



INSPECTION UPDATE

Volume 16, Issue 1

Spring 2015

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Inspection Update is a publication produced by Massachusetts Vehicle Check; a joint program of the Massachusetts Department of Environmental Protection (MassDEP), the Registry of Motor Vehicles (RMV) and Parsons Environment and Infrastructure Group, Inc.

Massachusetts Vehicle Check Remembers Anthony "Tony" Girard



Tony Girard

On December 31, 2014, the Massachusetts Vehicle Check Program lost Anthony "Tony" Girard, the Braintree Motorist Assistance Center (MAC) Repair Technician.

As an Inspector Trainer, Tony was integral to the success of the Massachusetts Vehicle Check Program and the previous Massachusetts Enhanced Emissions and Safety Test Program. During his seven-year tenure with Parsons Environment and Infrastructure Group, Tony trained thousands of new inspectors, as well as hundreds of Commercial inspectors seeking recertification, in the proper procedures for Commercial inspections.

Tony was also a National Institute for Automotive Service Excellence (ASE) L1 and L2 and a Master Ford Technician. Throughout his career he assisted hundreds of motorists and repair technicians around the state with emissions-related vehicle failures.

In his spare time, Tony enjoyed building and racing hot rods, driving big trucks, and woodcutting.

A Brockton native, Tony resided in Taunton with Nancy Girard, his wife of 25 years. He is also survived by his mother and four siblings. Relatives and friends gathered in early January to remember Tony and celebrate his life.

New Leadership at the Registry of Motor Vehicles

In early March, MassDOT Secretary & CEO Stephanie Pollock appointed Erin C. Deveney as Interim Registrar of Motor Vehicles. Her one-year appointment began on March 16. Deveney replaces Celia J. Blue who served as Registrar from January 30, 2014 until March 15, 2015.



Registrar Deveney returns to the Registry of Motor Vehicles (RMV) after working as Interim Commissioner of the Department of Children and Families. Registrar Deveney previously held the positions of Chief of Staff, Deputy Registrar of Policy and Planning and General Counsel within the Registry.

"I am excited for the opportunity to re-join the RMV in the new role as Registrar," Deveney said. "I want to thank Secretary Pollock for her confidence in me and for the opportunity to serve on her senior team. The Secretary has set a clear goal of moving the RMV into a new era as a customer-focused organization and I look forward to finding new and innovative ways to meet that challenge."

(Continued on page 2)

Inspection Procedure Reminders

► Reciprocal Inspection Reminders

If your customer's vehicle will be or is being operated outside of Massachusetts when the vehicle's inspection sticker expires, the Massachusetts Department of Transportation (MassDOT) Registry of Motor Vehicles Division (RMV) provides the following instructions. These guidelines apply in cases such as when students attend school out-of-state or military personnel are stationed out-of-state.

- To avoid the suspension of a vehicle's registration while it is out of state, the RMV encourages all motorists to obtain a vehicle inspection before leaving Massachusetts.
- If the vehicle is not inspected before leaving Massachusetts, the owner must provide documentation that the vehicle or equipment has passed the inspection required by the state in which the vehicle is currently domiciled. This will prevent the RMV from automatically suspending the vehicle's registration.
- After completing the vehicle inspection in that state, the motorist must submit a completed Out-of-State Verification for Vehicle Inspection Form to the RMV, available at <http://www.massdot.state.ma.us/rmv/forms/21307.pdf>, and attach a copy of the passing inspection receipt.
- If the state where the vehicle is being operated does not inspect vehicles registered in Massachusetts, or does not have a vehicle inspection program, the motorist is still required to submit an Out-of-State Verification for Vehicle Inspection Form that notes the jurisdiction does not perform vehicle inspections.
- Completed Out-of-State Verification for Vehicle Inspection Forms should be submitted to MassDOT, Registry of Motor Vehicles, Vehicle Safety & Compliance Services, P.O. Box 55892, Boston, MA 02205-5892. If motorists have questions about this form, they may call the RMV's Vehicle Safety and Compliance Services department at (857) 368-8130.
- Finally, when owners return to Massachusetts with the out-of-state vehicle, they must have it inspected at a Massachusetts Vehicle Check Inspection Station within 15 days of their return if the vehicle was inspected out-of-state, or within three days if the state did not allow out-of-state vehicle inspections.

► Online Registration Renewal Inspection Reminders

The Registry of Motor Vehicles (RMV) reminds inspectors that when a motorist renews a registration online or orders a duplicate registration online, the RMV website will send the motorist an e-mail receipt.

The e-mailed receipt serves as temporary and legal proof of the vehicle's registration until motorists receive their actual registration documents in the mail.

Inspectors should accept this e-mail receipt and conduct inspections accordingly.

Registration Number (1234AB) has been successfully renewed on 03/26/2010 at 10:52 AM. Your registration certificate and decal will be mailed to you. If your old registration has expired, your vehicle cannot be operated legally until you receive your new registration certificate, unless you print and carry this e-mail in the vehicle.

M.G.L. c.90 s.11 allows the Registrar to issue a receipt for the fees paid, which may be carried in lieu of the registration certificate for up to 60 days. A printed copy of this e-mail shall be deemed a receipt for the fees for the purposes of M.G.L. c.90 s.11. If you do not receive your registration certificate and decal within 30 days of the renewal, or you have questions, please contact the Telephone Center at 617-351-4500 (within 339/617/781/857) or 1-800-858-3926 (within 351/413/598/774/978) from 9:00am to 5:00pm, Monday - Friday, except holidays.

We welcome your feedback!

Above is an example of a temporary vehicle registration e-mail receipt generated by the RMV's website at the conclusion of a successful online registration renewal.

If an inspector remains unsure about a vehicle's registration, the workstation will communicate with the RMV's database and validate its status at the beginning of the inspection.

New Leadership

(Continued from page 1)

Registrar Deveney has twenty years of public service management experience as well as experience in legislative and municipal government. Deveney holds a bachelor's degree from College of the Holy Cross and a law degree from Suffolk University Law School.

Registered Repair Technician Updates

► Emissions Repair Success Ratings Reminder

For Registered Emissions Repair Shops that have entered repair data, the Fourth Quarter 2014 Emissions Repair Success Ratings are now available on Vehicle Inspection Reports and on the Repair Shop Locator, found at: http://www.massvehiclecheck.state.ma.us/find_emissions_repair.php.

Each repair shop is responsible for entering its vehicle repair information for any given month *by the tenth day of the following month*. For more information about repair data entry, visit: http://www.massvehiclecheck.state.ma.us/inspection_repair_data_entry.php

► 2015 Ongoing Training Courses

All current Registered Emissions Repair Technicians are required to attend one four-hour ongoing training seminar each year to maintain their status in the Massachusetts Vehicle Check Program. Parsons is offering these quarterly seminars from 6:00 PM to 10:00 PM at Motorist Assistance Centers (MACs) located across Massachusetts. The following 2015 classes are available:

Ongoing Training Course	Locations and Dates
Spring 2015 Strengthening Diagnostic Skills	Braintree MAC - June 8 Pocasset MAC - June 9 Shrewsbury MAC - June 10 West Springfield MAC - June 11
Summer 2015 ASE A8 / L1 Prep & Review	Medford MAC - September 14 Fall River MAC - September 15 Shrewsbury MAC - September 16 West Springfield MAC - September 17
Fall 2015 Variable Valve Timing (VVT)/ Variable Valve Lift (VVL) Systems	Braintree MAC - November 9 Pocasset MAC - November 10 Shrewsbury MAC - November 23 West Springfield MAC - November 24

In 2015, all of the Training Seminars will be free for Registered Repair Technicians. The applications for these courses are available at http://www.massvehiclecheck.state.ma.us/inspection_ongoing.html. Should you need help registering or have any questions, please contact our Registered Repair Coordinator at (781) 794-2961. It is important to enroll as soon as possible because space is limited to 35 technicians per class.

► OBD Diagnosis and Repair Training

The on-board diagnostics (OBD) Diagnosis and Repair Training is a \$600 course designed for motor vehicle repair professionals who are seeking to become Massachusetts Registered Emissions Repair Technicians.

This class is open to all technicians, including those studying to take the A8 Engine Performance or L1 Advanced Engine Performance Specialist National Institute for Automotive Service Excellence (ASE) test. In other words, you do not need to be ASE-certified repair technician to take this course.

The OBD Diagnosis and Repair Training course is a 28-hour course consisting of 20 hours of classroom lecture and eight hours of hands-on training and examination. The class provides foundational information concerning the diagnosis and repair of OBD-equipped vehicles. The next class available is:

Courses Offered	Dates and Times (Location to be determined based on demand)
Fall 2015	Monday - Wednesday, November 16 - 18, 8:00 AM - 5:00 PM Thursday, November 19, 8:00 AM - 12:00 PM

The application for this course is available at http://www.massvehiclecheck.state.ma.us/inspection_ongoing.html. If you have questions or need help signing up, please contact our Registered Repair Coordinator at (781) 794-2961.



Massachusetts Vehicle Check salutes the New England Patriots, the 2015 Super Bowl Champions. SOURCE: www.wbur.org

Vehicle Technology Advancements

2015 marks the beginning of the second half of the decade. Before the end of the decade, motorists could find their vehicles equipped with some or all of the following technologies.

► Apple CarPlay and Android Auto



Apple and Google are pushing to get their operating systems in vehicles. According to an article by CNBC, (<http://www.cnbc.com/id/101914627>), "Apple's CarPlay basically brings the interface of a person's iPhone to the car's infotainment center, allowing a driver to control things like music, messages and calls from their phone via voice or a built-in display. It can also predict where a user most likely wants to go based on addresses from your email, text messages, contacts and calendars."

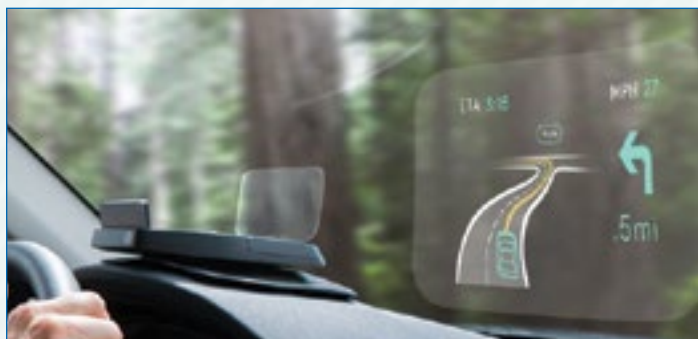


Google is offering a similar product called Android Auto. Both systems will be available this year in an increasing number of models.

For a list of manufacturers that will be supporting CarPlay, visit <https://www.apple.com/ios/carplay/>. For a list of manufacturers that will be supporting Android Auto, visit <http://www.android.com/auto/>. USA Today published a review of both systems in the following article: <http://www.usatoday.com/story/money/cars/2015/02/08/apple-car-play-hyundai/23079259/>.

► Navdy

A company called Navdy is already taking pre-orders for a device that will project everything you now get on your Apple or Android mobile phone onto the windshield of your car. The windshield would then act as a virtual movie screen that shows navigational data from your GPS



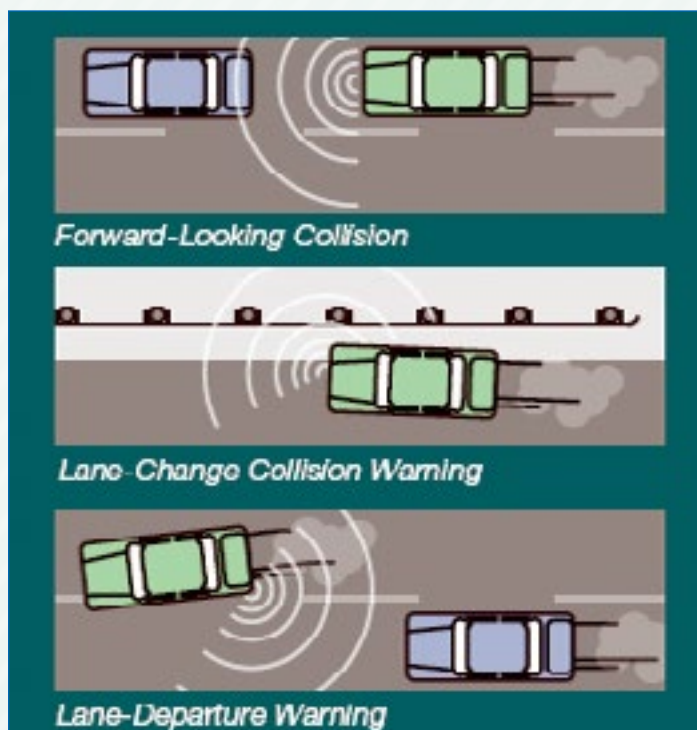
SOURCE: www.slashgear.com

unit, incoming phone calls, text messages and more. The Head-up device will even respond to voice commands and gestures.

For more information about Navdy, see the following article: <http://www.washingtonpost.com/blogs/dr-gridlock/wp/2014/08/18/more-or-less-distraction-with-windshield-texting/>.

► Vehicle to Vehicle (V2V) Communications

The U.S. Department of Transportation is moving forward with regulations that will mandate vehicle-to-vehicle (V2V) communications. This technology will add to the long list of crash-avoidance technology. The technology lets cars automatically exchange safety data such as speed and position 10 times per second, and sends warnings to drivers if an imminent collision is sensed.



V2V communications can prevent many of the most common traffic accidents. SOURCE: usdotblog.typepad.com

In the article <http://www.bloomberg.com/news/articles/2014-08-18/talking-car-plans-advance-as-u-s-says-lives-to-be-saved>, David Friedman, the agency's acting administrator stated, "By warning drivers of imminent danger, V2V technology has the potential to dramatically improve highway safety. V2V technology is ready to move toward implementation."

Inspection Update Profile

Doug Voss, Owner and Operator
Neighborhood Wrench, Natick, MA



Doug Voss, owner of
Neighborhood Wrench

Q: What services does Neighborhood Wrench offer?

A: Neighborhood Wrench is a full-service mechanical repair shop. We offer everything from routine maintenance to diagnostic services to oil changes and engine repair and exchanges. My background is in Honda repair, but we work on all vehicle makes and models. The only service we don't offer is auto body.

Q: What are your roles and responsibilities as owner?

A: I'm completely involved in every aspect of the business. I do it all—oil changes, clean the shop, perform diagnostic work, answer phones, and pay the bills. We have two locations, one shop is in Medway, and the other is in Natick. The Medway location is a licensed dealership, so we service, rent and even sell vehicles there.

Q: How many employees do you have?

A: Currently I have four employees, in addition to a part-time bookkeeper. My uncle Rick Voss has over 40 years experience working at Honda dealerships, and he helps runs my front-office at the Medway shop. Johnny Milch is our service manager at the Natick shop, Bob Pailler is a Registered Repair Tech at our Natick facility, and Richard Hooker is also a technician.

Q: How did you get your start in the automotive industry? What made you want to open your own business?

A: As a kid I always knew I wanted to work on cars, and my dream was to open my own automotive business. I obtained my Associate Degree in Automotive Technology at Franklin Institute in Boston. My uncle Rick gave me my first job at the time, working at Honda. I opened our Natick shop 12 years ago, and the Medway shop two years ago. We're growing, and my goal is to have both facilities operating independently and self-sufficiently.

Q: Have you attended any of the Ongoing Training? How else do you keep up with changes in vehicle technology and emerging technologies in the Industry?

A: Yes, I've attended trainings at both the Braintree and Shrewsbury Motorist Assistance Centers (MACs). I love going to any classes taught by David DeCoursey and Jerry "G" Truglia. I also attend hybrid training courses in Worcester at Auto Careers Development Center

(ACDC), taught by Craig Van Batenburg. In addition, I encourage our staff to attend training classes whenever possible.

Q: Are you a Registered Repair Technician (RRT)?

A: Yes, I am a Registered Repair Tech, and I have one more on-staff. Our Natick location is a Registered Emissions Repair Shop, and we are currently in the process of certifying our Medway location.

Q: How has being a Registered Repair Technician (RRT) helped your business?

A: Being a Registered Repair Tech helps bring in new business and is a great marketing tool, since people are directed to our shop on their Vehicle Inspection Reports (VIR).

Q: What are some of your most challenging vehicle repairs?

A: One of our most challenging issues is intermittent electrical problems. I rely heavily on the International Automotive Technician's Network (iATN) anytime I get a diagnostic problem. When a motorist brings in their car for an intermittent problem and it's not currently acting up, it's a guessing game for us. New cars are complicated, and you can't afford to guess what's wrong with them; that's where testing your components and the training we've invested in becomes essential.

Q: What should motorists begin to do to ready their vehicles for spring?

A: People generally want to ready their cars for traveling in the springtime, so that's when we start to get busier. We are always focused on routine maintenance and safety, and we do a 30-point inspection on each vehicle that comes in, which includes checking tire rods, undercarriage, brakes, tires and beyond.

Q: How do you advertise your business?

A: We are currently in the process of rebranding our website www.neighborhoodwrench.com to add more specifics about the separate locations and employees. We also print postcards and send them direct mail, which has been an effective and cost-efficient way to advertise. We also get a lot of customers from Yelp (www.yelp.com), and respond to each review. I've even had customers remove negative comments after I responded, because sometimes all they wanted was to hear back from me.

Q: What is your business motto?

A: We strive for happy customers driving safe and reliable vehicles. A happy customer is the best way to help promote my business.



Motorist Assistance Center Repair Technician's Corner

► A Visual Underhood Inspection Solves an OBD Readiness Monitor Mystery

It was a balmy day early last November when a 2001 Mazda Protégé came to the attention of the Tewksbury Motorist Assistance Center (MAC). Several months before, the MAC had been contacted by an inspection station about a drive cycle for this vehicle, but the MAC never received any further feedback from the inspection station and assumed that the readiness issue had been addressed.

It turned out that the motorist had undergone foot surgery, which kept the Mazda off the road for a while. However, the motorist still needed to set the readiness monitors to pass inspection. Reviewing the vehicle history, the Tewksbury MAC L1 technician noted that, on August 20, 2014, the vehicle had initially failed inspection for readiness. The next

The vehicle failed on November 15 with an illuminated MIL and diagnostic trouble codes (DTCs) P0300 and P1250. There were also three monitors not ready: the catalytic converter, oxygen sensor, and EGR sensor. With a P0300 random misfire code, it was not surprising that the oxygen sensor and catalyst monitors hadn't run. For this vehicle, the P1250 code is defined as "pressure regulator control (PRC) solenoid valve circuit malfunction." The PRC controls the vacuum supply to the fuel pressure regulator.

At this point, the motorist decided to return to his repair shop for a diagnosis and repairs for the MIL. He asked the shop technician to drive the vehicle and get it ready, then conduct a re-inspection of the Mazda. The vehicle remained at the shop for several weeks before the motorist called the Tewksbury MAC L1 again. After repairs for the P1250 DTC, the motorist again drove the vehicle but was still unable to

Date of Inspection	Test Counter	Overall Inspection Result	Overall Safety Result	Overall Emission Result	MIL Commanded	DTCs	Oxygen Sensor
8/20/2014	1	Fail	Fail	Fail	Pass		Not Ready
11/11/2014	2	Turnaway	N/A	Turnaway	Pass		Not Ready
11/15/2014	2	Fail	Pass	Fail	Fail	P0300, P1250	Not Ready
11/24/2014	3	Turnaway	N/A	Turnaway	Pass		Not Ready
12/24/2014	3	Pass	Pass	Pass	Pass		Ready

Date of Inspection	Oxygen Sensor Heater	Catalyst	Evaporative System	EGR Sensor	Heated Catalyst	Secondary Air	A/C
8/20/2014	Ready	Not Ready	Not Ready	Not Ready	Unsupported	Unsupported	Unsupported
11/11/2014	Ready	Not Ready	Ready	Not Ready	Unsupported	Unsupported	Unsupported
11/15/2014	Ready	Not Ready	Ready	Not Ready	Unsupported	Unsupported	Unsupported
11/24/2014	Ready	Not Ready	Not Ready	Not Ready	Unsupported	Unsupported	Unsupported
12/24/2014	Ready	Ready	Not Ready	Ready	Unsupported	Unsupported	Unsupported

time the vehicle was connected to an inspection machine was not until November 11, and it received a Turnaway for readiness.

After the November 11 inspection, the motorist contacted the Motorist Hotline for assistance. The vehicle had not yet received a MAC referral for readiness, but the inspection station had referred their customer to the Motorist Hotline. After discussing the problem with the motorist, the Hotline determined from the motorist that the Protégé had a malfunctioning indicator light (MIL) that would come on after doing some driving.

The motorist returned to the inspection station with the Hotline information. The inspection station cleared the OBD system, thereby turning off the MIL, and advised the motorist to drive some more. The station owner remembered the motorist and that his vehicle was struggling with readiness but did not remember a MIL being on. The motorist chose to drive the vehicle and then have it inspected with the MIL on, at which point he would contact the MAC for guidance.

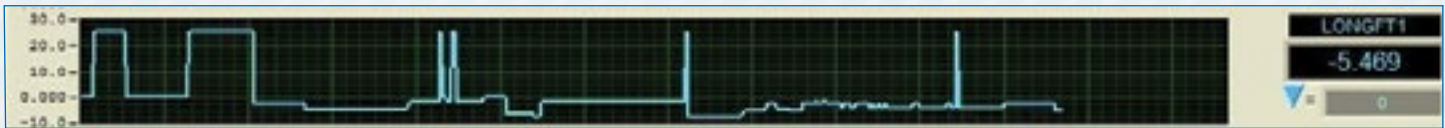
get it ready. He left the vehicle at his repair shop, but they were also unable to get the vehicle ready. When the MAC L1 contacted the repair shop to confirm that the correct drive cycle was being followed, the repair shop asked if they could bring the vehicle to the MAC, so that it could be driven on the dynamometer to try to set the readiness monitors.

At the MAC, the L1 noted that the vehicle had the same three monitors not ready. The MIL was off, but there was a pending P0300 DTC stored. The vehicle also did not idle particularly smoothly, which was no surprise given that it was occasionally setting a misfire code. It was not a steady, consistent misfire, just a rough idle condition. Just to be thorough and try to identify any further issues such as a slow or lazy oxygen sensor, the L1 drove the vehicle on the dyne. The L1 promptly determined that there must be something else wrong with the vehicle in addition to the intermittent misfire and rough idle.

(Continued on page 7)

MAC Repair Technician's Corner

(Continued from page 6)



Graph of 2001 Mazda Protégé LTFT values

By graphing the OBD data, the L1 discovered a major fuel trim problem. The LTFT values were either 0% or +25%, a highly unusual condition. In theory, all vehicles should be 0%, but the reality is that most vehicles are +/- 5%. Yet, when a vehicle is running at either +/- 25%, there is something very wrong. If the LTFT values are this high, most vehicles will set an MIL. The reason that this vehicle didn't seem to have done so was because it was not consistently running high.

The MAC L1 searched ALLDATA® for advice about this type of problem. He did not find the specific fault criteria for a 2001 Protégé to set a P0171 Bank 1 System Lean DTC, but he did find a helpful clue: the powertrain control module (PCM) must see the LTFT at +25% for a certain amount of time before it will set the P0171 code. While not shown in the graph above, the vehicle was also dropping in and out of closed loop in a random pattern. The PCM also set a pending P0300 while the vehicle was at a cruising speed of 55 miles per hour.

Knowing that the vehicle must have a reason for exhibiting intermittently high LTFT values, the L1 performed a quick examination under the hood to check for any obvious problems. He found a torn air boot between the mass airflow (MAF) sensor and the throttle body, which was allowing unmetered air into the engine.



When the Tewksbury MAC L1 performed a simple visual inspection, he discovered a torn air boot between the MAF and the throttle body.

The L1 advised the repair shop of the issue. The repair shop chose to purchase the part and install it at the MAC, so that the vehicle could be driven on the dyne again. After the repair shop completed the repairs, the PCM memory was cleared using a scan tool and the vehicle was driven again. All readiness monitors except for the Evaporative monitor set within about 23 minutes. The vehicle also idled much smoother and no longer set a P0300 DTC.



After the torn air boot was replaced, the Mazda Protégé reset all but one of its OBD monitors within 23 minutes.

It is interesting to note that even though a PCM reset was performed, the fuel trim tables did not seem to immediately reset. At the beginning of the final graphed data, you can see that vehicle still wanted to run at either 0% or +25% but after about 4 minutes on the dyne the LTFT settled down to right around 0%.

If a B+ disconnect had been done, that may have cleared the fuel trim tables to allow the monitors to run that much faster during the drive cycle. The fuel trim spiking to +25% on a sudden deceleration is normal and not a problem.

There are a multiple lessons to take away from this case.

- If you are an inspection station, **please hook the vehicle up to the workstation, even if you know it is going to get a Turnaway result.** Without three Turnaways over a 14-day period, vehicles with readiness problems will not get automatic MAC referrals and their owners will not get the MAC help that they may need.
- **Never clear a vehicle's codes to turn off the MIL.** Many shops, technicians, and inspection stations still engage in this practice. If a vehicle keeps setting an MIL, then it really does need repairs. Hoping to get a vehicle ready without setting the MIL on is a guaranteed recipe for an unhappy customer.
- **Graph your scan tool data while doing a drive cycle.** It's dangerous to try to read a scan tool while driving, so set the tool up to graph, drive the vehicle, and then review the data from the safety of your shop. Graphing data might also reveal problems that you cannot catch by just glancing at a data list.
- **Many problems may occur that will not set a code but will prevent monitors from running.** When a vehicle will not get ready and the vehicle is being driven per the drive cycle recommended by the manufacturer, then it is time to look for real problems.
- **Don't forget to perform visual inspections.** It's amazing how many problems can be found by a quick visual examination.

MASSACHUSETTS



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Vehicle Technology Advancements And Online Registration Renewal Reminders Inside!

Massachusetts Vehicle Check Program At A Glance

Program at a Glance			Enforcement Statistics	
	Count	Failure Rate		Count
Non-Commercial Safety Inspections	1,029,379	4.6%	Violations Issued to Inspectors	99
Commercial Safety Inspections	37,573	4.9%	Violations Issued to Stations	131
7D Safety Inspections	5,953	2.0%	Inspector Privileges Revoked	3
OBD Emissions Inspections	829,901	5.9%	Inspector Required to Retrain	7
Opacity Emissions Inspections	20,919	1.5%	Inspectors Suspended	16
Emissions Waivers Issued	3		Stations Suspended	29
Repair Hardship Extensions Issued	14		Penalties Assessed	\$58,000
Hotline and Training Statistics			Licensed Stations	
	Count			Count
Motorist Calls Received	2,655		Class A Stations	1,179
Inspection Station Calls Received	7,003		Class B Stations	190
Initial Non-Comm. Inspectors Trained	302		Class C Stations	30
Initial Commercial Inspectors Trained	64		Class D Stations	315
Initial 7D Inspectors Trained	21		Class E Stations	9
Initial Motorcycle Inspectors Trained	0		Reg. Emissions Repair Shops	213

For period 10/1/2014 through 12/31/2014



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