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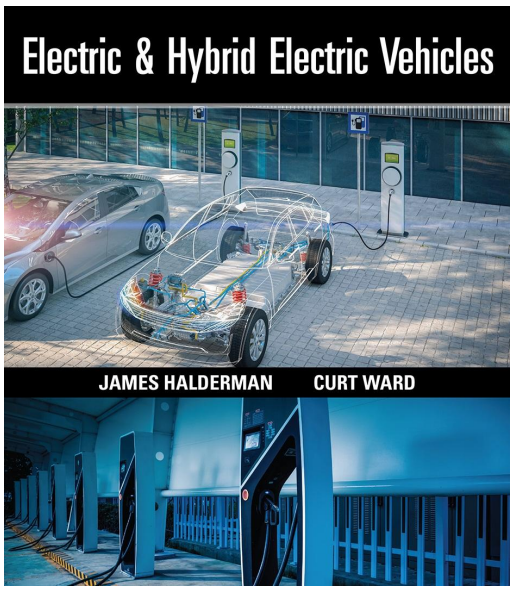
Author & Automotive Expert James D. Halderman

What's new with Jim?

Everything is organized for you!



I am pleased to announce that my website has been enhanced and expanded to include online automotive student testing with automatic grading with ASE-correlated questions. Click on "Student Assessment" on the home page for details.

FREE SAMPLE:
Send your name and contact information to the website manager for a free two-day trial. Send your request to Glen at glen@jameshalderman.com

New titles for 2023 available soon:
· **Electric and Hybrid Electric Vehicles-** Order ISBN 9780137532124
· **Automotive Heating and Air Conditioning-9th -** Order ISBN 9780137468829

Where's Jim?

No trips planned for this month.

Keep up with me at:
www.jameshalderman.com
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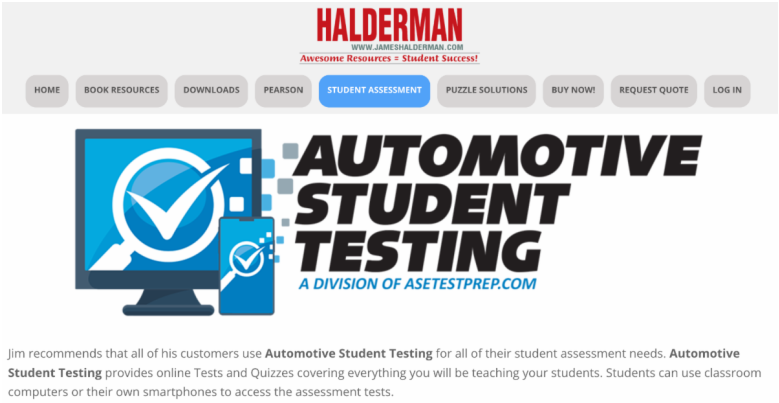
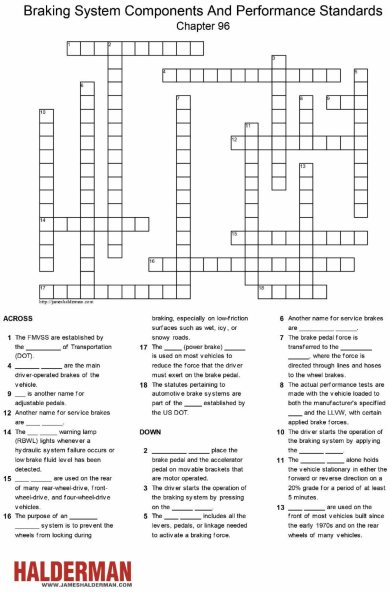
Puzzle of the month

Find this month's puzzle of the month at this link and test your students knowledge on brakes.

· **Automotive Engines -Theory and Servicing-10th -** Order ISBN 9780137469635





Auto Trivia

The tail light is on _____
a. Chevrolet Impala
b. Ford Falcon
c. Dodge Dart
d. Studebaker station wagon

**Answer at the bottom*

FAQ

What Is “Synthetic” Brake Fluid?

All glycol brake fluids are synthetic and are not petroleum-based. Brake fluid manufacturers get calls every week from people who have questions about brake fluid. For example, some are concerned because the old familiar brands have changed from “premium” to “synthetic” on the bottle. The DOT class system sets standards and testing procedures only; the ingredients used are up to the manufacturer. If it meets the standards, it will qualify as “brake fluid.” Based on a combination of the properties determined by testing, glycol-based brake fluids are labeled DOT 3, 4, or 5.1 and all are synthetic.

Sample ASE certification-type question

A vehicle equipped with antilock brakes (ABS) and electronic stability control (ESC) is being driven through a curve on a wet highway. What might the driver experience?
a. A vibration as the system tries to control the vehicle
b. A flashing traction control (TC) amber warning light in the dash
c. A pulsating brake pedal if the driver has a foot on the brake

d. All of the above

Answer/Explanation
The correct answer is d. All of the answers are correct. Answer a is correct because the electronic stability control system pulses the wheel brakes to restore the vehicle to the proper path, and pulsation of the brakes can be heard and felt as a vibration or pulsing sound. Answer b is correct when the system is functioning and trying to restore traction, the traction control of electronic stability control amber light will flash when it is actively trying to control the vehicle. Answer c is correct because the system pulses individual wheel brakes and a pulsating brake pedal is often felt if the driver is depressing the brake pedal. Answers a, b, and c are not correct because all are correct.

Tech Tip

Look for Swollen Parking Brake Cables

Always inspect parking brake cables for proper operation. A cable that is larger in diameter in one section indicates that it is rusting inside and has swollen. A rusting parking brake cable can keep the rear brake applied even though the parking brake lever has been released. This can cause dragging brakes, reduced fuel economy, and possible vehicle damage due to overheated brakes.

Case Study

The Noisy Toyota

A customer complained that a noise was heard from the rear of a Toyota Highlander SUV. During a test drive, the service technician did notice a slight noise and thought it might be due to a tire. Driving over various types of road surfaces did not change the level or the pitch (frequency) of the noise indicating that the noise was due to a bearing rather than a tire. As a double check that a tire was not the issue, the technician rotated the tires placing the front tires in the rear and the rear tires on the front. Another test drive resulted in the same results. The technician then recommended that the right rear wheel bearing (bearing hub assembly) be replaced and the customer agreed to the estimate. When the hub bearing was removed and checked for any roughness, the technician did not feel or hear any noise from the old bearing. However, once the new bearing was replaced, the noise was gone during a test drive.

Summary
• **Complaint**—Customer complained of a noise from the right rear of the SUV.
• **Cause**—Defective wheel bearing.
• **Correction**—Replacing the right rear bearing/hub assembly fixed the noise concern.

Straight Talk

Reader Has Questions about Winter Gasoline

From the January 29 Wheels Section of the Dayton Daily News

Wheels:
Ron asks by email:
"I was at a few places on Saturday and heard a customer asking the workers, where they could find anything to add to the gas so it would help prevent it from freezing. Apparently, someone told them that if they don't add stuff to the gas tank, the gas could freeze. I tried to explain to them that as long the car had at least 1/4 tank, then the gas line will not freeze.
I left the store and outside I heard two people disagreeing about what the octane gas they were going to use to fill their tanks. One was saying they were told that in the winter it is best to use the higher octane and not use what they normally use. The other person was saying to just fill the tank with BP gas because they put antifreeze stuff in their tanks. *What are your recommendations?"*

Halderman:
Cold weather does create many questions as to what is the best thing to do to prevent problems. Ron, you are correct that it is considered to be the best practice to always keep the fuel tank above a quarter. For all practical purposes, it is the water in the fuel line that freezes in cold weather and not the gasoline itself. When the gas level drops, the rest of the tank contains air. Then when the temperature drops, any moisture in the air condenses and drips into the fuel tank. Water is heavier than gasoline so it sinks to the bottom. Keeping the fuel tank level above a quarter helps keep moisture out of the tank.
Another reason that gas line freeze-up seldom occurs lately is that gasoline contains up to ten percent alcohol (ethanol). Alcohol absorbs any water that gets into the fuel tank. Regarding what octane gas to use, the short answer is to use whatever the vehicle specifies to use, which is usually regular grade. All gasoline, regardless of the brand, is blended for each season so in the cold weather months, gasoline is blended to allow the engine to start when the temperatures are low. That is one of the reasons to always use fresh fuel. Therefore, for best overall vehicle operation in cold weather, use the same octane as normal and keep the fuel tank as full as possible.

Have an automotive question? Get a straight answer by writing to Jim at jim@jameshalderman.com

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Answer To This Month's Trivia:
b Ford Falcon

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