

# 25 CARS WORTH WAITING FOR!

# CAR **AND** DRIVER

MAY/2018

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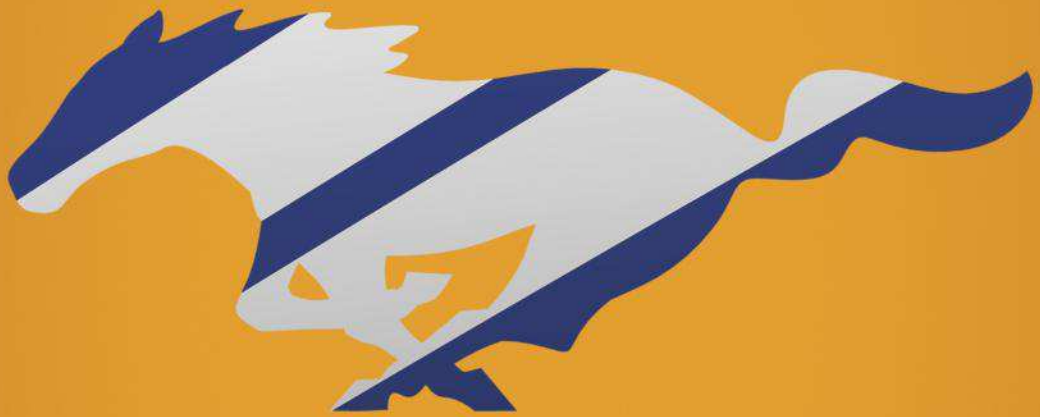
# MID-ENGINE CORVETTE

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## Features

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### 034

*Car Meets Road*

#### **McLAREN 720S**

We steer \$378,215 of carbon fiber and aluminum up an ill-maintained mountain road—and end up returning the way we came.

*by Eric Tingwall*

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### 040

*Feature*

#### **25 CARS WORTH WAITING FOR**

Our annual guide to the most compelling vehicles automakers will bring to market over the next several years. And yes, we include the mid-engined Corvette.

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### 078

*Comparison Test*

#### **I, ROBOT**

Honda Civic Si vs. Volkswagen Golf GTI.

*by Jeff Sabatini*

---

### 084

*Feature*

#### **CONTINENTAL DRIFT**

Just what kind of deal is a \$30,000 Bentley, anyway?

*by Brett Berk*

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### 094

*Long-Term Test*

#### **2017 JAGUAR XE 35t AWD**

Gone flat.

*by Jeff Sabatini*

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## On the Cover

Remember: There is no such thing as a mid-engined Corvette.

*illustration by Nick Kaloterakis*

# Car and Driver. vol. 63, no. 11

## In this Issue:

“Driving is exciting. Cars are machines that allow people to do inconceivable things.”

—JEFF SABATINI, “I, ROBOT”

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# 078

▼

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#### 030 . DANIEL PUND

Centaur.

#### 032 . EZRA DYER

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Jaguar becomes the first luxury brand to cross wires with Tesla.

020 . *Patron Saints*

#### MISSISSIPPI MENSCH

George Poteet's hot rods elevate both art form and artist.

#### 022 . DIET PLAN

A quick survey of the savings—and cost—of lightweight parts.

#### 024 . NANNY CABS

Tired of juggling kids' schedules? Silicon Valley has you covered.

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Volkswagen is the industry's premier purveyor of weird engines.

### Drivelines

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**QUADRIFOGLIO** . Whether it's to a soccer game or a track day, this 505-hp crossover is ready to haul.

#### 104 . 2019 RAM 1500

Ram Tough? Sure, and also: Ram Aerodynamic. Ram Luxurious. Ram Hybrid.

#### 106 . *Tested*

**BMW X2 xDRIVE28i** . Proof that BMW still loves yuppies.

#### 108 . FERRARI PORTOFINO

The "entry-level Ferrari" is a primal enchantment.

### Etc.

#### 009 . BACKFIRES

Come on, Ed.! You namecheck Bill Laimbeer but make no mention of NBA all-star and National Polish-American Sports Hall of Fame inductee Kelly Tripucka?

#### 116 . WHAT I'D DO DIFFERENTLY

Craig Breedlove.

### On the Web

#### ASTON MARTIN DB11 VOLANTE

See and be seen in an Aston with unseen AMG ties.

[CARandDRIVER.com/2019DB11Volante](http://CARandDRIVER.com/2019DB11Volante)

#### BENTLEY BENTAYGA V-8

Making reductions to produce more.

[CARandDRIVER.com/2019BentaygaV8](http://CARandDRIVER.com/2019BentaygaV8)

#### MERCEDES-BENZ CLS-CLASS

We sample Benz's new inline-six in the third-generation CLS.

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# Backfires: The joyful noise of the commentariat, rebutted sporadically by Ed.



## WE'RE COVERED

In regard to your statement on the "Vive la Ford!" February cover: Shouldn't the headline have read, "Full road and track test of..."? Oh, wait, I get it now. Clever.

—Randy Taylor  
Flushing, MI

I'm not sure if anyone else has brought this to your attention: The ass end of the Ford GT looks a lot like the pigs' faces from *Angry Birds*.

—Nate Smith  
Buffalo, NY

## First thing I saw—Ed.

## GT AND ME

I'm curious: Is the Ford GT's lowered Track mode street legal ["2:43.0: Lightning Lap 11.5," February 2018]? I note that in the larger article ["La Ford in La France!"], you mention that Track was "a mode we are expressly forbidden to select on-road." I just want to make sure I am comparing apples-to-apples performance with the rest of the vehicles on your Lightning Lap list. If the GT's Track mode isn't street legal, then only a time in the non-Track mode should be compared with all the other street-legal competitors'. If this is the

case, the magazine should run two times during Lightning Lap so one can compare the cars in street-legal and non-street-legal trims.

—Brian Wright  
Jamaica Estates, NY

**Dropping the car into Track mode is perfectly legal. Ford's public-relations folk asked us, however, not to use Track mode on the street due to the increased potential for damage from the reduced ground clearance—Ed.**

As the owner of a Gibson Les Paul Custom, I have to agree with Mike Duff's statement that the guitar shouldn't be left hanging on a wall. Sadly, the purchase of said guitar has left



**"IF THERE ARE ANY FORD GT OWNERS OUT THERE WHO WOULD LIKE TO TRY THEIR HAND AT PLAYING THE GREATEST GUITAR EVER MADE, I'D BE WILLING TO DO A CAR-FOR-GUITAR SWAP FOR AN AFTERNOON."**

me \$522,750 short of being able to buy a new Ford GT. If there are any Ford GT owners out there who would like to try their hand at playing the greatest guitar ever made, I'd be willing to do a car-for-guitar swap for an afternoon. All I ask is you bring it back in one piece.

—Rick Fike  
Doylestown, OH

If you had to use an electric-guitar reference to indicate rarity, desirability, and value, a better example of the Les Paul family would be a mint-condition 1960 Les Paul Standard. They sell in the six-figure range, are not very common, and instill a reaction in most guitar players ranging from catatonia to mania.

—Jeff Krug  
San Mateo, CA

## GORDON SUMNER KIA

I read the comparison in your February issue featuring the Audi A5 Sportback, the BMW 430i xDrive Gran Coupe, and the Kia Stinger AWD ["Behind the Fifth Door"]. Please help me understand why you would compare an Audi costing \$51,000 and a BMW costing \$54,000 with a Kia costing just \$42,000? You could have very easily included the Kia Stinger GT2 AWD that costs \$52,000. I know you are going to tell me the reason the Stinger GT2 AWD was not included was because it has a six-cylinder engine. And your next line will most likely be that the Kia Stinger GT2 AWD is more comparable to an Audi S5 Sportback and a BMW 440i xDrive with the M Sport package.

However, the reality is most consumers don't cross-shop based on the cylinder count—they compare based on price. A person shopping for a \$51,000 Audi or \$54,000 BMW would consider a \$52,000 Kia, not the entry-level all-wheel-drive model in your test. If Audi and BMW can't make a well-equipped, six-cylinder four-door coupe for \$52,000, that should be their problem, not Kia's.

—Justin Denk  
Toms River, NJ  
**Denk, Truesdell—Ed.**

Thanks for the comparo on these "standard" power GT autos. I am in the market for a long-haul-comfortable, quiet, and sport-handling-capable hatchback, and this article helped cement my upcoming purchase. As ugly as Audi's grille is—nearly as atrocious as the one Lexus now uses—I can live with one design faux pas as opposed to the Stinger's numerous nonfunctional pubescent scoops, vents, and aero doodads.

—John Truesdell  
Reno, NV  
**Truesdell, Denk—Ed.**

## VISITING TRUCKEE

My February *C/D* arrived 29 days late. My anguish was terrible. There is a much better choice for best subcompact SUV than the Kia Soul ["10Best Trucks and SUVs"]. It's the Kia Niro, which gets 40 to 52 mpg.

P. Gartside  
Cedar Hills, UT  
**Open up my eager eyes, you're Mr. Gartside—Ed.**

While I realize that consistency is the hobgoblin of small minds, you guys really are all over the place on the BMW X1. When the first gen came out, you made unflattering comparisons to a fugly Pontiac and a high-pockets station wagon [*Not true. We said it appeared to have "an anteater nose attached to a refrigerator"*—Ed.]. Then the second generation arrived, and you looked back with longing and regret regarding the departed model. Now you name that current version as the standard for small luxury utes. Was this an effort to make at least some small amends before it started to adversely

affect the advertising department?

—Dave Folan  
Johnstown, PA  
**Oh, BMW advertising split long ago—Ed.**

I have to question your selection of the Mercedes-Benz GLS450 as the best large SUV. It is a fine vehicle, but you really need to look at the 2018 Lincoln Navigator. Your comparisons to the Ford and GMC don't make sense to me. The Mercedes needs to be compared to the Navigator, Cadillac Escalade, and Infiniti QX80.

—Joe Sukola  
Morristown, NJ  
**The new Navigator wasn't available when we conducted our testing. Look for it next year—Ed.**

Being a connoisseur of the bloodline ever since totaling my mother's 1996 Grand Caravan as a high school junior, I feel obliged to note you transposed the images for the gen-three and gen-four Chrysler vans in your February issue.

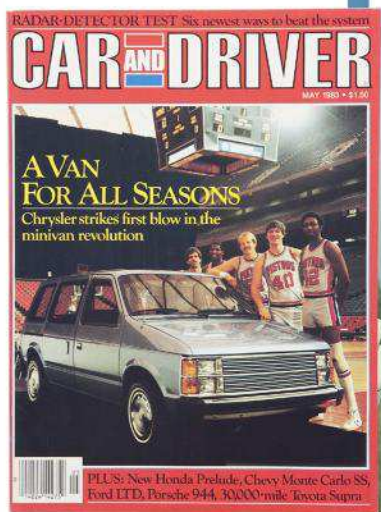
—Mike Hoeker  
Reston, VA

I liked the Chrysler minivan timeline at

## A MINIVAN SILHOUETTE

Clint Ford had one job: to properly illustrate the history of the Chrysler Pacifica from the Town & Country to the present . . . ["10Best Trucks and SUVs," February 2018]. Unfortunately, Mr. Ford put the gen-four in front of the gen-three model. Damn it, man! What a sad life I live that my excitement for the day is commenting on a minivan illustration.

—Tony Pasquale  
Rochester, MN  
**Don't blame Ford. The illustration came in very late in the production process and didn't receive our usual obsessive scrutiny. To make up for this oversight, we think you'll be excited about our May 1983 cover featuring Bill Laimbeer—Ed.**



**"THE REALITY IS MOST CONSUMERS DON'T CROSS-SHOP BASED ON THE CYLINDER COUNT—THEY COMPARE BASED ON PRICE."**

the bottom of the Pacifica article. It really helps to illustrate how very far the minivan concept has come. It would have been even more effective if you hadn't mixed up generations three and four.

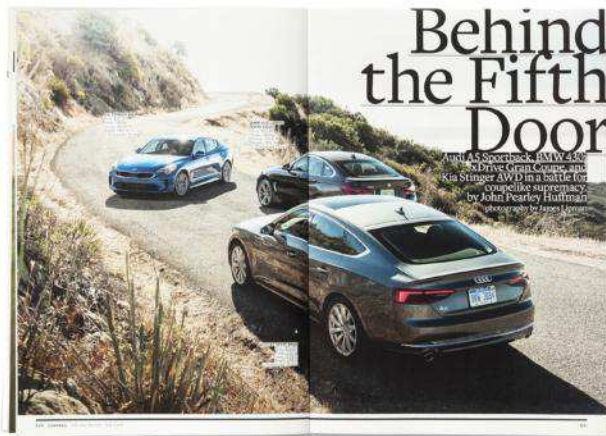
—David Huber  
Mechanicsville, VA

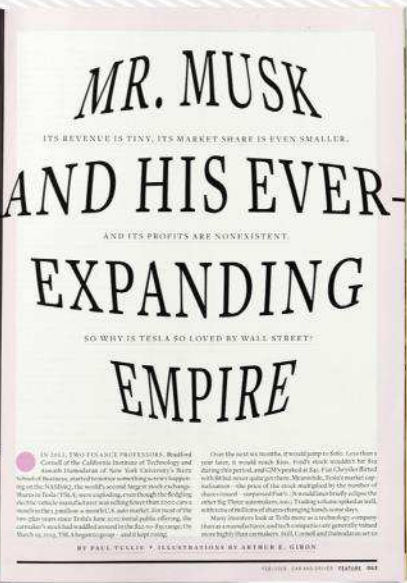
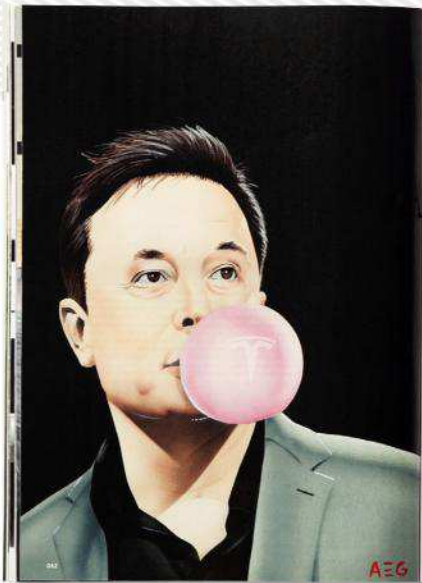
## FIVE ALIVE

Given the breadth of the English language, please refrain from using the word "sledgehammer" to describe a car,

especially a BMW ["Turning the Corner," February 2018]. There is only one Sledgehammer (the 1988 Callaway Corvette) and only one Hammer (the W124-based Mercedes-Benz AMG Hammer). Perhaps "battle-ax" or "über-[insert noun here]" would be more appropriate?

—Chris Filippi  
Encinitas, CA  
**Filippi, this is the second time I've run one of your letters. I'll say what I said**





**before: Stop worrying about this stuff and get to Karina's Taco Shop on N. Coast Highway 101 and order the carnitas burrito—Ed.**

Eric Tingwall's piece on the new BMW M5 in the February issue reads: "The Active M electronically controlled limited-slip rear differential helped the optional 20-inch Pirelli P Zero tires on our car lay down torque with a sense of control." But at the top of the same page is a photo showing the front wheel of the M5 clearly wearing a Michelin tire.

—Bob Fry Langham, SK

**Occasionally, we drive cars that aren't the same as the photographed cars. Tingwall drove a car wearing Pirellis, while the photo car had Michelins. Both are factory fitments for the M5. Fun fact: That's not Tingwall behind the wheel on page 059—Ed.**

### ELON'S MUSK

People are excited about what Tesla is doing, and they want to be a part of it—not just because they hope for earnings to flow from that investment (though all investors certainly do), but just for participation's own sake ["Mr. Musk and His Ever-Expanding Empire," February 2018]. Given the prices of the cars Tesla can currently deliver and the waiting time for the more affordable ones, buying stock in the company is a good way for people to join in. This desire to be a part of the Tesla-driven automotive revolution hasn't just pushed up the price of Tesla's stock, it's also responsible for the hundreds of millions of dollars in free loans that customers have given Tesla in the form of preorder deposits. Musk knows all of this, which is why he uses his bully pulpit to keep the excitement about his com-

▲ **"I'M ONE OF THOSE PEOPLE WHO'S EXCITED ABOUT WHAT TESLA IS DOING. AND WHILE I CAN NO LONGER HOLD ON TO TSLA AT THE CURRENT PRICE, I VERY MUCH WANT THE COMPANY TO LIVE ON."**

pany's big projects in front of the public at all times. When people move on to the next shiny thing—which they inevitably will do—they will start selling off their TSLA in favor of that new thing, and the price will plummet. Probably very quickly.

The question of how long TSLA can soar at such heights therefore has less to do with the ability of financial analysts to massage the numbers and a lot more to do with Tesla's ability to keep the public excited. I hope that Musk and the rest of the board of directors recognize this and are making plans for keeping the company alive in the aftermath of the stock's inevitable fall. Because I'm one of those people who's excited about what Tesla is doing. And while I can no longer hold on to TSLA at the current price, I very much want the company to live on.

—Greg Reed  
White Lake, MI



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So why is Tesla so loved by Wall Street? They're nuts. P/E=1400. Right-o.

—M. Nagel  
Colorado Springs, CO  
**But what is that in Bitcoin?—Ed.**

## SPACE WRANGLER

As an owner of two Jeep Wranglers, I read about the new model with great interest ["Height Club," February 2018]. But you left something out. I am a rural mail carrier and both of my Jeeps are right-hand drive. Will Jeep continue to make RHD Jeeps? [*Jeep's PR guy*

*promises there will be a RHD version later this year—Ed.*] It sure makes mail delivery easier. Have you ever done any testing on RHD vehicles? The post office's search for a replacement for its LLVs might make an interesting article.

—Curtis Everett  
Conway, MO

**No. No, it wouldn't—Ed.**

## THE BRONIES

Your February cover couldn't have summed it up any better for me: *Vive la Ford!* But not the Ford GT, the new

Mustang GT reviewed in Drivelines ["Middle Raged"]. Did you save the best for last? The new 5.0-liter with 460 horsepower, redline at 7400, and all from a naturally aspirated V-8?

I'm not a Ford enthusiast; that statement is given validity by my 2013 Escape with the turbo-hernia 1.5, which is my winter car. But with a large Dodge Hemi and a GM LT1 in my stable, I'm thinking it is time to rethink adding a performance—emphasis—Ford to my herd. *Coup de foudre!*

—Bill Craft  
Fort Russell, IL

**Ce fromage me brûle—Le Ed.**

I must admit that the 2019 Mustang GT is a legitimately great-looking sports car. Back in December 2013, I associated the then-new styling of the Mustang with the front end of a Focus. My eyes were opened, and it made me want to go to a Ford dealership and preorder a Mustang. I am feeling like it's 1964½ again.

—Miguel Martinez  
Galena Park, TX

## BADGE DELETE

I am writing about the beautiful McLaren Senna ["Senna-Sational," February 2018]. The makers seem to have seen to every detail on the \$1 million-plus car except the McLaren badge (sticker) on the hood. A Radio Flyer wagon has better integrated its mark than this car.

—Doug Pahl Jr.  
Monona, WI



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## Explained: It's a Gas, Gas, Gas

Re: "Pumped Up," February 2018. Fuel economy relies on the calorific value of combusting fuel, and ethanol has a lower calorific value than gasoline. Displacing hydrocarbons with ethanol results in a lower fuel-calorific value and lower mpg. (Regular gas with no ethanol gets better mpg than regular with 10 percent ethanol.) How is fuel economy improved with a higher-octane fuel that includes 25 percent ethanol?

—Elio Comello  
Camlachie, ON

The thermal efficiency of a spark-ignition Otto-cycle engine is primarily a function of two factors: the compression ratio and the specific heat-capacity ratio of the in-cylinder gases (both fuel and air). Automakers would redesign their engines to take advantage of the higher octane with increased compression ratios that more than compensate for the lower specific heat-capacity ratio of a fuel with higher ethanol content. Higher compression ratios can also be used to downsize engine displacement, further improving fuel economy—Ed.

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## Letter of the Month:

Hey, Ed., long time, first time. Re: February issue handicapping on page O14 ["Driving the Sky"]: Put me down for an exacta box on the 005 and 002, and give me the 003 across the board.

—Charles Nicholson, Chicago, IL



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### DAG GUMMIT

Regarding John Phillips's February column: It seems his struggle is over. He has won the victory over himself. He loves Big Brother.

—Mike Becker  
Fremont, NH

And by the way, Mr. Phillips, I for one would love for Obama's 2025 fuel-economy standards to be reversed. Maybe then we could end all this tiny-four-cylinder-turbo madness and go back to naturally aspirated four-cylinder and V-6 engines!

—Stan Brassell  
Augusta, GA

Phillips usually writes columns from beyond the edge with enough self-contradictory lunacy to befuddle a psychology convention. This month, he must have used a ghostwriter. As I read his column on statistics, politics, and contradictions, I heard the cadence and meter of that defiant iconoclast whom we lost in 2016: Brock

Yates. Phillips, how did you do it? Can you do it again?

—Richard Harrell  
Anaheim, CA

Hey, Phillips! I hear Venezuela is in need of a new president.

—Hank Houseman  
Grand Rapids, MI

It seemed to me that Phillips was somewhat mailing it in since he moved to Unabomber territory. His column in the February magazine proved that hypothesis wrong. So many good points, with just the right amount of irreverence and sarcasm. Well done, Mr. Phillips!

—Ellis Kitchen  
Frederick, MD

John Phillips's February column in defense of government bureaucrats is unsupportable. I recently purchased a new SUV. Can't start it without the headlights coming on, can't turn them off! Can't put it in gear without depressing the brake! My traffic lane was

stopping abruptly and I started to safely change lanes; halfway through this maneuver, heavy braking occurred on its own, leaving me vulnerably blocking half of both lanes! None of these and other "safety" features can be disconnected.

We cannot protect everyone from everything. Per John Wayne: "Life is tough, but it's tougher if you're stupid." And despite bureaucrats' efforts, it always will be. Live with it!

—Clyde L. Hunt Jr.  
Greensboro, NC

**Imagine how tough life will be when you realize that the only federally mandated feature you listed is the one that forces you to touch the brakes before moving out of park—Ed.**

### LETTER MEN

The amount of resistance to driverless cars in the Backfires section of the February 2018 issue made me think that in the early

1900s, people were probably saying that there's no way you're getting the reins out of my hands, taking my horse away, and expecting me to get into one of those contraptions with a steering wheel.

—John Westchester County, NY

Reading Backfires. It has prompted me to write to an automotive magazine for the first time. Just wanted to say that I don't give a shit what you put on your covers. Keep up the good work.

—F1bpm  
Atlantic City, NJ

### I'M MELTING

Please do not use the word "meats" for tires or the phrase "melted six sets of rear tires." Thank you for your time.

—Michael Thomas  
Oklahoma City, OK

### MOFW

Hey, Pund, you got a job for me?

—Brendan M.  
Tulane University  
New Orleans, LA

**That's Mr. Pund to you—Ed. ■**



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**CAR AND DRIVER**

Reveal of the Month

# PAGE RACE

THE I-PACE WILL MAKE JAGUAR THE FIRST LUXURY BRAND TO CROSS WIRES WITH TESLA. *by Jeff Sabatini*



**■ NEARLY SIX YEARS AFTER** Tesla's Model S became the first volume-produced pure-electric luxury vehicle with a range rivaling that of internal-combustion-engined cars, it still has no direct competition. Indeed, the \$3.5 trillion auto industry has inexplicably sat by while this upstart built a \$56 billion market capitalization. At least until now. Jaguar's production 2019 I-Pace looks almost exactly like the electric crossover concept that stunned Los Angeles showgoers in 2016. When it arrives in dealerships later this year, priced from \$70,495 before tax credits, it will give the well-heeled something to cross-shop. And Elon Musk headaches.

FLUSH-MOUNT DOOR HANDLES PRESENT THEMSELVES LIKE TESLA'S, BUT JAGUAR CHOSE (WISELY) NOT TO IMITATE THE MODEL X'S FALCON WING DOORS.

## ▼ CHASSIS

The I-Pace is a four-door hatch with a small frunk and a generous rear cargo hold. Formwise, it sort of splits the difference between the Tesla Model S and X. Its cabin promises to be roomy enough for five adults, as its available 22-inch wheels are pushed out to the corners of the vehicle, permitting a Lincoln Town Car–like 117.7-inch wheelbase. This despite a total length of only 184.3 inches, about the size of Jaguar's compact XE sedan. The latter car has six less inches between its axles. Jaguar is calling the design “cab forward.” We hope that wherever Dodge pitchman Edward Herrmann is now, he's smiling.

An aluminum-intensive structure incorporates the battery pack, which lies flat in the floor, as in a Tesla. This helps drop the center of gravity and contributes to the I-Pace's 50/50 weight distribution. Jaguar says the I-Pace tips the scales at 4784 pounds, about 200 pounds lighter than a dual-motor Model S and some 800 lighter than a Model X. Aluminum also serves





ALTHOUGH THE TWO-ROW I-PACE IS BEING PITCHED AGAINST THE TESLA MODEL X, WHICH HAS AN OPTIONAL THIRD ROW, THE ELECTRIC JAG'S INTERIOR IS CLOSER IN SIZE TO THAT OF A MODEL S.

in the suspension, which has control arms in the front and a multilink design in the rear. Air springs adjust the ride height, dropping the car 0.4 inch at speeds above 65 mph for improved aerodynamics.

The Land Rover side of the company must have shamed Jaguar into at least considering the I-Pace's off-roading chops, although they are meager, with approach and departure angles measuring in the teens. It is, however, possible to use the air suspension to raise the vehicle at speeds below 31 mph, improving its 7.3 inches of ground clearance by a further 2.2 inches and giving the I-Pace the ability to ford up to 19.7 inches of water. That ought to be a fun activity, at least for those who enjoy tossing plugged-in hair dryers into bathtubs full of water.

### ▼ POWERTRAIN

The 1329-pound battery pack is made up of 432 liquid-cooled lithium-ion pouch cells and rated at 90 kilowatt-hours. It feeds 388 volts to twin 197-hp permanent-magnet synchronous electric motors, one at each end of the car to provide all-wheel drive. Regenerative braking is adjustable to allow for one-pedal driving. Jaguar says this setup should be good for a 4.5-second zero-to-60-mph sprint and a top speed of 124 mph. More important, Jaguar claims the battery should deliver 240 miles of range, though the EPA has yet to weigh in.

Both DC fast charging and home charging are supported. A 100-kW DC charger can replenish 80 percent of capacity in as little as 40 minutes—if you can find one. Outside of Tesla's Supercharger network, almost all of America's DC fast chargers top out at 50 kilowatts. A full charge from a 240-volt, 32-amp wall charger



like you'd have installed in your garage will take almost 13 hours.

The biggest surprise is actually in the cabin. Rather than letting its first all-electric vehicle operate in near silence, punctuated as it is in most EVs by whirs and whines, Jaguar has chosen to create a score out of whole cloth. The faux engine sounds are piped through the audio system, climbing with speed and falling as the car slows.

### ▼ DESIGN AND TECH

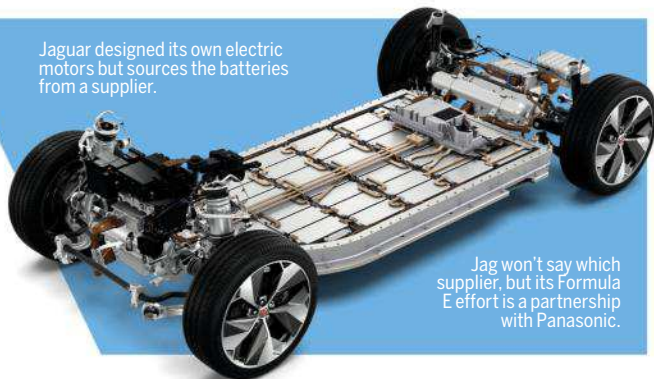
That extractor on the hood channels air from the grille to stream more efficiently over the windshield and roofline, air that also feeds the car's underhood climate-control and battery-cooling systems. Plus, this design allows the I-Pace to share its face with other Jags yet still have a low coefficient of drag, just 0.29, according to the company.



The cockpit also borrows from current Jaguars but with even more screens. A 12.3-inch display houses the main instrumentation, plus there's an optional head-up display. The capacitive-touch infotainment and climate controls occupy two screens in the center of the dash. At least there's still a volume knob.

The I-Pace will use what the company is calling, with ample liberty, artificial intelligence to recognize each driver by the Bluetooth signal from his phone and automatically set the climate control, infotainment, and seat position. The new Navigation Pro system will calculate range estimates based on prior journeys and an individual's driving style. Plus the I-Pace will update its own software over the air, à la Tesla. And if that's not enough geekery for you, owners can use an Amazon Alexa device to ask for information about things such as charge level and range. No word yet on any of its driver-assistance capabilities, but this looks like a Jaguar that you'll want to drive yourself.

Jaguar designed its own electric motors but sources the batteries from a supplier.



Jag won't say which supplier, but its Formula E effort is a partnership with Panasonic.

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# MISSISSIPPI MENSCH

GEORGE POTEET'S HOT RODS ELEVATE BOTH ART FORM AND ARTIST. by John Pearley Huffman

**□** **GEORGE POTEET'S** Mississippi accent often slides off into a chuckle at the end of a sentence, as if he finds his own automotive life surprisingly entertaining. He grew up in the tiny town of Mantachie, Mississippi, in a house that lacked indoor plumbing and electricity, and took to cars early. Poteet went to work for National Safety Associates in 1969 collecting past-due accounts, rose to senior management, and eventually became the company's second-largest shareholder. Now that he's made it, his passion and pocketbook are helping make others in the hot-rod business. His 1000-acre compound just south of Memphis houses more than 120 cars, many of them among the best hot rods ever built.

Projects commissioned by Poteet are always finished to the highest standard. They take a lot of time and, in a business that operates on hourly rates, that steady work can keep a garage's doors open. There isn't a hot-rod-centric magazine, website, newsletter, pamphlet, vlog, or podcast that hasn't featured his cars, and given Poteet's profile in the hot-rodding community, a commission from him gets a shop noticed. He was the first paying customer at Troy Trepanier's Rad Rides shop in Illinois, which produced the Viper V-10-powered "Sniper" '54 Plymouth Savoy for Poteet in the late 1990s. Alloway's Hot Rod Shop in Tennessee built a matching pair of black '61 Fords for him—a Sunliner convertible and Starliner hardtop—both powered by SOHC 427 engines.

Rolling Bones Hot Rod Shop in upstate New York created a lakes-style chopped '34 Ford coupe for Poteet. "It's definitely one of our most signature builds," says Keith Cornell, a partner in the shop. "Working for George raises anyone's profile at least a little."

"I have never had anybody I didn't like building cars for me," Poteet tells us. "I try to deal with people who have the same values that I got. Like those kids in Arizona, Hot Rods by Dean. I wouldn't hesitate a second to take a car to



POTEET DRIVES ALL HIS CARS—SOME FASTER THAN OTHERS. AT 439.562 MPH, HIS LAND SPEED RACER IS THE WORLD'S FASTEST PISTON-POWERED WHEEL-DRIVEN CAR.

them. Andy in Nebraska [of CAL Automotive Creations] is a good kid." Poteet's explicit goal is to foster the next generation of hot-rod builders.

"I've accomplished pretty much everything anyone could dream of accomplishing," he says. "I don't get off in getting big awards anymore. I'm in it for other people now."

## NATIONAL ENDOWMENT

Poteet is always adding to his collection. He thinks he has seven high-end projects in the works right now but isn't quite sure. The shops listed here are just a sampling of those he's employed:

- Johnson's Hot Rod Shop – Gadsden, AL
- Hot Rods by Dean – Phoenix, AZ
- Duttweiler Performance – Ventura, CA
- Maxwell Industries – Ventura, CA
- Pure Vision – Simi Valley, CA
- Roy Brizio Street Rods – South San Francisco, CA
- FastLane Rod Shop – Donahue, IA
- Rad Rides by Troy – Manteno, IL
- Roadster Shop – Mundelein, IL
- Woody's Hot Rodz – Bright, IN
- Kemp's Rod and Restoration – Hancock, MI
- CAL Automotive Creations – Bennington, NE
- Rolling Bones Hot Rod Shop – Greenfield Center, NY
- Alloway's Hot Rod Shop – Louisville, TN
- Legens Hot Rod Shop – Martin, TN
- Art Morrison Enterprises – Fife, WA



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# DIET PLAN

A QUICK SURVEY OF THE SAVINGS—AND COST—OF LIGHTWEIGHT PARTS. *by Robert Plotkin*

**REDUCING YOUR CAR'S MASS** is the only modification that will both improve every metric of performance and increase fuel efficiency. Doesn't matter the car: The delicate balance of safety, efficiency, and affordability that is automotive engineering typically leaves a few pounds on the table for the motivated owner. But the price you pay to save each pound varies greatly depending on the part you replace.

Our example for this exercise is the Porsche 911. Porsche's own options list contains many weight-reducing solutions, and with more than 1 million 911s in circulation, the aftermarket offers plenty of ways to drop pounds as well. We availed ourselves of both. Prices quoted below do not include installation, which in some cases will vary significantly.

## Weissach Package for the GT2 RS

WEIGHT SAVINGS: 40 LB

COST: \$31,000

COST/POUND SAVED: \$775

Opting for the Weissach package litters the GT2 RS with carbon fiber: The roof panel, steering-wheel trim, shift paddles, and even the anti-roll bars and their end links get replaced with the stuff. Forged magnesium wheels alone cleave 25 pounds from the total. In markets where the GT2 is fitted with a roll cage (so, not ours), the standard steel tubing gets swapped with titanium for even greater savings.

## Porsche Full Bucket Seats (Carbon-Fiber Shells)

WEIGHT SAVINGS: 32 LB

COST: \$5200

COST/POUND SAVED: \$163



## Akrapovic Slip-On Titanium Exhaust

WEIGHT SAVINGS: 10 LB

COST: \$5900

COST/POUND SAVED: \$590

Exhausts work both sides of the weight-to-power equation, with this one netting a claimed 19 horsepower to go along with its 10-pound savings.



## Porsche Ceramic Composite Brakes

WEIGHT SAVINGS: 46 LB

COST: \$8520

COST/POUND SAVED: \$185

You might think you want PCCB because you're going to track your car, but many owners find that the rotors can wear out quickly when tracked and cost over \$20,000 to replace. But they do reduce fade and unsprung mass.



## Liteblox Lithium-Ion Battery

WEIGHT SAVINGS: 54 LB

COST: \$1742

COST/POUND SAVED: \$32

The Liteblox is also a winner in terms of installation. It's hard to beat the ease of swapping a battery.

## Vorsteiner Carbon-Fiber Hood

WEIGHT SAVINGS: 6 LB

COST: \$5495

COST/POUND SAVED: \$916

## Performance Lexan Rear Window with Margard Coating

WEIGHT SAVINGS: 8 LB

COST: \$433

COST/POUND SAVED: \$54

Plastic windows have a reputation for scratching, but Porsche has been installing them as OEM rear windows on Europe-market GT3 RS models since the 996. Lexan Margard polycarbonates are treated for better scratch resistance, but they should only be cleaned with brand-specific spray and a microfiber cloth.

## HRE R101 Lightweight Wheels

WEIGHT SAVINGS: 31 LB

COST: \$10,000

COST/POUND SAVED: \$323

Porsche offers five different sets of wheels for the 991.2 Carrera, but none is a lightweight option, as Porsche doesn't want to have to warrant lightweight wheels against bending.



Porsche reserves the carbon buckets and the Weissach pack for top models, but the rest of these options would collectively chop 155 pounds off a base 911 for a cost of \$32,090. Adding only the battery, PCCB, and the Lexan rear window would cut 108 pounds for just \$10,695. Compared with the average 911's options bill, that's a steal.



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# NANNY CABS

TIRED OF JUGGLING KIDS' SCHEDULES? SILICON VALLEY HAS YOU COVERED.

by Clifford Atiyeh



**■** JUST AS WITH TV series and Taco Bell menu items, success in the tech industry can be measured in spinoffs. Now that Uber and Lyft apps are on everyone's phones, developers are taking the basic concept into new territory. Those apps prohibit anyone under 18 from riding solo, but a growing crop of ride-sharing services is targeting children—even toddlers. One is outside Boston, but most are in Silicon Valley, where the populace is accustomed to being new-tech guinea pigs. Kids can't use the apps themselves, nor do the services offer last-minute bookings. But they do promise booster seats, background checks (in California, the state's TrustLine database screens for the shady stuff), and easy scheduling. Some have made deals with major automakers. A few offer on-demand child care. And others envision a community of teachers, parents, and smiling people in branded T-shirts ready and willing to ferry your little gangsters to school. Because nothing says you love your kids like letting a stranger shuttle them around in a 2006 Chevy TrailBlazer.

 **HopSkipDrive**  
**Founded:** 2014  
**Areas serviced:**

Greater San Francisco, Los Angeles, and Orange County  
**Vehicles:** 2008 or newer four-doors

**Minimum cost:** \$16–\$18 per ride, \$7 per carpool with three other families

**Lowdown:** Three mothers founded HopSkipDrive. The company's drivers, almost all of whom are women, must have at least five years of child-care experience. Children six and

up can go anywhere in the Bay Area and L.A. provided they remember a password shared with the driver. HopSkipDrive checks to see that a driver's vehicle registration and inspection match her actual car.

 **Kango**  
**Founded:** 2012  
**Area serviced:**

Greater San Francisco  
**Vehicles:** 2008 or newer; Chrysler Pacifica Hybrids  
**Minimum cost:** \$16 per ride plus a \$9 monthly subscription fee

**Lowdown:** Not to be confused with the bucket hats once popular with LL Cool J. While Fiat Chrysler offers Kango drivers discounted leases on new minivans, little Bobby could just as easily be strapping into an old Caliber. Kango lets parents contact drivers directly and screen them before using the service. Children under two must have a parent or guardian ride with them, but Kango also offers at-home babysitting and chaperoned play dates.

 **Züm**  
**Founded:** 2014  
**Areas serviced:**

Greater San Francisco and Orange County  
**Vehicles:** 2006 or newer four-doors  
**Minimum cost:** \$16 per ride, \$8 per carpool  
**Lowdown:** Only one in five applicants is hired, which says something either about Züm's scrutiny

or the local talent pool. Children aged five and up may ride. Families can opt to exchange a password with the driver that's unique to each ride. Züm claims to have partnered with more than 1000 schools and also provides babysitting services (\$6 for every 15 minutes).

 **Sheprd**  
**Founded:** 2017  
**Areas serviced:**

Newton, Massachusetts, and surrounding area  
**Vehicles:** 2016 Land Rover LR4s  
**Minimum cost:** \$17 per ride  
**Lowdown:** Funded in part by Jaguar Land Rover, Sheprd is the snootiest way to schlep kids grades K–12 in this Boston suburb. It also may be the safest. The company-owned LR4s wear school-bus signage and lighting, and the drivers must carry school pupil transport licenses, know pediatric first aid, and pass a Breathalyzer test before every shift. The company restricts pickups and drop-offs to a child's home or a list of 70 institutions it can trust to be open and have adults waiting, such as art centers, camps, and schools.



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twin-turbo 6.0-liter, 582 hp,  
531 lb-ft



*Mill Stones*

# LOVELY LUMPS

VOLKSWAGEN IS THE INDUSTRY'S PREMIER PURVEYOR OF WEIRD ENGINES.  
*by Austin Lindberg*

**AUTOMAKING BEHEMOTH VOLKSWAGEN** leverages economies of scale with unparalleled success. It uses similar architectures to underpin Phaetons and six-figure Continental GTs, Polos and Passats.

That strategy is hardly unique to the Volkswagen Group. What is unique is the way each VW brand maintains its distinctive character. That's largely due to the Group's engine lineup, the most diverse in the industry.

In a market where it feels as if every brand's engine menu lists four-, six-, and eight-cylinders, novel mills such as Audi's inline-five and Bentley's W-12 imbue the Group's closely related cars with personalities all their own and the sort of cachet that attracts enthusiasts and the well-heeled alike—even if it's the four-cylinders that thrill the Wolfsburg accountants. Here's the full rundown of the under-the-hood oddities Volkswagen offers in the U.S.

## THE ISLAND OF MISFIT TOYS

Engine Configuration	All Brands Offering Configuration	VW Brands Offering Configuration	Available in	No. Delivered in 2017	Most Powerful Example
Inline-two	1	0	—	—	—
Inline-three	4	0	—	—	—
Inline-four	31	3	—	483,502	—
<b>FLAT-FOUR</b>	3	1	Porsche 718 Boxster and Cayman	5087	718 Boxster and Cayman GTS, turbocharged 2.5-liter, 365 hp, 309 or 317 lb-ft
<b>INLINE-FIVE</b>	2	1	Audi RS3 and TT RS	1280	RS3 and TT RS, turbocharged 2.5-liter, 400 hp, 354 lb-ft
<b>V-6</b>	29	3	Volkswagen Atlas and Passat	27,410	Passat, 3.6-liter, 280 hp, 258 lb-ft
Volkswagen's VR6 engine differs from any other V-6 on the market, with a narrow 10.6-degree bank angle and a single cylinder head.					
<b>FLAT-SIX</b>	2	1	Porsche 911	8970	911 GT2 RS, twin-turbocharged 3.8-liter, 700 hp, 553 lb-ft
Inline-six	2	0	—	—	—
V-8	25	3	—	—	—
<b>V-10</b>	3	2	Audi R8 and Lamborghini Huracán	1501	Huracán Performante, 5.2-liter, 631 hp, 443 lb-ft
<b>V-12</b>	6	1	Lamborghini Aventador S	327	Aventador S, 6.5-liter, 730 hp, 509 lb-ft
<b>W-12</b>	1	1	Bentley Bentayga, Continental GT, and Flying Spur	1845	Continental Supersports, twin-turbocharged 6.0-liter, 700 hp, 750 lb-ft
<b>W-16</b>	1	1	Bugatti Chiron	18	Chiron, quad-turbocharged 8.0-liter, 1500 hp, 1180 lb-ft

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## John Phillips // I'm studying the vocabulary of snowplows. You got your "shoes" (on which the plow skids across things that shouldn't be plowed), your power-angling versus auto-angling blade, your hydraulic or electric screw-type rams, your flexi/rigid deflectors,

your locking casters, and, of course, your blade color. Me? Bumblebee motif all the way. Funny thing is, the plow isn't even a plow. In Montana, they call it a blade, yet technically that curved dish of steel is a moldboard. You could ask a farmer.

In winter, my driveway is a 1.8-mile Olympic luge course, a galaxy of glacial cleavages that would make for a delightful doctoral dissertation. For five years, I've avoided the plow thing because the mountain-suitable versions start at about \$3000. But now, either I buy a plow or rely on a guy with a 35-foot commercial Caterpillar grader, six sets of chains, and \$300 per pass. Plus, he doesn't like my wife.

Without Sherpas, no delivery company will risk the ascent to my house. So on a sloppy day of slush—the sky looking as if it were filtered through newspapers, and me sick in bed—my wife and the freight driver scoured our little village to locate a forklift that could deposit the plow in our pickup's bed. Our NAPA store obliged. Price? A dozen doughnuts. Turns out my new plow weighs as much as a tax-reform bill, sinking my Toyota Tundra SR5 to low-rider status. Well, a lowrider with a 9000-pound winch.

Wrestling the plow out of the Tundra was enchanting. Hydraulic floor jack, a farm jack, ropes, blocks, and tackles sufficient to outfit the Flying Wallendas. Next came the intermezzo known as "some assembly required," with my butt cheeks angled toward a twin-burner propane heater. Surprise! I actually got the plow looking similar, though not identical, to the photo in the instruction manual. Well, apart from that pump-o-lator doohickey cross-edgewise on the Johnson bar.



Next came electrical connections, not one of my strengths. I couldn't locate a hole in the front firewall through which the wiring loom might poke. But I did briefly get my right arm trapped amid aluminum AC conduits and a warren of official Toyota wiring. Disengagement drew blood, which is a sentence you'll hear only at the Pentagon or in divorce court. I should have drilled a hole for the purpose, but its inner edges would have been jagged. So I just drooped the loom over the radiator without reading even one of the manual's 19 "Warning" notices, two "Danger" admonitions, and nine "Caution" citations. But, hey, plowing is a frigid endeavor, so how could the radiator get hot enough to melt wires? Tempting fate like that makes me feel like a rebel. The

rebel nonetheless installed a fire extinguisher, because the top of the Tundra's battery is now an entanglement of wires that, from a certain angle, resembles a Portuguese gill net.

It took two hours to adjust the blade to its specified 0.8-inch height at full droop. It's suspended by a chain, and each link accounts for about 1.5 inches of travel—twice what I wanted. Plus, the \$200 adjustable shoes aft of the blade add to the confounding calculus. More shims? Fewer? I've seen Formula 1 engineers dial in ride height quicker. And now my driving lights illuminate the back of the blade, so maybe I'll drop a wheel off the north edge of my driveway, over the precipice and through the air to Grandmother's house we go. Will skinny lodgepole pines halt the rollover of what now feels like a four-ton Toyota? Doubts are what I have.

The final instruction was to mount the lift/lower controller inside the cabin. I was low on energy, so I "mounted" it in the center console. No drilling necessary! Just the likelihood of electrical shorts smelling like burnt coffee.

So now I'm a plowing fool, although everything happens at the speed of 90-weight wood glue. And whenever I lift or lower the blade, the truck rises or squats like a senescent buffalo. You've heard of a world of hurt? I'm in a world of oversteer. Plus, the whole shebang juts proud of the grille maybe four feet. It's like sitting down with elk antlers attached to your arse—doable, though it entails random stabs of pain and much tedious rearrangement. There's also an alarming measure of squirmy-jumpy slack in the plow's trellis of braces, and the whole apparatus in operation sounds like a junkyard falling down Grandma's coal chute.

It's more abuse heaped upon my poor 13,000-mile Tundra, is what it is. Smashed tailgate (an unseen ponderosa pine that magically grew behind me in four minutes), scarred flanks and nose (I side-swiped a discarded oven—my own—and knocked askew a 55-gallon drum of sand—also my own), abducted chin spoiler (eaten twice by granitic outcrops), a pinged windshield (my third in five years, call Dave at Mountain View Glass), and a truck bed that appears to have been chewed by 50 blenders on max puree.

When I trade in the Tundra, I'm just gonna have to tell the salesman: "Hurricane Katrina. Son of a bitch."

I used to drive trucks. Now I use one.



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**COMING SOON**

# Daniel Pund // You know what you never see? A car that looks like an ancient Greek temple. And that's not just because modern folk have lost the desire to see a carving of a centaur kicking a naked dude in the junk. Mostly you never see cars shaped like

ancient Greek temples because that would be stupid. Plus, the few people who still want to view some hot centaur-on-dude action can just Google it.

Another question: Have you seen a modern car without its skin? It's an Erector Set of crimped and spot-welded beams and spurs that is beautiful only to the eye of a particularly artless engineer. You know what's behind that lovely bedazzled front fascia? A bumper beam that looks like, well, a beam. It's just a chunk of metal, indifferently finished with abrupt ends and covered in ugly blocks of energy-absorbing foam. That's not sporty and it's not elegant, and nobody is going to pay 50 grand to be seen behind it.

So, to recap: In modern cars, form does not follow function, at least not literally. And yet, never is form so disassociated from function that a rolling Parthenon makes it to production. Also, centaurs.

But we are currently living in a new age of automotive-design frivolity that seeks to disguise function. And just as ancient Greek architecture was broken down into orders defined, in large part, by the design of their columns, so too is this new vehicle-design era. The Greeks had Doric, Ionic, and Corinthian pillars, each more flowery and less purely functional than its predecessor. This new order, which we shall call the Nissanian order,



In *The Odyssey*, Homer wrote: "Iron has powers to draw a man to ruin. Also, this D-pillar is ridiculous."



after its fiercest advocate, is the silliest yet.

Nissanian adherents seek to persuade you that their pillars—those things that hold up a car's roof and frame its windows—don't exist. Or rather, that parts of them exist but maybe some parts don't, such as the part in the middle. This is especially true of the C- and D-pillars of many modern sedans and SUVs, respectively. Through the (often clumsy) use of black panels and chrome strips bisecting the pillar trim, certain designers would like your eye to register the roof structure as something less than solidly attached, something that might even flap, or dangle, or sprout. Naturally, this is no more convincing than the stick-on chrome fender vents slapped onto the driver's-side door of a Daewoo Nubira. It's pure affectation.

It's tempting, and not entirely without foundation, to blame the French for this. Google "Citroën DS3" to see some pro-level pillar buffoonery. But the French are not our concern. Instead, in the spirit of public service for which this magazine has become famous, we offer you this guide to the American car market's silly pillars.

Note: We excluded fully blacked-out pillars (à la Range Rover) not because "floating roofs" aren't silly but because they are not silly *enough*. Also noted and dismissed are odd roof pillars that serve purposes beyond the aesthetic, such as the glass panels in the rear corners of the Fiat 500L (the only *un-silly* part of that mop bucket), or that could credibly claim an aerodynamic function, such as the wicked-awesome ones on the Ford GT.

**Stalactite Pillars:** The most common type of silly pillar is the Stalactite (the kind that grows from the top down). Included here are the Lexus RX and Toyota Prius, both of the windswept-spire variety. Then there is the Honda Odyssey's rear pillar, which has less angle to its dangle. The Mazda CX-3's little nub is *so* cute.

**Stalagmite Pillars:** We could come up with only two examples of this bottom-up type, and one of them, the Jeep Compass, counts only when it's also equipped with a contrasting roof. The other is the Lotus Evora 400. So let's just drop it, shall we?

**Near-Pillar Pillars:** Know what it's called when a stalactite and a stalagmite finally meet? A pillar. Before that happens, you have the Near-Pillar Pillar. So close are the upper and lower pieces of trim as to make one wonder why they are not just, you know, a pillar. The Nissan Maxima and Chevrolet Bolt EV fall into this category.

**Flowstones:** Want to look young and fun and modern? The Flowstone is the silly pillar for you. Instead of a spirelike shape rising from the beltline, Flowstones look like a pile of petrified goo. The Nissan Leaf and Kicks are exemplars of the form, as are the GMC Terrain, Toyota C-HR, and Volvo XC40. The Nissan Murano is an example of the rare subset: Flowstone With a Hint of Misaligned Stalactite.

Finally come the **Nice-Try-but-a-Chrome-Strip-Doesn't-Count Pillars**. Come on, Buick Regal TourX and Kia Optima and Stinger! Are you even trying?

You know what's weirdest of all? The Hyundai Ioniq's pillars are not only Ionic in style but they aren't even silly. Get with it, Hyundai. Give us Corinthian Stalactites and watch sales triple.



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## **Ezra Dyer // We can add Max to the list of driving instructors who hate me. Max is an Italian hotshoe who was assigned to shepherd a group of punk Americans around an icy road course cut into the side of a mountain somewhere near Mont Blanc in the Alps. This**

was at a Maserati ice-driving school, which I enrolled in because I'm a big believer in education. Never stop learning, I say, especially when the lessons involve Maserati Levantes and Scandinavian flicks. I figured I'd be out there in the shadow of a craggy peak, powersliding through fresh powder while some European rally champion commented on the finer points of load transfer and slip angle. But Max didn't want to turn off the stability control.

Hey, I don't blame him. I wouldn't want to strap in with some jet-lagged nobody and go tearing off down the mountain half sideways in a 424-hp SUV. But then again, I didn't come all the way to Italy to drive carefully. In fact, I harbored a lot of pent-up ice-driving aggression since these events never work out for me. Years ago, Lamborghini tried to run a winter-driving course at the Team O'Neil Rally School, which is nestled in a corner of New Hampshire that's usually the temperature of liquid nitrogen, and that's in the summer. But of course, the day the Lambos showed up, it was balmy and muddy. Last year, Volkswagen attempted an ice-driving school at a lake in Quebec, and I arrived in the midst of steady February rain, the lake covered in slush. Instead of ice driving, I ended up terrorizing the local back roads, where I was accosted by a man wearing snowshoes. (I tried to pretend I didn't



Dyer isn't ignoring directions. The instructor is just pointing out a bystander awed by his skills.



speak English, but I soon realized that only works if you can speak another language.) At least with this Maserati thing, I figured, even if all the snow melts, I'm still in Italy. So I can mourn my plight over a plate of thinly sliced ham.

Back to Max. I don't know what happened earlier that day, or earlier in his life, but he'd about had it. He was brooking no nonsense. Thus, when I climbed in and cheerfully pressed the button to disable the stability control, we arrived at an immediate impasse. "No," he said, pressing the button again. "Stability control on." I understand his misgivings, since the guys who are quick to disable the stability-control system are usually the ones most in need of the stability-control system. And when I'm on a road course, I usually

run with stability on until I learn the track and the car. That's prudent. But here the schedule allowed for perhaps four laps. There was no time to screw around. Or rather, no time to not screw around. So I got out. Good day, sir.

This was a first in my experience. Normally it takes a few laps for a driving instructor to hate me, but Max knew right away. I respect that. But I bailed because he wasn't the only option. There were two Levantes, and the other one was under the command of a jovial Italian rally driver named Filippo. Plan B: Wait for Filippo. Because I don't want to say Max was no fun, but if he'd invented the Slip 'N Slide, it would've been called the Fall 'N Stop.

When I climbed in with Filippo, stability control was already off. "You want to leave it off? Okay!" he said, without waiting for an answer. We slithered off down the track and I was immediately glad I'd held out. The Levante gets nice and tail-happy when you stab the throttle. Filippo prudently moderated my enthusiasm here and there, but for the most part he gave me enough rope to hang myself, and I almost did. The walls of the track were hard-pack snow, eight feet high, and at one quick set of esses, I'm pretty sure that my exit took the rear end of the car within about a millimeter of setting off an avalanche of depreciation. But Filippo remained cool.

His advice was to be patient on turn-in, carry enough speed to generate useful load transfer when you brake, and please don't run over the photographer. At the moment he said the last one, I was attempting a heroic slide for the benefit of said photographer, who was standing in the middle of the lane. "He'll move," I said. "Photographers are all crazy." And I was right.

So it all worked out. I confirmed that all-wheel-drive Maseratis on winter tires are good in the snow. You're welcome. Later, the photographer sent some shots from the afternoon. I scrolled down to the ones from the corner where I almost ran him over, since I felt like I got it nice and crossed up there. And indeed, there was the Levante, heroically sideways, geysers of snow shooting back from all four tires. And there, behind the wheel... well, there was a shadow over the driver, but I could see the white collar of a rugby shirt. Which is what Filippo had been wearing.

Hey, fine with me. If you're going to have your cherished memories burnished by a stunt driver, at least get the one who's not afraid to go sideways. 🇩🇪



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# bad road, super car

We steer \$378,215 of carbon fiber and aluminum up an ill-maintained mountain road—and end up returning the way we came. *by Eric Tingwall*  
*photography by Greg Pajo*

## **California State Route 243 is a bad road. So many great roads are.**

Eighty-five miles east of Los Angeles, the northern end of this 29-mile asphalt patchwork offers incredible views of the confluence of the San Andreas and San Jacinto faults. Some 3000 feet higher, near the road's southern terminus, a typical winter dumps 32 inches of snow. The pavement here takes its beatings from above and below, and it shows.

But mostly SR 243 is cracked and buckled from years of neglect. It connects an industrial city of 30,000 with a town of less than 100, and you could drive it in both directions and still you'll be convinced that it goes nowhere. No surprise, then, that it's been either forgotten or ignored by the transportation agencies busy triaging SoCal's major arteries to keep them from clotting.

This road, also known as the Banning-Idyllwild Panoramic Highway, should be a treacherous proposition for a \$378,215 car that skims the surface with 4.2 inches of ground clearance and a half-year's salary's worth of carbon-fiber aero hanging from the underbody. Driving the rear wheels with a 710-hp V-8, the 720S is a Hellcat as realized by a Formula 1 team. By the chief engineer's own admission, this new midrange McLaren laps road courses quicker than the \$1.2 million P1. So you might assume that it is a brutal and uncompromising thing, so absurdly fast that it all but refuses to be driven down this marginally improved goat path.





**2018 McLaren  
720S vs.  
California State  
Route 243**



Except that it's not, and it doesn't. When McLaren reentered the road-car business in 2011, its MP4-12C (later just 12C; and later yet, 650S) challenged the Italian houses with an abundance of carbon fiber and a glut of turbocharged power. The company's best contribution to supercardom, though, is the chassis advantage it still lords over Ferrari and Lamborghini. With a suspension that draws parallels to a 60-year-old French sedan, the 720S delivers the ride of a Mercedes S-class with the handling of, well, a McLaren.

The company's Proactive Chassis Control II connects the left and right dampers with a network of hydraulic hoses and accumulators so that compression on one side resists extension on the opposite side. This allows the engineers to ratchet up the roll stiffness without compromising the vertical compliance that dictates ride quality. A scarred and technical road such as 243 is the perfect place to test the system's capabilities.

Our drive starts in Banning, California, an industrial town saddling Interstate 10 that could have been plucked out of central Oklahoma for all its anonymity. Just a mile outside town, SR 243 begins to climb the northern tip of a granite formation that stretches to the Baja peninsula and offers dramatic vistas of a landscape that is uniquely Californian, combining parched desert, verdant mountains, and snowcapped peaks.

The road rises quickly on a series of fast yet pocked-on-camber sweepers. A biting late-winter wind works against the 720S's optional Pirelli P Zero Corsa tires, which want heat in the tread before they'll latch to the pavement with the full 1.10g's of cornering grip we measured at the track. It takes a feverish pace to keep the tires warm and happy—a pace the 720S makes effortless. In corners, the McLaren sticks as if pressed into the pavement by the Hand of God, and yet it feels as light and nimble as a Miata. Few automakers count grams as neurotically as McLaren does, with the Brits even omitting a limited-slip differential in the interest of containing mass. At 3161 pounds, the McLaren crosses the scales 157 pounds lighter than a dual-clutch Porsche 911 GT3.

The 720S's trick suspension sorts the busy road into a fluid surface, while the fixed-ratio electrohydraulically assisted steering places the car with precision. Despite this competence, there's a pervasive disconnect in the flat steering effort, which maintains a consistent weight regardless of cornering load. Without that cue, it's difficult to know exactly where within the sub-limit envelope you are. If you're expecting steering-effort subtleties to coach you up to the McLaren's limits,



The 720S's interior is a model of functional simplicity. McLaren doesn't even festoon its steering wheel with buttons like all the other supercar brands.

you'll spend your miles toddling around at extralegal speeds that are still well below the car's capability.

Instead, the 720S communicates with old-fashioned steering feel. The wheel fidgets and bristles as it points out camber changes and dips and heaves that you would otherwise only notice through body motions or not at all. On SR 243, the McLaren's steering system talks incessantly, providing a constant stream of feedback that guides your hands to make unthinking corrections. Use your palms to feel the intensity of these signals, and you'll find exactly where the limits lie. The closer you push the 720S to the edge, the louder the steering speaks.

The McLaren's capabilities are unimpeachable. Its steering feedback is world-class. But a 911 GT3 or a Ferrari 488GTB better impart a sense of heroism at any speed. The 720S gives up its reward only if you push deep, and with so much grip available, that takes commitment and a touch of abandon on a public road.





Banning

243



CALIFORNIA

LOS ANGELES

SAN DIEGO

## IDLE WILD

California SR 243 runs between Banning and Mountain Center, but it's known as the Banning-Idyllwild Panoramic Highway for a reason. Twenty-five miles in, the road slows to a crawl through Idyllwild, a charming mountain town brimming with bonhomie that serves as the ultimate destination for much of the traffic on the road.



Highest Point: 6220 feet

Idyllwild

Mountain Center



Rising toward 6000 feet, Route 243 briefly uncoils and slices into pine forest. Straight runs such as this offer opportunities to uncork the engine, an update on the old 3.8-liter stroked to 4.0 liters. Unapologetically turbocharged, the M840T produces ridiculous power at the expense of considerable low-end lag, and it fills the cabin with steam-work huff and puff. Whether the eight cylinders bark or howl, we can't quite say because the 95-dBA racket at wide-open throttle sounds mostly like the dentist hooked his tiny mouth vacuum in your ear.

Torque peaks at 568 pound-feet at 5500 rpm and only starts to hit hard above 3500 rpm, so you drive the 720S as if it's packing a

high-strung naturally aspirated engine, keeping the revs up, carrying momentum, and cursing yourself anytime you try to yank the thing out of a corner on low-end torque. Driven this way, the engine is spectacular, spinning with an intensity that carries past 8000 rpm.

And the transmission is paddle-shifted magic in its manual mode. The gearbox is as graceful as it is quick; shifts practically disappear. But McLaren engineers also included a bit of programming brilliance wherein high-rpm upshifts in Track mode finish with a satisfying thwack. Called

Inertia Push, this feature slams shut the clutch for the next cog with the engine spinning faster than the transmission input shaft. The resulting sucker-punch shift uses the inertia of the rotating engine components to deliver a torque pulse to the wheels that, per McLaren, improves acceleration.

For the full effect of the 720S's thrust, stab the Launch button placed with the radio, climate, and navigation controls. With both pedals squeezed, the digital tach needle quivers around 3200 rpm for four full seconds before the digital instrument cluster reports "Boost Ready." The McLaren doesn't slingshot out of the hole as an all-wheel-drive sports car does. Launching the rear-drive 720S



**[+] Any-road ride quality, deft handling, gobsmaacking acceleration. [-] Stiff brake pedal, flat steering effort. [=] McLaren continues to rewrite supercar bylaws.**

is similar to lighting a rocket. You ride a wave of surging acceleration as the car's road speed catches up with the faster-spinning rear tires. The squeeze in your chest grips hardest as the tach nears the top of first gear. Sixty miles per hour flashes past in 2.7 seconds after liftoff. The McLaren's pull is relentless.

With the P Zero Corsas hooked up, the 720S wins back time on less powerful all-wheel-drive rivals that surpass it off the line. At 5.3 seconds to 100 mph, the 720S just nips the Lamborghini Huracán Performante. A 10.2-second quarter-mile puts the McLaren almost half a second ahead of a 911 Turbo S. At 180 mph, it keeps pulling, as if it's trying to outrun comparisons with any other car. It is the quickest rear-wheel-drive car we've ever tested.

To haul the McLaren back to earth, the brake pedal requires a significant single-leg press before the standard carbon-ceramic brakes bite. The initial travel is dull and only marginally productive, after which the braking force begins to respond to pedal pressure. This is how we like it—a pressure-sensitive pedal rather than a travel-dependent setup. Yet the required effort is unrea-

sonably high, and asking for more deceleration requires an exponentially harder kick. Considering the 720S's weight, sticky tires, and standard carbon-ceramic hardware, we also expected a shorter stop from 70 mph than the 149 feet we recorded.

Both the stiff brake pedal and the flat steering grow more familiar with miles and a conscious recalibration of your expectations. As 243 wraps into some of its tightest turns, we find a fast, satisfying flow before slowing for the town of Idyllwild. On the weekends, the quaint mountain hamlet draws enough city dwellers that traffic interrupts a quick run every few miles. Yet even rolling at Prius pace for a short stretch can't ruin this road. While Californians treat the freeways with ambivalence, drivers on two-lane roads consistently pitch their cars into gravel pullouts to yield for a faster car—or at least for a Paris Blue McLaren.

The 720S attracts enthusiastic upturned thumbs and outstretched cellphones, even if people still have to ask what it is. So otherworldly is its design that one admirer asks, "Is it electric?" as we pump 91 octane through its rear fender. Its organic lines

## 2018 McLAREN 720S

**PRICE**  
AS TESTED ..... **\$378,215**  
BASE ..... **\$288,845**

**VEHICLE TYPE:** mid-engine, rear-wheel-drive, 2-passenger, 2-door coupe  
**OPTIONS:** 720S Performance package, \$11,430; Carbon-Fiber Exterior Pack 2, \$10,790; Paris Blue paint, \$9400; Carbon-Fiber Exterior Pack 3, \$8340; carbon-fiber diffuser, \$7270; carbon-fiber rear aero bridge, \$6910; Touring seats, \$6210; sport exhaust, \$5770; lightweight forged wheels, \$5330; carbon-fiber seatbacks, \$3860; carbon-fiber rear deck, \$3640; track-telemetry app, \$2620; front-axle lift, \$2510; Satin Diamond Cut wheel finish, \$1880; yellow brake calipers, \$1340; Alcantara steering wheel, \$620; rear luggage strap, \$620; car cover, \$570; fire extinguisher, \$180; warning triangle and first-aid kit, \$80  
**AUDIO SYSTEM:** satellite radio; 59.3-GB media storage; minijack, USB, and Bluetooth-audio inputs; 4 speakers

**ENGINE**  
twin-turbocharged and intercooled V-8, aluminum block and heads  
**BORE X STROKE** ..... 3.66 x 2.89 in, 93.0 x 73.5 mm  
**DISPLACEMENT** ..... 244 cu in, 3994 cc  
**COMPRESSION RATIO** ..... 8.7:1  
**FUEL DELIVERY SYSTEM:** port injection  
**TURBOCHARGERS** ..... Mitsubishi TD05  
**VALVE GEAR:** double overhead cams, 4 valves per cylinder, variable intake- and exhaust-valve timing  
**REDLINE/FUEL CUTOFF** ..... 7500/8100 rpm  
**POWER** ..... **710 hp @ 7500 rpm**  
**TORQUE** ..... **568 lb-ft @ 5500 rpm**

**DRIVETRAIN**  
**TRANSMISSION:** 7-speed dual-clutch automatic with manual shifting mode  
**FINAL-DRIVE RATIO** ..... 3.31:1

GEAR	RATIO	MPH PER 1000 RPM	MAX SPEED IN GEAR (rpm)
1	3.98	6.0	49 mph (8100)
2	2.61	9.1	74 mph (8100)
3	1.91	12.8	104 mph (8100)
4	1.48	16.5	134 mph (8100)
5	1.16	21.0	170 mph (8100)
6	0.91	26.6	212 mph (7950)
7	0.69	34.4	197 mph (5750)

**CHASSIS**  
carbon-fiber center section with aluminum front and rear substructures  
**BODY MATERIAL:** aluminum stampings, carbon-fiber-reinforced plastic, sheet-molded plastic

**STEERING**  
rack-and-pinion with variable electrohydraulic power assist  
**RATIO** ..... 15.2:1  
**URNS LOCK-TO-LOCK** ..... 2.5  
**TURNING CIRCLE CURB-TO-CURB** ..... 40.0 ft

**SUSPENSION**  
**F:** ind, control arms, coil springs, 3-position electronically controlled dampers  
**R:** ind, 2 control arms and a toe-control link per side, coil springs, 3-position electronically controlled dampers, Z-bar

**BRAKES**  
**F:** 15.4- x 1.4-in vented, cross-drilled carbon-ceramic disc, 6-piston fixed caliper  
**R:** 15.0- x 1.4-in vented, cross-drilled carbon-ceramic disc, 4-piston fixed caliper

**STABILITY CONTROL** ..... fully defeatable, competition mode, launch control

**WHEELS AND TIRES**  
**WHEEL SIZE** ..... **F:** 9.0 x 19 in **R:** 11.0 x 20 in  
**WHEEL CONSTRUCTION** ..... forged aluminum  
**TIRES:** Pirelli P Zero Corsa  
**F:** 245/35ZR-19 (93Y) **R:** 305/30ZR-20 (103Y)

**EXTERIOR DIMENSIONS**  
**WHEELBASE** ..... 105.1 in  
**LENGTH** ..... 178.9 in  
**WIDTH** ..... 76.0 in  
**HEIGHT** ..... 47.1 in  
**FRONT TRACK** ..... 65.9 in  
**REAR TRACK** ..... 64.1 in  
**GROUND CLEARANCE** ..... 4.2 in

**INTERIOR DIMENSIONS**  
**PASSENGER VOLUME** ..... 48 cu ft  
**CARGO VOLUME** ..... 13 cu ft

## CAR AND DRIVER TEST RESULTS

ACCELERATION	SECONDS
ZERO TO 30 MPH	1.4
40 MPH	1.8
50 MPH	2.3
60 MPH	2.7
70 MPH	3.2
80 MPH	3.8
90 MPH	4.6
100 MPH	5.3
110 MPH	6.1
120 MPH	7.1
130 MPH	8.1
140 MPH	9.4
150 MPH	10.9



understate just how much air management this machine needs—to make such obscene power, to keep a catastrophic meltdown at bay, and to stop the whole thing from taking flight near its claimed 212-mph top speed. The vents and intakes are there, but you'll have to look closely to spot them. The sunken sockets housing the headlights flow air above and below the running lights and into the front-mounted radiators. Most mid-engined cars use the cooling ducts aft of the rear doors as a dominant styling element (see the Audi R8 or Ferrari 488 or Ford GT). The 720S visually stretches its wheelbase by moving these air intakes from the sides to the top of the car. Air follows sculpted channels along the shoulders and around the canopy before falling into the body sides to feed the intercoolers. The rear spoiler disappears into the bodywork until it deploys to increase downforce or stands on its front edge to act as an airbrake.

The interior is artfully simple. Ferrari and Lamborghini, with their button-speckled steering wheels, could take a cue from the beautiful Alcantara-and-carbon-fiber component that does just two things: changes the direction of the car and tells others to get out of the way. Compared with the 650S, it's easier to drop into the 720S's cabin thanks to narrower sills and top-hinged doors that take a portion of the roof with them when they open. It remains a struggle to hoist yourself up and over

The rotating gauge cluster is the car's only gimmick. Standard mode (top) is great. Slim mode (bottom) is just harder to read and offers no benefits.



the sill on exit, then extricate your legs with any grace. But the Touring-spec buckets are reasonably wide and as comfortable as fixed-back seats come. And visibility is excellent in every direction due to slender carbon-fiber pillars and that rarest of luxuries in mid-engined supercars: rear quarter-windows.

Leaving Idyllwild in our mirrors, 243 continues its impression of the moon's surface for five miles. The road ends in Mountain Center—a gas station, a café, and an animal feed shop—where it tees into State Route 74.

Left or right, 74 leads to more mountain passes, including some properly smooth pavement. But traffic is heavier and long chains of slow-moving cars form blockades. Instead, we turn around and return the way we came. The great roads are the bad roads are the empty roads, and they get that way because they're poorly maintained and draped over unforgiving terrain. McLaren builds a ground-hugging supercar that can run on crumbling pavement as if it were a freshly laid road course. It's a supercar that never needs to pass up a great road, no matter how bad it is. ■



160 MPH .....	12.7
170 MPH .....	14.8
180 MPH .....	17.5
ROLLING START, 5-60 MPH .....	3.3
TOP GEAR, 30-50 MPH .....	2.3
TOP GEAR, 50-70 MPH .....	2.7
1/4-MILE .....	10.2 sec @ 145 mph
TOP SPEED .....	212 mph (drag ltd, mfr's claim)

#### HANDLING

ROADHOLDING, 300-FT-DIA SKIDPAD .....	1.10 g
UNDERSTEER .....	minimal

#### BRAKING, 70-TO-ZERO MPH

SHORTEST STOP .....	149 ft
LONGEST STOP .....	166 ft
FADE RATING .....	none

#### WEIGHT

CURB .....	3161 lb
PER HORSEPOWER .....	4.5 lb
DISTRIBUTION .....	F: 41.7% R: 58.3%

#### FUEL

CAPACITY .....	18.9 gal
OCTANE .....	93 (recommended)
EPA COMBINED/CITY/HWY .....	18/15/22 mpg
C/D OBSERVED .....	12 mpg

#### INTERIOR SOUND LEVEL

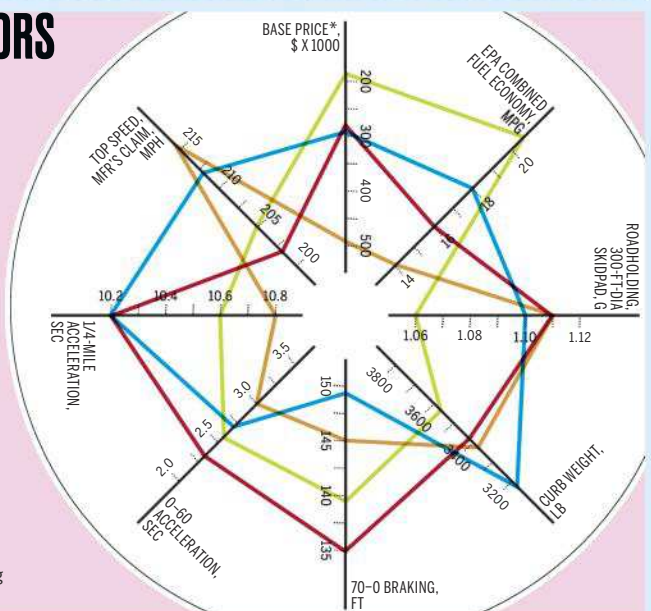
IDLE .....	61 dBA
FULL THROTTLE .....	95 dBA
70-MPH CRUISING .....	75 dBA

## COMPETITORS

The quickest rear-wheel-drive car we've ever tested still can't match the zero-to-60 rip of a powerful all-wheel-drive car.

- FORD GT  
647-HP 3.5-L V-6,  
7-SP AUTO
- LAMBORGHINI  
HURACÁN  
PERFORMANTE  
631-HP 5.2-L V-10,  
7-SP AUTO
- McLAREN 720S  
710-HP 4.0-L V-8,  
7-SP AUTO
- PORSCHE 911  
TURBO S  
580-HP 3.8-L FLAT-6,  
7-SP AUTO

\*Includes performance-enhancing options.



2020



# CARS WORTH WAITING FOR

**Can we predict the future? Sure thing.** We just schedule a few dozen Blanton's-fueled meetings with our editors from around the world, ply various product-planning deep throats with promises of cover stories, and sit down to a lengthy consultation with a Ouija board that David E. Davis Jr. bought at a Christie's auction in 1969. After that, a vision of the future emerges—well, at least the one concerning cars. And after it, a list, ordered by our level of excitement, of the 25 most interesting new vehicles that will arrive in the next four years or so. Here is that list, and almost none of what's in it is made up.



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25 CARS WORTH WAITING FOR

## 2019 ROLLS-ROYCE CULLINAN

**WHAT IT IS** • Rolls-Royce's answer to the Bentley Bentayga, set to arrive at the party fashionably late but likely to steal all the attention when it does. The Cullinan name was inspired by a giant diamond.

**WHY IT MATTERS** • Though the company's sedans and coupes are doing well, the folks in Goodwood realize that the superrich want SUVs. Bentley says that it's sold 50 percent of its Bentaygas to people new to the brand, and the Cullinan is likely to do the same for Rolls.

**PLATFORM** • Like the new Phantom, the Cullinan sits on R-R's so-called Architecture of Luxury, a pompously named aluminum structure that creates some clear engineering space over the top-flight BMW models on which smaller Rollers are based. It also will have what the company calls a Viewing Suite—two seats that slide out of the back for outdoor spectating but are more likely to be used as a place to put on your wellies.

**POWERTRAIN** • A version of the new Phantom's twin-turbo 6.7-liter V-12 in conjunction with an all-wheel-drive system. The company is also working on EV drivetrains; the Cullinan's raised floor should make housing a large battery pack easy.

**COMPETITION** • Bentley Bentayga, Lamborghini Urus, Land Rover Range Rover SVAutobiography, and the rumored Ferrari SUV. Or the Tibetan mastiff that guy in China bought for \$1.9 million.

**WHAT MIGHT GO WRONG** • China's discouragement of superconspicuous consumption could blow some icy winds over this segment.

**ESTIMATED ARRIVAL AND PRICE** • Late this year, and we're told it will undercut the \$500,000 Phantom EWB but outprice the \$236,000 Bentayga. So \$350,000 plus, and that's before you ask for monogrammed chinchilla-fur upholstery.



## 2020 TOYOTA FT-4X

**WHAT IT IS** • A de facto replacement for the defunct Scion xB, this time wearing Toyota badges and butched-up Tonka styling that promises off-road ability. Previewed by the FT-4X concept, this boxy small crossover will be a foil to the curvy, hatchback-like C-HR and offer more SUV-inspired looks and all-terrain capability than that bulging Napoleonic overcompensator.

**WHY IT MATTERS** • As the Renegade is to Jeep, this little SUV will be to Toyota. It will allow the brand to drape its off-road heritage onto an affordable on-road-friendly trucklet that ought to draw in a different clientele than would the Tacoma, the 4Runner, or the ridiculously expensive but totally worth it Land Cruiser.



**PLATFORM** • The same Toyota New Global Architecture that resides under more and more Toyotas these days, including the Avalon, the Camry, the C-HR, and the Prius. The FT-4X will be similar in size to the C-HR; the concept's wheelbase is identical to the latter's, at 103.9 inches.

**POWERTRAIN** • We sincerely hope the FT-4X will pack more muscle than the anemic C-HR's 144-hp 2.0-liter inline-four, but given Toyota's resistance to hop

on the bandwagon with a boosted small-displacement engine, we're not holding our breath. We're also pining for a manual-transmission option, as the C-HR connection will likely mean a CVT will be the automatic-transmission offering.

**COMPETITION** • Ford EcoSport, Honda HR-V, Hyundai Kona, Jeep Renegade, Subaru Crosstrek.

**WHAT MIGHT GO WRONG** • The FT-4X could be all show and no go, just like many of its tiny-crossover competitors. The concept backed up its rugged looks with an all-wheel-drive system that included a low range, but the production model might forgo that in favor of a mall-friendly all-wheel-drive setup, compromising its off-road bona fides.

**ESTIMATED ARRIVAL AND PRICE** • Possibly as soon as next year, with a starting price in the low-to-mid-\$20,000 range.

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## 2020 NISSAN FRONTIER

**WHAT IT IS** • The third generation of Nissan's best-selling pickup. Yes, that's right: The mid-size Frontier outsold the full-size Titan by more than 20,000 units in the U.S. last year, despite having changed little since the second generation, introduced in 2004.

**WHY IT MATTERS** • The Frontier has been a solid showroom performer for years. But the mid-size-truck market is growing more competitive, with the Chevy Colorado and the redesigned Honda Ridgeline already taking market share from Nissan. A new Jeep pickup and the return of the Ford Ranger further threaten Frontier sales.

**PLATFORM** • The obvious candidate is Nissan's global Navara truck, the brand's

small pickup in the rest of the world. But Nissan is more likely developing a new Frontier platform—one that remains closely related to the Titan, as both trucks will continue to be built side by side in Nissan's factory in Canton, Mississippi. The new Frontier could also spawn the return of the body-on-frame Xterra SUV.

**POWERTRAIN** • Expect a new gas V-6, possibly yet another development of the inexhaustible VQ-series engine. It will be shared with the Titan, which means output close to 300 horsepower routed through a seven-speed automatic transmission. Base models may get four-cylinders, but we doubt that Nissan will go to the expense of offering a diesel.

**COMPETITION** • Chevrolet Colorado, Ford Ranger, GMC Canyon, Honda Ridgeline, Jeep Wrangler pickup, Toyota Tacoma.

**WHAT MIGHT GO WRONG** • Apart from the GT-R's twin-turbo V-6, Nissan's engine lineup is unimpressive. And the company's conservative approach to product development means some redesigns arrive feeling already dated, a fate that could befall the next Frontier.

**ESTIMATED ARRIVAL AND PRICE** • Not before 2020, starting in the low-\$20,000 range.



## 2021 LAGONDA SEDAN

**WHAT IT IS** • Aston Martin's attempt to infiltrate the long-standing Rolls-Bentley duopoly at the top end of the sedan market. AM will relaunch Lagonda as an electric-only luxury brand aimed at the sort of tech billionaires who are growing bored of ticking every option box on a Tesla Model X P100D.

**WHY IT MATTERS** • Lagonda is a big part of Aston's plans to expand beyond the 7000 or so sales that CEO Andy Palmer sees as the natural annual limit for Aston Martin-badged cars. The Lagonda brand will offer this sedan and a closely related SUV. Equally important, it will lead Aston's electrification efforts, something the company is engineering on its own, separate from the engine deal it has with Mercedes-AMG.

**PLATFORM** • Both Lagondas will sit on the same Aston-developed platform that's underneath the forthcoming Aston DBX SUV and will be built alongside it at the company's new factory in St. Athan, Wales.

**POWERTRAIN** • We're told the Lagonda Vision concept that previews the new sedan uses electric motors at each wheel and a battery pack mounted under its flat floor. The SUV should follow suit. Palmer has promised that the battery-powered Aston RapidE, which is effectively acting as the test bed for the new battery-electric architecture, will offer performance at least equivalent to that of a V-12.

**COMPETITION** • Rolls-Royce and Bentley are both working on EV platforms, which likely will arrive at about the same time. It's going to get eerily quiet in private-airport and sex-dungeon parking lots.

**WHAT MIGHT GO WRONG** • Launching any new brand is a serious business but especially so at the top end, given how effectively Rolls and Bentley have defended their turf. Lagonda has plenty of history of its own—its V-12-equipped RapidE was the most expensive car on display at the 1939 New York auto show, with an engine designed by W.O. Bentley—but if the Lagonda name resonates at all, it'll be due to the angular and trouble-prone Lagonda sedan from the 1970s.

**ESTIMATED ARRIVAL AND PRICE** • The sedan will hit roads in 2021, with prices starting somewhere in the high \$200Ks.





## 2020 LAND ROVER DEFENDER

**WHAT IT IS** • The long-awaited and long-delayed replacement for the original Land Rover. The Defender died in 2016—it was last sold in the U.S. in 1997—but its successor will finally arrive next year. We're told that it will be considerably more plush than its tractorlike predecessor, but it will preserve tradition with different wheelbases and body styles.

**WHY IT MATTERS** • Like many a stately British home, the old Defender's distinguished external appearance sat in contrast to the more proletarian manners displayed downstairs. It was crude, uncomfortable, and—even in diesel form—drank like a dissolute baronet. It also sold in small numbers, less than 20,000 a year toward the end of production. The new one will need far broader appeal while remaining tough enough to be a credible off-roading icon for the brand.

**PLATFORM** • The new Defender will use the D7 aluminum unibody architecture that underpins the current Range Rover and Discovery. Despite losing its predecessor's separate frame and live axles, it will have to be as capable off-road as it was before.

**POWERTRAIN** • Jaguar Land Rover's Ingenium powerplants will serve underhood: probably both the turbocharged 2.0-liter four-cylinder gasoline and diesel engines that we get in the States, but also the forthcoming inline-six gasoline engine that is set to replace the company's venerable V-6 and V-8.

**COMPETITION** • Jeep Wrangler, Lexus LX570, Mercedes-Benz G-class, Toyota Land Cruiser.

**WHAT MIGHT GO WRONG** • Poor reaction to the toylike DC100 concepts said to preview the Defender's replacement led to the current delays. These days, Land Rover seems happiest developing gorgeous luxury SUVs; so if the new Defender is too much of a departure from the agricultural original, it will struggle to be taken seriously.

**ESTIMATED ARRIVAL AND PRICE** • It will go on sale in 2019 and it won't be cheap: Figure \$50,000 and up.

# 2019 GENESIS G70

Creating a proper compact sports sedan is an important, credibility-establishing job for any luxury brand. So it was a wise move for Hyundai's Genesis marque to wait a bit before trying to take on the Audi A4, BMW 3-series, and Mercedes-Benz C-class. After all, far more practiced brands than Genesis, including Cadillac, Infiniti, and Lexus, have struggled to match the Germans over the years, despite flashes of brilliance such as the ATS, the original G35, and the current IS.

With the Korean giant weighing in, the fight will intensify. Unlike the G80 and the G90, which are based on an older Hyundai platform, the G70 has been developed as a Genesis from the start. (That said, we first experienced this component set in the Kia Stinger.) To ensure that the G70 wins its share of buyers, the brand assembled an impressive team to engineer and develop the G70, including Albert Biermann, head of high-performance-vehicle development and testing, formerly of BMW M.

The G70 certainly checks all the right boxes. Its size mimics that of the A4, 3-series, and C-class—and it's nearly six inches shorter than the Stinger. It comes standard with a turbocharged 2.0-liter inline-four and offers a boosted six-cylinder. Rear-wheel drive will be standard, and to make sure it sells in the Salt Belt, all-wheel drive is available. A manual-transmission option will pair with the turbo four-cylinder and a limited-slip differential for the types who read this magazine.

As noted, the G70 shares the same basic chassis as the Kia Stinger, which we've found to be a bit soft when pushed to its handling limits. We've driven both four- and six-cylinder prototypes of the G70 on a track in Korea, and although we need a complete shakedown to render a final judgment, our short drive (in the V-6, at least) revealed a sports sedan with sharp handling, featuring eager turn-in and a promising amount of steering feedback.

The G70's base 252-hp four-cylinder will have its work cut out for it beating Audi's and BMW's polished and potent turbo 2.0-liter fours, but the twin-turbo 3.3-liter V-6 with 365 horsepower and 376 pound-feet of torque has proven to be a strong, enticing, and refined powerplant in the larger G80, G90, and Stinger. Dropped into the smaller and lighter G70, it will likely allow for a zero-to-60-mph sprint in the mid-four-second range—in the hunt with Audi's S4, BMW's 340i, and Mercedes-AMG's C43.

As hard as proving its sports-sedan chops will be, earning recognition may be even tougher. Its lines are clean and its details carefully considered, but the anonymity of the G70's design doesn't stand out in a group of cars whose designs have become familiar over generations. Even Genesis's Bentley-like winged badge could be confused with, well, Bentley's. Of course, there was a time when BMW's roundel and Audi's four rings lacked meaning, too. The G70 could provide it for Genesis. —Joseph Capparella



A PERFORMANCE MASTERPIECE



THE HIGHLY ACCLAIMED ALFA ROMEO GIULIA.

*La meccanica delle emozioni*



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A 591-HP LOW-VOLUME START TO ELECTRIFIED INDEPENDENCE.

## 2022 INFINITI Q80

**WHAT IT IS** • A soft reset for the Infiniti brand and a replacement for the forgotten Q70, which was thrown mercilessly into battle with the Audi A6, BMW 5-series, and Mercedes-Benz E-class.

The model adds another 10 to its name to keep pace in the luxury-brand alphanumeric arms race.

**WHY IT MATTERS** • Since 2009, Infiniti has teased gorgeous halo-car concepts of every variety—coupes, sedans, and mid-engined sports cars with hybrid powertrains—but failed to put any of them into showrooms. We're told the Q Inspiration concept from this year's Detroit auto show will actually live up to its name and inspire a production car. And while it won't be a full-fledged, S-class-sized flagship, its designers and engineers will use the Q80 to set the direction for the rest of the lineup.

**PLATFORM** • The Q80 will ride on a new architecture designed around Infiniti's plan to offer an electrified powertrain in every new model starting in 2021, either as a hybrid, pure electric, or range-extended electric vehicle.



**POWERTRAIN** • We expect the Q80 to begin life as a hybrid, with a compound powertrain built around the company's variable-compression-ratio turbocharged inline-four. Eventually it could also be offered as a plug-in hybrid or EV.

**COMPETITION** • Acura RLX Sport Hybrid SH-AWD, BMW 530e iPerformance, Mercedes-Benz E-class hybrid.

**WHAT MIGHT GO WRONG** • Infiniti's corporate minders are ruthlessly fixated on the bottom line. If the company designs and engineers the Q80 on a spreadsheet, there's a chance that the mid-sizer will do nothing to advance the brand's value.

**ESTIMATED ARRIVAL AND PRICE** • The Q80 should arrive in 2021 with a price spanning roughly \$55,000 to \$75,000.

## 2020 POLESTAR 1

Formerly Volvo's in-house tuning division, Polestar is expanding its purview. The sub-brand will create a distinct, aggressively styled lineup of vehicles intended to cast an experimental aura over the more staid Volvo marque, starting with the mid-2019 launch of the plug-in-hybrid Polestar 1.

Based on the Scalable Product Architecture from Volvo's 60- and 90-series models, the 1 is a dramatically smaller coupe version of the S90 sedan, with a sizable 12.6 inches chopped out of the wheelbase and another 7.2 cleaved from the rear overhang. The bodywork is all carbon fiber, as are a few structure-enhancing underbody bits. Polestar then stuffs the resulting smaller-than-a-Mercedes-C-class two-door with uprated powertrain building blocks from the S90/V90/XC90: The turbo- and supercharged 2.0-liter inline-four and electric motor up front will pitch in 375 horsepower. In back, instead of a single electric motor, there are two more-powerful 111-hp units.

## 2021 PORSCHE MISSION E CROSS TURISMO

**WHAT IT IS** • A sleek wagon version of Porsche's upcoming Tesla Model S fighter, the Mission E electric sedan.

**WHY IT MATTERS** • The Mission E Cross Turismo is more proof that wagons still live, provided they have flared fenders, some contrasting lower cladding à la Subaru's Outback, and the word "wagon"

is absent from its name. Also, the existence of a wagon variant is a hint that there will be more body styles spun off the Mission E's platform, likely an SUV and a coupe.

**PLATFORM** • You guessed it, the Mission E sedan's. The body will be made from a mix of steel, aluminum, and carbon fiber,

and the lithium-ion battery pack will be mounted in the floor, as in the Model S.

**POWERTRAIN** • Electric motors, one at each axle, will provide all-wheel drive and produce a combined 590-plus horsepower. The range is expected to exceed 300 miles, and if the company's advertised 800-volt charging stations come to fruition, Porsche says the battery could recapture 250 miles of range in just 15 minutes, which is more than twice as quick as Tesla's Supercharger. The zero-to-60-mph sprint should take around three seconds, with a quarter-mile time in the 11-second range.

**COMPETITION** • Jaguar I-Pace, Tesla Model S and Model X.


**WHAT MIGHT GO WRONG** • Porsche's EV program is unlikely to be derailed at this point, but without a gas engine providing the soundtrack, Mission Es might lack aural excitement.

**ESTIMATED ARRIVAL AND PRICE** • Porsche showed a concept version of the Cross Turismo in Geneva this year, and the production version is expected to arrive in 2021. Pricing should start at slightly less than \$100,000.




PHOTO ILLUSTRATION: INFINITI BY RADOVAN VARICAK





Plus, there's a planetary gearset hooked to either side of the differential that enables true overdrive—the outside-wheel torque vectoring. Total system output: 591 horsepower and 738 pound-feet of torque. The claimed 93 miles of range in its rear-wheel-drive EV mode towers above that of other plug-in hybrids and is achieved by employing three battery packs—one in the floor plus two in the rear—for a total of 34.0 kilowatt-hours of electricity storage.

In person, the 1 looks deliciously taut, cinched, and hunkered down on its 21-inch Pirelli P Zeros, even though its claimed curb weight of 4400 pounds—just 300 lighter than the gigantic plug-in S90 sedan—suffers from the hulking battery packs that deliver the 1's substantial electric range. In addition to some of the expected tweaks, like upsized front brakes with Akebono six-piston calipers and adaptive dampers from Öhlins, are the benefits that come with having designer Thomas Ingenlath, formerly Volvo's head of design, serving as Polestar's CEO, such as the ultrasubtle body-color badging or the prominently displayed (and labeled) seven power electronics connectors and associated wiring behind a clear panel in



the trunk. This, Ingenlath says, required much coordination with the individual suppliers to achieve a consistent orange color. And the 1 even has its own polestar: an illuminated logo projected onto the glass roof above occupants' heads.

Pricing hasn't been announced, but—hold on to your herring—Polestar may be asking as much as \$150,000 for one of the 500 units per year it's looking to sell globally. All will emerge from a new plant in Chengdu, China. But the promise of Polestar is as much about tinkering with the carmaker's operating model, parts of which may eventually blossom elsewhere in the Volvo and parent-company Geely empire, as it is about the cars. All Polestar 1s will be available via a bundled lease, which includes insurance as well as the ability to borrow other Volvos. Polestar will use a smartphone app as the car's key, so that after a service appointment is scheduled, the owner can remotely grant

access to the courier who will then ferry it to the shop. The brand will retail the cars via small stand-alone spaces to be built in roughly 80 to 100 major metropolitan areas; about a quarter of them will be in the U.S., where they will be owned by franchisees. By doing so, Volvo is hoping to sidestep endless legal battles like the ones Tesla has fought to own and operate its stores. The Polestar-tuned versions of Volvo models will continue, although, confusingly, those won't be sold through the Polestar outlets.

And there are more Polestar-only models coming. In addition to being less expensive and built in higher volumes than the 1, all other Polestars will be electric only. The Polestar 2 arrives at the end of 2019 and will be a long-range EV intended to take the fight to Tesla's Model 3, while Polestar's 3 will be an electric SUV. By then, the company hopes Polestar will be much more of a household name. —*Dave VanderWerp*



## 2022 VOLKSWAGEN MICROBUS

**WHAT IT IS** • The long-expected, what-took-you-so-long, have-you-been-out-tripping-in-Joshua-Tree, retro-futuristic VW Bus. Previewed recently by the I.D. Buzz concept, which was loosely modeled after the iconic Type 2 people mover sold until the 1970s, this production version will be a full-electric vehicle. It will be among the first in a planned lineup of EVs that will represent Volkswagen's Dieselgate *mea culpa* and drive us toward an electrified future.

**WHY IT MATTERS** • See last sentence above. It will also tell us whether VW can reenter long-abandoned segments. And for VW chairman Herbert Diess, the concept "is the most beautiful and most exciting electric car in the world." So it's pretty clear that he's been to Joshua Tree.

**PLATFORM** • The new Microbus stands on VW's MEB, or modular electric platform, designed to underpin a large number of compact to mid-size Audi, SEAT, Škoda, and VW models. It allows for a flexible design, and the Microbus will even have room for a front trunk.

**POWERTRAIN** • The MEB platform is designed to host various electric-powertrain configurations; a good indication of its capabilities was provided by the I.D. Buzz, which has all-wheel drive courtesy of electric motors on the front and rear axles that produce a total of 369 horsepower.

**COMPETITION** • Other than the Chrysler Pacifica hybrid, there are no other electrified vans at the moment. Maybe the Tesla Model X counts as a rival, but it's far more expensive.

**WHAT MIGHT GO WRONG** • VW's electric van might hit the market with a BMW i3-like thud and sans waiting list like Tesla's Model 3 has.

**ESTIMATED ARRIVAL AND PRICE** • The Microbus will launch in 2022. Pricing has yet to be determined, but we expect it to open around \$40,000.



## 2019 HYUNDAI VELOSTER N

**WHAT IT IS** • Hyundai realizing the promise of the last-gen Veloster Turbo. We hope.

**WHY IT MATTERS** • With the Genesis luxury brand up and running, Hyundai is now focusing on creating a performance subbrand. Bunkmate Kia has the rear-drive Stinger sports sedan, and Hyundai will have its N-badged cars. It's like BMW's

M division, right down to having Albert Biermann at the helm. He's the engineer Hyundai swiped from M and put in charge of performance, and he lends this whole thing a gravity we'd otherwise struggle to see.

**PLATFORM** • The new Veloster shares its front-strut-suspension design with the Elantra GT Sport, Hyundai's best hot-hatch effort yet. A multilink rear

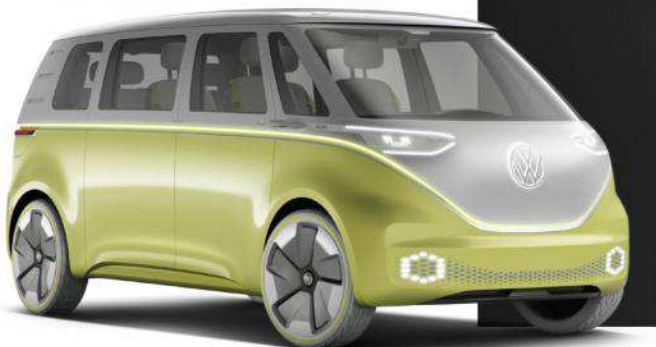
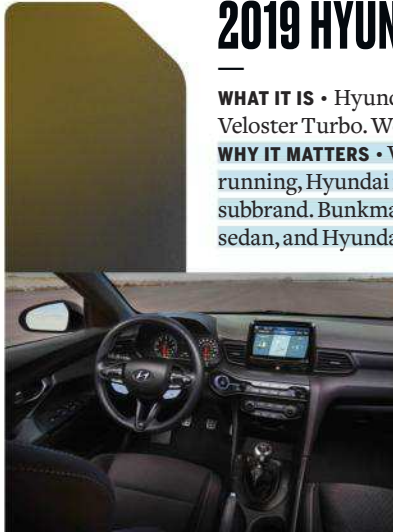
promises to elevate this three-doored sibling beyond the Elantra sedan's torsion-beam rear suspension. A limited-slip differential and sticky Pirelli P Zeros expressly designed for the Veloster N are options.

**POWERTRAIN** • A turbocharged 2.0-liter inline-four with up to 275 horsepower and 260 pound-feet, backed up by—and only by—a six-speed manual transmission. Power levels haven't officially been settled yet, but the Europe-market i30 N, with which this car shares its engine, starts off at 250 horsepower.

**COMPETITION** • Ford Focus ST, Honda Civic Si, Subaru WRX, Volkswagen Golf GTI.

**WHAT MIGHT GO WRONG** • Given that it's likely going to be more powerful than the ST, Si, and GTI, Hyundai could decide to position the N against the pricier Ford Focus RS, Honda Civic Type R, and Volkswagen Golf R, a decision that would make the Veloster N a harder sell.

**ESTIMATED ARRIVAL AND PRICE** • Then again, when has Hyundai ever charged too much for anything? Expect pricing to start around \$25,000 when the N goes on sale at the end of the year as a 2019 model.



## 2020 MAZDA 3

**WHAT IT IS** • The next generation of Mazda's fun-to-drive compact sedan and hatchback. It promises to combine stellar handling with new and innovative fuel-saving technology.

**WHY IT MATTERS** • The next Mazda 3 will be the first car to market with a gasoline compression-ignition engine. Well, sort of. Dubbed Skyactiv-X, the new engine is a supercharged four-cylinder that burns an ultralean charge during compression ignition (the air-to-fuel ratio is more than double that of a conventional gas engine). But to control the timing of the compression ignition, Mazda injects a squirt of fuel just before the power stroke and ignites it with a spark plug. This spark-initiated combustion unleashes a wave of increasing pressure that ignites the lean air-fuel mixture. If it all pans out, the X promises plentiful power and a bump in fuel efficiency.

**PLATFORM** • The fourth-generation Mazda 3 will use the company's latest Skyactiv-Vehicle Architecture. The new platform is stronger, and it lets less noise, vibration, and harshness into the cabin compared with the current model's setup. Mazda claims it has improved the 3's ride quality as well. Unfortunately, the 3 is expected to ditch its multilink rear suspension for a lighter, cheaper, and easier-to-package torsion beam.

**POWERTRAIN** • Today's naturally aspirated 155-hp 2.0-liter Skyactiv-G inline-four is anticipated to power entry-level models, with the new Skyactiv-X compression-ignition engine motivating higher-end trims. Expected to produce 190 horsepower and 207 pound-feet

of torque, this supercharged 2.0-liter inline-four is said to be up to 30 percent more fuel efficient than the 2.0-liter Skyactiv-G. Regardless of engine choice, all Mazda 3s will be available with either a six-speed manual or a six-speed automatic.

**COMPETITION** • Chevrolet Cruze, Ford Focus, Honda Civic, Hyundai Elantra, Kia Forte, Nissan Sentra, Subaru Impreza, Toyota Corolla, Volkswagen Golf and Jetta.

**WHAT MIGHT GO WRONG** • The new 3's cost-cut torsion-beam rear suspension may strip the 3 of its famously fun driving dynamics. Additionally, the complex and novel Skyactiv-X engine could turn out to be as reliable as a crackhead babysitter.

**ESTIMATED ARRIVAL AND PRICE** • Look for the Mazda 3 to arrive in 2019 with a starting price of less than \$20,000.



## 2020 FORD BRONCO

**WHAT IT IS** • The long-awaited and highly anticipated return of the mid-size off-roader.

**WHY IT MATTERS** • More than two decades have passed since the last Broncos rolled off the production line. And those were the low-speed-O.J.-chase Broncos, not the mountain-climbing, desert-racing originals. In that time, Jeep has sold more than 2.3 million profitable and popular Wranglers in the U.S. It's a Jeep thing, and we hope Ford understands.

**PLATFORM** • The Bronco will use the same body-on-frame bones as the 2019 Ranger. Many fingers and toes are crossed for a live front axle, but optimism is subdued; the Ranger uses an independent front suspension. Short and long wheelbases will beget two- and four-door configurations. Like the Wrangler, the Bronco will have a removable top and doors.

**POWERTRAIN** • Following the path of the Ranger, the Bronco likely will be powered by a turbocharged 2.3-liter inline-four making around 300 horsepower and driving the wheels through a 10-speed automatic transmission. A boosted 2.7-liter V-6 could also find its way under the hood. It would be criminal if Ford bucked a manual from the options list. But not O.J.-level criminal.

**COMPETITION** • Jeep Wrangler.

**WHAT MIGHT GO WRONG** • It's hard to imagine a Wrangler alternative with this kind of heritage wanting for an audience.

**ESTIMATED ARRIVAL AND PRICE** • It should hit dealerships in fall 2019 as a 2020 model with a base price under \$30K.



CADILLAC RENAMES  
AND REPOSITIONS  
THE ATS AND CTS TO  
MATCH THE GERMANS.



The story isn't too different for the ATS, which lacks the rear-seat space and comfort of the Audi A4 and the BMW 3-series. Cadillac is cagey about how it's going to handle this, but it's clear that a product realignment is in order. For now, all the company admits is that the ATS, CTS, and XTS will be replaced with two all-new models in separate segments and that the CT6 will remain situated above those new offerings.

The most likely scenario pits the redesigned ATS, which is to be renamed either the CT3 or CT4, against the Audi A3, BMW 2-series, and Mercedes-Benz CLA. Though the smallest CT will remain on the rear- and all-wheel-drive Alpha platform that underpins the ATS and CTS, it's unclear what, if any, resizing will take place. Up a class, the CTS gives way to the CT5, which will also remain on the Alpha platform but

will target more directly the A4, 3-series, and C-class bogeys.

Powertrains sit longitudinally in the Alpha platform, so rear-drive will be standard in both cars. All-wheel drive will likely remain optional depending on powertrain choices. Expect GM's turbo 2.0-liter four to be the base engine for both cars and a larger, yet-to-be-unveiled boosted four to serve as the upgrade. Should sanity prevail, V versions will have the option of one of the twin-turbocharged sixes (3.0 or 3.6 liters). And if the engineers run the asylum for long enough, one of several upcoming twin-turbo DOHC V-8s might find its way into the mix, though installing such a reactor in the CT3/4 is akin to powering a taco truck with a Merlin 1D rocket engine. It's also not an entirely bad idea. Eight- and 10-speed automatic transmissions are abundant in Cadillac's powertrain arsenal, but we can always hope for a manual, which is currently offered in six-speed form in the ATS.

Look for the CT5 to hit showrooms sometime next year starting in the mid-\$40,000 range and the CT3/4 in 2020 in the mid-\$30,000s. — *Josh Jacquot*

## 2020 CADILLAC CT5 AND 2021 CT3/4

**Cadillac's biggest problem** is the positioning of its cars versus their competitors. Here's part of that back story: When the CTS came to life in 2002, it slotted into the luxury segment as a sedan slightly larger than the BMW 3-series but at about the same cost. The strategy was to offer buyers a traditional American virtue: space. Keep in mind, this happened while class-leading dynamics overtook virtually all else as the brand priority. Two generations later, the CTS remains, functionally, between the 3- and 5-series, but its cost is closer to the latter's. We thought the CTS was worth its price, and said so, but the market is a fickle mistress; it prizes stuff like interior quality and roomy rear seats over limit-handling sharpness.

## 2022 LEXUS LC F

**WHAT IT IS** • A high-performance package for the seductive coupe.

**WHY IT MATTERS** • Despite the base car's available 471 horsepower, the V-8 struggles to move the obese LC500's nearly 4400 pounds of mass. More power and less weight benefit not only humans but cars, too.

**PLATFORM** • Like all LCs, the F will be based on the GA-L platform. Carbon fiber and other lightweight body materials will reduce mass. Aggressive front and rear fascias plus hood and fender ventilation will maximize airflow to keep things cool.

**POWERTRAIN** • Succumbing to the trend, Lexus will replace the LC500's naturally aspirated V-8 with a twin-turbocharged 4.0-liter V-8 making north of 600 horsepower. A 10-speed automatic will handle gearchanges. An updated, lightened torque-vectoring differential will work in conjunction with the latest version of the brand's Vehicle Dynamics Integrated Management system, augmenting the LC F's capabilities on the track.

**COMPETITION** • Acura NSX, Chevrolet Corvette, Jaguar F-type SVR, Mercedes-AMG GT R, Porsche 911.

**WHAT MIGHT GO WRONG** • Showing up late to



the party without enough speed for everyone. **ESTIMATED ARRIVAL AND PRICE** • The LC F will arrive as a 2022 model with a price approaching \$200,000.

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10

09

25 CARS WORTH WAITING

## 2021 GENESIS GT90

**WHAT IT IS** • A high-style, luxurious grand tourer that could do for Genesis what the gorgeous LC coupe has done for Lexus, i.e., attract a lot of attention and interest for the brand despite the car's meager sales aspirations. The GT prefix will be Genesis's designation for coupes (G is for sedans and GV will denote SUVs), and the 90 signifies that this new model will sit at the top of the lineup alongside the G90 full-size sedan.

**WHY IT MATTERS** • Genesis has yet to establish itself as a design player, as its current lineup offers handsome but somewhat anonymous shapes. Look for the design team to swing for the fences here.

**PLATFORM** • Either the longitudinal-engine architecture residing under the current G80 and G90 or an enlarged version of the new G70 sedan's underpinnings [see No. 20].

**POWERTRAIN** • Depending on when the coupe arrives, we expect Genesis will offer its existing twin-turbo 3.3-liter V-6 or—if it hasn't been phased out by then—its buttery-smooth naturally aspirated 5.0-liter V-8. Offering a hybrid, a plug-in hybrid, or even a fully electric drivetrain would



also legitimize Genesis's claim that it is serious about electrification.

**COMPETITION** • BMW 8-series, Lexus LC, Mercedes-Benz SL-class.

**WHAT MIGHT GO WRONG** • The GT90 isn't a done deal. An entry-level GT is already in the works, but the company hasn't said anything official about larger coupes, despite having trademarked the GT80 and GT90 names. Considering Genesis is reportedly working on a full-blown supercar, the company might be pulled in so many directions that this high-visibility model falls through the cracks.

**ESTIMATED ARRIVAL AND PRICE** • Appearing as soon as 2020 or 2021, the GT90 could be the first Genesis to creep beyond the \$80,000 mark, which would still make it thousands of dollars cheaper than its putative rivals.

## 2020 SUBARU WRX

**WHAT IT IS** • A redesign of one of the most iconic performance cars of this decade—and the last, too.

**WHY IT MATTERS** • Subaru should probably do something to burnish its slipping credibility among enthusiasts. A decade ago, the company exited the World Rally Championship. And now its street cars have been subjected to a broad deployment of continuously variable

transmissions. With little hope for a follow-up to the BRZ sports car, we see no better way for Subaru to prove that it still cares for us than by building the best WRX ever.

**PLATFORM** • The WRX will join the rest of Subaru's lineup on the Global Platform first used beneath the 2017 Impreza. Subaru says the new architecture is stiffer and has a lower center of gravity than the outgoing one—both desirable traits in a sports sedan—but improvements in noise and vibration will be even more welcome.

**POWERTRAIN** • A version of Subaru's FA-series turbocharged flat-four will most certainly find its way under the WRX's hood. Expect an increase in both displacement and output over today's 268-hp 2.0-liter. Subaru is using a 260-hp 2.4-liter FA in the new Ascent three-row crossover; a higher-horsepower version seems bound for the next-generation WRX and even the WRX STI. A six-speed manual or a CVT will still route torque to all four wheels.

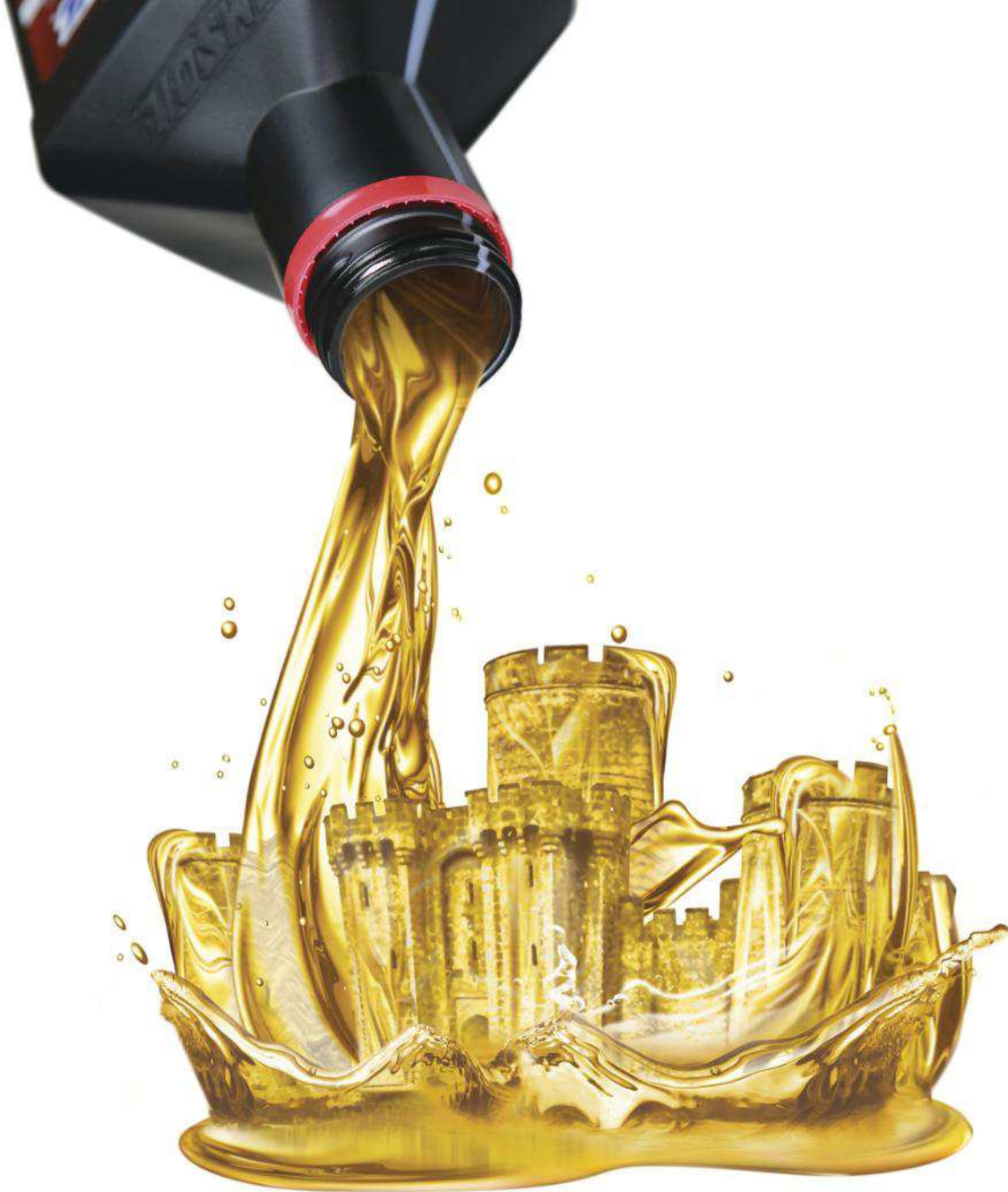
**COMPETITION** • Ford Focus ST, Honda Civic Si, Hyundai Veloster N, Volkswagen Golf GTI.

**WHAT MIGHT GO WRONG** • With Subaru focused on growing its commodity-car business, and with the archrival Mitsubishi Lancer Evolution consigned to the history books, the WRX may be less of a corporate priority than it's been in the past. It has to be awfully tempting for the product planners to just phone this one in, knowing full well that the vaping demographic has nowhere else to go.

**ESTIMATED ARRIVAL AND PRICE** • Today's WRX is priced just above its front-drive rivals, and while we don't expect Subaru will raise the base price too much, the new WRX is likely to creep closer to \$30,000 when it makes its debut in 18 months as a 2020 or 2021 model.



PHOTO ILLUSTRATIONS: GENESIS AND SUBARU BY RADOVAN VARIČAK



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AMG CRAFTS WHAT APPEARS TO BE A FOUR-DOOR AMG GT BUT REALLY ISN'T.

# 2019 MERCEDES-AMG GT 4-DOOR COUPE

When political theorist Jacques Mallet du Pan wrote, in 1793, that revolution “devours its children,” he was speaking from personal experience, having seen the fate of many who had early roles in the French Revolution but who had been brutally purged in the so-called Reign of Terror for their antirevolution leanings. More than 200 years later, the same principles are at play in the imminent arrival of the four-door version of the AMG GT.

This is the servant trying to become the master. One-time tuner AMG is no longer happy to make breathed-on versions of mainstream Mercedes models. Now it wants to become a full-fledged player in its own right. We’ve already become familiar with the AMG GT and SLS coupes and roadsters, two-seaters on their own platforms and with no direct equivalents within the Mercedes hierarchy. Mercedes’ original four-door coupe, the CLS, won’t come as a CLS63 this time around, leaving a space above the mightily

impressive E63 S to be occupied by the new four-door AMG GT.

The pure-blooded AMG will be, as the Germans like to put it, *schportier* than the Mercedes-based E63 S, in the same way that the E63 is a couple of notches hairier than its V-6-powered E43 understudy. The GT sedan will share many of the two-doors’ curvaceous styling cues but will sit on a different architecture. The two-seaters use a bespoke aluminum structure that wouldn’t stretch far enough for a car this size, so the new AMG will use the MRA platform that underpins the E-class. It will also share the same heart as the top AMG cars, with power coming from the twin-turbo 4.0-liter V-8, familiar from the upper reaches of the clan but tuned to deliver an even higher 630 horsepower in the range-topping GT63 S. A non-S version will be offered with 577 horsepower. Both models will have the E63’s nine-speed MCT automatic trans and all-wheel drive, and the S comes standard with that all-important Drift mode. Unlike the E63, the GT63 will feature four-wheel steering.

Because our gleaming future is electric, there will also be more than one hybrid version. The first of these is the only one confirmed so far, but we can confidently predict it will be the least exciting. The base version of the GT four-door line will be the inline-six-powered GT53. The

GT53 will use AMG’s 48-volt system, combining a 429-hp turbocharged 3.0-liter with up to 21 horsepower of electric boost. But beyond that, AMG is working on another hybrid, one that will be able to match the performance claims that were made for the GT concept shown at the 2017 Geneva show: a car with a peak output of at least 805 horsepower from a V-8-plus-e-motor combo and a zero-to-60 time of under three seconds.

AMG boss Tobias Moers has always been open about his ambition to turn his subbrand into a constructor in its own right; if the four-door GT is successful, we expect to see several other exclusive AMG models, likely exploring other niches including—of course—SUVs. But for that to happen, the four-door will have to sell. While the idea of a four-door sports car has clear appeal in Asia, the unanswered question is whether traditional-minded buyers will consider it over the AMG E-class or its coupe or roadster siblings.

The GT four-door’s most obvious competitor, the Porsche Panamera, has sold solidly rather than spectacularly. The GT63 and GT63 S will go on sale early next year, and we expect them to start at about \$115,000, with the S variant likely commanding \$135,000. The GT53 version will arrive later in 2019 and is expected to start at just over \$100,000. —Mike Duff







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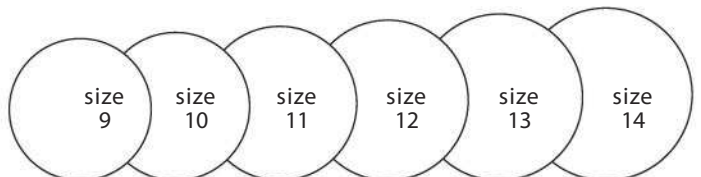
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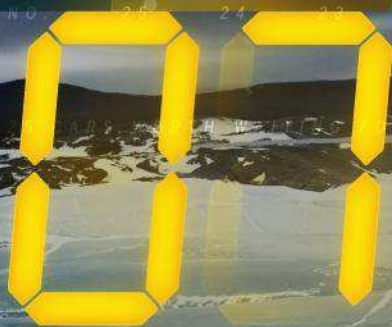
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BMW'S 8-SERIES RETURNS JUST IN TIME TO FIGHT THE AMG GT FOUR-DOOR.

## 2019 BMW 8-SERIES

For a people with such a well-earned reputation for obsessiveness, the Germans can be surprisingly cavalier about numbers. Consider this new BMW: What used to be called the 6-series will now become an 8. There is still a 6, but it was previously a 5, specifically the 5-series Gran Turismo. (The German attitude toward words and their meanings is perhaps a related discussion.) And despite its numerical promotion, the 2019 8-series will in fact be smaller and some 200 pounds lighter than the 6-series it replaces.

It will also be a dramatic stylistic departure. The higher number represents the car's repositioning at the top of the lineup, and BMW will be looking to establish the 8's premium status with cues pulled from the 2017 concept and reserved for the 8-series alone. It'll still wear BMW's signature grille, but with teeth that jut proud of the nose before cantilevering back in at the top of the kidney beans. Aggressively squinty headlights are a mash-up of traditional and modern elements, the usual twin halos here bent into near hexagons and illuminated by lasers. Perhaps the most daring



aspects of the design are its tapered greenhouse and pronounced shoulders. To find such extreme tumblehome on any previous BMW, you'd have to barrel-roll an Isetta down a hill into your living room. Inside, even elements such as the concept's metal speaker grilles and Swarovski-crystal iDrive controller are likely to make it into the production car, all part of the effort to distinguish the 8-series from the lower numbers of the BMW lineup.

As with the outgoing 6-series, the 8 will be available in coupe, convertible, and sleek four-door body styles. All should be significantly sportier than their predecessors, as BMW aims this flagship range at cars like the Porsche 911 rather than the Mercedes S-class. Our recent experience with the M5—which triumphed over a Cadillac CTS-V, Mercedes-AMG E63 S 4MATIC, and Porsche Panamera Turbo in a recent comparison test [“Power Drunk,” April 2018]—has us believing that BMW has rediscovered its performance-car mojo.

Powertrains will track those available in the 5-series, with a 335-hp turbocharged 3.0-liter inline-six at the bottom of the hierarchy, a 456-hp twin-turbo V-8 in the midline all-wheel-drive M850i, and versions of the M8 in every body style. Like the M5, the M8 will be powered by a 600-hp twin-turbo V-8 routing power to all four wheels and come with a selectable rear-drive mode that'll help satisfy the urge to buy new rear tires. All engines will mate to ZF's eight-speed automatic transmission.

Just as the 6-series cost more than the 5-series, now that it's an 8, expect it to cost more than the 7—and not by just a little bit. We'd be surprised if you could get into one for less than \$100,000. Adding options and horsepower quickly pushes the 8's price to \$130,000 and beyond. The 8-series coupe will be the first to launch, late this year, with additional body styles and M derivatives dribbling out through 2019. —Jared Gall

06

05

## 2021 TESLA ROADSTER

**WHAT IT IS** • Either a mound of provocative ballyhoo or a galactic nut kick to the makers of gas-fed hypercars. Either way, it's gorgeous, with wheels sprawled to its corners and a skin stretched as tight as Mickey Rourke's.

**WHY IT MATTERS** • Elon Musk, as he's prone to do, is making big claims for the car. Like the one he sputtered out with gormless ambivalence at the Roadster's three-ring rollout last November: "The new Tesla Roadster will be the fastest production car ever made. Period." That would mean beating the Koenigsegg Agera RS's top-speed record of 277.9 mph, but we wonder if the Tesla boss is confusing his superlatives here and intended to say "quickest." Musk claims that the Roadster will run from zero to 60 in 1.9 seconds, clear 100 mph in 4.2, and complete the quarter-mile in 8.9 with a maximum speed "above 250 mph" right out of the box. And that's the base model, which he hinted is only the beginning of the Roadster's performance.

**PLATFORM** • Possibly you've noticed that the Roadster isn't a roadster at all but a targa, which stores its glass roof in the trunk. Beyond that, we know only that it has four seats. Musk calls it a 2+2, so don't count on moving four adults, which matters little here.

**POWERTRAIN** • Three motors—two driving the rear wheels and one driving the fronts—will power the thing. Given the performance claims, a multispeed gearbox seems likely. A 200-kWh battery pack—that's twice the capacity of the largest pack currently available from Tesla—provides the juice for all that



speed, acceleration, and a claimed 620-mile range at highway speeds.

**COMPETITION** • McLaren BP23, Mercedes-AMG Project One, Porsche Mission E, Thor, Zeus, Medusa, and whatever other hyperbolic insanity exists in 2020.

**WHAT MIGHT GO WRONG** • Owners could expect the car to live up to Musk's claims, which has been a problem for Tesla. Or they could expect it to do things other hypercars can do, such as, say, lap a track with consistent performance—also a problem for at least one Tesla. And using a 200-kWh battery pack adds weight. Tesla will need to up its tech significantly to make this a track hound, a dragster, and a lake-bed special all in one. But it's only claiming two of the three.

**ESTIMATED ARRIVAL AND PRICE** • Tesla says it'll go on sale in 2020 and start at \$200,000. But it's said such things before. Here's to us eating those words.

## 2019 PORSCHE 718 CAYMAN GT4

**WHAT IT IS** • The topper of the current 718 range, bearing a flat-six. You'll recall that the other 718s have funny-sounding four-cylinders. As was the case with the first Cayman GT4, the car is nothing less than the 911 GT3's little brother and nearly its equal on the road and on the track.

**WHY IT MATTERS** • The 718 Cayman GT4 is a car for enthusiasts—many of whom, though, have been less than enthusiastic about the yawp of the 718's turbocharged flat-fours. The GT4's flat-six will certainly quiet those critics, especially if it's louder.

**PLATFORM** • Like its predecessor, the 718 Cayman GT4 will borrow the 911 GT3's front suspension and brakes. Otherwise, it's all mid-engined 718 goodness.

**POWERTRAIN** • A detuned version of the GT3's naturally aspirated 4.0-liter making about 420 horsepower. A six-speed manual will be standard; a seven-speed dual-clutch auto, an option.

**COMPETITION** • Audi TT RS, Chevrolet Camaro ZL1 1LE and Corvette Grand Sport.

**WHAT MIGHT GO WRONG** • The world could end, meaning you'd be less likely to care that, after the 911 GT3/RS, this is the quintessential Porsche sports car.

**ESTIMATED ARRIVAL AND PRICE** • Expect an unveiling early next year and an on-sale date before 2020, starting around \$90,000.



## 2020 VOLKSWAGEN GOLF GTI

**WHAT IT IS** • The eighth generation of the archetypal hot hatch, replete with plaid seats, a red line through the grille, and sublimely balanced performance.

**WHY IT MATTERS** • The GTI sets a high bar for every automaker aiming to turn its compact car into something greater, and our lives as enthusiasts are better because of it.

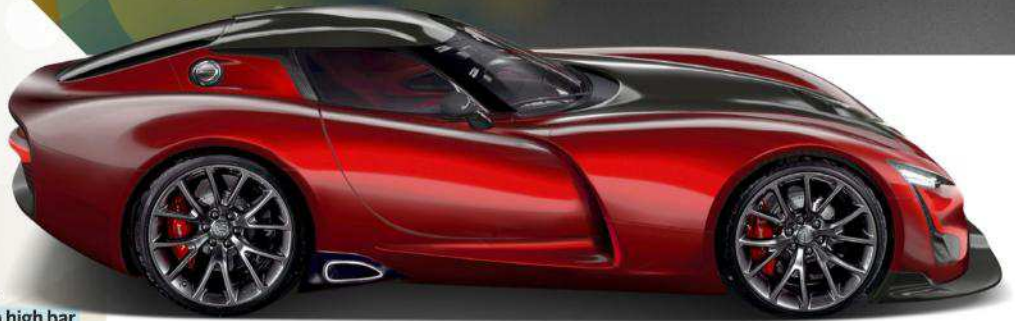
**PLATFORM** • Volkswagen's versatile MQB componentry (it underpins everything from the Audi TT to the Atlas three-row crossover) will carry over from today's GTI. Significant updates to the electrical architecture will accommodate a new infotainment system.

**POWERTRAIN** • The EA888 turbocharged 2.0-liter inline-four found in the current GTI will be nudged from 220 horsepower to more than 230. A six-speed manual or seven-speed dual-clutch automatic transmission will route torque to the front wheels.

**COMPETITION** • Ford Focus ST, Honda Civic Si, Hyundai Veloster N, Mini Cooper S Hardtop 4-Door, Nissan Sentra NISMO, Subaru WRX.

**WHAT MIGHT GO WRONG** • The world's largest automaker has been building GTIs since 1975. Nothing shy of the end of humanity is likely to derail the eighth gen, but we acknowledge that this isn't quite the guarantee it once was.

**ESTIMATED ARRIVAL AND PRICE** • We'll get our first official look at the next GTI in the fall of 2019, with U.S. sales starting in late 2020 at roughly \$28,000.



## 2021 DODGE VIPER

**WHAT IT IS** • The second rebirth of a Motown legend. Not many details have surfaced yet, but trust us: A new Viper is happening.

**WHY IT MATTERS** • Since the fifth-gen Viper's production ended in 2017, Dodge has lacked a true halo car. Sure, it has its supercharged trick ponies—Hellcat and Demon—but the Mopar faithful need something to put up against Chevy's and Ford's mid-engined sports cars.

**PLATFORM** • As before, the new Viper will use a spaceframe with independent suspensions front and rear. A long hood with an engine tucked behind the front axle, a Viper staple, will remain. Learning from its unfortunate fifth-gen product-planning mistake, Dodge will offer a convertible from the beginning; the coupe comes a few years after launch. Aluminum and carbon fiber will proliferate, keeping mass as low as

possible because the Viper is likely to lose a little grunt, at least to start.

**POWERTRAIN** • Sorry, 10-pack fans, the Viper is downsizing. Chrysler is (finally) developing an aluminum-block V-8 to replace the aging iron-block anchor it calls Hemi. We're guessing that a naturally aspirated V-8 will be the new Viper's first engine. Taking a page from the Corvette team, Dodge SRT will likely offer the Viper in multiple performance levels. Think 550 horsepower to start and a supercharged 700-plus-hp variant (essentially a second-gen Hellcat engine) coming a year or two later. And if we know anything about the engineers at SRT, you'd better believe there will be a hard-core road racer in the works designed to challenge Porsche's GT cars and Chevy's upper-register Corvettes on the racetrack. A manual transmission will make it stand out against the increasingly automatic-only competition.

**COMPETITION** • Chevrolet Corvette, FCA's bottom line.

**WHAT MIGHT GO WRONG** • With Conner Avenue Assembly closed for good, it's likely that a supplier will be tapped to bolt Vipers together, and that could lengthen the development time (think Multimatic-built Ford GT). We know SRT can build an amazing track car; FCA just needs to make sure it's a track car that people actually want to own.

**ESTIMATED ARRIVAL AND PRICE** • The January 2019 Detroit auto show will be the 30th anniversary of the Viper concept's debut. It would be a fitting tribute for the next Viper to go public then, though we don't expect to see it on the road until late 2020 as a 2021 model. Borrowing an engine from elsewhere in the FCA lineup might have a massive impact on the base price. As opposed to starting in the low six figures, the new Viper could broaden its appeal slightly by starting under \$90,000.



02

CAN'T TELL IT'S A  
NEW 911? WELL,  
THAT'S KIND OF  
THE POINT.

## 2020 PORSCHE 911

We have to give Porsche credit for turning the tables on us with its next 911. No, no, it won't be mid-engined or—gasp!—front-engined. It won't give up its vestigial rear seats. And its shape won't morph into something rectilinear. Like most generations of the 911, the 992 version (the current car is designated 991.2) will look very much like the 911 it replaces.

No, Porsche turned the tables on us by transforming itself from the hunted to the hunter. Typically, we are the ones pursuing prototypes; the carmakers, or rather their test drivers, are the ones trying to evade us. Well, with the 992 generation of the 911, which will be unveiled before the end of the year, a partially disguised prototype has been hounding us for months near our Ann Arbor, Michigan, headquarters. The blacked-out mule seems to be at the local Zippy Auto Wash every time we show up there. How clean does a camo'd prototype really need to be, anyway?

Do you know how we know it's a 911 prototype? Because it looks like a 911. In fact, it looks so much like a 911 that Porsche apparently thinks it can hide the car in plain sight.

We expect the 992 version to be fractionally larger than the 991.2 it replaces. But it won't grow the way it did from the 997 generation to the 991, when the wheelbase expanded by four inches. We know, however, that even the narrowest rear-drive 911 will be wider than before, since both rear- and all-wheel-drive Carreras will now wear the same wide body to simplify production. When the Turbo model arrives about a year after the Carrera and Carrera S models, it will distinguish itself with an even thicker rump.

That's Turbo with a capital T. The regular models also will be turbocharged, just as the later 991s were. In fact, the new 911 will be powered by essentially the same engines as the last one. The twin-turbo 3.0-liter flat-six will put out about 400 horsepower in



the standard car (up from the current 370). The S model will also gain about 30 horses, for a total of roughly 450. Porsche will again offer both manual and dual-clutch automatic transmissions, at least for the first few years of this generation's run. When the model gets a facelift, we expect that Porsche will introduce all-new engines and may cancel the manual transmission, something the company has been threatening to do for years. And yes, the long-rumored hybrid version is a possibility, although Porsche has no immediate plan to make it. The 992 is large enough to accommodate the electric motor and batteries, should the company decide to go down that road. But then, the 991 was also large enough to package the electro-gear, and the 911 hybrid never appeared.

If the exterior looks pretty much like the current car, the interior is significantly different than it was before. On either side of the typical center-mounted tachometer are screens for reconfigurable digital secondary gauges and/or information that carmakers believe the modern driver desires. The dual-clutch's stubby shifter makes room on the center console for a cupholder. So there's that.

The 2020 911, in base coupe form, will go on sale early next year starting right around \$100,000. Prices will go up from there, should a buyer fancy an S model, all-wheel drive, or a convertible. And that's before the buyer leafs through what will surely be a long list of options. In other words, it's still a 911. —Daniel Pund





NO FUTURE-CAR ISSUE  
WOULD BE COMPLETE  
WITHOUT A MID-  
ENGINE CORVETTE.

25 CARS WORTH WAITING FOR

# 2020 CHEVROLET CORVETTE



**On the eighth day,** God created Mid-Engined Corvette. Certain Mesoamerican cultures offered the still-beating hearts of human sacrifices to Mid-Engined Corvette. Medieval Europeans believed that Mid-Engined Corvette's horn could cure all maladies. It is said that Kublai Khan kept in his personal zoo at Xanadu a Mid-Engined Corvette of exceptional splendor. The phrase "mid-engined Corvette" means "goat sucker" in Spanish, owing to the thing's propensity to drink the blood of livestock. Inside the briefcase from *Pulp Fiction*? Mid-Engined Corvette.

Mid-Engined Corvette has always been with us, even when it totally didn't exist. And short of a few concept vehicles over the decades, it has never existed beyond the realm of folklore, the occasional conspiracy theory, and the fever dreams of automotive journalists.

But as it is written, so it shall be. Mid-Engined Corvette is real, and you'll see the official, genuine article before the end of the year. And no, Chevy isn't playing any games with the terminology: The engine will be bolted between the occupants and the rear wheels. Those expecting a carbon-fiber spaceship powered by an antimatter machine will be somewhat disappointed.

Like the recent front-engined Corvettes, the mid-engined one will remain an attainable sports car with supercar performance. Surely some bits of carbon fiber and magnesium will be stirred into the mix, but Chevy will construct the mid-engined car's spaceframe primarily from aluminum. And as in the past, its body will be made largely of fiberglass panels. To contain costs, Chevy

will launch the new car with an updated version of the pushrod LT1 engine that powers today's C7 Corvettes. We expect the mid-engined Corvette, or C8, to be a bit heavier than the current car's roughly 3500 pounds, but it will compensate for that with about 500 horsepower from the LT1. And thanks to the increased traction of a rearward weight bias and a quick-shifting transaxle, it'll be quicker than the C7.

Oh, did we not mention the transaxle? (Note that we used the singular form of the word.) There will be only one gearbox, and it won't come with a clutch pedal. Chevy has been working with Tremec on a new eight-speed dual-clutch automatic unit. The driver's involvement in shifting gears will begin and end with the steering-wheel-adjacent shift paddles.

But there's some consolation: That engine bay will also eventually host even more compelling mills. The first to follow the LT1 will be a naturally aspirated 5.5-liter DOHC V-8 with a flat-plane crankshaft capable of a Ferrari 458-like maximum engine speed of 9000 rpm. Sympathy for the transaxle, though, means the engine speed will be limited to several hundred rpm below that. That engine should be good for at least 600 horsepower.

Then, because it is totally unnecessary, Chevy will bolt two turbochargers and two big air-to-water intercoolers to the 5.5-liter V-8. The turbo engine will make about 800 owner-maiming horsepower. You will not be surprised to learn that this will be the fastest version around the Nürburgring Nordschleife.

But hang on: What if we told you that within a couple of years



Chevy would add a 200-hp electric motor to the mix? The twin-turbo 5.5-liter V-8 will abuse the rear tires while the electric motor, housed in what would typically be a front trunk, will energize the fronts. That's right: This mid-engined/front-motor Corvette will have a horsepower rating at or near the four-digit mark.

To cool these nuclear furnaces, the mid-engined Corvette is going to need massive amounts of airflow. So basically the entire leading plane of the nose will be open to the air and packed full of heat exchangers. The C8 will extract engine-compartment heat through vents below the taillights on the rear fascia. Combustion gases will be fed through an exhaust that includes the familiar dual-mode system to maximize airflow and noise generation at high engine loads. There will be two tips per side instead of the four center-mounted pipes on the C7.

In a break from past Corvettes, the mid-engined car will have a couple of active aerodynamic devices. In the rear will be a conventional power-operated spoiler. Up front, the picture is a little more complicated. We hear that Chevy will use the new Corvette's front-axle-lift system not just to clear speed bumps and steep driveway approaches but also to change the car's angle of attack, shifting the aero center of pressure fore and aft, depending on vehicle speed. And—wonders never cease—the C8 will use coil springs in place of the old transverse composite leaf springs.

For an unspecified amount of time, the C7 will be built alongside the C8 in Bowling Green, Kentucky. We're guessing Chevy will continue building the old car until the company is ready to start producing the Corvette Hovercraft. —*Daniel Pund*



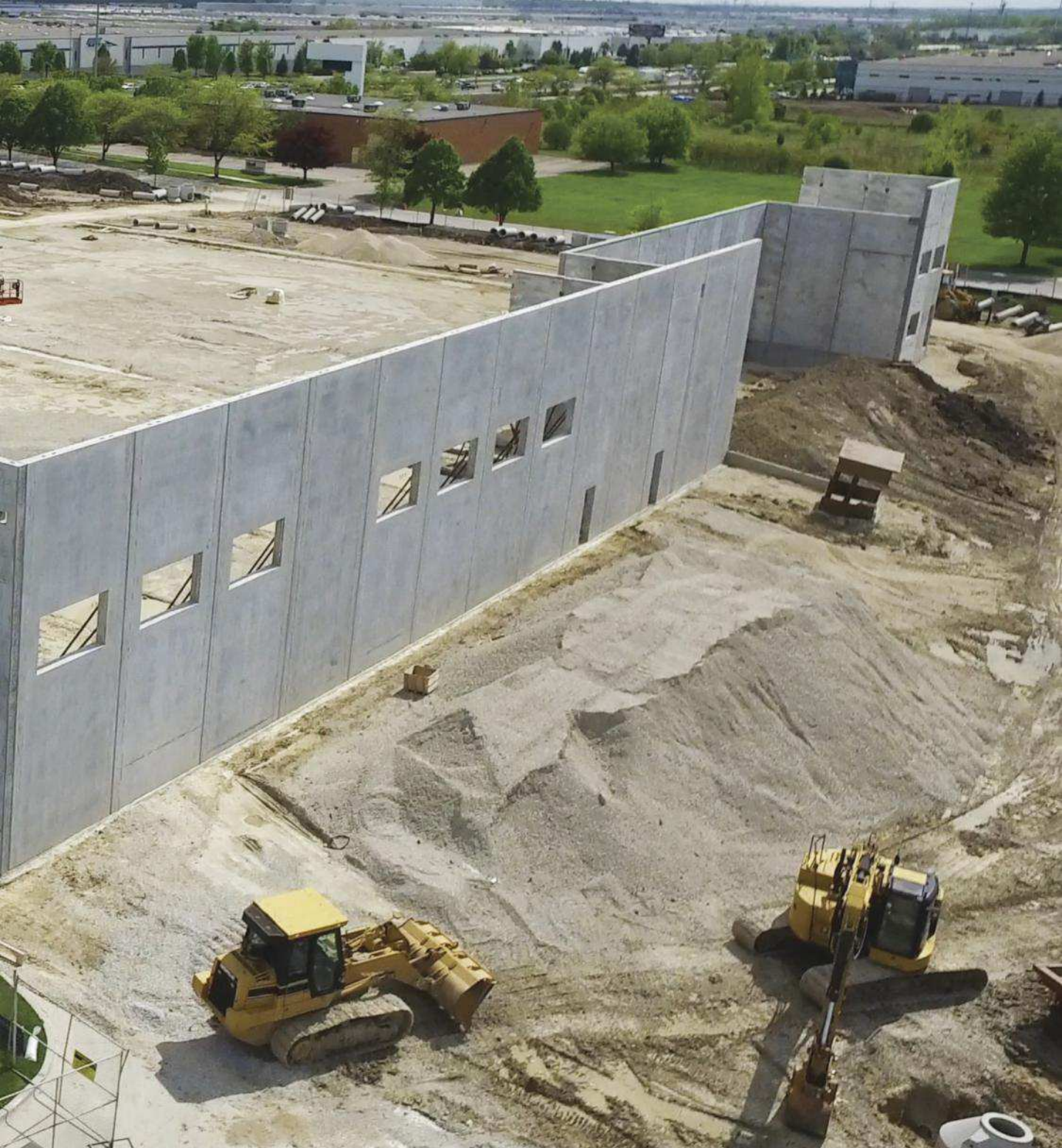


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# RO

THE GTI AND Si FACE OFF IN A BATTLE OF 10 BEST EGOS. \_BY JEFF SABATINI  
\_PHOTOGRAPHY BY GREG PAJO

**A PREDICTION: WHEN THE ROBOCAR REVOLUTION ULTIMATELY PROVES TO BE LESS THAN REVOLUTIONARY, WE WILL BLAME ITS LEVEL 5 ENDGAME.**

After all, you can get only so excited about napping or working, and there's just not that much worth watching on Netflix. Doing mundane stuff in a moving car will be amazing once, maybe twice, and then the novelty will wear off. People will start looking around for a steering wheel.

Because driving is exciting. Cars are machines that allow people to do inconceivable things. With the mastery of just a few simple controls, we can travel at impossible speeds and feel sensations otherwise unavailable in our terrestrial existence. Cars don't need to become robots; they already are robots. Only after an intense study of the literature—vintage science-fiction novels, Bronze Age comic books, and plenty of *Knight Rider* reruns—do we come to the conclusion that robotics is best applied to making humans better, stronger, faster. Think Steve Austin.

**VOLKSWAGEN  
GOLF GTI**  
Price: \$32,015  
Power: 220 hp  
Torque: 258 lb-ft  
Weight: 3184 lb  
0-60: 5.7 sec





# BOAT



**HONDA CIVIC Si**  
Price: \$24,990  
Power: 205 hp  
Torque: 192 lb-ft  
Weight: 2904 lb  
0-60: 6.4 sec



Indeed, the best cars act as extensions of our own bodies, and in what is still thankfully a predominantly Level 0 world, you don't need \$6 million to own one. Cue this story's battlebots, the Honda Civic Si and the Volkswagen Golf GTI. We drove this pair of machines through the mountains of Southern California's Los Padres National Forest, ignoring their dissimilarity in body style to focus on their shared enthusiast-friendly mission. Of course you will also recognize these two from their appearances on our most recent 10Best list, a reward both cars earned, in part, for their high ratio of performance per dollar.

The 2017 Si sedan we drove stickered for just \$24,990 all in, which is a mere 71 percent of the average cost of a new vehicle. This includes its optional Goodyear Eagle F1 Asymmetric 2 summer tires, a \$200 upcharge that's a relative steal—it's about what it would cost to have a single replacement shipped to you. Tires aside, Honda doesn't offer any choices with the Si after you pick your color, although you could get a coupe. Regardless of door count, every Si comes with a six-speed manual gearbox mated to a tweaked version of the standard Civic's turbocharged 1.5-liter four-cylinder. An extra 3.8 psi of boost produces 205 horsepower and 192 pound-feet of torque—gains of 31 and 25, respectively.

The four-door hatchback GTI is more expensive, with the base S trim starting at \$27,265. Our test car was the one-rung-higher SE with a \$31,320 starting price. That \$4055 differential pays for, well, the differential for starters, an electronically controlled limited-slip unit. Also bigger brakes from the Golf R, as well as a sunroof and blind-spot monitoring. Plus the SE ditches the standard halogen headlights in favor of LEDs and swaps the stock 6.5-inch infotainment screen for an 8.0-inch system. Bridgestone Potenza S001 summer tires are a no-cost swap from the stock all-seasons.

Buying an SE also allows you to spend \$695 on leather, as our test car demonstrates. But doing so is a mistake, as a GTI without plaid upholstery is like a GTI without a manual transmission. Luckily, our \$32,015 test car had the latter, although a dual-clutch



**2017 Honda Civic Si [+]** Animated chassis, bargain price. **[-]** Anime appearance, cheap furnishings. **[=]** Buy it for its performance, as that's where it shines.

gearbox is also available. All 2018 models now make 220 horsepower and 258 pound-feet of torque from VW's venerable EA888 turbocharged 2.0-liter inline-four.

Yes, Oscar Goldman, we *do* have the technology.

## 2. HONDA CIVIC Si

Slipping behind the wheel of the Si is like donning a mighty exoskeleton; it makes you feel invincible on the road, as if you have suddenly become a much better driver. Like its big brother, the Type R, its chassis is its greatest strength. The Si pips the GTI's 0.95 g of lateral grip on the skidpad, where its lower stance and wider tires help it achieve 0.97 g. More significantly, the Si is 1 mph faster through our slalom, proving its quicker reflexes.

The Civic's strengths feel even greater on the street, where the Honda's larger size serves to amplify the brilliance of its underpinning. You drop down into the Si's perfectly sculpted sport seats as if you're behind the wheel of a sports car rather than a sedan. And yet it is the longer car by more than a foot, with a wheelbase

**2017  
HONDA CIVIC Si**

**\$24,990**

BASE PRICE \$24,790

**2018  
VOLKSWAGEN GOLF  
GTI SE**

**\$32,015**

\$31,320

**PRICE AS TESTED  
BASE PRICE**

**DIMENSIONS**

**LENGTH** 182.8 in

**WIDTH** 70.8 in

**HEIGHT** 55.5 in

**WHEELBASE** 106.3 in

**FRONT TRACK** 60.5 in

**REAR TRACK** 61.2 in

**INTERIOR VOLUME**

**CARGO VOLUME**

**POWERTRAIN**

**ENGINE**

turbocharged DOHC

16-valve inline-4

91 cu in (1498 cc)

**POWER HP @ RPM**

**TORQUE LB-FT @ RPM**

**REDLINE/FUEL CUTOFF**

**LB PER HP**

**DRIVELINE**

**TRANSMISSION**

**DRIVEN WHEELS**

**GEAR RATIO:1/**

**MPH PER 1000 RPM/**

**MAX MPH**

**FINAL-DRIVE RATIO:1**

**CHASSIS**

**SUSPENSION**

**BRAKES**

**STABILITY CONTROL**

**TIRES**

6-speed manual

front

1 3.64/4.9/32

2 2.08/8.5/55

3 1.36/13.0/85

4 1.02/17.4/113

5 0.83/21.4/136

6 0.69/25.7/136

4.11, limited-slip

differential

F: struts, coil springs,

anti-roll bar

R: multilink, coil

springs, anti-roll bar

F: 12.3-inch

vented disc

R: 11.1-inch disc

partially defeatable,

traction off

Goodyear Eagle F1

Asymmetric 2

235/40R-18 95Y

turbocharged DOHC

16-valve inline-4

121 cu in (1984 cc)

**220 @ 4700**

**258 @ 1500**

**7300/6800 rpm**

**14.5**

6-speed manual

front

1 3.76/5.7/39

2 2.08/10.4/71

3 1.46/14.7/100

4 1.08/19.9/125

5 1.09/24.4/125

6 0.91/29.3/125

3.24, 2.62\*, limited-

slip differential

F: struts, coil springs,

anti-roll bar

R: multilink, coil

springs, anti-roll bar

F: 13.4-inch

vented disc

R: 12.2-inch vented disc

partially defeatable,

traction off

Bridgestone Potenza

S001

225/40R-18 92Y



The Honda's engine is 25 percent smaller than the VW's, but you wouldn't know it from its midrange flexibility. Its weight-to-power ratio is better, too.

that stretches nearly three inches farther than the VW's. But most of the time it drives as if it's a class smaller, rather than one larger. Weighing just 2904 pounds, the mid-size Si undercuts the compact GTI by 280 pounds. Climbing into the upright chair of the Volkswagen feels as if you're

boarding one of the company's Microbuses by comparison.

The character of their handling follows the pattern. Where the Si corners flat, promising never-ending grip, the GTI leans, warning the driver to back off earlier than necessary. Whereas the Si dives into corners with an almost twitchy eagerness to rotate, the GTI is more methodical in its attack, taking its set and then relying on its helical limited-slip differential to pull itself around the bend. But the Si crashes over broken pavement, while the firm but seemingly infinitely elastic GTI suspension just swallows it without upsetting the pace.

Yes, the Civic's prime asset is also a crucial weakness; even with its adaptive dampers in their normal setting, its flinty ride can batter the driver. Steering effort is high—higher still in Sport mode—and there's no respite from the always-on demands of its quick-witted helm. Add in the roar of the wind, the relentless thrum of its tires, and a poorly insulated firewall that permits too much of the four-cylinder engine's buzz through, and the Si grows as exhausting to drive as it is to look at.

Nothing more need be written about the Civic's styling; the photos on these pages should suffice. But what you can't quite see in the photos is how wide and uneven the panel gaps were on our test car. Or how phony the fake-carbon-fiber interior trim looks, which is still not as bad as the molded plastic "stitching" on the dashboard. Even the fabric used to dress up the Si's seats and interior feels unnecessarily cheap. Some of this is inherent in the

**CAR AND DRIVER TEST RESULTS**

**ACCELERATION**

**0-30 MPH**

**0-60 MPH**

**0-100 MPH**

**0-120 MPH**

**1/4-MILE @ MPH**

**ROLLING START,**

**5-60 MPH**

**TOP GEAR, 30-50 MPH**

**TOP GEAR, 50-70 MPH**

**TOP SPEED**

2.5 sec

6.4 sec

16.2 sec

26.1 sec

14.9 sec @ 96

7.4 sec

9.9 sec

8.4 sec

136 mph (gov ltd)

2.3 sec

5.7 sec

14.3 sec

22.4 sec

14.3 sec @ 100

6.6 sec

12.3 sec

8.6 sec

125 mph (gov ltd)

**CHASSIS**

**BRAKING, 70-0 MPH**

**ROADHOLDING,**

**300-FT-DIA SKIDPAD**

**610-FT SLALOM**

161 ft

0.97 g

44.0 mph

161 ft

0.95 g

43.0 mph

**WEIGHT**

**CURB**

**%FRONT/%REAR**

2904 lb

60.4/39.6

3184 lb

60.4/39.6

**FUEL**

**TANK**

**RATING**

**EPA COMBINED/**

**CITY/HWY**

**C/D 500-MILE TRIP**

12.4 gal

91 octane

32/28/38 mpg

26 mpg

13.2 gal

91 octane

28/25/33 mpg

23 mpg

**SOUND LEVEL**

**IDLE**

**FULL THROTTLE**

**70-MPH CRUISE**

39 dBA

78 dBA

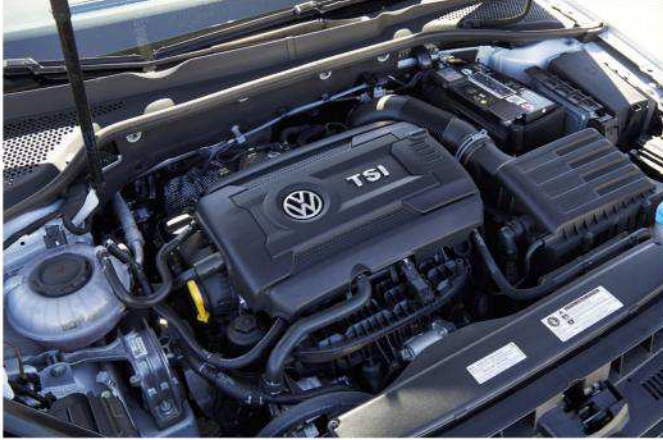
69 dBA

39 dBA

80 dBA

67 dBA

\*The first ratio is for gears 1-4. The second is for 5 and 6.



Si being a hot-rodded version of a car with a starting price below \$20,000, yet the GTI has similar budget bones in the Golf. And Volkswagen still manages to convincingly stretch that Golf into a much higher price bracket.

We'll give Honda credit for keeping the sticker of the Si so affordable—you can actually spend more on a regular Civic—but we'd still like the Si to be more refined. If that makes it slightly more expensive, we'd consider it money well spent.

## 1. VOLKSWAGEN GOLF GTI

If the Si is the robot for those whose own programming is still incomplete, a car for the young and impetuous, the GTI is the machine you would choose to have your brain transplanted into after you die, thereby transcending human existence and achieving eternal life. Yes, that idea is ridiculous enough that there are researchers actually working on it. To whom we would suggest that there are few cars more livable than the GTI. It has more bandwidth than Google Fiber.

Its silky ride had us negotiating who got to drive it back from the canyons to civilization, where knife-edge handling matters less than Swiss Army knife utility. The GTI's greater comfort is due to more than its suspension, as better sightlines from its large greenhouse and a higher seating position for rear passengers make it a more enjoyable place to spend time. Despite its smaller size, we found the Volkswagen just as capable of carrying four adults as the Honda, though neither car is well suited for a full complement of five.

Hello, old friend.  
You're looking well.  
Are you Botoxing?  
Cryosculpting?  
Microneedling?  
Whatever it is, keep  
doing it. It's working.

The GTI is noticeably quieter at cruising speed. Carpeted door pockets quell rattles and give the impression that Volkswagen engineers have obsessed over every last detail. Like how, at full throttle, the GTI's deep exhaust note—though measuring louder than the buzzy Si's—stays focused behind the driver where it belongs.

And where it can be enjoyed, too. Because, as with every other facet of Volkswagen's diamond, the GTI's turbocharged 2.0-liter four has been polished to perfection. Its 258 pound-feet of peak torque arrives at just 1500 rpm, nearly as instantly as an electric





**2018 Volkswagen GTI [+]** The exemplar for turbocharged four-cylinders, no car at this price is so refined. [-] Could be lighter, options are fully priced. [=] No matter why you buy a GTI, it will exceed your expectations.

motor's. Throttle response is telepathic, with no discernible turbo lag. Even a lazy driver can lug the engine around in high gear, letting that great wall of torque bail him out. And the GTI just walks away from the Si in straight-line acceleration, regardless of the Honda's on-paper weight-to-power advantage. Hitting 60 mph in 5.7 seconds places the GTI 0.7 second ahead of the Si. That gap closes by only 0.1 second through the quarter-mile, as the GTI crosses the line in 14.3 seconds.

The GTI also has the better-sounding audio system and the superior infotainment interface, which isn't saying much compared with Honda's confusing and glitchy mess. There's a lesson here, too: When the GTI launched, its infotainment

was outdated junk, but VW has updated it with its newest tech, with multiple ways to access most functions. Honda should do likewise and gift the Civic with the improved infotainment system it uses in the new Accord.

The GTI is not perfect. Its bigger engine did consume more fuel than the Civic's. And the GTI's brake pedal is too soft at the top of its rather long stroke. But these are small complaints.

The Civic was exceptional in the canyons, where the GTI was still quite good, nearly its equal. Everywhere else, doing everything else, however, the GTI is the better car.

It had better be. From here to eternity is a long drive. ■

## FINAL RESULTS

Shell  
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NITRO+  
Premium Gasoline  
The Official Fuel of  
CAR AND DRIVER

	VOLKSWAGEN GOLF GTI <i>Maximum points available</i>		HONDA CIVIC SI	
	RANK	1	RANK	2
<b>VEHICLE</b>				
DRIVER COMFORT	10	10	8	
ERGONOMICS	10	9	6	
REAR-SEAT COMFORT	5	3	3	
REAR-SEAT SPACE*	5	5	5	
CARGO SPACE*	5	5	1	
FEATURES/AMENITIES*	10	10	6	
FIT AND FINISH	10	9	7	
INTERIOR STYLING	10	9	7	
EXTERIOR STYLING	10	8	6	
REBATES/EXTRAS*	5	0	0	
AS-TESTED PRICE*	20	14	20	
<b>SUBTOTAL</b>	<b>100</b>	<b>82</b>	<b>69</b>	
<b>POWERTRAIN</b>				
1/4-MILE				
ACCELERATION*	20	20	17	
FLEXIBILITY*	5	3	3	
FUEL ECONOMY*	10	7	10	
ENGINE NVH	10	10	6	
TRANSMISSION	10	8	8	
<b>SUBTOTAL</b>	<b>55</b>	<b>47</b>	<b>44</b>	
<b>CHASSIS</b>				
PERFORMANCE*	20	19	20	
STEERING FEEL	10	8	9	
BRAKE FEEL	10	7	8	
HANDLING	10	8	10	
RIDE	10	9	7	
<b>SUBTOTAL</b>	<b>60</b>	<b>51</b>	<b>54</b>	
<b>EXPERIENCE</b>				
FUN TO DRIVE	25	20	21	
<b>TOTAL</b>	<b>240</b>	<b>200</b>	<b>188</b>	

\*These objective scores are calculated from the vehicles' dimensions, capacities, rebates and extras, and/or test results.



# CONTINENTAL NENT ALL

# D RIFT

Just  
is a \$30,000

what kind of deal  
\$30,000 Bentley, anyway?  
by Brett Berk

illustration by Tomer Hanuka

# A

\$30,000 Bentley Continental Flying Spur emits a siren call, even from behind a razor-wire fence at an un-Googleable used-car dealership off a pitted secondary street en route to the airport. It is called something like “EuroLux Motors” or “LAXotics,” if it even has a name at all. If you follow your basest instincts and mosey onto the lot, might a magic subaltern world of affordable ultraluxury vehicles reveal itself?

Not exactly. You will be greeted by a salesman who will emerge, smoking, from a cramped trailer. He will be wearing studded jeans and windshield-sized Louis Vuitton glasses and sporting eyelash

extensions. He will look at you suspiciously, as if you've just wandered into the delivery room in which his sister is giving birth.

When you ask how a car with a list price of \$200,000 or more, a car meant for titans of industry and the tightened of facelifts, ended up here, priced like a mid-level Malibu, he will rattle off a highly inaccurate list of the Bentley's standard features. When you ask about a test drive, he will say he doesn't have the keys. When you ask who does, he will stare at his phone, which has a flip-out keyboard and is turquoise, until you stop asking. Looking more closely at the Spur, you will wonder if the front end is starting to sag before your eyes, like an ice-cream cake left out in the sun.

Despite the allure of your imagined baller lifestyle, you will decide it is better not to suggest a no-cash trade on your 2016 Grand Cherokee. But as you drive off, you will ponder, nearly existentially, where that Bentley has been and where it is going.

It is not only accepted wisdom that new cars depreciate in value, it is proven. This holds even for ultra-luxury cars, though the absolute amount they depreciate each year is significantly higher than average, due to their higher initial prices. The big difference is in the depreciation curve. According to Eric Ibara, director of residual value consulting for Kelley Blue Book, within the first year of ownership, an average car may lose as much as 38 percent of its value, a decline that continues through a vehicle's seventh year, when it's down to about a quarter of the original retail price. In comparison, high-end vehicles such as Rolls-Royces and Bentleys hold their value at a better rate initially but lose more of their value after seven years.

"The demand for these vehicles is all toward the newer end of the supply chain," Ibara says. "Whereas with a mainstream vehicle like Camry, it's more evenly distributed."

This is a market result reflecting the motivations of ultra-luxury car buyers. "These are what I would call flavor-of-the-moment ego cars," says Keith Martin, collectible-car-valuation expert and editor and publisher of *Sports Car Market* magazine. "So you buy them because they make you look good. And when the next model comes out, or the model after, suddenly you're not making the same statement of success that you were before."

Compounding this steep later-in-life depreciation for vehicles of this sort is the fallout from their brands' own recent success. Since the Germans took possession of this elite British segment of the automotive market, they've streamlined product development and increased production significantly. (Rolls-Royce and Bentley were sold to Volkswagen in 1998, a complicated deal that resulted in the formerly joined brands separating and BMW assuming control of Rolls-Royce in 2003.)

"In 2003, Bentley sold just a few hundred cars here," says Fadi Elias, who's worked with vintage Rolls-Royces for more than 30 years and owns Classic Motor, a tidy and well-reputed shop in the Los Angeles suburbs that specializes in such vehicles. "In

**"THE DEMAND FOR THESE VEHICLES IS ALL TOWARD THE NEWER END OF THE SUPPLY CHAIN. WHEREAS WITH A MAINSTREAM VEHICLE LIKE CAMRY, IT'S MORE EVENLY DISTRIBUTED."**

2004, the company sold thousands."

In fact, Bentley's U.S. sales peaked at nearly 4000 cars in 2007. Rolls's numbers were smaller, but it consistently sold twice as many cars in the U.S. in the late Aughts as it did at the decade's start. These vehicles have since left the heated garages of their original pampering owners, or found their way off-lease, or sailed past secondary ownership via a franchise dealership's certified pre-owned program. They have exited warranty coverage and dealer servicing and have thus entered the phase of their lives where they are simply used cars. And there are a lot of them.

Capitalism often works in predictable ways. With a glut of vehicles in supply, and with demand clustered around a relatively small number of well-maintained, low-mileage recent models, prices on average have dropped. "In the past two or three years, I would say the market for these cars tanked by about 45 to 50 percent," Elias says.

This descent has had an interesting effect on the market for older Rollers and Bentleys as well. These cars might have typically rebounded from the nadir of their depreciation curve and begun their voyage toward the higher prices associated with collectibility. But with abysmally low prices on newer cars, vintage British luxury is also declining. "A 1982 Silver Spur, a 1985 Spur, a 1977 Shadow, a 2000 Arnage... they just have no value," Elias says. It saddens him, since he's been dealing with these cars since his childhood, when his family ran a Rolls repair shop in Lebanon. "They're not desirable anymore because the Bentley [Continental] GT came out in 2004, and it killed the older cars. A guy will tell you, 'Why should I buy your 1989 Rolls-Royce when I can go out and buy an '04 GT for \$35,000? What am I going to do with this old beater you have?'"

Even good "no stories" examples of these later-model cars at their depreciated and discounted prices aren't exactly bargains. One major challenge of buying a \$200,000 car for \$30,000 is that it's still a \$200,000 car at heart. Parts, service, and labor are priced at extortionate levels. And as these vehicles find their way downmarket, they often reach consumers who are less likely to be able to afford to have things done properly. Routine annual maintenance for these vehicles is in the mid-four-figures, and that's if nothing breaks. To fix the third brake lamp on an early Bentley GT can cost a few thousand dollars. A new convertible top runs five figures. "I would be willing to bet that in any of those lots where you see those cars for \$25,000," Martin says, "there's probably \$20,000 in deferred maintenance sitting in every car."

Of course, a complex, hand-built car can suffer worse fates than neglect before landing on the lot of a less-than-reputable dealer. It could have been involved in accidents severe enough to cause airbags to deploy. Or stolen, stripped, and recovered. Caught in a fire or flood. Maybe even grafted together from two damaged vehicles. Some of these troubled cars come to dealers' lots via insurance auctions, a subcategory of the wholesale business. The auctions sell vehicles that have been written off by an insurance company, meaning the vehicle's damage is more than 70 percent of its value. Insurance companies recoup some of their payout by selling the remains. Though these auc-



tions have typically been open only to registered dealers and repair shops, online versions have opened the door to average consumers through websites such as autobidmaster.com. “We are the middlemen between the auctions and buyers,” says AutoBidMaster founder Yury Strachuk. “We basically provide a license to bid at the auction.”

This has expanded entry to a new cohort of profiteers, since salvage cars can sell at a 50 percent discount compared with cars with clean titles. “They buy damaged vehicles; they know how much it will take to put them into a retail-ready condition, and then they just specialize in it,” Strachuk says. “They repair them, the cars pass all the inspections, and then they sell them to dealers.”

In California and most other states, dealers are legally obligated to disclose if a vehicle has a salvage or rebuilt title. But even the California Department of Motor Vehicles’ website says that “the law is difficult to enforce.” This is especially true if the car comes from or has been retitled in another state with different rules.

We visited a number of Los Angeles dealerships with cars like these on offer, and none of the salespeople (or websites) were forthcoming about the cars’ troubled pasts. Caveat emptor! At one local lot, we inquired about a 2006 Continental Flying Spur with 80,000 miles. The salesman informed us that the Spur was totally clean, with low miles and no accidents. A quick Carfax search revealed that it had suffered a significant side-impact collision. At another lot near Hollywood, the salesman refused to talk on the record about the 2008 Continental GTC he had for sale. The car was advertised as having a clean title and ice-cold air, but no mention was made of any frame damage, which Carfax reported. “We’re here to sell cars, not to do radio or TV interviews,” he told us.

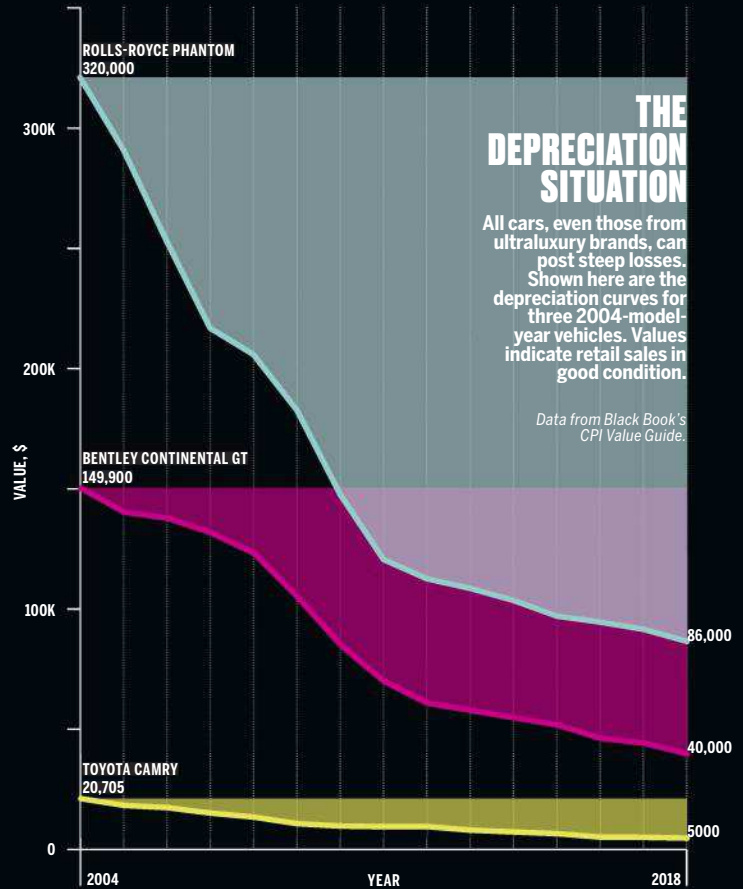
Elias from Classic Motor says more-scrupulous dealers won’t deal in troubled or salvage cars. “No bank will touch it, and you’re going to have a hard time insuring it, too. And when a customer calls, it’s too much explanation,” he says. “And then if you put it on your website, and it shows ‘salvage,’ people will say, ‘Oh, this guy has one salvage car. Maybe everything he has is salvage.’ It’s just not a good reputation for us.”

**G**iven all the potential pitfalls, who is buying these cars? When we asked this question at one Los Angeles lot, the salesman said, evasively: “I have customers everywhere. I can sell to next door. I can sell to New York or overseas.”

He was not being hyperbolic. “When you’re talking about discount dealers that more or less have a wholesale setup, they will usually be right by airports,” says dealer and auctioneer Steven Lang. “The reason is, you can fly in, get what you need, and go.”

Such businesses thus often cater to an international clientele with different standards. “They usually go overseas, because salvage to them is the same value,” says Elias. “They go to Dubai or they go to China.”

The global export of rough, inauspiciously titled, U.K.-built, American-abused ultraluxury cars may seem like an unlikely and cost-ineffective prospect. But it makes more sense than you might



imagine. The U.S. market for these cars has long been the largest in the world, so quantity is high, which, as previously discussed, deflates the price. And as it turns out, shipping is crazy cheap.

“To Europe, for just one car, you’re looking at about \$1500,” says Rigo Zavaleta, sales executive with the Port of Los Angeles-based shipping company Direct Express, which specializes in transporting high-end vehicles overseas. “To Asia, it’s actually a little cheaper. You’re looking at anywhere from \$800 to \$1000.” It can cost more to truck a car to Detroit from South Dakota.

What happens to these vehicles when they arrive at their overseas destinations? They’re often further repaired and resold by local dealers. “They tend to focus on higher-mileage vehicles, because they can usually roll back the odometer and not get killed for it,” says Lang. “They rely on cheaper labor to do fixes on the vehicles. You’re not going to have someone who is certified to work on that particular brand.”

This sentiment is echoed by AutoBidMaster’s Strachuk. “You take a car to the Middle East, to China, to Asia, and the type of document that it sells with is a branded title. A branded title means that a vehicle has been written off. But it doesn’t really matter for them in those countries. Plus, you get new documents. Each country has its own set of titles.”

The lesson here is clear: Rather than stopping in to shop that clapped-out 21st-century Bentley or Rolls, allow it to continue its degraded, end-use ride toward Cairo or Manila, like so many bundles of recycled T-shirts. Instead, maybe consider a classic Rolls or Bentley from the last few decades of the 20th century.

“[The lower-volume cars] used to be desirable 10 years ago. We used to sell them for 100 grand wholesale,” says Elias. “Now they’re 20 grand. You can buy a Bentley for 20 grand! I think that’s a bargain. You can’t even buy a [new] Kia for 20 grand.” ■

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# 2017 JAGUAR XE 35t AWD

**Arrival: Sep/2016**  
**Departure: Jan/2018**

Gone flat. *by Jeff Sabatini*

**C**ar enthusiasts are, by definition, tire enthusiasts. Tires are our beasts of burden; their grip, or lack thereof, enables us to exercise our passions. Tires are also beautiful things to behold, from their circular perfection to their psychedelic tread patterns. Tires engage our senses and, with their nearly inscrutable taxonomy of sizes and codes, also our minds. Speak to any engineer about tires and you will inevitably be told of the “black arts” involved in their design and creation, a fitting invocation for these most magical of auto parts. Who among us has not lovingly dragged a finger across the raised surface of a sidewall while waiting on new rubber at the local shop?

So it was with great excitement that we received our long-term 2017 Jaguar XE in September 2016 with not one but two sets of wheels and tires. While our test car arrived wearing the black 19-inch Venom

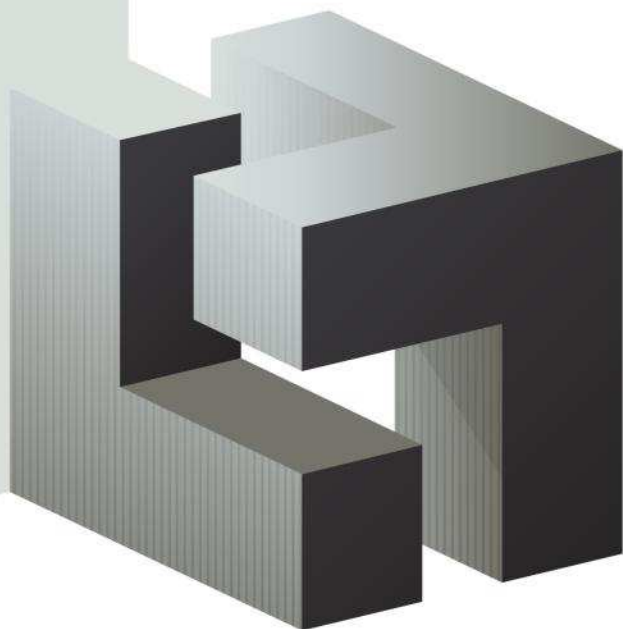


We thought these optional 20-inch Propeller wheels looked smashing. The P Zero summer tires mostly just looked smashed.

wheels (\$500) with all-seasons that we had originally ordered, we asked Jaguar to send us a set of 20-inch Propeller wheels (\$1000) so we could get some additional test numbers for another story on the optional summer fitment. We took one look at those 10-spoke monsters wrapped in staggered Pirelli P Zeros with sidewalls as thin as rubber bands (sizes 235/35R-20 front and 265/30R-20 rear) and immediately decided we would run them for this long-term test.

With a base price of \$52,695, our V-6-powered 35t R-Sport AWD was Jag's top-of-the-line XE through 2017. (For the 2018 model year, the 35t was replaced by a four-cylinder 30t and usurped by a 380-hp XE S.) As it's a compact sports sedan that promised to shake up the German-dominated pecking order, it was therefore appropriate that our car was sprayed in a metallic British Racing Green (\$550). We opted for the \$2700 Technology package, with its 10.2-inch touchscreen and premium Meridian audio system, and we ticked the Comfort & Convenience package (\$2100) primarily to get the climate-controlled front seats and heated rear seats. We allocated just \$300 to dress up the cabin with burlwood trim, which did little to offset the gloominess of the predominantly black interior. The Jaguar's ultimate sticker price totaled \$59,345, including the Propellers.

In retrospect, the decision to install the more aggressive wheel-and-tire combo may not have been our clearest thinking, especially given our XE's hefty 4036-pound curb weight. Certainly we have made this mistake before, forgetting just how poorly maintained our local roads are during and after the annual pothole season. But disremembering winter is what defines a true Michigander. And we were also seduced by a second stack of Pirellis that came on a subsequent UPS truck; Jaguar wanted to make sure we had absolutely fresh tires for our test. So we mounted them and hustled off to the track, where those 20-inch P Zeros helped the







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—RICH CEPPOS, BUYER'S GUIDE SENIOR EDITOR



Jag record 0.93 g on the skidpad and post a 147-foot stop from 70 mph. Impressive numbers both, especially compared with our testing on the smaller Pirelli Cinturato P7 All Seasons (0.87 g and 170 feet).

The XE's 340-hp supercharged V-6 was good for a 4.8-second zero-to-60-mph sprint, hitting the quarter-mile mark in 13.4 seconds (both numbers improved by a tenth of a second at the conclusion of our test). Some staffers, however, were shocked to learn that Jaguar creates its V-6 by casting its V-8 block with just six cylinder bores. Still, initial impressions of the XE were positive: Logbook entries raved about its good looks and faithful driving dynamics. More than one commenter indulged in comparisons with long-out-of-production BMW models, heaping praise on the XE's spectacular steering feel. And even an editor who banged his head on the tiny rear-door aperture when getting into the back seat was inclined to write off the incident as unimportant: "You don't buy a compact sports sedan for its back seat, you buy it for how it drives, and this one drives better than most."

We replaced our first damaged tire just five days after initial testing, when the right front developed a sidewall bubble. Six weeks later, with less than 7000 miles on the odometer, it happened again. Two weeks after that, it had gotten cold enough to switch to winter tires—a set of Pirelli Winter Sottozero 3s that we mounted on the black 19-inch wheels, thinking a little more sidewall couldn't hurt. We thus managed to go four months and add another 8000 miles to the odometer without any



One word defines the XE's infotainment system: buggy. We slowed the tire loss with the switch to Winter Sottozero 3s.

tire carnage, the Jag's all-wheel-drive system proving itself a useful asset.

and an infotainment system that was freezing almost as often as the outside temperature. The entire infotainment unit wound up being replaced under warranty after the dealership was unable to update it with Jaguar's software fix for such trouble. The underhood sounds proved much more elusive, both to describe and to repair. First the dealer told us we had a bad idler pulley, but after the shop replaced the pulley—which required a subsequent visit—something was still making a racket. The dealer then found two bad fuel pumps and replaced them under warranty during a 13-day service visit. Still noisy.

This gave us time to address the other issues that had since materialized: a loud, throttle-dependent whirring and clatter coming from the engine compartment, and an infotainment system that was freezing almost as often as the outside temperature. The entire infotainment unit wound up being replaced under warranty after the dealership was unable to update it with Jaguar's software fix for such trouble. The underhood sounds proved much more elusive, both to describe and to repair. First the dealer told us we had a bad idler pulley, but after the shop replaced the pulley—which required a subsequent visit—something was still making a racket. The dealer then found two bad fuel pumps and replaced them under warranty during a 13-day service visit. Still noisy.

With the dealer unable to find anything else to fix and an assurance that this was how our XE was supposed to

**Rants & Raves**  
"So much better on the summer tires. Gains a final measure of responsiveness and refinement absent on the all-seasons."  
—Erik Johnson

"I like the car, but the thing in the dashboard [the infotainment system] is rubbish."  
—Kevin A. Wilson

"Wouldn't it be nice to sample a Jag that dispelled the stereotype for electronic glitches?"  
—Rusty Blackwell

"This engine sounds worse than every 2018 Grammy-nominated artist."  
—David Beard

## Service Timeline: So, so tired.

**Key:** ● - Repairs ● - Damage ● - Maintenance  
● - Normal Wear ● - Oil Additions

**September 2, 2016**  
316 miles: Jaguar XE begins its long-term test.

**September 27, 2016**  
● 3073 miles: We replace the right-front tire, which had developed a sidewall bulge, \$305

**November 9, 2016**  
● 6912 miles: Right-front tire bubbles again and we replace it, \$305

**November 17, 2016**  
● 8279 miles: Dealer diagnoses the clattering under acceleration as a cracked idler pulley and orders a replacement. Also replaces a cracked hose in the evaporative-emissions system, reprograms the powertrain control module, and tops up low coolant—all covered under warranty, \$0

**November 22, 2016**  
8413 miles: We install Pirelli Winter Sottozero 3 tires (\$1088).

**November 28, 2016**  
● 8871 miles: Cracked idler pulley identified at previous service is replaced by dealer, \$0

**December 14, 2016**  
● 10,087 miles: Dealer replaces both high-pressure fuel pumps in an

attempt to quell the persistent clatter, \$0

**January 3, 2017**  
● 11,067 miles: Unable to update our InControl Touch Pro infotainment system, dealer replaces the hardware, \$0

**March 21, 2017**  
● 16,052 miles: The first service includes an oil change, a new engine air

filter, torquing the tie-rod ends, and an inspection, all covered under free maintenance, \$0

**March 23, 2017**  
● 16,252 miles: Damaged left-rear winter tire leads us to enlist the 19-inch Pirelli Cinturato P7 All Seasons that came with our loan.

**April 27, 2017**  
18,565 miles: We install

the 20-inch Pirelli P Zero summer tires.

**May 31, 2017**  
● 21,063 miles: We replace both right-side tires due to pothole damage, \$662

**June 15, 2017**  
● 22,314 miles: Again, we replace both right-side tires due to pothole damage. Again, \$662



sound, we gave up and moved on. Or some of us did, at least, convincing ourselves that the noises weren't as bad as before or just drowning out whatever it was by cranking the excellent Meridian audio system. Our measurements, however, confirm that the car did get noisier. By the end of our test, the XE was four decibels louder at idle and three louder at wide-open throttle than when the car was first delivered. "It sounds as if marbles are eternally being ground into glass shards," wrote reviews editor Josh Jacquot. Technical editor David Beard's prose was less purple: "It sounds like a snowplow going down a gravel road."

One of the Sottozeros succumbed to such a road in late March last year. We then decided to deploy the set of all-season tires for a month, just until it warmed up enough to get the summer rubber back on the car. Once the P Zeros were remounted, the Jag picked right up where it left off, destroying both its right-side tires in May, then again in June. When we discovered a nail in the left-rear tire a week later, we checked all four corners and found that both right-side wheels were bent. So we put the spare all-season tires back on and sent the wheels out for a \$290 repair. In a small victory, we were able to plug the nail hole in the tire, thus (temporarily) holding the kill count to seven.

Despite the constant threat of flat tires and the din of its engine, the Jaguar still had its admirers among our staff. "I'm in love," wrote Buyer's Guide senior editor Rich Ceppos. "This XE is everything a sports sedan should be. It has intuitive steering, a brilliant ride-handling balance, a powerful and responsive engine with a crackling soundtrack, and expressive and sporty looks. It's all here."

Indeed, even the car's detractors would admit that the XE is a mechanically impressive package. But during the long stretches



**June 21, 2017**

● **22,818 miles:** We refit the 19-inch all-season tires while two bent 20-inch wheels go out for repair. Puncture in the left-rear tire is patched, gratis, at the local tire shop, \$0

**June 29, 2017**

● **23,615 miles:** Repaired wheels go back on the car, as do summer tires, \$290

**August 28, 2017**

● **27,720 miles:** Left-rear turn signal stops working but resumes functioning before we can get to the dealership. The problem never rematerializes.

**October 6, 2017**

● **29,435 miles:** We replace both front tires due to bulged sidewalls and straighten the bent left-front wheel, \$768

**November 10, 2017**

●● **33,694 miles:** We miss out on Jag's free service when we bring the XE in 1000-plus miles overdue for an oil change and new engine and cabin air filters. We also get new wiper blades, \$571

**November 20, 2017**

● **35,934 miles:** We refit winter tires, with a new rear to replace the tire damaged last spring, \$295

**January 11, 2018**

● **40,448 miles:** Summer tires installed for final testing. And we replace the left-rear tire because a chunk of tread is missing, bringing the final tire-death toll to 10, \$319

**January 13, 2018**

● **40,606 miles:** Long-term test ends.

**OPERATING COSTS (FOR 40,000 MILES)**

<b>MAINTENANCE</b> .....	\$530
<b>NORMAL WEAR</b> .....	\$41
<b>REPAIR</b> .....	\$0
<b>GASOLINE (@ \$2.82 PER GALLON)</b> .....	\$4700

**DAMAGE AND DESTRUCTION** .....

\$3606

**SERVICE**

<b>DEALER VISITS (SCHEDULED/UNSCHEDULED)</b> .....	2/4
<b>DAYS OUT OF SERVICE</b> .....	21
<b>UNSCHEDULED OIL ADDITIONS</b> .....	0 qt





in which we had its winter tires fitted and the short ones in which we pressed the all-seasons into backup duty, we became conscious of how much of the XE's lightning-quick responses are tire dependent—and how much less fun it is to drive without those P Zeros. And if you're not wholly consumed with the thrills provided by the XE driving experience, you'll start to notice things like the hard, flat seats and the austere cockpit. "I'd not recommend it to anyone," wrote senior online editor Kevin A. Wilson, one of the car's biggest—and most conflicted—fans, "and yet I want to keep it."

The tire count remained unchanged for three full months, until we discovered more bulging sidewalls on both front tires in early October, along with a bent wheel on the left side. But nothing that writing more checks couldn't fix: another \$170 for wheel repair, \$520 to the Tire Rack, and \$78 for installation. Fortunately, the onset of cold weather meant we completed the last 10,000 uneventful miles riding on winter tires. That is, until we went to conduct the XE's final performance evaluation and discovered a chunk of tread missing from a rear summer tire. The final tally: 10 replacement tires and three bent wheels, at a cost of roughly \$3600.

Perhaps we should have known better. Maybe our initial overabundance—a dozen tires!—might have been an omen. But at the time, we interpreted it as a reason to rejoice. We truly love tires. Or at least we did. After spending over 16 months with the XE's, we're kind of, er, tired of them. ■

The Jag's supercharged V-6 uses a V-8 block absent two cylinders. But it was a sporting (and noisy) thing, well suited to the XE's chassis.



## 2017 JAGUAR XE 35t R-SPORT AWD

PRICE AS TESTED ..... **\$59,345**

BASE PRICE ..... \$52,695

VEHICLE TYPE: front-engine, all-wheel-drive, 5-passenger, 4-door sedan

ENGINE: supercharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection

DISPLACEMENT ..... 183 cu in, 2995 cc

POWER ..... **340 hp @ 6500 rpm**

TORQUE ..... **332 lb-ft @ 4500 rpm**

TRANSMISSION ..... 8-speed automatic with manual shifting mode

WHEELBASE ..... 111.6 in

LENGTH ..... 183.9 in

WIDTH ..... 72.8 in

HEIGHT ..... 55.7 in

CURB WEIGHT ..... 4036 lb

### WARRANTY

5 years/60,000 miles bumper to bumper  
6 years/unlimited miles corrosion protection  
5 years/60,000 miles roadside assistance  
5 years/60,000 miles free scheduled maintenance

### MODEL-YEAR CHANGES

**2017:** In the middle of the model year, a 247-hp inline-four joins the XE range as the base engine with the moniker 25t.

**2018:** A 296-hp variant of the inline-four known as the 30t replaces the 340-hp V-6 35t. The new XE S makes 380 horsepower from its supercharged 3.0-liter V-6.

## CAR AND DRIVER TEST RESULTS

### PERFORMANCE

#### ZERO TO 60 MPH:

NEW ..... 4.8 sec  
40,000 ..... 4.7 sec

#### ZERO TO 100 MPH:

NEW ..... 11.9 sec  
40,000 ..... 12.0 sec

#### ZERO TO 110 MPH:

NEW ..... 14.6 sec  
40,000 ..... 14.8 sec

#### ROLLING START, 5–60 MPH:

NEW ..... 5.2 sec  
40,000 ..... 5.1 sec

#### 1/4-MILE:

NEW ..... 13.4 sec @ 105 mph  
40,000 ..... 13.3 sec @ 105 mph

#### BRAKING, 70–0 MPH:

NEW ..... 147 ft  
40,000 ..... 154 ft

#### ROADHOLDING, 300-FT-DIA SKIDPAD:

NEW ..... 0.93 g  
40,000 ..... 0.94 g

TOP SPEED ..... 123 mph (governor limited)

#### EPA FUEL ECONOMY,

COMBINED/CITY/HWY ..... 23/20/29 mpg

C/D-OBSERVED FUEL ECONOMY ..... 24 mpg

#### LIFE EXPECTANCIES (estimated from 40,000-mile test)

FRONT TIRES ..... 30,000 miles

REAR TIRES ..... 30,000 miles

FRONT BRAKE PADS ..... more than 100,000 miles

REAR BRAKE PADS ..... more than 100,000 miles

#### WHAT BITS AND PIECES COST

HEADLAMP ..... \$2700

ENGINE AIR FILTER ..... \$54

OIL FILTER ..... \$46

WHEEL ..... \$1157

TIRE (FRONT/REAR) ..... \$260/\$299

WIPER BLADES (LEFT/RIGHT) ..... \$41/\$37

FRONT BRAKE PADS ..... \$263

## FIVE-YEAR DEPRECIATION

Depreciation data from ALG. Based on 15,000 miles per year.





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# Load Warrior

Whether it's to a soccer game or a track day, the Alfa Romeo **Stelvio Quadrifoglio** is ready to haul. *—by Rich Ceppos*

▼  
**IS IT JUST US**, or has the automotive world gone crazy? Well, okay, crazier. As evidence, consider that manufacturers now not only routinely drag their high-performance cars to the fabled Nürburgring Nordschleife to break lap records, they're also doing the same thing with their hyperactive SUVs. Two outfits currently vying for 'Ring lap-time supremacy and the brand cred that comes with it are Porsche—no surprise there—and Alfa Romeo.

It's a David-and-Goliath moment, and as in the parable, the little guy is winning: The new 505-hp Stelvio Quadrifoglio, with Alfa factory driver Fabio Francia at the wheel, recently seared the writhing 12.9-mile python in 7 minutes, 51.7 seconds. It was the fastest-ever lap for a production SUV, beating the Porsche Cayenne Turbo S's best effort by eight seconds. You want to know how quick that is? Back in 2008, Cadillac was jubilant when its supercharged 556-hp CTS-V sedan managed a 7:59.3. A decade later, the Caddy gets smoked by a truck. So much for sanity.

The racetrack fun continued on this side of the Atlantic at Alfa's Stelvio Quadrifoglio media launch staged at the Circuit of the Americas in Austin, Texas, which has been on the Formula 1 dance

card since 2012. You can guess at the company's objective. Luckily, the first half of our introductory day behind the wheel was on the road, where we expect almost all Stelvio QFs to spend their entire working lives.

Alfa is aware of that reality, says Stelvio QF chief engineer Andrea Zizak. Alfa points to the Porsche Macan Turbo with the Performance package and the Mercedes-AMG GLC63 S as the Stelvio QF's chief rivals; we'd also include the 707-hp Jeep Grand Cherokee Trackhawk. "We wanted to build the best high-performance SUV," Zizak says. "But we also wanted it to be good to drive on the road. We wanted it to have real Alfa personality."

That the Stelvio has. Based on the same Giorgio architecture as the Giulia sedan, it borrows the Quadrifoglio version's 505-hp twin-turbocharged 2.9-liter V-6, paddle-shifted eight-speed automatic, and cleverly named Alfa DNA Pro chassis-control system, with its Dynamic, Natural (normal), and Advanced Efficiency driving modes. As in the Giulia QF, there's also a fourth mode labeled Race, which amounts to truth in advertising: It suspends all stability- and traction-control enforcement.

The major mechanical difference between the Stelvio QF and its sedan sibling is that the crossover has all-wheel drive, while the Giulia QF is rear-drive

**[+] Overachieving powertrain, Wagnerian exhaust note, racetrack ready.**  
**[-] Low-rpm lousing, touchy brakes.**

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only. The Stelvio system defaults to sending 100 percent of the vehicle's torque to the rear wheels in most situations but can shuttle up to 60 percent of it to the fronts when rear slip is detected, as when driving in snow or rain. Or on a racecourse. The QF's handling is also aided by a torque-vectoring rear differential not present on the base Stelvio that can send 100 percent of the torque to either rear wheel, as traction dictates.

Like the muscled-up Giulia Quadrifoglio sedan, the Stelvio QF's chassis is fortified with stiffer springs, larger anti-roll bars, and more powerful Brembo brakes—six-piston fronts and four-piston rears. Carbon-ceramic rotors are an \$8000 option.

Pirelli P Zero summer tires specially developed for the Stelvio QF, sized 255/45ZR-20 front and 285/40ZR-20 rear, wrap around five-hole alloys inspired by vintage Alfa Romeo wheel designs. While the hardware promises racecourse capability, our 100-mile drive northwest of Austin confirmed that this is no stripped-out track-day special. It's a thoroughly equipped luxury SUV with everything from 14-way power front seats to a standard 14-speaker Harman/Kardon sound system. It's comfortable as well as capable, friendly as well as fiery.

Like Stelvios of all stripes, the QF version is a compact-class SUV, so interior room is adequate but not overly generous. Both its front and rear seats are firmly supportive, and there's enough rear-seat leg and headroom for six-footers. The QF's interior is significantly better dressed

than the base Stelvio's, although that lesser model sets a fairly low bar. The workaday Stelvio's plastic bits are less obvious here; there are high-quality coverings everywhere in the cabin, including smooth leather on the dash and doors, seat inserts of faux suede, and trim bits upgraded to real carbon fiber. An 8.8-inch infotainment screen operated via a rotary controller on the console is standard, and the system features navigation, satellite radio, and Android Auto and Apple CarPlay capability. The short options list includes a panoramic sunroof and a pair of sexy but unnecessary Sparco carbon-fiber-shell racing seats. While not as overtly luxurious as the best interiors from Porsche and Mercedes, the QF's

#### tech highlight

## WEIGHTY MATTERS

With automobiles as with waists, weight is the enemy. Reducing a vehicle's mass almost always results in positive health effects, including improved acceleration, braking, cornering, fuel efficiency, and racetrack lap times. For Alfa Romeo, a brand focused on sportiness, making the Stelvio as light as commercially feasible was a priority.

The Stelvio's body shell is steel and, like many cars, its transmission case and engines are aluminum. But the use of that lightweight alloy goes beyond those components to the front fenders, hood, front shock towers, front and rear subframes, brake calipers, and most of the suspension parts. Though Alfa won't disclose how much weight every part saves, it did reveal that the Stelvio's aluminum doors eliminate about 44 pounds and that its aluminum rear crossmember cuts about 11 more. Carbon fiber is employed for the Stelvio's driveshaft, deleting another 11 pounds. Two options can reduce the Quadrifoglio's mass even further: Carbon-ceramic brakes are good for a 40-pound savings while Sparco carbon-fiber-shell front seats reduce weight by 15 pounds.

Alfa pegs the standard Stelvio Quadrifoglio's curb weight at 4360 pounds—something we'll have to confirm. But if that's accurate, the QF should weigh some 90 pounds less than the similarly sized Porsche Macan Turbo outfitted with the Performance package. Diet plans can be iffy, but this one seems effective. —RC



cabin is lush enough for an SUV with such heavy performance leanings.

As we made our way through the clots of metro Austin's morning traffic, the QF was well behaved, although it pulsed with an undercurrent of athleticism and power waiting to be unleashed, like an NFL lineman in a three-point stance. The exhaust note is an angry snarl, and the eight-speed automatic shifts seamlessly. Response from the large column-mounted aluminum paddles is swift and is accompanied by a satisfying chorus of braps and pops. Acceleration comes in turbocharged torrents. Alfa claims the Stelvio QF is two-tenths of a second quicker to 60 mph than the Giulia QF, even though it's about 550 pounds heavier. Thank the all-wheel-drive system, which provides more grip at launch. If that advantage holds true in our testing, expect a zero-to-60-mph time of about 3.6 seconds. Top speed is a claimed 176 mph. On Texas State Highway 45, which has an 80-mph limit, the QF loped along half asleep at well above the posted speed, but a solid prod of the throttle made it vault like a scared gazelle.

Besides raw speed, the Stelvio QF offers a measure of on-road finesse. This is a driver's car—did we just say that? Yes, it felt that confident and controlled on the smooth Texas two-lane roads, slick as they were with rain. It cornered with unwavering stability and displayed scalpel-sharp steering and little body roll. On tighter sections, the steering effort went wispy and the feel a bit distant; switching to Dynamic mode added some badly needed heft. The only daily-driving demerits we can give the QF are for the engine's ten-

## 2018 ALFA ROMEO STELVIO QUADRIFOGLIO

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**BASE PRICE:** \$81,590

**ENGINE:** twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection

**DISPLACEMENT:** 176 cu in, 2891 cc

**POWER:** 505 hp @ 6500 rpm

**TORQUE:** 443 lb-ft @ 2500 rpm

**TRANSMISSION:** 8-speed automatic with manual shifting mode

**DIMENSIONS**

**WHEELBASE:** 110.9 in

**LENGTH:** 185.1 in

**WIDTH:** 77.0 in

**HEIGHT:** 66.3 in

**PASSENGER VOLUME:** 89 cu ft

**CARGO VOLUME:** 19 cu ft

**CURB WEIGHT:** 4350 lb

**PERFORMANCE**

**(C/D EST)**

**ZERO TO 60 MPH:** 3.6 sec

**ZERO TO 100 MPH:** 9.0 sec

**1/4-MILE:** 12.2 sec

**TOP SPEED:** 176 mph

**FUEL ECONOMY**

**EPA COMBINED/CITY/HWY:** 19/17/23 mpg



dency to emit a bovine-like moan during low-rpm cruising and the brake-by-wire system's touchy low-speed response.

But no demerits accrue to it as a track weapon. We ran about 20 laps on the magnificent COTA course, flinging the Stelvio QF around at racing speeds, easily hitting 135 mph on the back straight with the exhaust emitting a demented howl. Switched into Race mode, the QF's steering effort and feel amped up considerably and became satisfyingly communicative. Pressed to its limits, the QF handled much like a mid-size rear-drive sports sedan, raging out of tight corners with its tail slithering sideways, always easy to rein in. Its well-balanced chassis forgave our ham-fisted inputs as we learned the track, and its brakes—carbon ceramics on the track cars—were faithful, powerful, and fade-free. It was a bravura performance.

That few Stelvio Quadrifoglio owners will ever experience their SUVs so vividly is both expected and a disappointing waste of automotive talent. But remember, this is a vehicle with practical capabilities and, with the rear seats folded, 57 cubic feet of cargo space—tied with the Mercedes GLC. It will reach dealers later this year and start at \$81,590, after which we expect more than a few trips to pick up the kids at school will be carried out in great haste. The SUVs will be wearing the four-leaf-clover badge on their flanks; the drivers will be wearing broad smiles.

*A funny thing happens when you cover an interior of middling quality in carbon fiber, leather, and suede: It ends up looking and feeling pretty nice.*





# Flattering Ram

More aerodynamic, efficient, and luxurious than before, the new Ram 1500 works harder than ever to break GM's and Ford's pickup dominance. *—by David Beard*

▼ **THERE'S A WAR RAGING** on the home front. A divide in our nation. A fight between deeply entrenched opponents. Social media is up in arms. But it's not what you think. This thing has been going on for decades. This is the truck war, the clash between the best-selling vehicles in the U.S. In 2017, combined truck sales for the Detroit Three amounted to more than 2.3 million rigs. That's a new pickup for every man, woman, and child in Idaho and Wyoming—the sorts of places where even an eight-year-old might need one. For 2019, Ram rearms itself with the all-new 1500-series pickup.

The first move in redesigning a 21st-century truck is to shed weight. Ram started with the ladder frame, which it claims is 100 pounds lighter than before thanks to wider use of high-strength steel and an aluminum transmission crossmember. Overall weight savings total a claimed 225 pounds on the volume model, a V-8 crew cab 4x4. The next step is to make everything around the structure look better, and the mostly steel body—save the aluminum hood and tailgate—is visually sleeker. Next, make it more aero friendly. To accomplish this, Ram raked the windshield another 2 degrees versus the outgoing model's. The roof, dove-tailed in the rear, smooths airflow over the bed, the sides of which are 1.5 inches taller to reduce the parachute effect. Redesigned active grille shutters help the new Ram slice through air; they remain closed in cold temperatures to heat the engine as rapidly as possible. An active air dam [see “Ram Dam”] helps lower the drag coefficient from 0.39 to 0.36.

The previous-generation Ram was the best-riding truck in the segment, largely

**[+] Massive towing ability, plush cabin, sublime ride. [-] Does the world want a luxury truck?**

thanks to the five-link rear-axle setup with either coil or air springs. Building off that fabulous ride, Ram engineers retuned the front suspension with a lightweight composite upper control arm and revised the geometry. A relocated front anti-roll bar better stabilizes the body. The standard coil-spring package makes a strong case for skipping the air-spring system in the new truck—the updated dampers have internal bypass valves that adapt to the speed of impacts, turning road irregularities into velvety afterthoughts. Twisting the Ram through ranch roads north of San Antonio shouldn't be this fun, but the electrically assisted steering is precise, if a bit light. Scrubbing speed is easier than before, due to larger 14.9-inch front rotors.

We drove the high-volume engine, the unchanged 5.7-liter iron-block pushrod V-8. Its 395 horsepower and 410 pound-feet of torque are more than ample to move this lighter rig with enthusiasm. And there's no need to pump artificial exhaust noise into the cabin with all eight cylinders barking through the dual exhaust.

The vibrations caused by cylinder deactivation are largely quelled by active mass dampers—essentially computer-controlled Shake Weights—attached to the frame. Active noise canceling furthers the cause to the extent that we only

## 2019 RAM 1500

**VEHICLE TYPE:** front-engine, rear-, rear-/all-, or rear-/4-wheel-drive, 5- or 6-passenger, 4-door pickup  
**BASE PRICE:** \$33,340–\$45,835  
**POWERTRAINS:** DOHC 24-valve 3.6-liter V-6, 305 hp, 269 lb-ft + synchronous AC electric motor, 12 hp, 90 lb-ft (combined output, 305 hp, 269 lb-ft; 0.4-kWh lithium-ion battery pack); pushrod 16-valve 5.7-liter V-8, 395 hp, 410 lb-ft + synchronous AC electric motor, 16 hp, 130 lb-ft (combined output, 395 hp, 410 lb-ft; 0.4-kWh lithium-ion battery pack); pushrod 16-valve 5.7-liter V-8, 395 hp, 410 lb-ft  
**TRANSMISSION:** 8-speed automatic with manual shifting mode  
**DIMENSIONS**  
**WHEELBASE:** 140.5–153.5 in  
**LENGTH:** 228.9–241.8 in  
**WIDTH:** 82.0 in  
**HEIGHT:** 77.4–77.7 in  
**PASSENGER VOLUME:** 117–132 cu ft  
**CURB WEIGHT:** 5300–5800 lb  
**PERFORMANCE (C/D EST)**  
**ZERO TO 60 MPH:** 6.6–7.5 sec  
**ZERO TO 100 MPH:** 18.0–22.0 sec  
**1/4-MILE:** 15.2–16.0 sec  
**TOP SPEED:** 106 mph  
**FUEL ECONOMY**  
**EPA COMBINED/CITY/HWY:** 18–22/15–19/22–26 mpg (C/D est)



noticed the switch to four-cylinder mode when the windows were down.

Though we didn't drive them, there are more powertrain options, which come bearing a low-voltage hybrid system. But electrification in light-duty trucks is nothing new—General Motors' hybrid system dates back more than a decade. As in the Jeep Wrangler, FCA's eTorque system uses a high-output alternator-starter coupled to the engine via an eight-ribbed belt. Standard on the 3.6-liter V-6, eTorque delivers 90 pound-feet of torque through the belt to the crankshaft. It is optional on the V-8, offering 130 pound-feet in that application. Regenerative engine braking recharges the 48-volt, 0.4-kWh lithium-ion battery. The system also manages the automatic stop-start function, a first for Ram. Coal-rolling fanatics will have to wait until the 2019 calendar year before the turbo-diesel 3.0-liter V-6 returns to the market. Though official EPA numbers aren't yet available, we'd wager that Ram didn't hybridize its trucks to enhance its tough-guy image.

As in previous Rams, torque delivery is managed by the ZF eight-speed automatic transmission. And that's not a bad thing: The gearbox delivers precise shifts and is rarely caught off guard. In 4x2s—and later in 4x4s—the rear axle uses engine coolant to bring its fluid up to operating temperature and also to cool the differential under load, enhancing efficiency. The axle shafts are larger, upping the lug count from five to six. When configured

**It's taken 25 years, but the Ram has morphed over three generations from a cartoonish mini big rig to a genuinely sophisticated vehicle. Check out that interior.**

with two-wheel drive and the optional Max Tow package, the strengthened rear axle increases the payload and tow ratings to 2300 and 12,750 pounds, respectively. Our crew cab 4x4 in Laramie trim was minimally burdened and its ride remained fairly uncompromised when tugging a 2700-pound trailer on our drive.

The interior is not only refined, it's also more functional than ever. There are more USB ports (five of the ubiquitous type A and four of the newer type C) than there are seats for passengers. Also available is the Ramcharger—not the sweet utility vehicle from decades ago but wireless device charging. The reconfigurable center console offers vast storage options capable of stowing a laptop and two tablets. Or perhaps a gut-wrecking pile of beef jerky. The new seat structure sits 0.8 inch lower, providing sufficient Stetson clearance. Stretching the cabin four inches extends rear legroom, creating the largest back seat in the segment at 68 cubic feet in the crew cab. In higher trims, the rear seats recline for maximum comfort. The top-level Limited model triggers thoughts of the Mercedes S-class with its aluminum speaker grilles, wood inserts, and piano-black trim. The optional 19-speaker Harman/Kardon stereo offers great fidelity. The available 12.0-inch split-screen-capable Uconnect infotainment system is ridiculously large, but it's a small piece of a ridiculously good truck. The 2019 Ram 1500 is available now, with rear-drivers starting at \$33,340 and all-wheel-drive models at \$36,840. Ram's opulent interior options, ever-improving ride quality, and revised powertrains can only mean one thing: war.

*air dammit*

## RAM DAM

Ram left no box unchecked in the hunt for aerodynamic efficiency. Coil-sprung versions of the truck receive a 2.5-inch deployable air dam that reduces turbulent air movement under the pickup, increasing its aerodynamic slipperiness. Tucked beneath the front bumper, the air dam lowers in less than two seconds when speed exceeds 35 mph and the temperature is above 38 degrees. Clutched hinges allow it to fold backward in the event of a territorial dispute with road debris.





TESTED

# Gold Mine

The new **X2** is proof that BMW still loves yuppies. *—by Tony Quiroga*

▼ **THERE'S A BMW** roundel stuck to the C-pillar of the new X2. It's an impossible-to-miss detail on a crossover-hatchback thing that is in itself impossible to miss, especially in Galvanic Gold Metallic. It looks great stuck back there, behind the X2's version of the Hofmeister kink. Does it matter that only the most devout of the BMW faithful will know that this badge is a tribute to the CS coupes of the '60s and '70s?

Probably not. This is the kind of vehicle the luxury market is clamoring for now, and this nugget of intrabrand appropriation seems unlikely to impact sales projections. But despite the X2's transversely mounted engine, its standard front-wheel drive, and its lack of a manual option, the badge is a sign that there's the spirit of a real BMW lurking in here. Built on the same platform as the X1 and the Mini Countryman, the X2 can be thought of as a sleeker X1 with a lower roof, a pinched greenhouse, and just the right amount of running shoe in its design to mask the transverse-engine proportions. Its nearly \$40,000 base price shouldn't stop it from flying out of showrooms and right into the manicured hands of young urban professionals.

What the modern yuppie will get in the X2 xDrive28i is a 3705-pound crossover with room for five and their \$15 kale smoothies. As an X1 spinoff, the wheelbases are identical, but X2s are a couple of inches lower and shorter in overall length. Inside, the X2 is a near match to the X1. Both have the same high-quality materials and the same design. The only differences inside are slight reductions in cargo space and headroom.

With its 228-hp turbocharged 2.0-liter inline-four and an eight-speed automatic,

**[+] Attractive inside and out, nails the fun-to-drive quotient. [-] Stiff ride, road and suspension noise, high as-tested price.**

the all-wheel-drive X2 calls up 60 mph in 6.4 seconds. And when equipped with the \$400 M Sport suspension and 19-inch Pirelli Cinturato P7 summer tires that are part of the \$4650 M SportX package, the X2 boasts eager turn-in responses, flat cornering, and 0.90 g of stable grip. Its front-wheel-drive roots mean that it can't be steered with the throttle, but neither can a Volkswagen GTI, which is sort of what the X2 feels like—a loaded GTI with a lift kit.

A jarring ride is the penalty for the handling goodness. Coarse pavement sends tire and road hum pouring into the cabin, and there's suspension- and tire-impact noise that BMW's junior varsity platform doesn't filter out. We measured 67 decibels of din at 70 mph, only slightly louder than a BMW X3. However, the X3 deals with the ride-and-handling catch-22 by offering a similar level of dynamic joy while being more compliant, refined, and quiet. The X2 is noisy and rough around the edges for a crossover with an as-tested price above \$50,000. It's a vehicle that makes a lot more sense at just over \$40,000, so put yours on an options diet.

What the X2 lacks in refinement, it makes up for in playfulness. And while its layout and platform may break with BMW tradition, its pricing, handling, and badge placement—and its appeal to yuppies—are as BMW as you can get.



## 2018 BMW X2 xDRIVE28i

**VEHICLE TYPE:** front-engine, all-wheel-drive, 5-passenger, 4-door hatchback

**PRICE AS TESTED:** \$50,920

**BASE PRICE:** \$39,395

**ENGINE:** turbocharged and intercooled DOHC 16-valve inline-4, aluminum block and head, direct fuel injection

**DISPLACEMENT:** 122 cu in, 1998 cc

**POWER:** 228 hp @ 5000 rpm

**TORQUE:** 258 lb-ft @ 1450 rpm

**TRANSMISSION:** 8-speed automatic with manual shifting mode

**DIMENSIONS**

**WHEELBASE:** 105.1 in

**LENGTH:** 172.2 in

**WIDTH:** 71.8 in

**HEIGHT:** 60.1 in

**PASSENGER VOLUME:** 93 cu ft

**CARGO VOLUME:** 22 cu ft

**CURB WEIGHT:** 3705 lb

## C/D TEST RESULTS

**ZERO TO 60 MPH:** 6.4 sec

**ZERO TO 100 MPH:** 17.5 sec

**ZERO TO 120 MPH:** 28.9 sec

**ROLLING START, 5-60 MPH:** 7.2 sec

**1/4-MILE:** 15.0 sec @ 93 mph

**TOP SPEED:** 143 mph (governor limited, mfr's claim)

**BRAKING, 70-0 MPH:** 162 ft

**ROADHOLDING, 300-FT-DIA SKIDPAD:** 0.90 g

**FUEL ECONOMY**

**EPA COMBINED/CITY/HWY:** 25/21/31 mpg

**C/D OBSERVED:** 24 mpg

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# Dimenticare il Dino

Ferrari's 591-hp **Portofino** convertible is a primal enchantment. *by Alexander Stoklosa*

**A STARTER FERRARI?** To those of us whose 401(k)s contain some pocket lint and an unclaimed McDonald's Monopoly Big Mac, there is no such animal. The \$214,533 Portofino replaces the best-selling California T, marketed as the mortal's passageway to Rossoland. Unlike its forbear, though, the Portofino's aspirations lie beyond the whole "entry-level Ferrari" thing, which, as we've just established, is not a coherent ontology.

With its power-folding hardtop raised, the Portofino appears longer and more squat than the Cali—almost a mini-812 Superfast. It is actually just 0.1 inch lower, 1.1 inches wider, and 0.7 inch longer than the car it replaces. Stowing the roof reveals the biggest transformation. Where the California hid its bulky lid about as well as an adult diaper under elastic-waist-band jeans, the Portofino effectively slides tight yoga pants over its sculpted rump. The lifting mechanism (for the top, not the pants) is beefed up, so you can open and close the top at speeds under 25 mph. With the hardtop up, wind noise is hushed.

The toning extends to the twin-turbocharged V-8 carried over from the California T. The 3.9-liter breathes through a freer-flowing intake, equal-length exhaust runners with integrated twin-scroll turbochargers, and larger-diameter exhaust plumbing. With fresh pistons, connecting rods, and engine-management software, the V-8 produces 39 more stallions than

## 2018 FERRARI PORTOFINO

**VEHICLE TYPE:** front-engine, rear-wheel-drive, 2+2-passenger, 2-door convertible  
**BASE PRICE:** \$214,533  
**ENGINE:** twin-turbocharged and intercooled DOHC 32-valve V-8, aluminum block and heads, direct fuel injection  
**DISPLACEMENT:** 235 cu in, 3855 cc  
**POWER:** 591 hp @ 7500 rpm  
**TORQUE:** 561 lb-ft @ 3000 rpm  
**TRANSMISSION:** 7-speed dual-clutch automatic with manual shifting mode  
**DIMENSIONS**  
**WHEELBASE:** 105.1 in  
**LENGTH:** 180.6 in  
**WIDTH:** 76.3 in  
**HEIGHT:** 51.9 in  
**CURB WEIGHT:** 3900 lb  
**PERFORMANCE (C/D EST)**  
**ZERO TO 60 MPH:** 3.1 sec  
**ZERO TO 100 MPH:** 6.8 sec  
**1/4-MILE:** 10.9 sec  
**TOP SPEED:** 198 mph  
**FUEL ECONOMY**  
**EPA COMBINED/CITY/HWY:** 18-19/16/23 mpg (C/D est)



before, now up to 591 horsepower at 7500 rpm. The engine's song also climbs an octave higher with the addition of electronically actuated exhaust flaps. Ferrari limits torque in the first six gears, so the dual-clutch automatic only sees the full 561 pound-feet in seventh gear, its highest. After driving the Portofino, we can understand why. On hard launches, traction control and the new electronically controlled differential search furiously for grip through fourth gear. The California T took 3.3 seconds to reach 60 mph, and we expect the Porto to make the run in 3.1 seconds, thanks in part to a claimed 176-pound weight reduction.

Ferrari says it fortified body stiffness by 35 percent in the transition from California to Portofino, and this seems credible, too. The springs are stiffer and nearly match the California T's optional Handling Speciale package tune, yet the ride is comfortable and wheel control is wonderfully delicate. With 54 percent of its mass on the rear axle and a steering ratio that's 7 percent quicker than the California's, the Portofino twitches into corners as if you'd just tased its quarter-panel.

The Portofino is only the second Ferrari, after the 812 Superfast, with electrically boosted steering, and the automaker is still ironing out some of the details. The rack's satisfying on-center valley and pleasantly light effort are plum; now how about some feedback, please? The impeccable chassis fills in the gaps, helping your internal gyro easily detect deviations from neutral.

Fifty years ago, Ferrari sequestered models with fewer than 12 cylinders to the Dino brand, a dragnet that today would ensnare most of its lineup. The Portofino might be at the bottom of the prancing-horse hierarchy, but it is every bit the limbic tripwire you'd expect a Ferrari to be. So, work on that 401(k). ■

**[+] Looks inspire lust, a coupe when necessary, it's a Ferrari.**  
**[-] Back seats still useless.**



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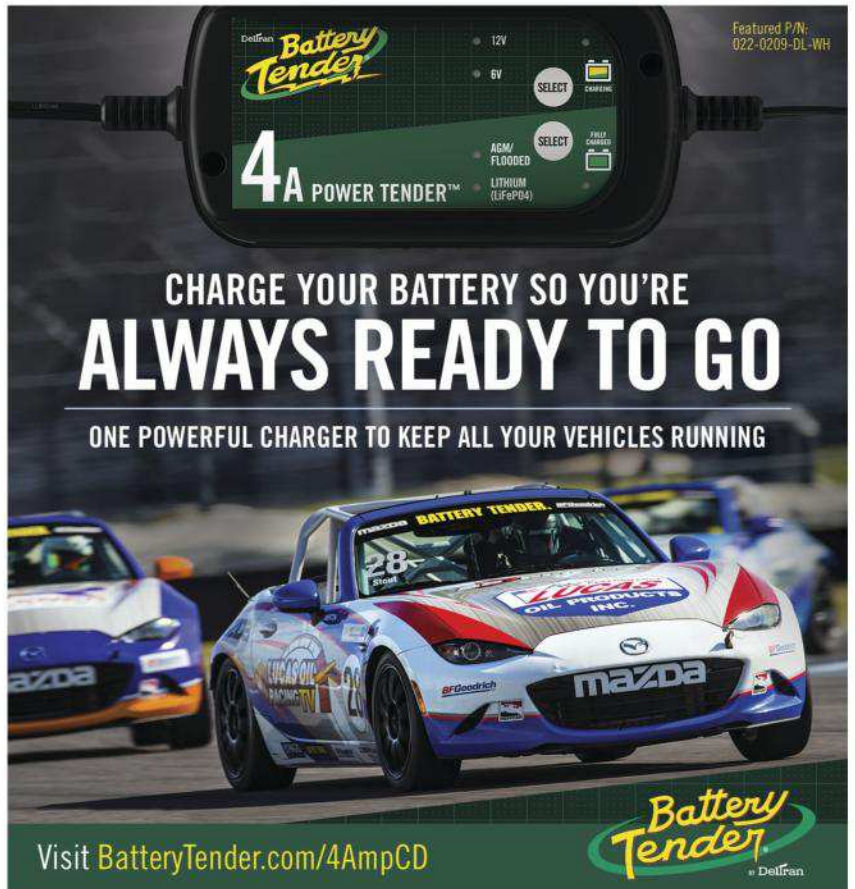


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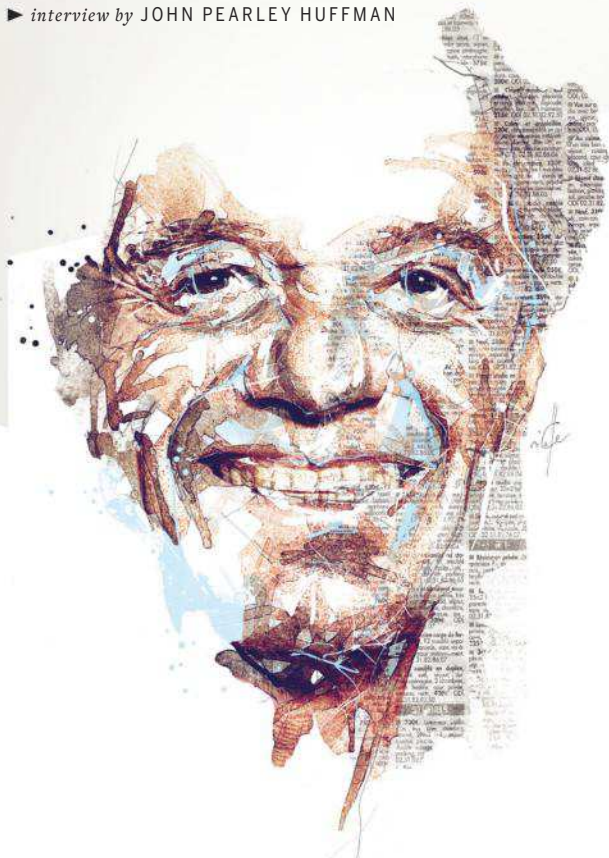
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# What I'd Do Differently

## Craig Breedlove, 81

Breedlove and his *Spirit of America* went 407.45 mph in 1963 and 526.28 mph in 1964, and they topped 600 mph in 1965. Now he wants to go even faster.

► interview by JOHN PEARLEY HUFFMAN



**C/D:** What are you working on?

**[CB:]** I've been doing the design on a speed-record car. We went through an iteration of it with two J79s [jet engines], but eventually I was able to hook up with Gerard Elverum, who did the Apollo lunar descent engine for TRW. He's the guy who invented the pintle injector that they used to make the throttled rocket engine so they could take the lander and fly it down to the surface of the moon. Currently they're using his injector in all the SpaceX rockets that they can take back down and land on their tails. It was a big breakthrough in rocketry. He's getting up there like me, but he's agreed to do the engineering on the car. So we're working with him to do a rocket version. It's a cleaner design, with centerline thrust and

so on and so forth. He just turned 90 and you almost hate to call. I've got Steve Watt down in Ventura. He's going to build the chassis. He's the fella who built the Speed Demon car that set all those records.

■ **You're not going to still try and drive it, are you?**

No, God, no. I'm basically just doing the design of the car.

■ **After you've gone 600 mph, does driving on the freeway seem slow?**

Not really. I've got to watch my Ps and Qs. I've got a radar detector that reminds me, so I'm doing okay so far. I've still got a license.

■ **You were only 25 or 26 years old when you first set a land speed record. How did you get the money to do that?**

Actually 26. That was a big

problem and still is, getting these things funded. Basically I went in to Shell Oil Company. I used to have a part-time job in high school working for the Shell station at the corner of Venice and Sepulveda, and the district office was right behind [it]. I found out the name of the district manager who ran the Shell office, and I went in with my model and a flip-chart presentation that we'd put together. I asked if I could see Bill Lawler, and his office was right behind the receptionist. She leaned back in her chair and said, "Bill, there's a Mr. Breedlove to see you," and I could hear in a big booming Boston accent, "Send him in." So he took his watch off and said, "Okay, you've got 10 minutes." And that turned into a couple-hour meeting. Eventually that got me the Shell sponsorship. And Goodyear came along because Shell was about a \$50-million-a-year customer.

■ **Okay, how'd you have the balls to think you could build a land speed record car at all?**

I was able to get a job in material and process engineering at Douglas Aircraft. There I hooked up with an engineer who was kind of a rising star in the rocketry division. I had welding experience from working on the muffler racks at Quincy's speed shop in Santa Monica after school. I was able to come up with a method to test exotic, high-temperature materials for use in missile engines. The first time I went to Bonneville, just the fact that the streamliners were so beautiful and aerodynamic... and I was at a place in my life where I was a young guy trying to figure out what the hell I was going to do. And I wanted to try and do something significant. There were some surplus jet engines coming onto the market from the Korean War. I was a hot rodder and I could get a jet motor for 500 bucks.

■ **But it took a certain level of fanaticism to get it done.**

Yeah.

■ **Drag racing was big in Southern California when you were growing up. Did you race?**

When I was 13 or 14, I went to the drag races out at Saugus, and I used to hang out with a guy named Bill Adair, who drove an early lakester as a dragster. It had a

supercharged flathead in it. The thing wasn't running well, and Bill came in and tossed me his crash helmet. They took me up to the starting line and my knees were shaking. I drove that dragster and that was my first taste of speed.

■ **Do you actually drive a jet car? Or just hold on?**

The salt [at Bonneville] is really slippery, number one. And the course is bumpy—it's rough. So it requires attention to get this thing down through there.

■ **Was there ever a point where you wanted to give up chasing the land speed record?**

Not really.

■ **When you had that big accident in your first land speed car, what happened?**

My brakes were gone, my chutes were gone, and I had a broken bolt that supported the front-wheel-camber control. Anyway, that's why I went into the lake.

■ **Is there anything you'd have done differently?**

I don't think so. It's been a pretty exciting ride. Not that it wasn't fraught with a few problems, but that's life, and you grow from that. I'm really satisfied with everything I've done so far, and hopefully we'll get to build this other car. If I last that long. ■

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