



Author & Automotive Expert James D. Halderman



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Halderman newsletter

July 2018

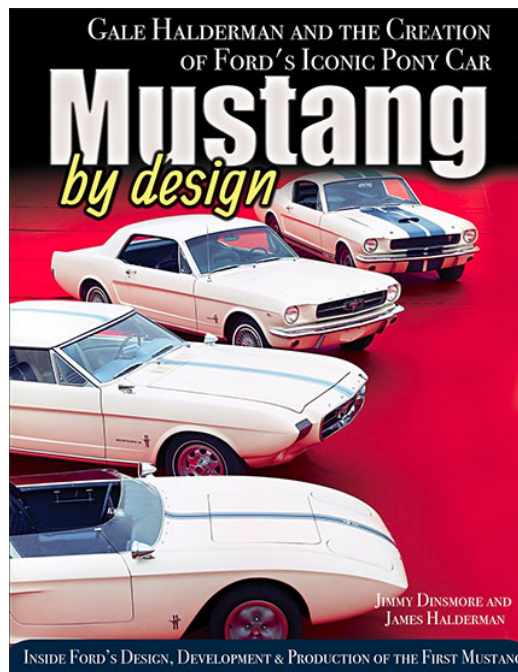
What's new with Jim?

Summer is in full swing and I hope that most automotive instructors and professionals are enjoying some family time away from the shop and the office. If and when you are working on vehicles, please keep in mind the resources that are on my website. My webmaster, Carl Borsani, has been busy keeping the site working smoothly and up-to-date. Many of the resources posted under "Service Information" on my website may be helpful to technicians and instructors including:

1. Lug Nut tightening torque specifications
2. Oil life monitor reset procedures for all vehicles
3. Wiring diagrams for all vehicles
4. Technical service bulletins (TSBs) for all vehicle
5. Casting numbers for most engine blocks, cylinder heads and crankshafts.

Check it out at www.jameshalderman.com

The new book about the design of the original Mustang titled "Mustang By Design-Gale Halderman and the Creation of Ford's Iconic Pony Car" is available now for [pre-order on Amazon](#). I worked on this with my colleague Jimmy



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Where's Jim?

July 16-20 - NACAT, Williamsport, PA, presenting (with Curt Ward) Automotive Update - 2018 which includes update on engine oil, coolant, gasoline plus telematics and autonomous vehicles

July 23 - Honda Training, Troy, OH, Honda training facility

July 25 - Halderman Barn Museum Open House, Tipp City, OH

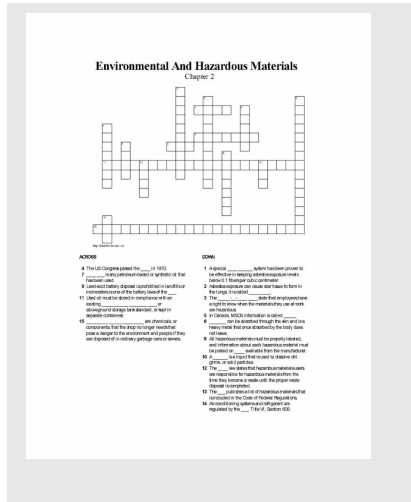
July 30 - [Automated and Connected Vehicles Conference](#) at Sinclair Community College, Dayton, OH

[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 heating and air conditioning.

Dinsmore. It's a fun read, full of lots of photos and great for all car enthusiasts, not just Mustang fans.



Auto Trivia

What vehicle manufacturer used this unique design door handle?



- a. General Motors
- b. American Motors
- c. Ford/Mercury
- d. Chrysler/ Dodge

Answer at the bottom of this page!

FAQ

How Much Coolant Can a Water Pump Move?

A typical water pump can move a maximum of about 7,500 gallons (28,000 liters) of coolant per hour or recirculate the coolant in the engine over 20 times per minute. This means a water pump could be used to empty a typical private swimming pool in an hour!

The slower the engine speed, the less power is consumed by the water pump. However, even at 35 mph (56 km/h), the typical water pump still moves about 2,000 gallons (7,500 liters) per hour or 0.5 gallon (2 liters) per second!



Sample ASE certification-type question

Question:

A lack of cooling is being diagnosed. A technician discovers that the high-pressure line is hot to the touch on both sides of the orifice tube. Technician A says that is normal operation for an orifice tube system. Technician B says that the orifice tube may be clogged. Which technician is correct?

- a. A only
- b. B only
- c. Both A and B
- d. Neither A nor B

Answer/Explanation:

The correct answer is d. Neither technician is correct. Technician A is not correct because the line after the orifice tube should be cool, indicating that the refrigerant has passed through a restriction and is expanding. The temperature also gets cooler as the refrigerant absorbs heat to change states from a liquid to a gas. Technician B is not correct because a clogged or partially clogged orifice tube would stop the flow of refrigerant causing the tube to be hot only on one side of the orifice tube. Answers a, b, and c are not correct because neither technician is correct.

Tech Tip

Hot/Cold Sides

A complaint of uneven air discharge temperature from the instrument panel vents (cold on one side and warm on the other) can be caused by a low charge level. This will cause some parts of the evaporator to be cold while others are warm. It is possible for the air from the cold side to flow to a single register. Most customers complain that the driver's side is blowing warmer air than the passenger side when the system is partially discharged.

Straight Talk

From the June 30, Wheels section of Dayton Daily News

Reader Asks if Large Capacity Battery Could Hurt Small Engine

Wheels:

Ricardo from Florida writes by email:

"Would it hurt or be a disadvantage to use a 1,000 CCA- rated battery in a vehicle equipped with a four-cylinder engine? The technician at the shop told me that the standard battery for my 2015 Chevrolet Cruze is 590 CCA. I was told to take the cubic inch displacement of the engine and double it to arrive at the suggested CCA rating of a battery. However, with just a 2.0-liter (122 cu. In.) engine, this calculation does not seem to apply.

The temperatures here in south Florida are high and I don't think I need a large battery capacity to start my car even in the winter. The technician also said that the heat causes the battery to lose capacity and by installing a high capacity battery will result in longer battery life. I don't want to have

a large capacity battery hurting my car. What is your suggestion?"

Halderman:

If you can afford the larger capacity battery in the size that fits your car, I would recommend that you take the advice of the technician to use a battery that is more than you need. The technician was also correct that heat is harmful to batteries and that is why batteries, when placed under the hood, usually have an insulated pad or cover to help keep engine heat from for the battery. The larger capacity battery will not harm your car as the starter, and all of the electrical accessories, use just what is needed and it will not result in an increased current flow from the battery. However, the life of the battery may improve and should be serviceable for a longer period of time compared to the same size battery, but with a lower capacity.



Have an automotive question? Please write to Jim with your questions at jim@jameshalderman.com

Trivia question answer: B.

Please let me know what you think of the newsletter. I would love to include any of your automotive news, trivia questions or any tech tips you might have. Send me your suggestions! You can email me [here](#) or visit [my website](#). You can connect with me on Facebook, Twitter and LinkedIn too (links above).

Regards,
Jim Halderman

James D. Halderman writes automotive technology textbooks for [Pearson Education](#). He is an ASE-certified Master Technician with more than 20 years instructional experience.