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Autoist

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TIME MACHINE

'83 Scirocco marks milestone, hits the road



Autoist

Since 1955

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New Family memberships are \$26 for the first year, then \$20 per year for renewal. Add \$6 to these amounts for residents outside the U.S. Pay by check to VWCA, P.O. Box 154, North Aurora, IL 60542, or visit VWClub.org, click the "Membership" tab and use a credit card to join or renew.

ABOUT THE AUTOIST

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Driver's Seat

BY CLIFF LEPPKE ✉leppke.cliff@gmail.com

It's VW 1-2-3 and more at Road America

The Midwest Automotive Media Association's 2023 Spring Rally at Road America (aka America's National Park of Speed) let 160 motoring scribes test the mettle of shapely metal on a historic racetrack, off road or scenic routes. I was one of them.

VW's Mark Gillies arrived with the 2023 Golf GTI, 2023 Golf R 20th Anniversary Edition and the American-built 2023 ID.4 battery-electric vehicle. The race-track fun began on May 23 with Golfs staged, ready to approach RA's entrance — as if this were a bowling tournament. Once the motoring pins were set, track officials let a car and its driver from the incoming queue launch and then aim for RA's equivalent of dots and arrows: braking markers, rumble strips, topography and commercial signage.

Your lane is a four-mile snaky path with 14 turns carved through the rolling hills of Wisconsin's Kettle Moraine. Gillies says, "RA is one of my favorite tracks, and I have driven a lot of good ones." It's legendary. In January 1974, *Car and Driver* devoted an entire page, plotting how Mark Donahue's quicker line through a turn cost him lap time. What? It's true. *CD* said Donahue braked later, cornered at a faster speed, but exited slightly slower than his competitor, Jody Scheckter, in Road America's Turn 14. Scheckter's power-on, tail-out style yielded a 4 mph faster exit speed — ultimately the more important factor, as Turn 14 leads on to RA's longest straight.

This teenager, in 1974, never expected he'd have a future date with RA, experiencing what *CD* dubbed "pulling away the curtain of mystery." The publication graphically presented a "new dimension in race reporting," which informed my 2023 driving style. Thus, just as bowlers develop strategies for strikes or picking up spares, those driving RA's course must find its sweet spots. Technique matters.

Often you brake before entering a turn, wide at its entrance, approaching a yellow/red rumble strip. Then comes a slight trail braking when heading toward the turn's apex or clipping point (another rumble strip), and once past the apex you can apply the throttle and focus on tracking out or making the exit by unwinding the steering wheel and letting the car head outward again to, yes, yet another rumble strip.

It sounds simple, but sometimes you must alter your line such as with a late apex — sort of Scheckter style, which although you might enter this spot a tad slower. This lets you apply more go pedal for an exit headed toward a straight. Get it? I did. Another complication is sometimes you cannot view from the turn-in point the ideal apex or perhaps the exit. You must memorize the track, looking far ahead.

RA presents several conundrums due to elevation changes. Thus, you must use experience to get the motoring equivalent of a strike. In addition, sometimes you must brake before you can see turn's en-



Golf R



Golf GTI



ID.4

►TURN TO PAGE 28

Small Talk

VW + AUDI AT A GLANCE

NEW & IMPROVED

THE BUZZ BEGINS: The long-awaited news of the long-wheelbase ID. Buzz finally arrived in a glitzy California debut in June, and now the long wait beckons for delivery next year. Unlike the shorter Buzz sold in Europe, the US version will have three rows, sport a 91 kWh battery and produce 282 hp for the RWD variant; 330 hp for the AWD. Plan on selecting an interesting exterior color with an available two-tone palette such as Energetic Orange, Pomelo Yellow and Mahi Green. Others, such as Cabana Blue, Metro Silver and Indium Grey, are all-new.



EV NEWS



BEETLE 3.0? : VW brought back its iconic Microbus in the form of the ID. Buzz, so why not a Beetle 3.0? More hints were dropped when VW revealed a new e-Beetle concept debuting in an animated family movie “Miraculous: Ladybug & Cat Noir.” VW said: “The beloved characters will experience their adventures with different fully

electric cars of our Volkswagen ID. family,” including a concept electric Beetle car alongside the ID. Vizzion and ID. Buzz models.

BATTERY BREAKTHROUGH: In the search for ways to reduce high-voltage battery costs in EVs, VW is researching a so-called dry electrode coating process, said to reduce energy consumption in the production of battery cells by 30 percent, saving hundreds on the cost of a new car.

PRICE-GOUGING: Volkswagen of America CEO Pablo Di Si is warning dealers against ID. Buzz price markups. “We need to find a fair way ... for the consumer and the dealer — there’s no overpricing,

that the system doesn’t crash. We have, I would say, another three to five months to figure it out. We don’t have the solution yet,” Pablo Di Si said.

COMPANY NEWS

PRODUCTION SURGES: With the easing of the global chip shortage caused by the war in Ukraine, VW has added extra shifts at its Wolfsburg factory, a senior executive told Reuters. In 2022, the factory could only produce 400,000 cars, or half its annual capacity. Delivery schedules are down to about three months in Europe for VW’s ID models.

SCOUT HIRE: VW’s Scout Motors revealed that it has hired Chris Benjamin, a key Stellantis designer who crafted the interior style of some of the latest Jeep and Ram models, to lead the design of its rugged Scout, an all-purpose electric truck and SUV. Benjamin will join the brand as chief design officer, or “the steward of the iconic Scout design,” according to the company.

GONE IN 480 SECONDS: An \$81,000 sticker price didn’t deter fans of a high-output Golf model. A limited-run special edition of the Golf R 333 — representing the number to be built — sold out in eight minutes.

Retro Autoist

FROM THE VWCA ARCHIVES

10 YEARS AGO

JULY/AUGUST 2013: The world's 30 millionth Golf rolled off the assembly line at the Volkswagen plant in Wolfsburg in June — a production record for the most successful European car ever. Production of the original Golf began in early 1974. Since then, statistically speaking, an average of more than 2,000 people have purchased a new Golf every day over the past 39 years.



20 YEARS AGO

JULY/AUGUST 2003: Volkswagen has made official the news that has numbed Beetle fans around the world. As reported in the March/April *AUTOIST*, the final classic air-cooled Bug will roll off the world's last remaining Beetle production line at VW de Mexico's plant in Puebla this summer, and a living automotive legend will pass away after 69 years.

JULY/AUGUST 2003: The VWCA has opened an account with PayPal, an online payment service, and is working to give existing members and prospective members the opportunity to pay their dues and buy club gear on the website.

30 YEARS AGO

JULY/AUGUST 1993: Larry Nutson, VW public relations manager, calls to inquire why the *AUTOIST* is “so nega-

tive.” He wonders about some of the letter-writers who seem so unhappy with their cars. He was told that although the publication is mostly positive, members show an element of frustration because their cars don't seem to run very well for very long. He said the company is committed to making its customers happy and is redoubling its efforts.

40 YEARS AGO

JULY/AUGUST 1983: Volkswagen of America's parent company in West Germany lost \$122.4 million last year, mostly as a result of VWoA's poor performance. The loss compared with a profit of \$55.5 million the year before. VW saw its biggest loss since 1974, a recession year.

JULY/AUGUST 1983: The National Highway Traffic Safety Administration has opened a safety defect investigation involving brake line failures in German-made 1975-79 Rabbit and Scirocco models.

50 YEARS AGO

JULY 1973: Sooner than expected, VW introduced a new model in its next generation of automobiles — the VW Passat, named for a constant velocity tropical wind. The Passat is the first of a series of new front-wheel-drive VWs.

AUGUST 1973: VW announced in July that it was ending manufacture of the Type 3 family of vehicles (Fastback, Squareback and Notchback). The cars were introduced in Europe in December 1961 and more than 2.5 million were produced.

60 YEARS AGO

JULY 1963: The sale of seat belts has been steadily increasing, and it looks like they may even become standard factory installed equipment in a few years. There appears to be no doubt that a good lap belt will keep a person from flying about the interior of a car or going out an open door.



**SEE
THE
USA***

**The old-fashioned way ...*

In early May, I woke my 1983 VW Scirocco from its winter hibernation, checked its tire pressures and soldered a bad electrical connection at its instrument cluster's voltage regulator, which solved low temp and fuel-gauge level issues.

These were the opening steps to what would be a top-to-bottom crisscross of America covering 4,000 miles in which the Scirocco's odometer would roll past 352,000 miles, its tachometer pointing toward 3,000 rpm while its 1.8-liter engine pulled me steadily at 70 mph.

From Milwaukee, I veered toward Paducah, Kentucky, to visit with auto writer Jules Stayton and her

husband, who served me grilled bratwurst.

From there, my destination was my brother's place on Florida's Space Coast: Melbourne. He wanted to show me his Sunshine State income tax-shelter. I refilled the Scirocco in Paducah at 11 p.m., zipped through the glittering Music City and then east of Chattanooga, where I pulled into a ledge-like rest area for shuteye having covered some 275 miles.

Sorry, Holiday Inn, my VW's right front seat reclines, converting into a lumpy bed. My rejuvenating layover — lulled to sleep by the din of nearby diesel engine clatter — went well until intense sunlight turned my auto into a hothouse shortly before noon,

... in a 40-year-old VW

By Cliff Leppke ✉ leppke.cliff@gmail.com

still in sync with my normal sleep cycle.

I resumed my diagonal route through Georgia, slipping through Atlanta's wide thoroughfare. Slowed by construction backups, I arrived in Melbourne about 28 hours after I left Milwaukee.

On the agenda, a weekend of bicycling, a break from Milwaukee's chilly weather and left-foot physical therapy. Then, I'd head back to Milwaukee and direct my wheels toward the Leppke farm in Carrington, North Dakota, with a pause near Minneapolis, where my sister's family resides.

Whether it's my DNA or some kind of primordial petroleum-age ooze, I find piloting a 1983 Wolfsburg Edition Scirocco transcendental. Sorry, Henry Thoreau, VW's sports coupe is my Walden's Pond—suspended on 14-inch Michelins. A mono wiper clears the pockmarked picture window. There's something about tire patter song, this car's languid compartment, the Teutonic din of its 1.8-liter mill and the cabin's subdued rush of air while in flight. It melts time and space — an automotive fun-size Snickers.

Its hot-wind name suggests the romance of the open road, a conveyance to exotic lands and that analogue feedback dialed out of the digital-everything world. It's a Dr. No car. No power steering, no cruise control, no turbocharger, no USB, no airbags, no ABS, no ESP, no hydraulic clutch and no digital

music player. Yet, it's a yes car, VW's Medi-car, a mechanical-feeling salve to a person



A superbly engineered and handsomely equipped German sports car at a remarkable price.

Print ad for a 1983 Scirocco: "A superbly engineered and handsomely equipped German sports car at a remarkable price."

“ It’s a Dr. No car. No power steering, no cruise control, no turbocharger, no USB, no airbags, no ABS, no ESP, no hydraulic clutch and no digital music player.

who is weary, trapped in a 40-hour workweek of computer screens, keyboard, software, graphical interfaces and internet connections.

The irony, of course, is the Scirocco and its driver are captives — routes aren't free or open but rather prescribed by highway engineers, accountants, lawyers and politicians — hemmed in by the slight, white lines of the not so free, freeway.

Many have written about motoring. Get your kicks on Route 66. I have. These days, you'll hear odes extolling electrified touring, charging networks and

how to become the Columbus of recharging: the vehicle itself, the driver and its passengers.

You'd expect your correspondent, who's published scholarly papers on roadside architecture, to focus on the shifting taste or lack thereof in the built environment nestled along our nation's Eisenhower-era planned arteries. Instead, I present the narrative complexity of a public radio station's pledge drive. Why? My highway haven is my longtime companion. A device discussed in the *AUTOIST* not once but multiple times over three decades.

My motoring manner, moreover, is out of sync with the usual notion of the fabled road trip. It's like a Mars Red-eye special. I'm a shift worker; nighttime is my primetime. The Scirocco lets me travel during the dark side, when traffic is lighter and your vistas are murky silhouettes punctuated by neon or electronic billboards. My path is illuminated by H4 lamps. Toggle switches flank the RO's flood-lighted instrument panel like an Art Deco Zenith Stratosphere radio. The oil temp, oil pressure and volt meter gauges reside in a console ahead of the shift lever.

▶ **PREVIOUS PAGE:** The Scirocco is parked at the Leppke farm in North Dakota, the weight scale building seen in the background.

I suspect my mode of transport might not seem appealing. It has a pre-history, a parallel practice employed by my late father, Elton, meant to maximize uninterrupted traveling. My folks woke up before dawn, put us back to sleep in a 1967 Ford Country Sedan's aft pew, and headed out into the darkness. His brood snoozed, while he sat on the front-bench seat's left side. Because his progeny slept, traffic jams were few and the sun didn't bake our rolling greenhouse without A/C my father found his kind of bliss. When he needed a break, my mother slid behind the wheel of a massive station wagon with a manual transmission, manual steering, manual brakes and a service manual.

Sometimes the Ford was loaded with a party of five, a Ward's Sea King aluminum boat clamped on its roof, and a stout custom-built pop-up camper hitched to the car's rear. We didn't stop for fast or medium-speed food. My mother stocked the cooler with sustenance, often doled out as we rode. Highway signs of the roadside life — near Route 66 in Illinois — sirens seductively enjoining us to stop at Funk's Grove's Maple Sirup, Dixie Truckers Home, Steak 'n Shake, Lincoln's sites and White Fence Farm were curiosities we didn't explore. I notice there's Henry's Rabbit Ranch near Staunton Illinois. It's punctuated with, I'm not kidding, VW Rabbits. Finally, a warren worth seeing.

We stopped for fuel, utilized waysides, or checked out Illinois' I-55 modernistic brick-clad toilet building



Hare it is: Henry's Rabbit Ranch near Staunton, Illinois.

covered by a dramatic concrete form in a safety rest area — SRAs are what the interstate planners dubbed these rest areas, meant for safer motoring.

I've met a scholar who's an expert on these expressway parks. The story behind these places, some sensationally liberated from period architecture, others stylized to reflect regional tastes, tells us a lot about where we've been as a nation and where we're headed.

Our pilgrimages avoided roadside commercial entertainments. Our in-car activities were playing cards, auto bingo and road-sign word games. We were pilgrims in the sense that we found new highways, such as I-55, escaping the stoplights on Route 66. We discovered that our side of the monotonous wide lanes, with limited access mowed down my great-grandmother's place in Minneapolis or my mom's grandparents' spread outside of St. Louis. What we lost, in my father's opinion, we got back: virtual high-speed efficiency — a quicker way to get there, even if there was longer there.

Fast-forward to today. You'll find my way across America's highways, the paradise of dimmed dashboard illumination and the Scirocco's oversized guiding wheel, strapped into a contoured bucket seat with a foam wedge placed atop the parking brake lever as a center armrest, a curiosity perhaps or just plain and about as appealing as wending your way through the waivers you must sign in order to drive on a racetrack.

The purple mountains of Tennessee are inky black. Their inclines require you to squish the long



A safety rest area along Interstate 55 near Springfield, Illinois.

pedal or downshift to fourth. The lines guiding my route resemble an Olympic Tartan track. The hurdles are truck-tire carcasses littered throughout America's midsection, and any one of them could hobble. You dodge them without the cheering spectators. Moreover, the tractor trailers (semis) pose hazards. Their heights are incompatible with motorcars. The appearance and experience of our motorways look

nothing like the sleek, uncluttered park-like renderings promoting postwar urban and rural renewal.

Because I'm a night rider, I experience the 24/7 lifestyle of truck stops and the glow of semis lit like Christmas trees. Tennessee, at night, is a massive semi parking lot stretching the entire I-24 corridor. There was a time when 24-hour, pump-it-yourself fuel wasn't the norm — truck stops were an exception.

Much like a racecar crew, I must balance the number and timing of pit stops, seeking speedy low-cost refills. My range, therefore, is either how far the Scirocco's 10.6-gallon tank will let me go (315 miles puts the gauge into the red zone) or short of that, low-priced fueling meccas, places where I don't have to contend with, say, Minnesota's frontage highways, which twist your mind with their pretzel logic.

That's the gas part. For food, I've got bagels nestled behind the front seats, granola bars, water and trail mix.

March of dimes

It turns out I traveled 3,975 miles, consumed 118 gallons of fuel, paid \$378 for it, and averaged 33.8 miles per gallon. My math is fuzzy because at least one pump wouldn't pop out a receipt. I haven't refilled the car's tank since returning home, and my brother treated me to gas at a Florida Costco — the price was about 40 cents cheaper per gallon than other places. I added one quart of oil. My gas bill was just below 10 cents per mile, including Costco's tab.



Toggle switches flank the instrument panel with oil temp, oil pressure and volt meter gauges in a console ahead of the shifter.

While in Florida, my brother Gary and I mounted bicycles and rode about 15 miles the first day, 42 miles the second day (rain dampened that ride) and 35 miles the last. Besides the opportunity to explore this part of Florida, Gary had another trick up his short-sleeved jersey: he let me experience a 21st-century carbon-fiber frame Trek Domane SL 7 bike, lightweight wheels, tubeless tires, electronic shift-

ing and hydraulic disc brakes. The first ride helped me master ski binding-like clipless bike pedals. You place hardware on your cycling shoes, snap it into the pedals and twist your foot sideways to release.

Electronic shifting, programmed to eliminate drive chain crossing, is the DSG of cycling. I performed most gear changes with two tiny buttons tucked behind the right brake lever. In addition, this bike's effective braking system, tested on a bike path where a pedestrian stepped in front of me, works. The bike lifted its rear wheel, but I modulated the binders preventing a header. This cycle moves!

Lisa, my brother's wife, treated us to a poolside, Italian-style dinner featuring her family's favorite pasta sauce recipe. So, while I cooked up a storm on the bicycle, she did the same in the kitchen. One thing I noticed in Melbourne: lots of new concrete-block house subdivisions with reinforced garage doors. New building codes might improve the odds you'll weather a major storm. I noticed none of the new developments with their branded entrances, directly interconnects with the other. You must use a trunk highway to get around, which could cause future traffic jams.

I headed back to Milwaukee driving north to Jacksonville, westward from there and then north to Atlanta. I reached Kentucky, when vivid lightning, my need for sleep and sheets of rain suggested I find the next rest area. I did. Hours later, I was back on the

►TURN TO PAGE 33



BEAM ME UP

Long-awaited ID.4 offers an otherworldly driving experience

“Shoot for the moon. Even if you miss, you’ll land among the stars.”

— 19th century post Oscar Wilde

Just about every kid growing up has heard that upbeat, time-worn advice from a parent who was wistfully aware that the child’s lofty goals might be difficult to achieve.

And then one day, humankind not only shot for the moon but reached it, walked on it, gathered some souvenirs and returned to Earth, all in a matter of eight days. If you live long enough, you see some stuff — advances that once seemed unimaginable become routine.

Witness the Two-Way Wrist Radio that legendary cartoon character Dick Tracy relied on to communicate with fellow police officers starting in the mid-1940s. How could that ever happen?

Until one day, “radio wristwatch” technology would allow us to do much more than have a simple conversation with wrist held close to mouth — thanks to a science fiction-y pocket computer and some magical airwaves called Bluetooth.

The automobile, of course, has seen remarkable advances in my lifetime. For decades it was a means of getting from Point A to Point B, and not always comfortably. Though obviously smaller, today’s vehicles offer the comforts and conveniences of a recre-

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ational vehicle and drive better, too.

My 1971 VW Beetle was a willing soldier in that A-to-B class of basic transportation. Now more than five decades later and a dozen VWs that have trod my driveway, I'm experiencing a revelation in land travel: A VW ID.4 EV. Hey, Siri, text Detective Tracy and tell him I'm, uh, over the moon driving this road-bound spaceship powered by electrons.

His probable reply? "What's an electron?"

The future can sure take its time. Eleven months after a test drive followed an online order — originally for a 2021 model that was kicked to a '22, then to a '23 — the Arctic Blue RWD ID.4 arrived from the Chattanooga factory in early March. For me (and others in waiting who have followed the car's progress through those who went before us), not without trepidation.

VWs I've driven since 2006, a Rabbit, Jetta, Golf TDI and Passat, were and are, in the case of the Passat, rock solid reliable. So, when you gravitate to social media forums that provide an in-depth level of the good, bad and the ugly one would expect from such a new concept built by a legacy automaker of internal combustion engine cars, the reviews can give you pause. As with most EVs not named Tesla, buggy software can be maddeningly unpredictable and occasionally scary, generating warnings of trouble that sometimes can be solved like a balky computer: shut it down and restart it.

But not always. AUTOIST correspondent Todd Allcock's 2022 AWD ID.4 was parked at his dealer for more than

nine weeks awaiting a front-drive motor. Under Colorado's lemon law, he sought a buy-back from VW.

► **PREVIOUS PAGE:** The ID.4 is pictured at Digital Strike, a marketing agency operating out of a former service station in suburban St. Louis.



VW designers threw customers a fashionable curveball in the form of this Cosmic blue and white interior paired with white steering wheel.

"I think you have to look at the entire experience," he said in an email. "The ID.4 is a great car and probably the best EV value on the market other than the Chevy Bolt, which is really just a city car (the 60-minute 20 to 80% charge times pretty much exempt it from serious road tripping).

"It's hard to be mad at VW about this. If this wasn't the tail end of the pandemic/chip shortage/Carpocalypse, my problem wouldn't exist — this would've been two or three days in the shop, pop in a new motor and everyone gets on with their lives. ... It's not like VW is twiddling its mustache like a silent movie villain, salivating at the thought of buying my 6-month-old car back for \$50K!"

After getting nowhere with VW, the Better Business Bureau told

him to begin the arbitration process for a buyback. A front-drive motor expected by late July suddenly was found in early June.

It's striking, the number of people who have posted similar horror stories on social media while acknowledging how much they liked the car, tolerated the gremlins and hoped the problems could be resolved. (In time, software updates will smooth the rough edges, but many 2021 owners waited nearly two years to get theirs.) Amid the grumbling, you still see a lot of "best car I've ever owned" admissions.

One of those bad-news headlines displayed on the infotainment screen in earlier models is "Electrical system not working correctly. Please service vehicle." This could be related to a recall involving battery management control software, which, when something goes wrong, can leave the car inoperable. For many, as with Allcock, the fix can take a long time.

For me, in the more than 2,500 miles traveled at this writing, it's so far, so good. The typical annoyances many experience include a seat that automati-

ID.4

cally slides backward for easy entry and exiting but doesn't always return to its programmed setting; an infotainment screen and radio that can lag at launch but is much improved overall since the software update; the lack of backlit controls; and a profile setting that isn't a bug but just bad design: Even with only one profile set up, the user is asked to log in with a press on the screen at every start.

More nonsense: The steering wheel up/down arrows controlling songs and stations. "Up" is back or previous; "down" is forward or next!

But the native navigation is excellent, and the female voice offers soothing turn instructions, prefacing her instructions with a "please." On our inaugural road trip, covering more than 850 miles, she rerouted us around a massive traffic jam caused by accident. My beef with the navigation interface is the big "miles to" number it displays at the top of the screen. Rather than referring to a programmed destination, like a charging station, the "miles to" seems to refer to the next highway interchange or maybe an exit you'll be taking. You're left to speculate. (The miles to the final destination and arrival time are shown in the map's upper right corner.)

On the plus side, you can program in just about any style restaurant imaginable (Russian, Thai, for example), plus museums, libraries, cemeteries, grocery stores and much more, and they'll show up on the map. For trip planning, find your charging stations and add them to your favorites.

VW's capacitive touch format has been universally panned, prompting executives to promise more knobs in future models. As with many tech features like this, we adapt. Navigating to get a climate setting can be an annoying multi-tap-tap misadventure, but the lady behind the dashboard can do the work while you



The ID.4 is joined by a Ford Lightning EV at an Electrify America station in Indianapolis.

eyes are on the road and hands are on the wheel.

"Start air conditioning."

"Sure, air conditioning started."

"Reduce blower speed."

"Sure, reducing blower speed."

The way she enunciates "sure" is reassuring!

VW has an app that controls various functions of its cars remotely, and by all accounts they work reasonably well — but not the ID.4's app, a persistent embarrassment now covering three model years. Though it's gotten token updates since the car's 2021 rollout, its usefulness remains limited and is often inaccurate in what it reports. (You'll turn off the regular notifications alerting to an open window or door when they're actually closed.)

But how's the car drive? Like nothing you've ever experienced in a traditional car. At city speeds, the quiet is office-like. The torque is instant and with no gear-shifting, disarmingly smooth. Critics shrug at the RWD's 0-60 time of about 7.5 seconds, but how often does the average driver go 0 to 60? Zero to 30 or 40 is a visceral whoosh — and its spaceship-like 0-18 mph electronic whir serves to alert pedestrians but is barely audible inside with the windows closed.

With no downshifting transmission, the car coasts like a Soap Box Derby champ. This helps extend range because of battery regeneration. Switching the mode to "Brake" from "Drive" accelerates that

process, and it is the topic of much debate among EV owners. (Allcock will explore the options in a future issue.)

The rear drum brakes make for a much different and sometimes jarringly soft pedal feel, but a quick one- or two-finger flip of the drive mode switch just behind the steering wheel will bring you to the confident stop you'd normally expect. "B" mode is like downshifting, no clutch required. Timed just right while approaching a stop sign, my car can slow to 1 mph, allowing a rolling stop, no brake pedal needed.

VW has taken heat for the lack of a true one-pedal drive setup, but I prefer the creeping version. Like a non-EV, you can hold the car with the brake pedal and creep; but unlike a non-EV, you can also push a little harder and activate "auto hold" while resting your foot on the go pedal. The tight turning radius makes the car a star in cramped spaces.

One downside on the down side: My previous VWs have handled bumpy roadways with more poise.

This is not a luxury car, but the Pro S is loaded with features those high-end models are known for. The seats are the most comfortable I've ever experienced in a VW, and the back massage feature is a bonus for an old guy. The Cosmic blue and white interior with white steering wheel is a head-turner under that full glass roof (with shade cover) and goes far against the grain of traditional VW interiors.

Travel assist, combined with adaptive cruise control, keeps the car centered in a lane, even doing automatic lane changes with a flick of the turn signal. You need only to rest a hand or wrapped fingers on the steering wheel. Three benefits: Sightseeing for more than a couple seconds; the ability to monitor the navigation more closely; and, for those who can nod off while driving, potential life-saving guidance.

VW subsidiary Electrify America, which provides three years of free 30-minute charges to later model ID.4s, is frequently reviled for reliability issues, with



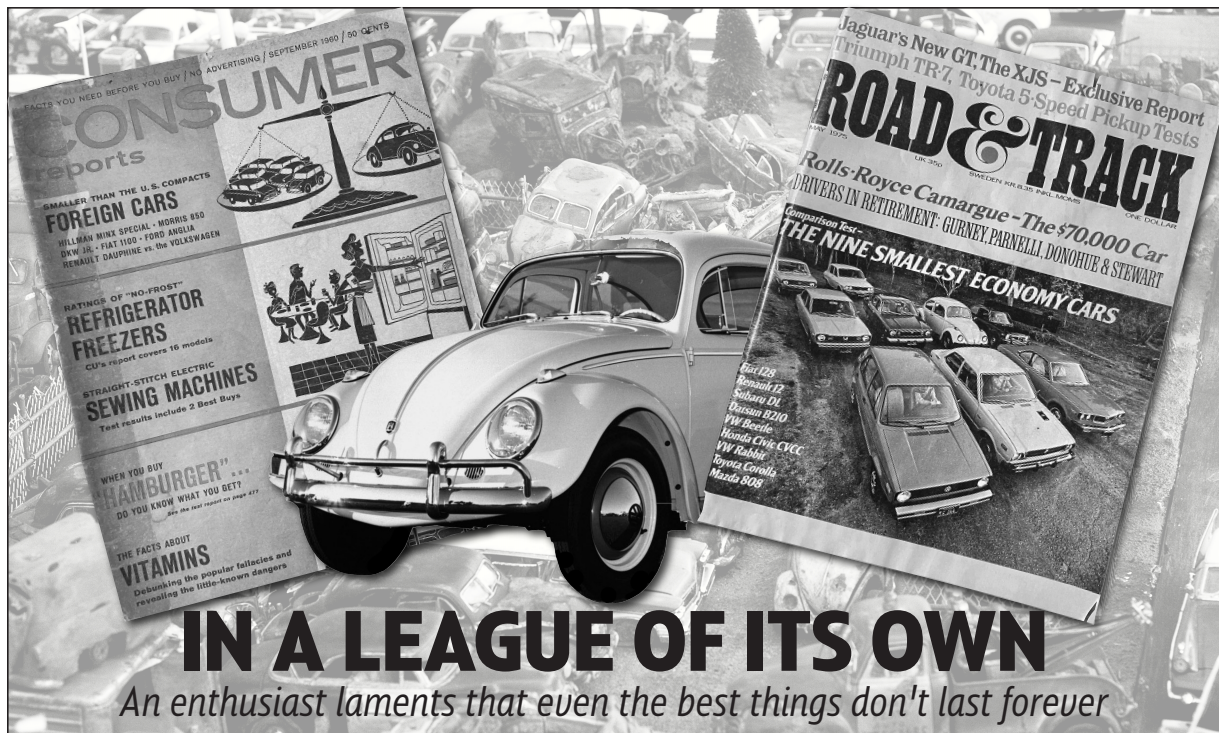
The pertinent stats after a Columbus, Ohio-to-St. Louis trek. Miles per kilowatt hour reflect range in real time. For example, starting a trip charged at 80% and recharging at 5% would use 75% of this ID.4's usable 77kWh battery capacity. So 3.1 mi/kWh X 57.75 kWh equals 179 miles of range and less than three hours of driving between stops. But ... perhaps for the fearless and foolish who like to see how close to empty they can get, VW has provides a small buffer of a few miles below 0% to allow them to limp to a charger.

units whose speeds can be throttled and may not even work. In our three EA stops en route to Columbus, Ohio, we maxed out at 68kW, 111kW and 97kW. (My car can accept up to 135kW.) Coming back, four different outlets we tried at the EA near Dayton, Ohio, ranged from 26kW to 37kW; the fifth one at least hit 57kW. So EA's free charging can come with the cost of longer waits.

On the last leg of our trip home, the A Better Route Planner app suggested charging to 62%. And because we had been surpassing projections on earlier stops, we unplugged at 60%.

The miles-remaining "guess-o-meter" readout, as it is dubbed, saw us arriving home with 22 miles of range remaining. But with the AC on, driving into a slight headwind at 75 mph, the projection gradually bled to 18 miles and a gentle suggestion from our lady mileage monitor that we might want to make one more charging stop. We deferred to a 20-minute stint behind a semi going 65-70 mph to bolster our reserve, and we arrived home with a state of charge at 11% and an estimated 30 miles of range.

The popular ABRP app projected it right, a good lesson learned in this new world of EVing. In a second trip that included a stop at that same station, we charged to 62%, locked in the cruise at 78 mph and finished the final 116 miles with 11% and 29 miles in reserve, no drafting behind a semi necessary. **VWCA**



IN A LEAGUE OF ITS OWN

An enthusiast laments that even the best things don't last forever

My collection of old-car magazines published some revealing information about the VW Beetle. In 1960 *Consumer Reports* tested a group of imported cars, and each one had at least one advantage or more over the Beetle: Bigger trunk. More powerful engine. Better acceleration. Better gas mileage. Tighter turning circle. More passenger space. Quieter. Every one of them was more modern. In 1960 the Beetle's 1938 design was 22 years old. Practically antique.

In 1975 *Road and Track* tested a group of imported cars. As was the case 15 years before, each one had at least one advantage or more over the Beetle. By this time the Beetle's 1938 design was 37 years old. Genuinely antique.

Yet in the 1960 *Consumer Reports* test, the Beetle led the field. To quote from the article:

"Mostly, though the VW's faults were minor, the car offered plenty of the big virtues: unbeatable quality

for price throughout, good workmanship, unexcelled durability, long legged speed for the parkways with a noticeable absence of vibration, a transmission with lively ratios and butter smooth shifting, good inside heights on good seats. ..."

By 1966, *CR* rated both the Opel Kadett and Toyota Corona higher than the Beetle, but VW offered a larger dealer network with parts and service.

To quote *Road and Track's* assessment in 1975: "The VW Beetle trails the field by as much as the VW Rabbit leads it. An old, outdated design, the Beetle now has little to offer except outstanding fuel economy and a reputation for long life and reliability."

But for the Super Beetle and revamped 1975 Beetle, same car, same virtues, same faults, different conclusion. But why? And I mean this in both cases: Both when the Beetle led the pack and when it trailed it. I can easily see the comments from 1975 applying to 1960 and the comments from 1960 ap-

By Robert Beaumont ✉ VW1452582@yahoo.com

plying just as easily to 1975.

Road and Track also observed that it was obvious that “VW is making only a token effort with the Beetle now ...” Alas, the editors were correct. I can also imagine that people went into the VW dealerships in 1975 and said, “But I don’t want a Rabbit! I want a Volkswagen!” Yet, Rabbit demand was so high that VW’s Pennsylvania production plant ran at full capacity for a time, and VW bought (though never developed) a second assembly plant in Michigan in 1980.

For years it seemed as though none of the Beetle’s competitors could lay a glove on it. When American compact cars were introduced in the late 1950s and early 1960s, sales of every European small car fell in the USA. Every European small car *except* the Beetle. Its sales continued to rise. In many ways the Beetle phenomenon seemed inexplicable. Even to me, a lifelong Beetle enthusiast. The only explanation I can hazard is that the Beetle, especially in the USA, was in a league of its own and thus had no real competitors in that league.

Unfortunately, the clock was ticking on the aging Beetle. The 1970 Clean Air Act restricted the amount of lead in gasoline, and unleaded regular fuel required a slightly lower octane. In 1972 most carmakers dropped their compression ratios to prevent pinging or pre-detonation — a major problem for VW’s air-cooled cars that led to reliability and fuel efficiency issues. Compliance with new US safety regulations were costly.

With the 1973 oil embargo sending gasoline prices

soaring, Japanese automakers were making headway here with their own fuel-efficient models, which competed with the more expensive Beetle. Toyota got a foothold in the mid-1960s with its Corona and later the Corolla. In 1971 came Chevrolet’s Vega and Ford’s Pinto. The 1973 Civic was Honda’s first model to have an impact in the export market with its trans-

verse engine and front-wheel drive, perhaps inspired by the late ’60s Fiat 128. VW adopted those mechanicals for its new generation of cars in 1974.

VW faced geo-political hurdles as well. President Nixon imposed excise taxes on imports and floated the dollar against the Deutsche

Mark, ending a period when the exchange rate was fixed to keep European imports less expensive. That scheme promoted Euro exports as a cold war economic weapon.

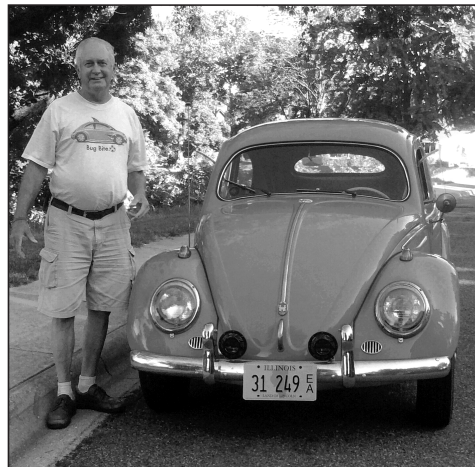
From the late 1960s onward, sales of Toyota Corona and Datsun 510 saw exponential growth as overall Beetle and Karmann Ghia sales dropped: from 371,097 in 1973 to 243,664 in 1974. By then VW was resorting to specialty Beetle models meant to garner attention, selling its cars with Detroit-like pitches. Thus, we got the Sports Bug, the Sun

Bug and the Love Bug.

When VW eventually abandoned air-cooled Beetle sales in the US, the domestic market — but for a relatively brief honeymoon with the Rabbit — largely abandoned VW, a problem that persists to this day. In 1970 VW sold more than 574,000 cars here, a market share of 5.6%. Sales have trended upward in recent years, but the market share has seldom >>

RELIABILITY	
Reliability as transportation is an especially important aspect of low-priced sedans. Here are the reliability predictions we have arrived at for the nine models tested, based on our own series of Owner Surveys. We have not published survey reports on all nine but have sufficient questionnaires in our files to make the predictions confidently:	
Datsun—better than average	Subaru—average
Fiat—below average	Toyota—better than average
Honda—better than average	VW Beetle—much better than average
Mazda—slightly better than average	VW Rabbit—better than average
Renault—better than average	

Ratings from a 1975 *Road & Track* review.



Bob Beaumont poses with his 1958 Beetle, Hildegard, in 2018.

BEETLE

surpassed 3%.

I've been a VW enthusiast since 1965. The only modern VW I've ever owned is a 2003 New Beetle. The only reason why I bought it was because at least it *looked* like a Beetle. I recently bought a new 2023 Kia Rio. It's a nice little car, but I'm not really enthusiastic about it.

VW essentially has abandoned the demographic that bought the Beetle. But for the base Jetta, it doesn't offer a car in the least expensive auto segment any more in the USA. Most VWs sold here cost thousands more than I paid for my Kia. If I'm going to have to drive a car that I'm not really enthusiastic about for my daily transportation, why shouldn't I

buy the cheapest car I can find?

By the time worldwide air-cooled Beetle production finally ended in Mexico in 2003, the car's 1938 design was 65 years old. Old enough for Social Security and Medicare. In 65 years and 21 million-plus units built, the air-cooled Beetle was refined in detail many, many times, but it always resembled the original.

It kept the same virtues and some of the same faults until the end of its production. For a production run that long and with that many air-cooled Beetles built, it almost seems like the Beetle's virtues might have outnumbered its faults.

At least by a little. **VWCA**

A LOST LEGACY

In a world of SUVs, Volkswagen embraces the generic

As I parked my New Beetle convertible at a neighborhood pharmacy, another New Beetle pulled up next to mine. As its driver got out, we both said "I like your car." The lady explained that hers was a 2003 that she had purchased new. I shared that mine was a 2010 that I also purchased new. We both agreed that we planned to keep our Beetles as long as we could. She said that in her high school years, she had an air-cooled Beetle but sold it to help pay for college. I also had an air-cooled Beetle back in my younger years. We both bought our current Beetles to rekindle the Beetle experience.

At a cruise night a few



weeks later in my '73 Beetle, I spotted a 2019 Beetle convertible. I approached its owner and mentioned that I also had water-cooled Beetle convertible. We exchanged stories about how much we appreciated the "modern conveniences" of the New Beetles, such as an efficient heater, defroster and air conditioner, all of which were lacking in the classic Beetles. He also swore that he would keep his New Beetle for as long as he could because he liked it so much.

As I reflected on my own history with New Beetles, I remembered my 1999 turbo New Beetle, which carried me on my 100-mile round trip daily commute for several years. I re-

By Steve Midlock ✉ SMidlock@stfrancis.edu

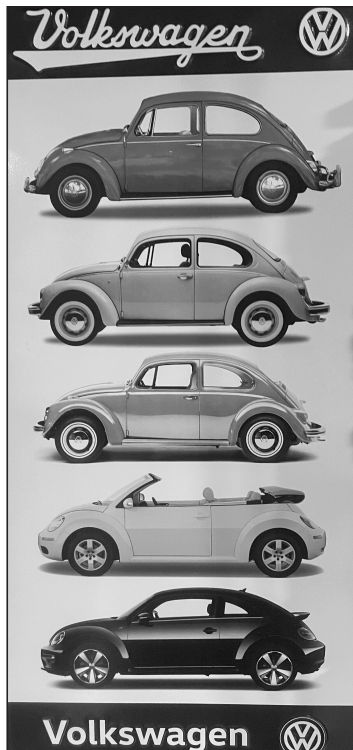
placed it with a 2004 New Beetle Convertible, and then when VW announced the Final Edition for 2010, I bought my current New Beetle. So, I have been driving New Beetles for 20-plus years! Quite honestly, I can't imagine myself driving anything else.

These experiences have led me to a conclusion that just like the classic, air-cooled Beetles have a strong following, so do the New Beetles. Often, it's a rekindling of a relationship with a classic Beetle. This seems to be supported by the long-life span of the New Beetles (1998-2010 and 2012-2019 when "New" was dropped from the name). Actually, if we go back to 1994 when the New Beetle was introduced as the Concept I, it received such positive interest that VW decided to produce it. There was a pent-up hunger for another Beetle! The public wanted it back after a hiatus.

Market forces brought an end to the classic Beetle in this country in 1977 (the convertible lasted until 1979). The 1970s Rabbit, although modern, looked like their Asian competitors, and the Plymouth Horizon and in the 1980s the Dodge Omni GLH ("Goes Like Hell") also ate into sales. VW had little else to set it apart from the rest of the automotive field. The GTI helped, but it was a niche model. In 1998, the Beetle resurrected VW's identity and sales improved.

New Beetle sales peaked in the US in 1999 at 83,434, but short-attention-span buyers began to move on as sales declined, dropping to about 14,000 in 2009. The 2012-19 Beetle A5, as it was called, topped 43,000 in sales in 2013 before dropping steadily until the end, hitting just 14,411 in 2018.

Sadly, in the absence of a legacy and identity, VW vehicles today look like every other SUV. A drive past my local dealer showed Atlas, Tiguan and Taos SUVs, in gray, silver, black or white. There was nothing to catch anyone's attention, just SUVs in small, medium



or large, all with a generic appearance. Where are the colorful Beetles that the public likes? I realize that the Beetle would be part of a niche market, but is that bad? Do we all have to drive vehicles of the same appearance and color? Do all models have to generate mega-sales? What happened to the value of a diverse portfolio of offerings to the customer?

As the New Beetle did, the ID. Buzz shows promise as a distinctive successor to VW's Transporter. But its expected high price will relegate it to a niche vehicle status.

Meanwhile, the market is hot today for these cars. A quick search of Carmax.com or Cargurus.com will show 2019 Beetles with a price that exceeds their original sticker price. Even 10-year-old Beetles carry a hefty price. I realize that this holds true for some other makes and mod-

els, but it shows the continuing attraction of the beloved Beetle. A haven persists for New Beetle lovers, but what will happen when that pool dries up?

It is sad that corporate executives at VW seem not to recognize the personal connections people have with Beetles — new or classic. History has shown this through the "Herbie the Love Bug" movies and related memorabilia. Apparel, toys, puzzles, cookie jars, salt and pepper shakers, Avon bottles, playing cards and games all show the affective connection with the Beetle.

I am not an accountant, but didn't VW make a profit on each New Beetle sold? Why not bring it back to rekindle the corporate identity and continue the legacy, even if it's not the top seller? As already had been done, the Beetle could continue to utilize the ubiquitous monocoque to keep development costs in check. It's obvious that people of all ages and walks of life love the Beetle.

Long live the Beetle! Fingers crossed for a renaissance. **VWCA**

2023

FRIENDS OF OUR CLUB

CONTINUED FROM PREVIOUS PAGE

VOLKSWAGEN DEALERS

TEXAS

ARLINGTON: RANDY HILEY VOLKSWAGEN OF ARLINGTON, 1400 TECH CENTRE HWY., 817-575-6100

GARLAND: RUSTY WALLIS VOLKSWAGEN, 12635 LBJ FREEWAY, 214-349-5559

HOUSTON: ARCHER VOLKSWAGEN, 10400 SOUTHWEST FREEWAY, 713-272-1700

SAN ANTONIO: NORTH PARK VOLKSWAGEN, 21315 W. INTERSTATE 10, 210-581-1000, P-15 A-15 L-15

UTAH

SALT LAKE CITY: STRONG VOLKSWAGEN, 1070 S. MAIN ST., 801-596-2200, P-10 A-15 L-10 AC

VIRGINIA

ALEXANDRIA: ALEXANDRIA VOLKSWAGEN, 107 W. GLEBE RD., 703-684-8888, alexandriavw.com, P-15 A-15 L-10

RICHMOND: WEST BROAD VOLKSWAGEN, 9001 W. BROAD ST., 804-270-9000

STAUNTON: VALLEY VW, 314 LEE-JACKSON HWY., 540-213-6800

WASHINGTON

KIRKLAND: VOLKSWAGEN OF KIRKLAND, 12612 NE 124TH ST., 415-898-2500, P-10 A-10 L-10

PORT ANGELES: WILDER VOLKSWAGEN, 53 JETTA WAY, 360-452-9268, wilderauto.com

SEATTLE: UNIVERSITY VOLKSWAGEN, 4724 ROOSEVELT WAY NE, 206-634-3322

WISCONSIN

EAU CLAIRE: VOLKSWAGEN-AUDI OF EAU CLAIRE, 5201 FAIRVIEW DR., 715-830-1111, P-10 A-10 L-10 AC

MADISON: ZIMBRICK VOLKSWAGEN OF MADISON, 1430 N. STOUGHTON ROAD, 608-241-5201, P-10

MIDDLETON: ZIMBRICK VOLKSWAGEN, 7505 CENTURY AVE., 608-836-7777

WYOMING

CASPER: FREMONT VOLKSWAGEN, 6001 E. 2ND ST., 303-233-4300, P-10 A-10 L-10

AUDI DEALERS

ARIZONA

TUCSON: AUDI OF TUCSON, 4690 E. 22ND STREET NO. 3, 520-748-1000

CALIFORNIA

BURLINGAME: AUDI BURLINGAME, 1010 CADILLAC WAY, 650-348-0111

LOUISIANA

BOSSIER CITY: MOFFITT VOLKSWAGEN, 1960 OLD MINDEN RD., 318-746-2175

MICHIGAN

KALAMAZOO: MAPLE HILL VOLKSWAGEN, 5622 W. MAIN ST., 269-342-6600

MUSKEGON: AUDI MUSKEGON, 1860 E. STERNBERG RD, 888-724-3942

OHIO

COLUMBUS: BYERS IMPORTS, 401 N. HAMILTON RD., 614-864-5180, P-10 A-10 L-10

PENNSYLVANIA

LANCASTER: AUTOHAUS LANCASTER, INC., 1373 MANHEIM PIKE, 717-299-2801

WASHINGTON

SEATTLE: UNIVERSITY VOLKSWAGEN, 4724 ROOSEVELT WAY NE, 206-634-3322

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EAU CLAIRE: VOLKSWAGEN-AUDI OF EAU CLAIRE, 5201 FAIRVIEW DR., 715-830-1111, P-10 A-10 L-10 AC

OTHER DEALERS

ARIZONA

KINGMAN: TNT AUTO CENTER, 535 E. ANDY DEVINE AVE., 928-753-1477, P-10 A-10 L-10

CALIFORNIA

LONG BEACH: SO CAL IMPORTS, 6831 N. PARAMOUNT BLVD., 562-633-4979

SANTA BARBARA: TOP SHOP AUTOMOTIVE, 177 S. PATTERSON

AVE., 805-964-6554, topshopsb.com, P-20 A-20

CONNECTICUT

OLD SAYBROOK: CARDONE AND DAUGHTER AUTOMOTIVE, 4 CUSTOM DRIVE, 860-664-0727, cardoneanddaughter.com, AC, SERVICE & REPAIR SHOP

ILLINOIS

DOWNERS GROVE: SPAROMOBILE, 503 OGDEN AVE., 630-963-8410, FOREIGN CAR PARTS

EFFINGHAM: MID AMERICA MOTORWORKS, 17082 N. US HIGHWAY 45, 866-867-0540, mamotorworks.com, P-10 A-10 AC, AUTOMOTIVE AFTERMARKET

EVERGREEN PARK: BEETLE CRAFT SPORT TUNING, 9535 S. PULASKI RD., 708-422-7548, P-10 A-10 L-10 AC, AIR-COOLED VW SPECIALISTS

OAK LAWN: G&H IMPORT AUTO PARTS, 9734 S. CICERO AVE., 708-422-9272, PARTS & ACCESSORIES

INDIANA

FORT WAYNE: WERNER'S GARAGE, 7804 FRITZ ROAD, 260-489-9783, AC, ALL EUROPEAN CARS

KENTUCKY

LOUISVILLE: IMPORTDOKTOR, 1387 LEXINGTON RD., 502-584-3511, importdoktor.com, INDEPENDENT REPAIR SHOP

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WATERFORD TOWNSHIP: MUNK'S MOTORS, 3080 W. HURON ST., 248-681-8081, munks.com, AC, INDEPENDENT REPAIR SHOP

NEW YORK

MASSAPEQUA: G T PRECISION IMPORTS, INC., 190A MARGARETTA AVE., 516-799-1100, gtprecision.com, P-10 L-10 AC, REPAIR & RESTORATION

WATERLOO: SELECT EUROCARS, INC., 0685 WATERLOO-GENEVA RD., 315-789-2200, P-10 A-10 L-10 AC, INDEPENDENT VW & AUDI SPECIALISTS

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SOUTH KINGSTOWN: M & T MANUFACTURING, 30 HOPKINS LANE, 401-789-0472, VW PARTS



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Last issue, I examined VW's innovative Computer Diagnosis. This time, let's explore VW's pioneering role in automotive fuel systems. Michael Porter, a Harvard Business School professor who's known for his studies of business strategies, is a good place to start.

Although he compresses the story of Bosch's electronic fuel injection development — the system VW employed — his research is helpful. He says Bosch obtained licenses from Bendix in 1967 to enter this field. Bosch wanted to manufacture fuel injection systems on a large-scale and had a VW contract. This moment, Porter says, was a game changer. VW's decision to use EFI rather than conventional carburetors represented a major innovation — Porter asserts it was the biggest event in "real" automotive technology since the introduction of the automatic transmission.

Bosch couldn't develop its own electronic fuel injection system without a Bendix license. Bendix, during the 1950s, broadly patented, in an ironclad manner, the idea of electronic fuel injection for internal combustion engines. Bendix, which didn't find carmakers willing to accept its innovation for mainstream vehicles, didn't invest much in developing or manufacturing EFI. Plus early versions of its EFI used electrical components such as vacuum tubes or consumer-electronics-type capacitors. These parts didn't work well in an auto's engine bay. Furthermore, most U.S. carmakers were vertically integrated — they made key items such as carburetors. Thus, American carmakers with their big investments in existing technology didn't see shelling

out more money for a whole new fuel delivery system as making sense or cents.

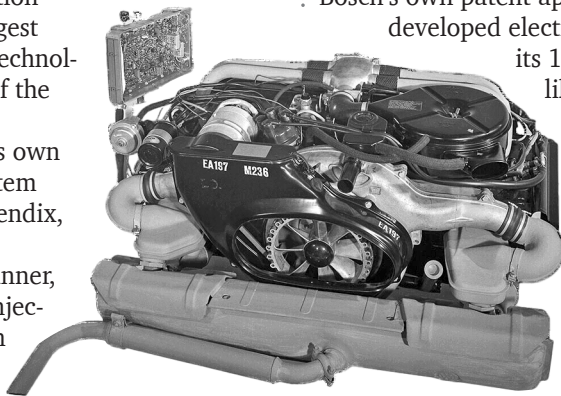
Bosch, according to Porter, had a happier situation; VW and other European carmakers relied heavily on independent companies for the research, development and manufacturing of their car parts. Thus, Bosch could develop, say, a fuel system for VW and then in turn sell basically the same setup to Volvo, Porsche or Mercedes. Bosch could get the economies of scale to make its wares relatively affordable. For consumers, this meant your fuel injected car had a large support network.

Regardless, VW's decision to use fuel injection set in motion a major change in automotive technology. Bosch's own patent applications, however, show it developed electronic fuel injection years before

its 1967 Bendix deal. Plus, it is likely Bosch already had EFI manufacturing facilities ready for its electronic control units and fuel injectors before 1968 — the year Porter says Bosch built its EFI manufacturing facilities. Porter doesn't examine how Bosch got the bugs out of mass-producing EFI. Nevertheless, Porter claims Bendix, during the 1970s, went to Bosch's plants to learn how to make fuel injectors.

Several innovations worth exploring include Bosch's automated EFI production and an important diagnostic tool. Bendix, in contrast to Bosch, which delivered EFI for VW's relatively affordable Fastbacks and Squarebacks, decided its basic patents were likely to expire in the 1970s if it didn't find a U.S. carmaker willing to fund the switch from carburetors.

Porter says the latter cost about



A Type 3 EFI engine introduced for the 1968 model.

GAME CHANGER

Key VW decision on fuel injection spurred major industry change

▶ **SECOND OF THREE ARTICLES** In the September/October issue, we'll explore VW's innovative use of computer controlled body assembly and its computerized US parts distribution/warehouses.

By Cliff Leppke ✉ leppke.cliff@gmail.com

\$55 and EFI about \$500. Experts, moreover, predicted carburetor prices would climb to about \$90 due to emissions standards. But \$500 for improved luxury-car engine performance was just what Cadillac needed to launch its smaller 1976 Seville meant to compete with Mercedes-Benz. Bendix, as Porter chronicles, ran into lots of difficulties meeting GM's deadlines for a new standard of excellence backed by an EFI with a microprocessor heart.

Here we see an interesting hint of manufacturing complexity. Injector making, according to Porter, was capital intensive, using high-precision, high-volume turning and grinding equipment. As one engineer described injector manufacturing technology: "on a scale of one to ten, this is definitely the ten-level technology." Injectors had to work for at least 150,000 traveled miles before breaking down. After millions of cycles, fuel flow tolerance of less than 1 percent was required. Grinding operations were critical, as tolerances were only 1-to-1.5 microns. At that time, only five companies in the entire world could do the job.

Because business histories don't tell us much about Bosch's EFI research and development or how it figured out how to make its components and then sell them to VW, we'll have to wing it. I'd say one key to D-Jetronic is the computer box's use of a solid-state multivibrator and various forms of automated manufacturing.

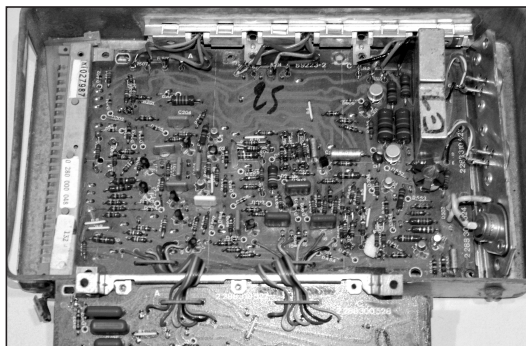
VW presented its Type 3 series with "widely admired innovation" or "electronic direct fuel injection" installed in vehicles manufactured for the U.S. market at the IAA Frankfurt International Motor Show in September 1967. The caption of one Type 3 engine with Bosch's fuel injection claimed VW was smart: for the first time, a computer precisely calculated the optimum gasoline-air mix in the VW 1600.

Tellingly, the 1967 VW Annual Report says the electronic fuel injection system, which includes a

completely new solution to the problem of exhaust emission control has been installed on VW 1600 models exported to the U.S. When the Type 3 offered EFI as an option in Germany — after the USA got it, the price was 580DM in May 1968, according to Joachim Kuch. That might convert (1969 exchange rate) to about \$145.

Flip-flop: It's not a shoe, it's a computer

Bosch's EFI computer needed reliable electrical components, a means for attaching them to circuit boards and a way to tweak circuitry to compensate for variations in components (tolerance) or application—like a vintage TV's fine-tuning knob. It's possible Bosch designed its circuit boards for automated parts insertion and then automated soldering — all methods Lawrence Lessing covered in a 1950s *Fortune* magazine piece "Electronics Goes Modern." The irony, according to Lessing, was modern electrical wonders were manufactured with antiquated methods such as hand soldering.



Bosch D Jetronic circuit board with hand-inserted parts.

I asked an engineer to examine a Bosch D Jetronic circuit board. He said component quality is outstanding but that the leads from electrical components bend where they protrude from the insertion holes. That's a sign they were installed by hand. Moreover, stakes protruded from the EFI boards. These let production workers solder carefully selected components, tweaking each box's performance.

Chances are Bosch employed what's called a multivibrator (the flip-flop version), an electrical circuit that toggles between high and low states. Bendix's 1950s patents show it used tube-type multivibrator circuits as did some TV-set scanning circuits. Bosch likely used various sensors (head temp, throttle position, trigger switches, intake air temp and air pressure) to vary the injector flip-flop pulse numbers and widths. These pulses energized coils inside the fuel

►TURN TO PAGE 33

Local Volks

Activities of VWCA affiliates

Summer activities are heating up

We've always said that participation in local chapter activities is a huge part of "enjoying your VW to the fullest." It is the purpose of this column, therefore, to highlight these events and activities, give the planners and organizers a little recognition for their efforts and perhaps inspire other chapters to try some of the unique and fun ways we enjoy our VWs.

If there is no local chapter in your area and you'd like to start one, contact our vice president, Tom Janiszewski at Volkstom@sbcglobal.net, or the club office at VWClub@aol.com.

Here's what some of the locals are up to of late: **BADGER BEETLES AUTOFUN CLUB, MILWAUKEE:** All the members survived the annual Memorial Day Campout. The club also planned a theater party in May and are planning its annual picnic in August. And it's not too early to start thinking about the annual Labor Day Campout.

NORTHEAST ILLINOIS VW ASSN., LISLE: A cruise-in to a popular Dog-N-Suds drive-in was a huge success. A campout was planned for June as well as NIVA's annual BugFest, the area's largest all-VW car show and swap meet. Keep in touch with nivaclub.org or facebook.com/nivaclub.

STATELINE VOLKS FOLKS, ROCKFORD, ILL.: The Stateline members were meeting up with NIVA for the June campout, while some were heading to Effingham, Illinois, for the MidAmerica Motorworks Funfest. The annual Vintage Picnic as also in the works. Visit statelinevolksfolks.com or check the "Events" posts at VWClub.org for the latest details.

CENTRAL FLORIDA VW CLUB, ORLANDO: Members are abuzz (!) with the news of the new electric vehicles from Volkswagen, according to the coverage and commentary on the subject in the "V-Dubber" newsletter. To read the latest details, visit centralfloridavwclub.org and click on "Newsletter."

Check our website, VWClub.org, for listings of these and future events. You'll always find the latest updates there — and even some events that were announced too late to make the *AUTOIST* publication schedule. Occasionally, photos and videos of these events appear live as they happen on our Facebook page, facebook.com/vwclubofamerica.

And if your local chapter is planning an event, contact us at VWClub.org and we'll post it. **VWCA**

|| **▶ GOT A STORY?** Or a quip, a point of view, a problem, a solution? Let us know! Email VWAUTOIST@icloud.com ||



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imagination board trying different scenarios. At this point, we fantasize that the new VW Amarok (supposedly co-opted with Ford's Ranger) will be offered as a V-6 long bed jump-seat two-door, with adequate towing capacity. Perhaps it could support a slip-in hi-lo camper (we'd likely have to build, to get just the right capability).

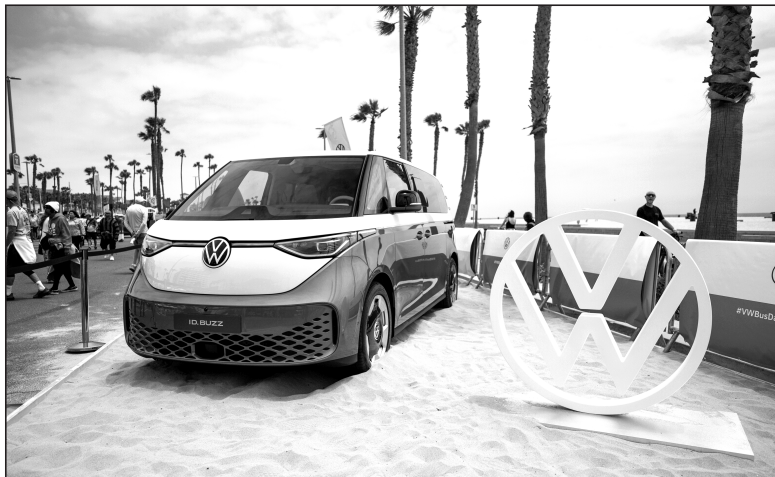
The second half of this pipe dream is VW's new ID. Buzz, to be the full length high-capacity battery model when sold in the US as a '25 model. This new "hippie van" with three-row seating would quickly change to flat bed for oversize cargo.

Likely requiring a lottery scratch-off hit (if not the Powerball) for both vehicles and the home charger, the new mix would seem to satisfy a wide range of needs and options in our mind's eye. We don't think either one would always get left home on party night, either.

On charging amid the big winds

Dear old Mom was born in 1910, back when airships and aeroplanes were still competing against each other for airshow box office. Mother enjoyed riding in her grandmother's horse-drawn buggy, fondly remembering that all on board could doze off and the mare would still get them home, because she headed to where her warm stall and the feed bag were waiting.

While affordable self-driving cars might not be ready to find the home garage in this first half of the



The three-row ID. Buzz made its American debut in Huntington Beach, California, in June.



The VW Amarok pickup remains but a fantasy for the US market.

decade, there is no hardware reason an electric car cannot act as a home power source for backup purposes. That would go a long way toward justifying their purchase price during hurricane season around here. **VWCA**



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ID. Insight

BY TODD ALLCOCK ✉ tallcock@aol.com

Ford, GM plug in with Tesla: Now what?

A risk one takes when writing about current events in a bimonthly periodical is that the topic may no longer be current (or even much of an “event”!) by the time the issue sees print. But the biggest news in electric vehicles when this issue went to press was the announcement by Ford, and then two weeks later by GM, to embrace Tesla’s (self-proclaimed) “North American Charging Standard,” or NACS, charging port in their cars starting in 2025, instead of the Combined Charging System, or CCS port currently used by all other EV makers in the USA, including Volkswagen.

This news has dominated online EV discussions and articles since the announcements, leading to click-bait stories proclaiming the “death” of CCS, and all charging networks other than Tesla’s, or even of carmakers who don’t immediately follow suit and announce that they too will adopt Tesla’s NACS port. Many CCS car owners on social media post panic-filled rants worried their cars are suddenly “obsolete” overnight.

These so-called Level 3 DC chargers typically are used for long-range trips and don’t affect AC home setups.

So, what’s going on, what does it mean and how does this affect current or future owners of Volkswagen EVs?

First, what’s going on? For those unaware, in North America, Tesla cars use a different charging port and plug than other EVs. When Tesla starting making EVs over a decade ago, ahead of other carmakers, standards weren’t finalized, so Tesla moved forward with its own connector rather than delay launching its cars while waiting for a standard plug to be developed. In the decade or so since, Tesla has built an impressive, unequaled charging network in the US, using its non-standard connector for its cars’ exclusive use. But it’s recently promised to open parts of

that network to other cars by installing integrated CCS adapters in many of their stations.

At press time, New York had 10 stations and California two that were open to all CCS EVs as a trial before expanding the program to a

few thousand chargers over the next year or so. Late last year, Tesla “opened” the use of its proprietary connector, offering it to other carmakers and charging networks in hopes of it becoming the standard it suddenly proclaimed it was. At the time, no one seriously considered that any major car manufacturer would take them up on it.

An industry shocked

Then, in late May, Ford shocked the EV world, announcing it had reached an agreement with Tesla to give Ford EVs access to 12,000 Tesla Superchargers



in the USA starting early next year using an adaptor designed by Tesla and would put NACS connectors rather than CCS on future cars. Two weeks later GM followed suit.

So what does this mean? Much of the EV press and social media posts seem to make the mistake of equating the NACS connector with Tesla chargers. The connector is just that, a connector. Ford and GM, and any other manufacturers who follow their lead are still building CCS cars under the hood (or behind the charge door!) and will still communicate via CCS protocols, even on future models with NACS connectors, allowing them to charge at both Tesla stations and CCS stations using an adaptor. Tesla is updating the software in its chargers to “talk” to CCS cars, necessary to open its network to non-Teslas. (Tesla cars use their own protocol based on the older CHAdeMO charging standard, but recent models can also “speak” CCS to allow them to use CCS chargers with adaptors.)

Slapping a NACS port on a car doesn’t automatically give it access to Tesla Superchargers — Tesla has to allow it. That’s the bulk of what Ford and GM negotiated — access to over two-thirds of the Supercharger network that even the current Ford and GM cars without the NACS plug will get access to next year using an adaptor. (The remaining one-third of the Tesla network uses an older model of Tesla charger that lacks the hardware necessary to communicate with CCS cars.)

Where does this leave other CCS cars like the VW ID.4, and existing CCS charging networks like VW’s Electrify America? Well, in theory, VW cars will get access to thousands of Superchargers when Tesla opens them to all CCS cars, but not as many as Fords and GMs will get, unless VW pursues a similar agreement. (Because VW owns Electrify America, I don’t see that happening any more than I would expect Coca-Cola to start selling Pepsi!)

If Electrify America wants to sell charging to Ford and GM cars with NACS plugs in the future, it could add



An Electrify America station with both CCS and CHAdeMO service.

NACS connectors to its chargers in addition to the CCS plugs currently on them, or NACS-port car owners could buy adapters as Tesla owners who also want to use CCS chargers currently do. Several charger manufacturers (like ABB and Freewire) and charging networks (like ChargePoint and Flo) have already announced that they intend to offer chargers with both CCS and NACS plugs. One charging network, EVGo, has been installing chargers with all three standards, CCS, CHAdeMO and Tesla for over two years.

As far as the “death” of CCS, that’s not happening anytime soon, despite what Tesla-centric blogs would have you believe. As noted above, the EV charging industry is already acting on this new development and preparing for a multi-

standard future. The bipartisan Infrastructure Investment and Jobs Act, which set aside billions of dollars for EV charging infrastructure, only offers subsidies for EV fast charging stations that include a minimum of four CCS chargers. Other plugs can also be added (up to the number of CCS plugs) and qualify for subsidies as well, but without the required CCS chargers they won’t qualify at all.

VW says it’s committed to the CCS standard. Electrify America plans to double its number of chargers by 2026. It now more than 800 stations and about 4,000 plugs.

As computer scientist Andrew S. Tanenbaum wrote, “The nice thing about standards is there are so many of them to choose from!” Most charging networks already offer two different plugs on many of their chargers, usually supporting CCS and the older CHAdeMO standard. The EVGo charging network has even been deploying chargers with all three plugs; CCS, CHAdeMO, and Tesla/NACS, for three years now. Adding NACS support will only add a comparatively minimal cost to an EV fast charger, so the future is likely to be one with two standards, and a lot of adapters, for quite a while, as EV owners benefit from more charging stations and more competition. **VWCA**

DRIVER'S SEAT

► FROM PAGE 3

trance or clip the apex, yet, not see the exit. And on RA's bend after the inclined Carousel, you can take it wide; skip kissing the apex. Then, your next sight is the Kink toward-the-almost straight Kettle Bottoms. Mint. Gillies says his favorite section is the Carousel and the Kink because "I like fast corners."

There are gutters or fouls. All four tires must be on the track. Period.

VW's GTI and Golf R, although they share the same silhouettes, handle differently. The GTI, with all-season tires, has more understeer and body roll. The R, however, has what Gillies calls a "grown up's hooligan quality"; it's more alert and seems as though you can tap brake/steer it more precisely. One annoying trait was VW's lane-keep assist, which should have been turned off. On the R, despite picking its Nürburgring drive mode, I discovered the steering wheel pulled the car toward the center of the blend-in track entrance, which we could cross because the Road America Straight before "our" first



Cliff Leppke, a regular *AUTOIST* contributor since 1993, has upgraded his wheels since getting his first car in the early '60s.

turn is off limits. The track is mine. I can cross the line. You can turn this street driving aid off, but you must tap the end of the turn signal and then touch the steering wheel's OK zone — try that when you're barreling into Turn One.

Both Golfs braked well. The R's got beeper binders. Just return one VW, like a



A Golf GTI (left) and R (right) await in the Road America queue, ready to rally.



GTI instrument cluster.

bowling ball heading back to the rack, and then take the other one out for different approach. I should note the R had a manual transmission and the GTI the automated direct-shift gearbox with stubby control lever. I

don't care for this affectation, but it's yours for \$32,425 — a relative bargain these days, if your dealer plays nicely.

VW's 2023 ID.4 sports updated instruments; the driver's cockpit display attached to the steering column now has a triptych, the ability to show three items at once, mph, range and navigation cues, say. The front seats no longer have arm rests, but nonetheless fit me well. The radio doesn't receive the AM band. VW says the electrified ID generates too much electrical interference, so it's FM and satellite exclusive. One wonders whether it complies with FCC rules and regulations. Whether the feds will intervene with radio's version of the All Channel Receiver Act of 1964, which mandated all TVs have both VHF and UHF tuners, remains to be seen.

The heavy AWD ID (in sport mode) has proper steering weighting, but the brake pedal sinks. I don't like it, but the Nissan Ariya's pedal was far worse.

Currently, the ID.4 is in fourth place in U.S. BEV sales. Its insane touch interface controls drove me

nuts. First, the HVAC system shut down while driving it. I massaged the steering wheel's talk button and politely told Helga, VW's onboard assistant, "I'm too hot." She rudely replied, this "not available." I pulled over, wormed my way into the infotainment screen's climate control folder. There, I noticed a power symbol. It was off. I touch it; the A/C chilled. The ID refused to cool the front passenger space, likely to save energy; no one was sitting there. This leads me to believe the ID has overly assertive energy usage cops.

A second frustration is the door-window control. Only two buttons are available for four-door windows. If you inadvertently touch the area ahead of the pull up-or-push-down window switch, that button becomes a rear window operator. Several times, when I needed to lower a front window and show my event credentials, the ID.4's lousy ergonomics made something simple too complex. This VW needs aiming dots like the Henry Dreyfuss' human-friendly Western Electric Model 500 telephone. Meanwhile, the Ariya's touch interface has illuminated console contact points. The ID's temperature and volume touch spots are dark. Neither configuration amused me. Bring back the knobs, dials and buttons.

Let's move from the VWs to the wider assortment of motoring morsels. As Gillies notes, MAMA's Spring Rally is the "best run media event, a great location and one of the best road courses in America." Therefore, like a bowling champ, I approached RA's starting line multiple times in various machines. This track lets you evaluate a vehicle's dynamics. Plus, it's a great opportunity to master its tricky spots.

I couldn't resist Chevrolet's tempting **Corvette Stingray Z51**. So, I drove it. It came with a shotgun driving pro, who asked me where I learned how to brake/steer this car. "At Gingerman," I replied, "dur-



The second-from-left 1987 Scirocco 16V parked in the Enthusiasts Paddock.

ing an FCA-sponsored professional driving school." The Vette pivoted politely. Just a tap of the whoa pedal caused its nose to tuck in, a beautiful experience when a vehicle lets you shift its weight forward for a tighter arc instead of cranking the steering wheel.

Up next came the Mexican-made **BMW M2**, again with a co-pilot, who set up the drive modes. The steering wheel has more switchgear than my grandmother's elaborate GE Stratoliner stove. Does one press M1 or M2 — it depends on which M driving mode you want. M1 is for back roads. M2 is for track. This time, BMW's track pro complimented me on my smoothness.



Buttons galore on the Mercedes.

But he didn't like how I positioned the steering wheel (these track pros watch you very carefully). After I showed him my fused left wrist, he grasped why I placed the hoop farther away than usual — it's the best way to get enough elbow room so I can jam that joint into the door card. Then, I can manipulate my left hand, like a talon, holding the wheel, while I reposition my right hand. This isn't classic sports car methodology. My

M2 driving goodness, however, wasn't intuitive. Instead, I thank those who taught me how to drive gracefully.

This leads me to some very hot predatory wheels: the \$212,925 **Mercedes-AMG GT63C4** — the string of letters alone is amazing. Let's call it the 630-hp GT 63S. The price includes the gas guzzler tax. This time its pro sought me. And because I'm behind the wheel

DRIVER'S SEAT

of an AMG, I went to the front of the RA line. He wanted to talk about my twin-cam 123-hp 1987 Volkswagen Scirocco 16V, which MAMA's rally team invited me to park in RA's Enthusiasts Paddock — a mini static car show within a much bigger show of shows.

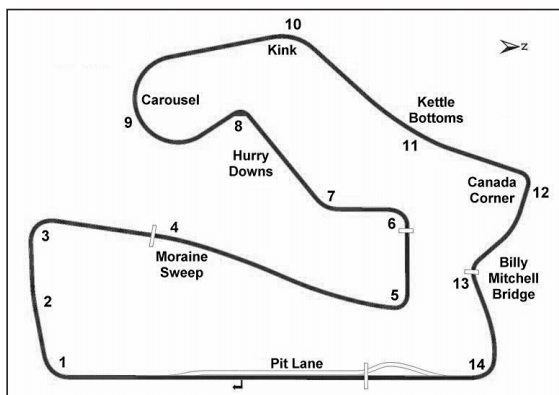
Merc's pro had a 16V GTI, and he's still fond of it. He chuckled with delight when he described how these earlier fast VWs cornered; they salute fast ones by lifting the inside rear wheel. After this initiation, he set the AMG for aggressive downshifting and plenty of engine rumble. After the first few turns, he also complimented me on my smoothness. Then, he coached me. He explained how to put the Merc through his RA favorite: up Thunder Valley from the Canada Corner — Turn 13.

Thirteen at RA is an enigma. It's sort of off camber with the apex (an area without rumble strip) on the left higher than your entry point. Plus, you're headed uphill, and you cannot see what's beyond this sacred asphalt patch. You take advantage of that inner spot's extra paving (sort of flattens the apex), drive over that and then look very carefully. There's a service road to the track's opposite side on the right. You can use this as the turn's exit, a motoring pocket that's out of sight. On some cars, you can apply the go pedal for rear rotation, which dials in the car's direction just right without wrestling with the tiller. Power to the people, I'd say.

Stall tactics

Surprisingly, this year's rally had more sticks than

Sherwood Forest — lots of manual transmissions, from the \$37,400 **Acura Integra A-Spec** to the \$46,485 VW Golf R. The former was a pleasure to drive on the hilly terrain outside RA. I really wanted to try the **Corolla GR**; it's got a turbocharged three-banger with a zany reputation. Unfortunately, it was one of several cars sidelined due to overheated



Cliff Leppke readies a Golf R run.

brakes or clutches. So, I drove the manual transmission **Toyota Supra**. I pressed the M/T **Hyundai Elantra N**'s blue Grin Control System button. Unlike my previous experience with Hyundai's Veloster N, I found this one's 276 horses temperamental in the paddock.

There's something goofy about its rev-matching engine. It varies the RPM a lot, based on your left foot's ministrations. Some Hyundais have a no-lift shift feature — rev matches for upshifts and downshifts. Anyhow, the engine sped up when I released the clutch pedal. Then, I stalled it — four times. Either I had the wrong gear or the electric throttle mapping was askew. I charged from the starting line onto the track without a hitch. And I'd say this compact car's track behavior does, indeed, put a grin on your face.

The \$31,455 **Subaru-built BRZ** and its cousin, the **Toyota GR86** or is that Great 6?, might not be sales room fodder — few are buying these super coupes (all the rage in the 1970s), but they're a ball to drive. The GR proved the sportier of the two due to its revised suspension tuning. It also spoke more loudly.

For street drives, I decided to go decadent with a **Genesis G90** with E Supercharger — yes, a Hyundai

product with a \$101,295 MSRP. And it uses an electric blower — hmmm. This comfort coach has drive modes. If you pick sport, the driver's bottom cushion drops, forming a Recaro-style ramp. The side bolsters narrow, too. It is decadent with Mood Curator, active noise control and a very difficult-to-locate navigation map.

In contrast I don't know what to say about the \$168,395 **BMW XM** — a V-8 powered plug-in hybrid electric vehicle. I think it's the ultimate drive-in vehicle; its interior is padded like a Barcalounger. You tuck yourself in, under an illuminated origami headliner that looks sort of like Kaiser's quilted aluminum foil.

Dodge's Alfa Romeo-built **Hornet** (a revival of the Hudson nameplate, then AMC one) promises to take America by swarm. This plug-in hybrid model struck me as satisfactory; instead of the usual rubber banding and engine thrash of a typical hybrid with continuously variable transmission, this one has an eight-speed automatic. It didn't draw my attention to its engine on/off transitions. Here's a hybrid that's not ashamed to let you hear its throaty turbocharged engine.

I didn't get to drive the **Lucid Air**, an EV. Nevertheless, I climbed into its front trunk, which is remarkably commodious. The rear lid is extra wide and wraps over and around the car's rump — loading cargo is easy. The Air gets the booby prize for the most assembly errors. At \$140,500, you'd expect nicely fitted trim and smooth transitions between body panels — instead the vehicle appears as if it's been assembled by someone who's overdosed at Starbucks.

Other drives included **Mazda's CX-90** with an in-



BMW's XM plug-in hybrid with a unique headliner.



line six-cylinder engine. I wasn't allowed to drop the MX-5's retractable top — it must remain upright when you're on the track. And **Subaru's Impreza RS** motored near RA rather nicely. **Toyota's new Prius** might have lots more oomph, but climbing hills near Elkhart Lake evoked much engine thrash — the usual Prius trait.

Event sponsors did more than satisfy our automotive gastronomic appetites; they informed us at several static events. **Honda's Pilot** presentation was twisted — it presented a smashed SUV demonstrating how it met

stricter side-impact standards. The doors, for example, have multiple guard beams. This distributes forces better. In this case, the B pillar and front and rear floors didn't buckle much, when struck.

Honda's rep explained one automotive safety feature I've seen but never tested. Often, you'll find vehicles where their doors have lower posts, much like the door latch, but there's no latch. This device prevents the door from buckling inward into the passenger space when it's struck. The post sticks out just enough to jam into the door jam. Finally, Honda claims the Pilot's tall truck-like nose is designed to protect pedestrians and bicyclists.

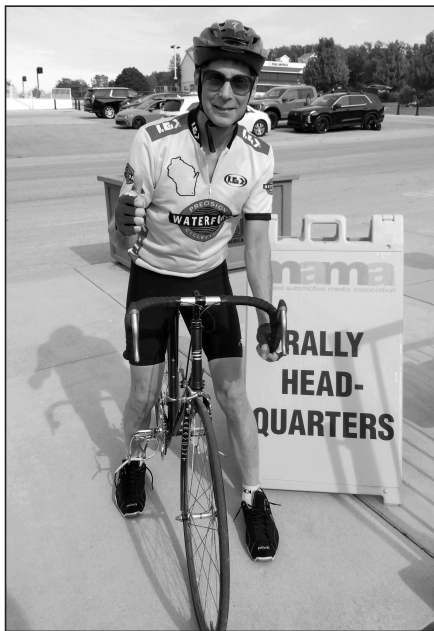
ONE (Our Next Energy), a battery vendor, explained how its battery chemistry, while less dense than some other lithium types, has a packaging advantage. Because its batteries are not affected by thermal runaway, it can pack its cells more tightly. A carmaker, which otherwise might have to place cells farther apart to prevent fires, can get greater energy density with ONE's scheme. And this matters for an-

DRIVER'S SEAT

other BEV driving scenario: the EPA-rated range of, say, 300 miles can drop significantly should you motor at 75 mph with the HVAC cranked. Or for that matter, try to motor in cold weather. Thus, ONE argues range matters.

Off-road adventures

MAMA's rally committee kept us occupied. In addition to track laps and street drives, there was an off-road venture, VW-sponsored karting and Kia ponied up for its One Lap. Instead of motoring around RA, Kia invited me to ride my bicycle on it — counterclockwise. I selected my custom-built Paramount OS. The OS (built in Waterford, Wisconsin) is a vintage frame from the early 1990s. It features oversized, thin-gauge steel tubing — fitted very beautifully with




mitered tubes and forged lugs. I built the bike with Shimano's 600 Tri-Color Ultegra components — took me many years to find the right stuff. These stylish aero-shaped parts are finished in a glossy gray paint. Style matters.


So, I switched from my driving shoes to my cycling shoes, slipped into my cycling clothes and headed toward Kia's starting line. OK, that order isn't accurate. My shoes, new this year with the special Shimano pedal cleats, worked. Yes, I'm still using toe clips and straps. Some cyclists call me a "retro grouch." No, I just like my bikes vintage correct. I had a blast charging down the first hill. My first serious outing with this bike, at a famous track on a clear day in May, that's incredible. Plus, my bike, which doesn't have granny gearing for inclines, moved very well through Donohue's famous corner. Thanks, MAMA.

Perhaps the best part about MAMA's rally is it envelops you with two days of motoring entertainment. For best impact, I arrived early for the Chicago Auto Trade Association's fish fry. Wisconsin has a fish-fry tradition. Great food, good company, cars and a track — it's tough to beat.




On the final rally day, after more scenic drives and lunch, I packed the Tornado Red Scirocco and drove to Milwaukee and began my engineering shift at WITI-TV6. After that, I motored to my storage shed north of the city and capped off the night with an adventure near RA in a 40-hp VW 1200cc Beetle. **VWCA**



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► FROM PAGE 9

road. I ran into Chicagoland traffic jam and roughed up pavement. The Skyway, Dan Ryan, Kennedy, Edens and the Tri-State directed toward my old Milwaukee home.

A day later, I headed to Minneapolis where my sister, Barb, prepared sous vide salmon. This vacuum-sealed meal in a pouch reminded me of the early 1970s Banquet Cookin' Bag meals. Fast food, meet sous vide slow food. Barb's creation was fantastic. The next day, I headed west, into the sun, toward Carrington, arriving by dinnertime. My mother prepared roast beef.

I took my mom to Grace City (population 53) for Mother's Day. There's a postwar-era high school building now known as the Schoolhouse Cafe. Its rectangular form has several original items from its glass-block windows, decorative brick patterns and a flat roof. This is yesterday's school of tomorrow, low-slung largely unsung with class photos and athletic trophies.

I found unexpected farm chores due to wet weather. The barn and its lower-level workshop had standing water. Family photos from 1947 show my grandfather employed a 1937 D-Series 1.5-ton six-wheel International truck to move and dump materials he used to build the barn and a house. And yet another photo features a 1927 Buick converted into a tractor — both the truck and that car are in the cattle shed. I don't know whether they designed the barn's foundation to manage water and frost. I discovered several vintage automobile headlights, though.

These relics have an uncertain future — everything must go. My mother plans to auction off my father's expansive motoring/farming/electronics museum. I'd

like to finish one of my dad's restoration projects, or select, say, my grandparent's 1938 Ford Tudor as a future project — one I currently neither have the room to store nor body shop willing to mend its busted body. There's a 1972 VW Squareback, a 1966 Bug and an entire hayloft section filled with VW suspensions, engines, transmissions, wheels and body parts.

My trek home took less than 12 hours covering about 700 miles. I departed NDak with the RO's air conditioner chilling, but a pneumonia front in Milwaukee — at least a 20-degree drop in one hour — meant my very last leg of the trip required me to turn on the heater. The 40-year old Scirocco let me crisscross America rolling the odometer to just short of 352,000 miles. **VWCA**

FUEL INJECTION

► FROM PAGE 22

injectors creating magnetic fields, which opened needle-small fuel valves.

Bosch did more than make a viable fuel injection computer box, injectors, sensors and electric fuel pumps. It developed test gear to help VW's service techs efficiently troubleshoot Bosch's fuel injection. Widespread acceptance of EFI wasn't possible without some form of systematic troubleshooting for it; most car service people had never fixed this stuff before.

Thus, Bosch developed a box you hooked up to the car's EFI box and the wiring to its various sensors. Most of its tasks could be performed with a multimeter — but even that device, circa 1967, was relatively bulky and probably not automated, requiring lots of informed button pushing and dial turning to pick the correct mode and range. **VWCA**



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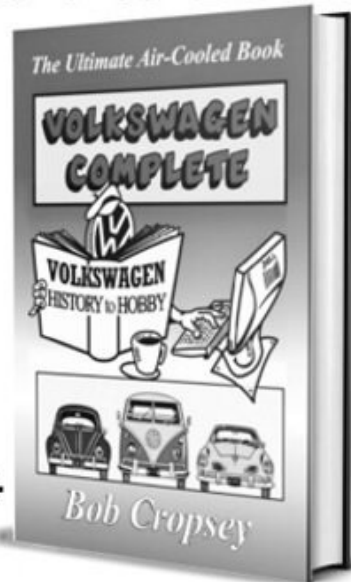
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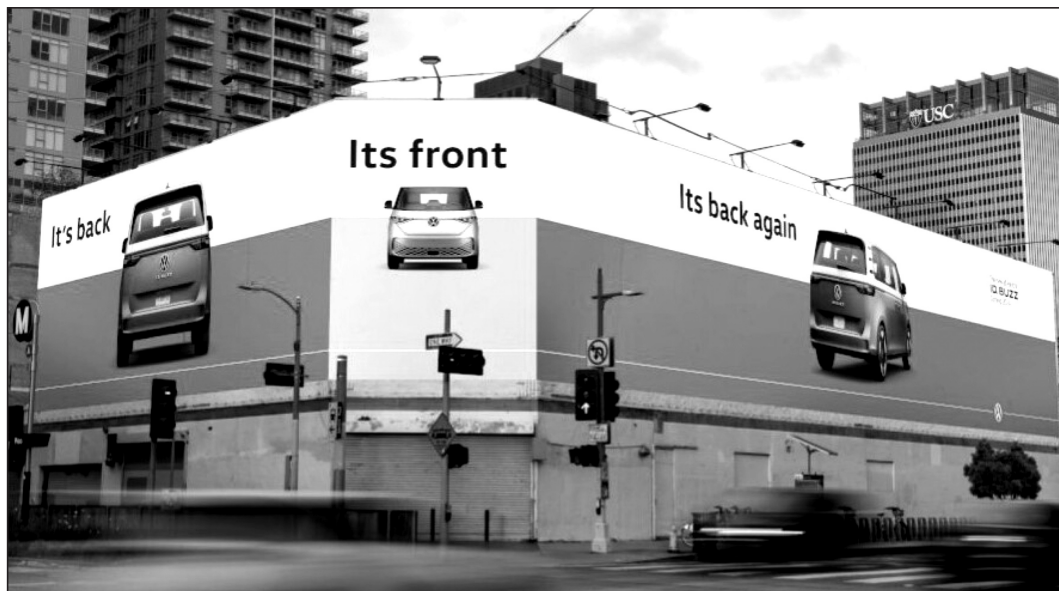
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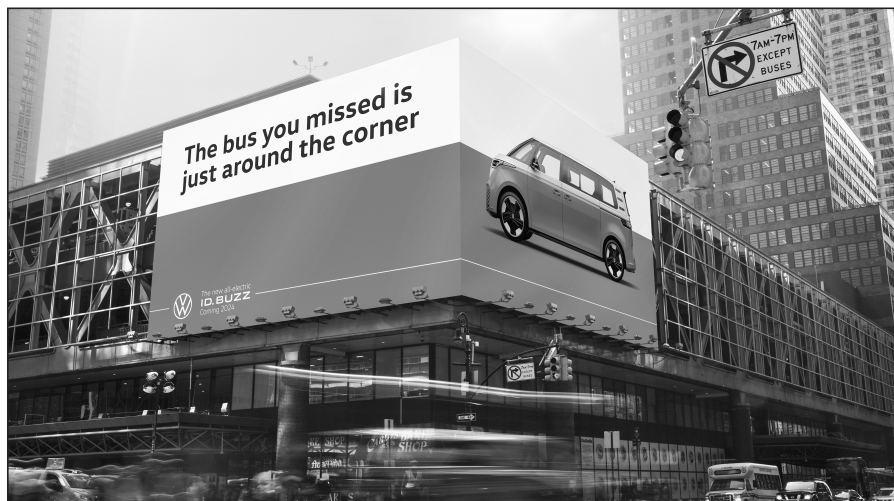


Parting Shot

It is brilliant, isn't it?!



And the ID. Buzz is pretty cool, too. But, no, we're referring to the clever use by ad writers of the Johannes Leonardo agency who brought the two iterations of the word "it" into the limelight for an ID. Buzz — what is this, a three-sided billboard? The two-sided billboard corners the market for appropriate ad space. There's a Buzz in the air! Let the long wait begin.



Don't miss an issue

► Moving is hectic, but so is missing an issue of the **AUTOIST**. Bulk mailing of the publication doesn't allow for forwarding, so it's important to let us know your new address promptly. Send a snail mail to the VWCA, P.O. Box 154, North Aurora, IL 60506. Or an email to VWClub@aol.com.



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VW Toon-ups

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