



# Exhaust Notes

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## CONTENTS

New Emission Check Rule	1
Kudos	2
Keep Your Authorization Current	2
Calibration Gas Checks	3
Gas Analyzer Suppliers	3
What's That Code?	4
Shop Certification Options	5
Tampering Alert	5
Protect Washington's Waters	6
About This Issue	6
Just for Fleets	7
Diesel and Your Health	7
Emission Check Staff	8

## Welcome to Exhaust Notes

- Would you like to know more about upcoming changes to Washington's Emission Check rule?
- Are you looking for Authorized Emission Specialist (AES) training opportunities?
- Do you ever need help troubleshooting unusual OBD codes?
- Are you looking for supplies for your gas analyzer?
- Have you ever wondered how the Emission Check Program helps Washington residents breathe cleaner air?
- Do you want to know what you can do to protect Washington's environment?

You will find this information and more in *Exhaust Notes*. Look for future issues in your inbox. To receive *Exhaust Notes*, sign up for the RSS feed here:

[www.emissiontestwa.com/e/EmissionRSS/EmissionRSS.xml](http://www.emissiontestwa.com/e/EmissionRSS/EmissionRSS.xml)



### One of Washington's vehicle emission test stations

The Emission Check Program couldn't function without AES Technicians and authorized shops. By fixing emission control failures, you are helping

to reduce pollution from vehicles. Since motor vehicles are Washington's biggest source of air pollution, that's saying a lot.

We hope *Exhaust Notes* becomes a helpful resource to you and your colleagues. Our goal is to provide information to help you serve your customers and keep Washington's air clean.

If you have a question or issue you would like *Exhaust Notes* to address, please contact Melanie Forster at [melanie.forster@ecy.wa.gov](mailto:melanie.forster@ecy.wa.gov) or 360-407-6330.

For general questions about Ecology's Emission Check Program, go to:

[www.ecy.wa.gov/programs/air/cars/automotive\\_pages.htm](http://www.ecy.wa.gov/programs/air/cars/automotive_pages.htm)

## New Emission Check Rule

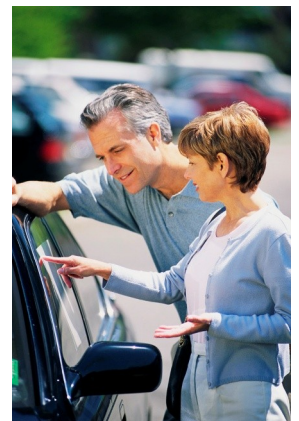
The state legislature has required changes to the Emission Check Program. The current Emission Check contract expires in 2012. Ecology is currently updating the rule to reflect these changes.

These changes include:

- Businesses other than Washington state's contractor will be able to test vehicles

- 2009 and newer vehicles will never require testing. They must meet more stringent emission standards to be sold and registered in Washington.

The \$15 test fee will remain the same at Ecology's contractor test sites. There will be no limit on the fee non-contractor businesses may charge to perform emission tests.



**2009 and newer vehicles will never require emission tests.**



## Kudos to Our Technicians and Shops

Authorized Emission Specialists provide a valuable service to the people of Washington. We appreciate all AES technicians for helping us breathe cleaner air. We would like to thank the following shop and technician for their years of outstanding service:

### John Erosky and Marv's Auto Repair

Tucked away off the main road, just north of 88<sup>th</sup> Street in Hazel Dell is an automotive shop known for its great work

in the Emission Check Program. Marv's Auto Repair has been retail gasoline certified in Ecology's Emission Check Program since 1997.

John Erosky has been an Automotive Emission Specialist for over a decade at Marv's shop. He provides quality emission reduction services to Vancouver motorists. John successfully fixes vehicles so they pass the emissions test, consistently maintains the

calibration log book, and keeps his AES certification up to date.

Marv's Auto Repair is an asset to the vehicle emission repair program. We appreciate their superior performance and many years of service.

*Rachael O'Malley contributed information about John Erosky and Marv's Auto Repair.*

## Keep Your Authorization Current

Interested in becoming an Authorized Emission Specialist? Is it time to update your AES training? If so, here are instructors who offer Ecology-authorized training.

Instructors offer classes as they fill. Contact instructors personally for class information.

### Clark

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Remember, you must take an Ecology-authorized training every two years to stay in the AES program.

If you have questions about training, please contact emission check staff on page 8.



Stay up to date on your AES authorization by taking an Ecology-authorized training every two years.

## Remember to Check Calibration Gases

Imagine that you repair a vehicle that failed an emission test. The tailpipe test you run with your gas analyzer indicates that you fixed the problem. The happy customer leaves your shop, eager to have the car retested and tabs renewed.

Now imagine this once happy customer returns to your shop irate at receiving *another* failed test! To add insult to injury, the repair amount is just under the waiver eligible amount.

How do you reduce the chance this will happen to you? One thing you can do is keep up your regular calibration checks on your analyzer. This will ensure that your shop's test results are as accurate as the equipment can deliver. And it will help validate the effectiveness of emission-related repairs.

Certified shops must run calibration tests monthly to remain in the program. Our staff will ask to check your calibration logs to make sure you are performing monthly checks. It's our way of ensuring your customers receive accurate readings before they retest.

We can't guarantee you will never see discrepancies between your tailpipe test and the official test. Intermittent problems can confound even the most skilled technician. However, eliminating an improperly calibrated analyzer as a cause of failure may help you diagnose the problem.

If you're short on calibration gases or analyzer parts, please read the next article.



**The Emission Check Program's Art Betts inspects a shop's calibration log.**

## Calibration Gas and Analyzer Parts Suppliers

Are you having difficulty finding calibration gases for your monthly checks? Is your analyzer down, and you need replacement parts? Are you working on a vehicle with hard-to-find emission parts? Try the following resources. Please note that Ecology does not recommend or endorse these or any other suppliers.

### Calibration gases:

Air Liquide America Specialty Gases, LLC (formerly Scott Specialty Gases)  
1-877-715-8651  
[www.scottgas.com](http://www.scottgas.com)

Airgas  
503-283-2295  
[www.airgas.com](http://www.airgas.com)

Allview Services  
206-755-9611  
[www.allview.com](http://www.allview.com)

BAR 97 Smog Supply  
1-800-439-5099

Some of these companies are located outside Washington. Contact the vendors to find out shipping rates. To minimize down time, we recommend ordering when you notice your supply is low. Don't wait until you run out.

You can also check the Yellow Pages® or use the internet to find

other sources. Be sure to ask if they carry BAR 84 or BAR 90 calibration gases.

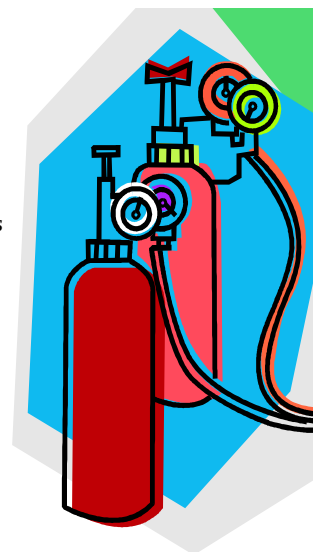
### Analyzer parts:

Parts Queen—also supplies calibration gases  
1-800-443-5174  
[www.smogqueen.com](http://www.smogqueen.com)

### Emission parts:

BAR Emission Parts Locator Service  
1-800-622-7733

*Art Betts supplied the gas and parts resources for this article.*





# What's That Code?

## P0420—Catalyst System Efficiency Below Threshold I

**Check Exhaust Notes regularly for explanations of some of the most vexing OBD codes. If there's a troublesome code you would like future issues to address, contact emission check staff on page 8.**

**Rachael O'Malley and Kerry Swayne contributed their OBD expertise for these articles.**

The driver of a vehicle with a P0420 code usually will not notice drivability problems. But the vehicle will fail an OBD test because the emission system is not working properly. This code may mean:

- The catalytic converter has an oxygen sensor in front and behind it. When the vehicle is warm and running in closed loop mode, the upstream oxygen sensor waveform reading should fluctuate.
- The downstream oxygen (O<sub>2</sub>) sensor reading should be fairly steady. Typically, the P0420 code triggers the MIL

light if the readings of the two sensors are similar.

- This may indicate the converter is not working as efficiently as it should.

What may cause a P0420 code?

- O<sub>2</sub> sensor is not reading properly.
- Problems with the engine coolant temperature sensor
- Damaged or leaking exhaust manifold/catalytic converter/exhaust pipe
- Retarded spark timing
- Readings of the front and rear sensors are too similar.

**Suggestions for troubleshooting a P0420 error code:**

- Check for exhaust leaks at the manifold, pipes, catalytic converter.
- Use a scope to diagnose the O<sub>2</sub> sensor operation. (Tip: The front O<sub>2</sub> sensor normally has a fluctuating waveform. The waveform of the rear sensor should be steadier.)
- Inspect the downstream heated oxygen sensor (HO<sub>2</sub>) and replace if necessary.
- Replace the catalytic converter.

## P2000 and P3000 codes

You may have recently encountered some unfamiliar codes that contain numbers in the P2000s or P3000s. These codes are beginning to surface at several test stations and repair shops. Like P000 codes, these are generic codes that are considered emission test failures.

These codes have not surfaced until recently because they are only used in newer vehicles. They are even more common in 2006 model year vehicles, so expect to see them more often in the next few years.

If you encounter a P2000 or P3000 code, treat it as you would a P0000 code and follow standard diagnostic,

repair, and waiver procedures.

P1000 codes are manufacturer specific and are not considered emission test failures at this time.

# Shop Certification Options

Back when the Emission Check Program started, OBD was not widely used. The only viable emission test used a tailpipe probe and gas analyzer.

As non-OBD equipped vehicles age out of Washington’s fleet, the OBD test has become the most common way to test vehicle emissions. Therefore, shops without gas analyzers can perform waiver eligible repairs on many vehicles.

Many shops have opted to become authorized as OBD-only, as opposed to full-service, shops. For

OBD-only authorization, the following requirements apply:

- OBD II compliant scanner that meets or exceeds the requirements of the Emission Check Program
- At least one authorized emission specialist (AES) technician on staff

Note: If a vehicle fails an initial OBD test, subsequent tests must also be OBD.

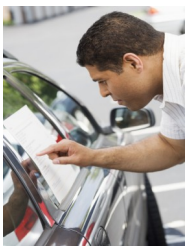
Of course, the likelihood of emission problems increases with the age of the vehicle. Since the oldest vehicles tested are non-

OBD, there will always be a need for full-service shops. So if your shop already has a gas analyzer, it is still worthwhile to maintain it.



**Most vehicles in the Emission Check Program receive OBD tests.**

## Tampering Alert



**Help your customers avoid buying tampered used vehicles.**

Thanks to pollution control equipment, today’s cars are much cleaner than they used to be. But these pollution controls only work when they are correctly installed and operable. Removing, replacing with non-equivalent parts, or rendering this equipment inoperable is called *tampering*.

A tampered vehicle that fails an emission test is not eligible for a waiver. That means the owner must have the emission control system restored to its original configuration—regardless of cost—to relicense the vehicle.

What if your customer purchased an already-tampered vehicle? “Buyer beware” applies. When you do a pre-purchase inspection of a used vehicle, make sure the emissions system is intact. If you find parts missing or inoperable, your customer can request that the seller restore the vehicle to factory

condition. This could save major headaches (and cash!) down the road.

Of course, the consequences can be dire for technicians who tamper. Tampering with a vehicle’s emission control system is a federal crime. That means hefty fines or even jail time for those who get caught.

**What if your customer purchased an already-tampered vehicle? “Buyer beware” applies.**



To find out how you can protect Washington's waters go to [www.ecy.wa.gov/washington\\_waters/index.html](http://www.ecy.wa.gov/washington_waters/index.html)

# Protect Washington's Waters

You know that neglect and poor maintenance cause vehicles to pollute the air. Did you know that fluid leaks from vehicles can also pollute our streams, lakes, rivers, and Puget Sound?

Stormwater carries these fluids from driveways, parking lots, and roads to our local waters. These chemicals harm the health of fish and other animals. They can also harm people who eat fish and shellfish from contaminated waters.

You can help prevent automotive fluids, like motor oil, from polluting our waters if you:

- Fix vehicle leaks promptly.
- Use rags to clean up small spills.
- Cover larger spills with clean cat litter or other absorbent material. Sweep it up, and dispose of it properly—either in the trash or at a hazardous waste facility.

- Store fluids in proper closed containers away from rain.
- Use less hazardous cleaners, solvents, and other products when possible.

Check your local regulations to find out where to dispose of used or spilled fluids. Some used fluids can be collected for recycling. Others may require disposal at a hazardous waste facility.



Get the next issue of *Exhaust Notes* in your email inbox!

[www.emissiontest.wa.com/e/EmissionRSS/EmissionRSS.xml](http://www.emissiontest.wa.com/e/EmissionRSS/EmissionRSS.xml)

## About This Issue

*Exhaust Notes* is a publication by the Washington Department of Ecology Air Quality Program. Its purpose is to inform AES technicians, shop owners, fleet managers and others interested in the roles automotive maintenance and repair play in keeping our air clean.

### Contributors

The following Emission Check Program staff contributed articles for this issue of *Exhaust Notes*:

Art Betts, Fritz Merkl, Rachael O'Malley, and Kerry Swayne.

### Tell us what you think!

We hope *Exhaust Notes* helps you make effective repairs and provide top-notch customer service. We welcome your suggestions for improving this newsletter.

What articles did you find most useful? What would you like to see covered in future issues?

Please contact the editor, Melanie Forster, with questions, comments, and story ideas:

360-407-6330

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# Just for Fleets

Fleets may be authorized to conduct their own emission testing or to contract for the emission testing of their vehicles. The following charts show which fleet vehicles will need testing in 2010-2012.

Year	U.S. government and private fleet vehicles requiring tests
2010	1986-1994 even model years only+1997, 1999, 2001, 2003, 2005
2011	1987-1995 odd model years only + 1996, 1998, 2000, 2002, 2004, 2006
2012	1988-1994 even model years only + 1997, 1999, 2001, 2003, 2005, 2007

Year	Washington State and local government fleet vehicles requiring tests
2010	1985-2005
2011	1986-2006
2012	1987-2007

For more information about fleet emission testing requirements see: <http://www.ecy.wa.gov/programs/air/cars/Fleetemissionpage.htm>

If you have any questions about testing fleet vehicles, please contact the following staff:

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## Diesel Exhaust and Your Health



Diesel exhaust contains fine particles that are tiny enough to penetrate deep into our lungs where they can cause damage. Diesel particles are the greatest air quality threat to public health because:

- More people are exposed to high levels of diesel particles.
- The small diesel particles readily deposit in our lungs

where they are absorbed by the body.

- Exposure to diesel particles increases the risk of heart attack and stroke.
- Numerous studies have shown that diesel particles damage DNA and cause cancer.

If you drive or work on diesel vehicles, it's important to reduce your exposure to harmful diesel exhaust. To protect yourself and others:

- Ventilate your shop. Open windows and doors to bring in fresh air.
- Run engines only when necessary, preferably outdoors.

- Use exhaust extractor hoses on tailpipes to carry exhaust outdoors.
- Use diesel particulate filters and other pollution control equipment when available.

If you manage a fleet with diesel vehicles:

- Encourage drivers to turn off the engine when not needed.
- Purchase idle reduction equipment such as heaters and auxiliary power units.

For more information, see Ecology's diesel web page: [http://www.ecy.wa.gov/programs/air/cars/diesel\\_exhaust\\_information.htm](http://www.ecy.wa.gov/programs/air/cars/diesel_exhaust_information.htm)

**Numerous studies have shown that diesel particles damage DNA and cause cancer.**

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To conserve resources, we provide this newsletter in an electronic-only format. Please consider the environment when printing this newsletter.

*If you need this publication in another format, please contact the Air Quality Program at 360-407-6800. If you have a hearing loss, call 711 for Washington Relay Service. If you have a speech disability, call 877-833-6341.*

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**Spokane County**  
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**Emission Check**   
You're on the Road to Cleaner Air.