Monoxide, Carbon Dioxide, Nitrogen, Oxygen, and water vapor (steam). The speciation of the constituents provides varying levels of sensitivity, amplification, and interference depending on the type of equipment used to measure the exhaust. For example, whereas IM240 systems can observe nearly all of the hydrocarbon atoms in the vehicle exhaust stream, the bench in Mass99 systems can see 100% of Hexane atoms, about 50% of Propane atoms and differing levels of other hydrocarbon components in the exhaust. Therefore, because of the differences in measurement technology between the two systems, correction is needed for each regulated pollutant to align MA31 readings with those observed with IM240.

The second variable needing compensation is the driving trace. Driving traces are characterized by speed, loading, acceleration, and

total work performed (fuel used) per distance driven. This is analogous to the difference in miles per gallon fuel economy depending on whether it is city or highway driving. The MA31 trace applies higher loads (more work done and fuel used per mile driven) than the IM240 driving trace. Therefore, correction for loading is necessary. One might observe that the process is similar to predicting highway fuel economy based on measuring city fuel economy and be reasonably accurate. (Mass and RI chose the 31 second trace for its advantages of lower speed, intrinsic safety, and shorter test time; NY chose to adopt the IM240 driving trace. The Mass software can be configured to operate the IM240 driving trace and was done so for the Arizona study.

### The Arizona Study (and Results)

To characterize these differences, Massachusetts had a study conducted with back-to-back tests of the IM240 and Mass99 tests that enlisted 612 vehicles covering the spectrum of low, medium, and high emitters. New York has conducted back-to-back tests using IM240 and New York equipment on 867 vehicles to obtain their emission correction coefficients.

Although the study was never intended to collect information for comparison to other states, we have enough information to make some inferences. Rhode Island uses the same equipment and same trace but does not change the raw emissions readings. New York uses the IM240 trace on equipment essentially the same as Massachusetts and the effect of alternative traces was one of the areas examined in the study.

The IM240 equipment was the centralized lane equipment used by the state of Arizona and included a Superflow dynamometer and Horriba bench with Flame Ionization Detector (FID) and chemiluminescence NOx detector meeting EPA specifications for IM240 equipment. An SPX workstation from Massachusetts was configured to run both the Mass99 trace and the IM240 trace. First, each vehicle ran two IM240 traces and two Mass99 traces on the Arizona IM240 equipment. Next, each vehicle did IM240 and Mass99 traces on the SPX workstation from Massachusetts. The IM240 numbers in the charts below are those for the IM240 trace on the Arizona IM240 equipment. The MA and RI numbers are for the Mass99 trace on MA equipment. The NY numbers represent the IM240 trace on MA equipment.

The following table summarizes the finding of those studies and the coefficients that were generated. Since the number is a composite of all study vehicles, results for individual vehicles may vary. It's also important to keep in mind that a vehicle in need of repair may have substantial variation in its emission rate.

	equip	trace	Emissions Correction Coefficients			trace correction	cutpoints
			CO	HC	NOx		
IM240	FID/cheme	IM240	1	1	1	1	IM240
RI	VMAS/BAR97	Mass99	-----	-----	-----	No	RI specific
NY	VMAS/BAR97	IM240	0.819	1.456	0.87	1	IM240
MA - prior to July 2001	VMAS/BAR97	Mass99	0.86	1.5	0.86	included	IM240
MA - current	VMAS/BAR97	Mass99	0.57	0.98	0.56	included	IM240

# Calculations and Correction Factors

## Why do different states report different emissions for the same car?

Applying the general formula to each pollutant yields the following equations as used by the software to derive and report IM240 emissions from the Mass99 raw readings:

$$\begin{aligned} \text{CO}_{\text{IM240}} &= \text{CO}_{\text{Mass99}} \times X & 0.57 \\ \text{HC}_{\text{IM240}} &= \text{HC}_{\text{Mass99}} \times X & 0.98 \\ \text{NOx}_{\text{IM240}} &= \text{NOx}_{\text{Mass99}} \times X & 0.56 \end{aligned}$$

The above demonstrates how different states address the correction factor issue. New York only compensates for the equipment because it uses the IM240 trace. Massachusetts compensates for equipment *and* the trace. Rhode Island does not compensate for either the trace or the equipment. On average, the Mass test, New York test, and EPA's IM240 test will yield similar emission results. Since the coefficients are based on statistical regression analysis of hundreds of vehicles, any individual vehicle's emissions may vary slightly. In contrast, Rhode Island does not correct raw emissions results and does not claim parity to IM240 in their readings. Instead of correcting the over estimated emissions, Rhode Island has changed their cutpoints.

Different states design for different objectives as well, depending on their overall air pollution control strategies. States choice of programs is influenced by many factors including emissions from industry, the sophistication of the repair industry and voter preferences. For example, the Massachusetts program is designed to be 85% as effective as EPA's IM240 test using phase-in cutpoints; NY is designed to be 90% as effective as IM240 with final cutpoints; and RI is designed to be 75% as effective as IM240 with final cutpoints. These differences hamper comparison between states because the distinctions affect cutpoints and program design choices. However, the following examples are intended to demonstrate how the emissions of a typical vehicle might be measured and reported in different states.

### Examples

Example 1: 1991 Chev 1500 1G6DC14K2M203189	CO				
	Raw Emission Readings	Correction Factor	Reported Emissions	Cut Point	
IM240 (phase-in)	15.91	1.00	15.91	20.00	pass
IM240 (final)	15.91	1.00	15.91	15.00	fail
NY	22.39	0.82	18.34	15.00	fail
RI	28.29	1.00	28.29	23.74	fail
MA - prev	28.29	0.86	24.33	20.00	fail
MA - current	28.29	0.57	16.13	20.00	pass

Example 1: How different states process emissions readings (CO).

In the above example, you can see that corrected (reported) emissions in Mass (MA-current) and NY are comparable to IM240 emissions. In contrast, RI has increased their cutpoints rather than correct the emissions. The same vehicle would pass IM240 phase-in and the Massachusetts test, yet fail IM240 final standards,

Rhode Island and New York tests. As mentioned already, the raw emissions readings are affected by the trace and type of equipment used. Cutpoints are part of program design. The examples chosen were for vehicles with emissions near the cutpoints to demonstrate how different results might be observed in different program designs.

The following charts exhibit the comparison for HC and NOx.

Example 2: 1985 Olds Cutlass 1G3NT27U7FC061564	HC				
	Raw Emission Readings	Correction Factor	Reported Emissions	Cut Point	
IM240 (phase-in)	1.12	1	1.12	1.2	pass
IM240 (final)	1.12	1	1.12	0.8	fail
NY	0.76	1.46	1.11	0.8	fail
RI	1.16	1	1.16	2.25	pass
MA - prev	1.16	1.46	1.70	1.2	fail
MA - current	1.16	0.87	1.01	1.2	pass

Example 2: How different states process emissions readings (HC).

Example 3: 1990 Pontiac Sunbird 1G2JB34K1L7616754	NOx				
	Raw Emission Readings	Correction Factor	Reported Emissions	Cut Point	
IM240 (phase-in)	1.78	1	1.78	2.0	pass
IM240 (final)	1.78	1	1.78	1.5	fail
NY	2.31	0.87	2.01	1.5	fail
RI	3.10	1	3.10	3.25	pass
MA - prev	3.10	0.86	2.67	2.0	fail
MA - current	3.10	0.56	1.74	2.0	pass

Example 3: How different states process emissions readings (NOx).

You can see that the vehicle above is dirty enough to fail IM240 final cutpoints but clean enough to pass IM240 phase-in. The stricter cutpoints in New York properly fail the vehicle. The effect of Rhode Island's cutpoints appear to make it stricter than Massachusetts on Carbon Monoxide (CO), more lenient on Hydrocarbons, and slightly more stringent on Nitrogen Oxides (NOx).

The state has already derived a wealth of information from the study comparing and evaluating the effects of equipment and traces. It has also provided insights into improving the test and the effectiveness of the program. These options will be further evaluated and incorporated where feasible and be the subject of future articles. ■

**Bert Cox is Chief of Vehicle Programs for the Massachusetts Department of Environmental Protection. Questions? Call Mr. Cox at 617-292-5745.**

## Massachusetts Among States Doing Reciprocal Inspections

# Out-of-State Motorists Entitled to Emissions Test

Motorists with out-of-state plates have the right to an emissions inspection and should be tested. Out-of-state motorists residing in Massachusetts may need to have their vehicles tested here in order to comply with regulations in their home state. Massachusetts has reciprocal vehicle inspection agreements with most other states.

All stations in Massachusetts are capable of performing inspections on out-of-state vehicles. This type of test, known as a reciprocal inspection, is a simple process, and is described below.

NOTE: It is not necessary to have a valid registration form to perform a reciprocal inspection.

Reciprocal inspections take on added significance during the traditional period that colleges and universities are in session, September through May, as out-of-state students often bring their cars with them. If the sticker on an out-of-state student's vehicle is due to expire during his/her stay in Massachusetts, the student can, and should, have the vehicle inspected here. Typically, the student is required to have the vehicle re-inspected within a certain period after returning home with the vehicle. The Massachusetts process for reciprocal inspections is the same for student-operated vehicles as it is for all other out-of-state vehicles.

## Mechanical Woes Cause Many Fatal Accidents in U.S.

The next time a customer complains about your conducting a safety inspection that is too rigorous or too extensive, try responding with these facts compiled recently by the national Car Care Council:

One, motor vehicle accidents linked to mechanical failure cause more than 2,600 deaths annually in the United States.

Two, these mechanically related accidents cost the U.S. economy more than \$2 billion each year in lost wages, medical expenses and property damages.

For more information on the Car Care Council, visit [www.carcare.org](http://www.carcare.org). ■

Here's how to perform an inspection on an out-of-state vehicle:

- ✓ As with all inspections, the safety inspection should be performed prior to the emissions test.
- ✓ After completing the safety test, the workstation prompt will ask the inspector if the motorist is seeking a Massachusetts registration.
- ✓ If the answer is "no," the inspector will continue with the reciprocal test. (If the answer is "yes," the workstation will instruct you to have the motorist contact the RMV, and the test will not continue.)
- ✓ The workstation prompts will ask the inspector for the state in which the vehicle is registered. Enter the postal abbreviation or full state name, where applicable, (NOT Massachusetts).

- ✓ Continue entering the appropriate vehicle data until the software informs the inspector that "a reciprocal inspection will be performed."
- ✓ A reciprocal inspection must be performed online. After the workstation conducts the begin-test call, the software will ask if this is an initial registration for a used vehicle. Answer this question "YES."
- ✓ The remainder of the inspection shall continue normally and produce a valid Vehicle Inspection Report.
- ✓ The sticker should be affixed to the normal location, as described in the Massachusetts regulations.
- ✓ The inspection station will charge the \$29 fee for the reciprocal inspection.
- ✓ If the vehicle fails the inspection, a failure sticker should be affixed to the windshield. ■

## MR. ANSWER: New Hampshire's Jim Grant

**Q. How do you clear or reset the "Service Engine Soon" light on a 1997 Chevy Tahoe?**

**A.** There are three ways to clear or reset the "Service Engine Soon" light in your vehicle: (1) Use a computer scan tool; while you're having that performed, have the technician record the code (or reason) for the warning light being on. There may be a system problem that needs to be addressed. (2) Disconnect the battery; disconnecting the battery causes the computer to lose all its memory. The only problem there is you won't know why the warning light was on. (3) Drive the vehicle; the warning light comes on if there is a system problem or if the key was in the on position and a computer sensor was disconnected. Just about every time you start the engine and drive your vehicle, the computer runs a series of tests. This is called a drive cycle. Before the computer will turn off the warning light, the vehicle and computer have to go through three drive cycles. If the computer has determined there isn't a system problem after three drive cycles of testing, the light will be turned off. If after three or four days of driving the light has not turned off, you may have a problem that needs to be addressed. ■

*Jim Grant manages the Northwood Garage in Northwood, N.H. This first appeared in his regular column, "Let's Talk Cars," in the Sunday Concord (N.H.) Monitor.*

## ENFORCEMENT ACTIONS

January 1, 2003 – May 31, 2003

Violations Issued to Inspectors : 138

Violations Issued to Stations: 131

Inspectors Required to Retrain: 10

Inspector Privileges Revoked: 3

Inspectors Suspended: 32

Stations Suspended: 56



## Engineer Finds Success, Happiness Repairing Hondas



**Barry Innerfield (center), founder-proprietor of LBJ Independent Honda-Acura Specialists, with long-time employees Dan Wood (left) and Rick LaCroix.**

As a youngster, **Barry Innerfield** never considered a career in the automotive service industry. But that's where he found his calling one day by accident. He did not dream of owning his own business and being his own boss. But that's what he's done, happily, for more than 20 years.

The life of Barry Innerfield, founder of LBJ Independent Honda-Acura Specialists in Melrose, is a case study in the wisdom of relying on your own instincts and abilities.

Now 70 years old, Mr. Innerfield grew up in Brooklyn, NY, attended the former Carnegie Institute of Technology in Pittsburgh (now Carnegie Mellon University), and earned a degree in mechanical engineering from the University of Bridgeport (CT). He worked for years as an engineer, one among many toiling on a series of large, complex projects.

"After one to two months of working on something, it would appear that I had no accomplishments of my own," he recalled. "The projects were so big."

In 1973, Mr. Innerfield lost his job during a recession. Unable to find work as an engineer, he took a job as a mechanic at a Volvo-Honda dealership in Newton Center. Although he'd always maintained and repaired his own cars, he was surprised to find that he enjoyed working on other people's vehicles so much. "It gave me a feeling of accomplishment several times a day," he said. But that didn't stop him from going back to engineering when the economy turned around. "The money was better, and, physically, it was a lot easier," he explained.

Back in an office building, however, Mr. Innerfield's thoughts kept returning to the garage. "I'd fallen in love with those little cars, especially the Civic," he said. "Hondas are truly special. Their engineering is superb."

The spell of those "little cars" eventually proved irresistible. Mr. Innerfield left engineering for good in 1980 and took a technician's job at a Honda dealership in Salem. It was a good job, but ultimately he decided he could not find fulfillment on someone else's payroll.

In 1983, Mr. Innerfield struck out on his own, fixing Hondas in the garage behind his home in Wakefield. His business grew rapidly. In 1986, he moved LBJ Independent Honda-Acura Specialists to a small industrial complex in Melrose, adjacent to the city's high school athletic field.

People ask all the time if Mr. Innerfield named the business in honor of the former president, Lyndon Baines Johnson. The answer is no. "L" stands for Liuda, Mr. Innerfield's wife, "B" for Barry and "J" for Jerry, his son.

Today, LBJ Independent Honda-Acura Specialists has about 1,200 regular customers and two full-time employees, **Dan Wood** and **Rick LaCroix**. They're busy all the time, according to Mr. Innerfield, "because all three of us realize we work for the person who drives the car... We have the tools, we have the manuals, and we have the right attitude. We do things by the book. We talk straight to our customers."

Early in the *Enhanced Emissions & Safety Test* program, LBJ Independent Honda-Acura Specialists qualified as a registered emissions repair facility. Mr. Innerfield, an L-1 ASE-certified Master Technician, believes strongly in the health and environmental objectives of the program. Currently, LBJ has five-stars in the program's Emissions Repair Success Rating.

Emissions repairs, however, are not a big part of the business. The reason: Most LBJ customers are committed to doing the recommended, periodic maintenance of their vehicles. "Well-maintained cars usually have no trouble passing the emissions test," Mr. Innerfield said.

LBJ performs two to five emissions repairs per month. The folks at LBJ have found that, when the emissions controls on a Honda or Acura are in need of repair, the source of the problem is most commonly in the EGR system. ■

### **LBJ Independent Honda-Acura Specialists**

165R Tremont St., Melrose

Monday through Friday, 8 a.m. – 6 p.m.

781-662-5300 or 1-800-66CIVIC

# Simple Actions Build Customer Trust, Repeat Business

**“The customer is king.”  
Successful entrepreneurs pay more than lip service to this axiom;  
they live by it every day.**

The *Workstation Reference Guide* for the Massachusetts *Enhanced Emissions & Safety Test* program has some important things to say about serving your customers well, and forging long-term relationships with them. Read the following advice from the *Workstation Reference Guide* and ask yourself, “Is the customer the king in my shop?”

- **Spend adequate time interacting with the customer.** Make sure the customer understands, and feels comfortable with, the vehicle inspection results and any maintenance or repairs that have to be performed.
- **Be specific.** Let the customer know the details. For example, you could say, “The upper ball joints on the right side are worn out, and an idler arm is also very worn. This positive approach is much more professional than saying something like, “Sorry lady. Your front end is shot.”
- **Show the customer why his/her vehicle failed.** Break down the failure components point by point. Then try to have the consumer repeat the problem back to you during this conversation. This will bolster the consumer’s confidence in the inspector’s ability to perform a proper motor vehicle inspection, as well as the repairer’s ability to fix it.
- **Thank the customer for choosing your facility.** Everybody likes to be thanked. And every customer likes to know that his/her business is valued. If you want to lose a customer, take him for granted; act like you don’t care if he comes to your shop or not.

Customer confidence in the inspector, the repairer and the station is built on a solid, honest and courteous relationship. Interacting sincerely with your customers, and taking time with your customers, greatly reduces the chances of your customers becoming difficult, angry or disillusioned. ■

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**Do You Know How to Inspect a Car from Out of State?  
For Steps You Have to Take, See Page 6**

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