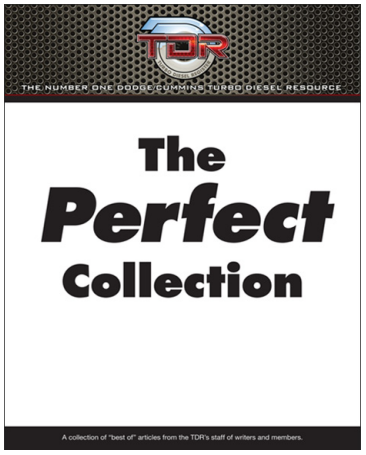
Nancy Newbies's Newfound Knowledge

"Reading is important, because if you can read,
you can learn anything about everything and everything about anything." – *Tomie dePaolo*

Oh, the things I learned from reading TDR Issue 121:

In the "Letter Exchange," I noted that problems can arise from bad electrical connections. The simple stuff first: Check your fuse box, fuse connections and wiring connection points! In "Backfire," you can learn theories on why some folks drill brake rotors. What I learned is that it's not a good idea, as it can cause cracks and other problems that shorten rotor life.

"10 Back" highlights The Perfect Collection books and the valuable information found therein. Have you checked out these two valuable resource books? Yep, they are available at no charge to TDR members at our website. Check 'em out and download your copies today!

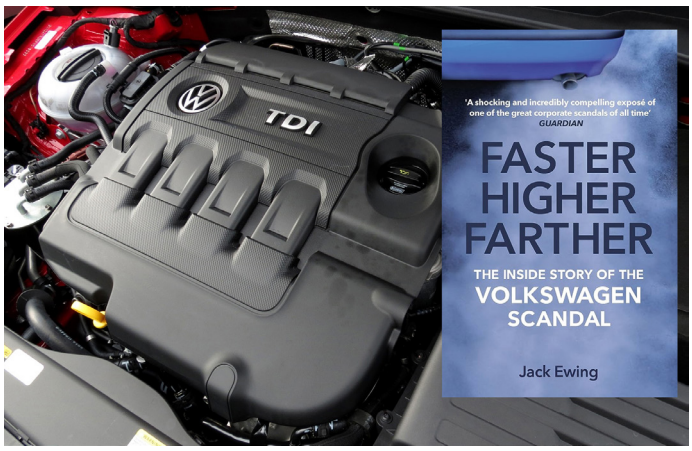


"10 Back" also features a review of ULSD (turn to page 18 if you don't already know what that means), why it's special, how it's changed since 2003, and what it has to do with our environment. I learned a lot, including a whole lesson about how the EPA was wrong in how to decrease NOx (oxides of nitrogen) in exhaust, seemingly encouraging manufacturers to develop NOx adsorbers, rather than the more promising method known as selective catalytic reduction (SCR). Turns out the SCR technology was, as Light and Medium Truck said, "the method [that] offers simplicity, economical operation, and….sidesteps some of the problems associated with other methods, including lower fuel economy." The bottom line from page 19: "The NOx technology proved too costly and the SCR aftertreatment has been universally adopted…" Yep, that was/is some techie-stuff.

TDR's "10 Back" also covers Oil Analysis and Oil Change Intervals. With the advancement of synthetic oils and the SCR emissions aftertreatment system, oil change intervals have increased to 15K miles or as required by the EVIC (electronic vehicle information center). Recently I learned that the oil change interval for my own car can be extended with no harm to the engine and cost savings to me—one of my favorite things.

"Technical Topics" focuses on the 2019/2020 model year trucks and specifically the CP4 Injection Pump failures that the NHTSA is investigating. The investigation also covers 2014-2022 Ram 1500 trucks, as well as certain 2014-2022 Jeeps and some BMWs. A letter from BMW indicated that "failed pumps on [their] vehicles were caused by an interaction between pump internal components and U.S. market diesel fuel, leading to increased slip and eventual particle-generating wear surface." NHTSA is investigating "whether a similar root cause is associated with vehicles previously recalled by Stellantis and if similar wear dynamics occur on pumps supplied to other automakers."

My question: Why was the CP4 not tested with the diesel fuel marketed in the US? Editor's note: ***Good question. I'm sure Mr. Bosch, Mr. Ford, Mr. GM, Mr. Cummins, Mr. Jeep, Mr. BMW, etc., will have ample opportunity to answer that question in a court proceeding (or two).*** Page 28 says, "Stay tuned as there are further developments." Further developments on the safety recall for grid heater relays are shared on page 29. Thankfully, the stop sale order for new vehicles was only in place for about one month.



"TDReview" features part 2 of a review of Faster, Higher, Farther by Jack Ewing. I found it interesting that the creator of the Volkswagen Beetle and founder of Volkswagenwerk, Ferdinand Porsche, had a grandson, Ferdinand Piech, who led the creation of the Porsche sports car. Two extremes in design and engineering, it would seem, though both used air-cooled motors. Why? "The requirement had little to do with technology and everything to do with marketing," as "at the time of Piech's oversight, Volkswagen supplied two-thirds of the Porsche racing budget" and demanded it, reasoning that "if Porsche cars were winning on the racetrack with air-cooled motors [then] Volkswagen could still maintain that its technology was superior to the water-cooled motors used by almost every other manufacturer." In doing so, they were able to increase sales of their Volkswagens. ***Editor's note: History proves this was a great marketing tactic. They extended the lifespan of the air-cooled engine into the mid-90s. Emissions regulations (specifically cold start, lack-of warm up) and the big air flow needed for higher horsepower put the end to air-cooled mass production engines.***

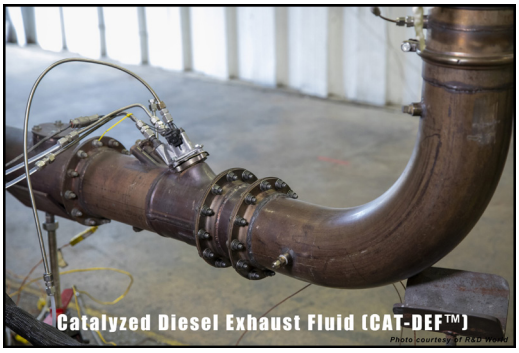
Bob Lutz, former president and COO of Chrysler (who was quoted about Elon Musk in Issue 120), comments on Ferdinand Piech: "Lutz called Piech 'probably the greatest automotive product genius in the history of this industry.' But he added, 'I would not have cared to work for him.'" You've read the book review. Is it time to read the book to learn more about the history of Volkswagen and Porsche?

What else did I learn from the editor-dude's review of Jack Ewing's book? I learned that "common rail" has nothing to do with trains. I now know that common rail is diesel technology developed to provide fuel from a single reservoir of pressurized fuel (a tubelike common rail) to feed all the cylinders, instead of each cylinder having a separate fuel supply as in old designs. "Common rail ensured more consistent delivery of diesel fuel to the cylinders, and it is also cheaper."

The editor-dude shares that after further review of Ewing's book he was "hopping mad." My take is analogous to "one bad apple spoils the barrel." Ewing states, "As Europe's biggest car company by far, Volkswagen had a special responsibility to set the standard. Instead, it established a lowest common denominator." Not what you want in a leader.

You'll find mechanical troubles and ideas for their resolutions in the "Generations" columns on pages 34-43. Thanks, TDR members!

In "Blowin' in the Wind" see what the editor says about "Californication," a word that first appeared in Time in 1966, relating to the "haphazard, mindless development of land in southern California."



Changes in emissions are also covered in "BITW," as is the continued push for Electronic Vehicles (EVs). I learned that Cummins is working on several technologies to comply with the EPA's new rules for model year 2027 and later heavy-duty engines which places "stricter NOx emission standards and extended useful engine life cycle targets for engine manufacturers." One of these technologies may be Catalyzed Diesel Exhaust Fluid technology, or CAT-DEF, a catalyst- and surfactant-modified diesel exhaust fluid solution developed by the Southwest Research Institute, which, according to their website, is an independent, nonprofit, applied research and development organization, specializing in the creation and transfer of technology in engineering and physical sciences. Find out more about the CAT-DEF system on page 46. Find more emissions news and the EPA's tightening rules on page 47.

More “BITW,” page 49 lists three major barriers to widespread battery electric vehicle (BEV) adoption in the USA and elaborates on them:

1) Critical minerals and their mining and processing
2) Charging infrastructure and the current lack thereof
3) Affordability of BEVs compared to ICE vehicles

Yep, I think we all have a good grasp of the obvious hurdles that BEVs face.

I appreciate the sharing of the JD Power 2023 U.S. Vehicle Dependability Study on page 51. It actually makes me want to find out more about Kia automobiles and SUVs. This is a brand I never thought I would explore.

I found the “Four Whaling” article interesting, especially questioning whether our existing road infrastructure is ready for EVs and BEVs, and the comment from the National Bureau of Economic Research (NEBR). I am shocked at the number of blackouts mentioned on page 53, which begs the question, “How is the USA going to handle more demand on the electric grid with the future increase in EVs and BEVs?” We’ll continue to hear much more about the push towards proliferation of EVs and the challenges caused by it for years to come.

The Ram 1500 TRX and the Jeep Grand Wagoneer are highlighted on pages 54-55.

I loved the “Motor Minded” article on pages 56-58 and I think it has some great takeaways for all of us, including the following words of wisdom:

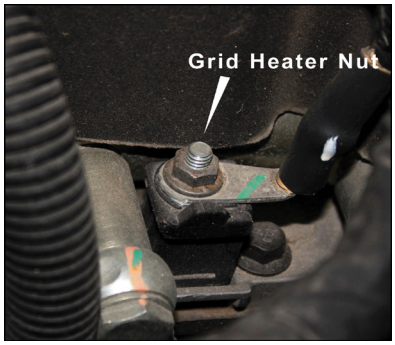
- Sadly, most people don’t recognize their own need for a level of maintenance they’d have no problem honoring for their motors or horses.
- If we’re to have a sense of vitality, it’s vitally important to mind our clearances.
- Play gives us time and space to recover from stress, and to engage in pursuits and connections we treasure as personally meaningful.
- With no play in the system, mechanical or human, things break down—often catastrophically.

In “Ready to Travel” the editor-dude highlights the Mecum Auction and some of the diverse vehicles found there. I appreciate the inside scoop on auto auctions that was provided by Jim Pantas on page 65.

Statements like this one found in “Ranch Dressing,” “The Chief Executive said they may have to even close additional factories to absorb the cost of making electric vehicles,” makes one wonder how this whole push to EVs is going to play out. Headlines like, “Production of Renewable Diesel Continues to Climb” sounds great until you realize that, since it’s made with vegetable oils, it might increase food prices even more. “What if your EV Could Run on Sodium?” suggests researchers/manufacturers are working on developing sodium-ion batteries, instead of more expensive lithium-ion batteries. Interesting.

Headlines about Cummins are mentioned on pages 67-68, including its new zero-emissions business unit called Accelera, which I saw advertised on a billboard as I drove I-65 last week. It was interesting to learn about the Citroen story where the French manufacturer (under conquered conditions) moved the “full” mark on the dipstick to sabotage the trucks used by the Nazis during WWII.

In “Polly’s Pickup,” Polly Holmes highlights one of her favorite things—“air suspension” and the smoother ride it creates. She also writes about two of my favorite things: Businesses that are true proponents of their towns and give back to their communities, and experts in their fields, highlighting the importance of supporting businesses that continue to pour into our communities and employ knowledgeable and dedicated staff. Polly also mentions a not-so-positive thing: The problem with EV trucks, at this time, is their range goes way down when they are doing truck-type jobs. I’m interested in how the manufacturers are going to solve that issue. I think it’s likely that TDR will have articles in the future about such things.



The importance of the “wiggle test” is mentioned in “Have Ram, Will Travel,” as is Geno’s Garage’s publishing of “Critical Tech Tip: Grid Heater Nut Jiggle Test.”

Wiggle or Jiggle—either way, it sounds like a test that comes in handy for a variety of parts, including the ones in Joe Donnelly’s installation story.

“Back in the Saddle” highlights his purchase of a new Ram EcoDiesel. Scott says, “Having ¾-ton performance with excellent fuel economy lets me know technology has brought engine development a long way.” Air Suspension is featured with detailed instructions on modifying ride height. Scott also lets us know the savings that can be found by shopping around for extended warranty plans before choosing one.

In “Still Plays with Trucks,” James Langan features Nexen tires, a brand I had not heard of before reading his article. My website search revealed that Nexen is a Korean company established in 1942 under the name Heung-A Tire Company. It was recognized in 1956 as the first Korean Tire Company. In 2005 they established their US brand, Nexen Tire America. Something else I hadn’t heard of before was “siping,” which, according to Wikipedia, “is a process of cutting thin slits across a rubber surface to improve traction in wet or icy conditions.” It was “invented and patented in 1923 under the name of John F. Sipe.”

One of my favorite things is to read something that raises a question in my mind and then have the writer answer the question. James Langan did just that with his “Road Force Sidebar,” as I had no idea what road force was. I found an informational 3-minute video on YouTube from MotorWeek.org entitled, “Goss’ Garage: Road Force Balancing.”

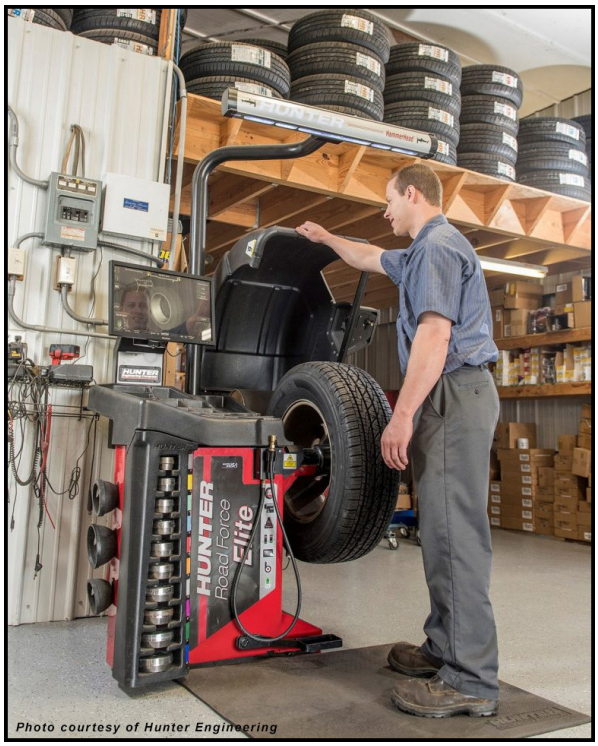
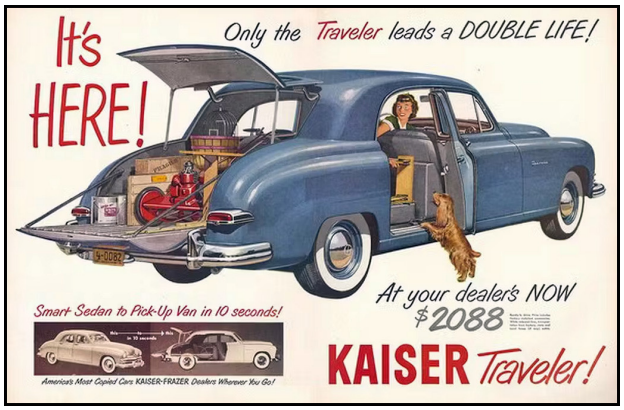


Photo courtesy of Hunter Engineering

And, to further prove just what a newbie I am, I had never heard of band adjustments for transmissions as mentioned in Moses Ludel’s “The Long Haul.” It did make me feel a bit better when he said that, even though “band adjustment is a routine maintenance service, many independent shops know nothing about the Ram truck band adjustment requirements.” Ouch. Okay, shops may know nothing, but Ludel’s six-page article gives Ram automatic transmission owners (1989-2007) the service procedure(s) needed to maintain their trucks. Over my head, yes. But those pictures and words of experience from Ludel are well worth your review. (I’m betting the TDR’s editor-dude will incorporate this article into one of the Perfect Collection books.)



I had not heard of Kaiser automobiles until I read the "Exhaust Note" reprint where Kevin Cameron mentions that his family drove the Alaska Highway in a 1951 Kaiser when he was a boy. A lesson he learned on that trip was the importance of standardized parts, which as he says, "represents something this is known to work, backed by a lot of experience" and "means that service and parts can be found anywhere." Quite important when a part breaks and is liable to leave you stranded if it can't be replaced quickly.

In "The Rest of the Story," Stan Gozzi discusses "Grid Heater Nut, Part Two" and shares a couple of installation stories complete with pictures. It's always good to know "the rest of the story."

I read about ABS problems and the solutions Andy Redmond came up with to solve them, in "From the Shop Floor."

In the "Exhaust Note," guest writer Jack Baruth asks if we're entering another lost decade for automobile manufacturers. He makes a statement that is obvious but is often overlooked in the media: "When it comes to EVs, which often source their electricity from coal or natural gas, zero-emission is, of course a lie." He points out that "there aren't enough raw materials in the world to replace today's passenger-car fleet with EVs. There is no battery technology in the foreseeable future that will allow EVs to match or even approach modern internal-combustion vehicle standards of range, weight, durability…." Find out more about why some folks are calling the 2020s a "lost decade" by reading the "Exhaust Note" on pages 110-111.

Happy reading and learning and spreading the word about TDR and all the information found in its pages.

Connie Kiviniemi-Baylor
TDR Writer

From the Turbo Diesel Register, Issue #122