

SHOCK! QUICKEST CAR EVER TESTED PAGE 12

MOTOR TREND

MAY 2017 MOTORTREND.COM

FIRST LOOK: 2018 MCLAREN 720S ■ FIRST DRIVE: 2017 RAM 2500 POWER WAGON ■ FIRST TEST: PORSCHE 911 TURBO S



NEW WHIP, WHO DIS?

EXCLUSIVE 710-HP FERRARI HUNTER FROM...



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THE NEXT-GEN 2018 EQUINOX

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The next-gen Equinox has been engineered to make every drive a more efficient one. Going above and beyond, the new Equinox offers more to help keep you confident on the road. From available Forward Collision Alert and Side Blind Zone Alert, which help warn you of potential hazards, to available Low Speed Forward Automatic Braking and Lane Keep Assist that can help you take action when needed. With these advanced safety technologies, along with a trio of turbo engines and a perfectly balanced design, the next-gen Equinox is everything you need, to do everything you want.

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ACTIVE SAFETY TECHNOLOGIES

Low Speed Forward Automatic Braking

This available system automatically engages the brakes to potentially help reduce the severity of an imminent front-end collision with a detected vehicle. It may even help avoid collisions at very low speeds.

Lane Keep Assist

Lane Keep Assist can help to keep you from drifting into the next lane. At speeds above 37 mph, this available camera-based system monitors road lines and will gently turn the steering wheel if the vehicle begins changing lanes when you are not actively steering and your turn signal is not activated. The feature is triggered when it does not receive active input from the driver and is disabled when you provide active input, such as purposely changing lanes or using your turn signal.

IntelliBeam Headlamps

Available IntelliBeam[®] headlamps intuitively adjust between low and high beams when oncoming headlamps are sensed or when tall lamps are detected in front of you. This can help to illuminate the road ahead and improve visibility – especially in dark conditions. It also helps spare oncoming drivers the glare of your high beams on dark roads.





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This available feature uses directional vibration pulses from the seat cushion instead of audible alerts to help indicate the direction of potential collision threats. This patented warning approach is tied into select available onboard hazard avoidance systems.

Get a bird's-eye view.

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Using four strategically placed cameras, available Surround Vision gives you a bird's-eye view of your Equinox on an available 8-inch diagonal color touch-screen. All camera viewpoints simultaneously merge to transmit a clear side-by-side digital image to the display screen to help provide you with more information, allowing you to see more of the areas behind and around you. Especially when parallel parking, it helps navigate tight spaces with ease.

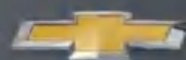
Safety features are no substitute for the driver's responsibility to operate the vehicle in a safe manner. The driver should remain attentive to traffic, surroundings and road conditions at all times. Read the vehicle Owner's Manual for more important feature limitations and information.

2018 EQUINOX

VS. 2017 FORD ESCAPE & 2017 HONDA CR-V

Available Safety Feature	'18 Equinox	'17 Escape	'17 CR-V
Surround Vision	YES	NO	NO
Safety Alert Seat	YES	NO	NO
Lane Change Alert	YES	NO	NO
Low Speed Forward Automatic Braking	YES	NO	YES
Rear Park Assist	YES	YES	NO

CHEVROLET



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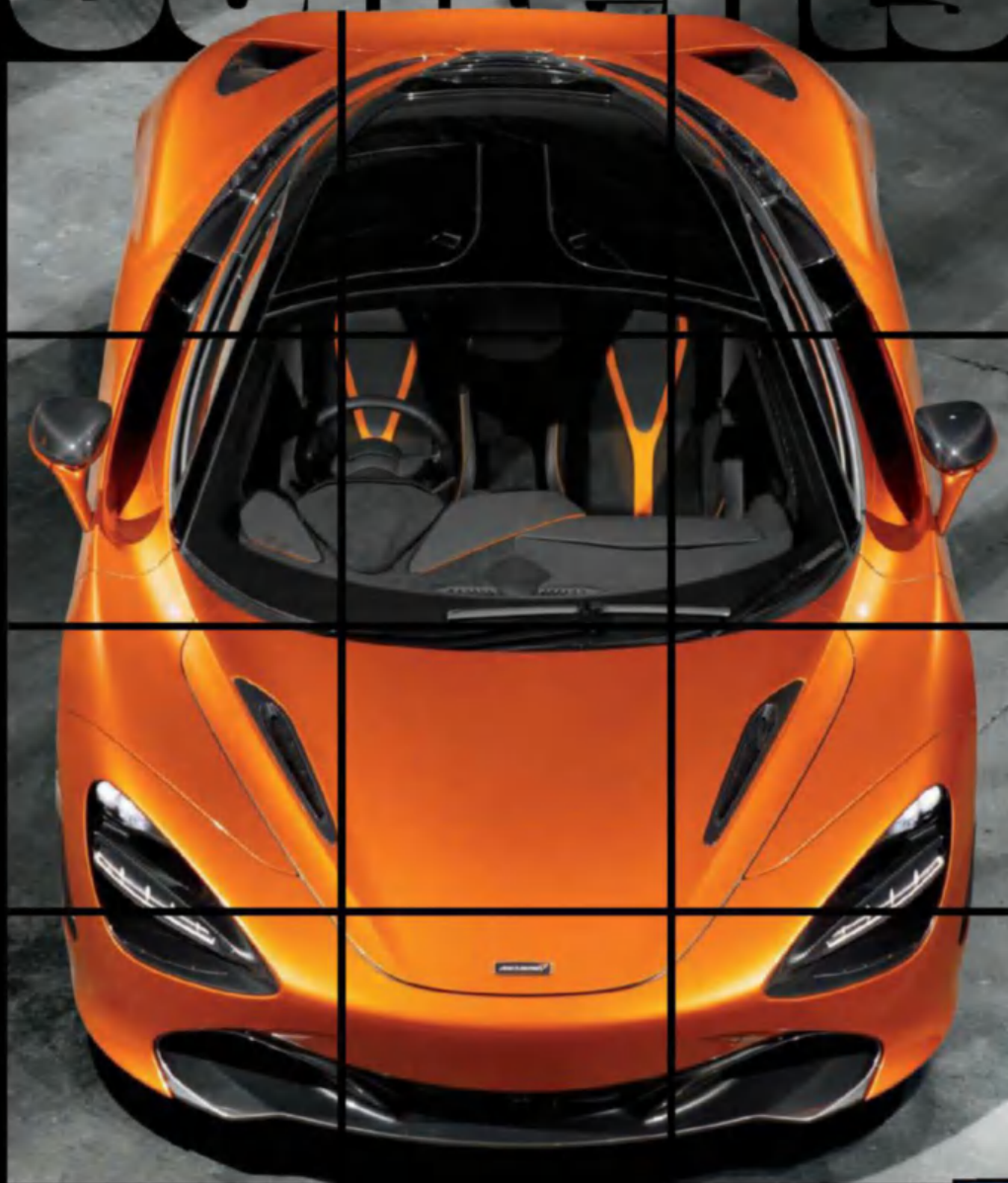
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Lightning in a Bottle

What happens when Iron Man blows you up on Twitter?



Earlier this year, everyone's favorite rocket-launching, electric-car-crafting billionaire CEO, Elon Musk, fired off a tweet heard around the world: "Promising early results from the Ludicrous [sic] Easter egg. Looks like 0 to 60 mph in 2.34 sec (Motor Trend spec) might be achievable..."

That tweet received more than 2,700 retweets, nearly 13,000 likes, and almost 600 replies. One of them was ours: "@elonmusk Bring it on! We'd be happy to validate the P100D, as we did the P90D's Ludicrous (2.6 sec) 0-60 mph time."

Game on. Elon said his PR team would be in touch, and three weeks later we had a fresh and clean Tesla Model S at our test facility, strapped down with redundant VBox data loggers, and were ready to see just how quick Tesla's new Ludicrous launch control update made the already blistering P100D. The results are on page 12—there's also a more detailed analysis and video online.

We pushed our story on motortrend.com in the early hours of the Eastern time zone to catch our fans and readers who make *MT* part of their morning. Elon tweeted us at exactly 7 a.m. PST, and moments later we were riding the lightning.

At 7:13 a.m., a colleague from CNN texted me, looking for details and confirmation. At 8:40 a.m., we got word from Tesla PR that CNBC and *The Wall Street Journal* were interested in running stories, as well. By noon, more than a dozen reputable outlets had published stories, including nonautomotive sites such as Mashable, TechCrunch, and Business Insider. Even our competitors got in the mix. (Thank you to those who practiced professional courtesy by attributing the story and including linkbacks to us.) From an online traffic perspective, it was a massive day; at one point, more than a third of the visitors to motortrend.com were coming from social media to this one story. The day itself was in our top 10 busiest since the beginning of 2016.

Why the fuss? Slow news day on Twitter? Ha. Do we even have those any more?

Obviously Elon's tweet helped; his Twitter page has more than 7 million followers—greater than the pages for both of his main companies, SpaceX (2.8 million) and Tesla (1.3 million) combined. (*Motor Trend* has a more modest 460K.) He's the E.F. Hutton of the modern era; when Elon talks (or tweets), people listen (and then retweet). I tracked the progress over 12 hours from when he tweeted our story. In the first hour, his tweet had more than 5,000 likes and 2,000 retweets. By 7 p.m., it had 5,900 likes and 15,500 retweets—which explains the interest from and knock-on effect provided by all of those other media outlets.

There is an unsung hero in this, however: our email newsletter. This daily dose is always a huge driver of traffic for us because it contains links to the day's hottest stories. It also was distributed in the 7 a.m. hour to hundreds of thousands of *Motor Trend* fans around the world. (Are you a subscriber? You should be. Just head to motortrend.com/newsletter to sign up for free.) After 24 hours, our 0-60 test had generated 2.67 million organic media impressions—from *Motor Trend's* social media channels alone.

Of course, I can't forget the subject matter. Speed captures the imagination (look at our cover), breaking speed barriers even more so. *Motor Trend* has been around since 1949 and is one of the few outlets of any kind with the gear, facilities, and know-how to validate performance claims. So when we say the Tesla P100D is the quickest car we've ever seen, that actually means something.

Elon gets it. You do, too. Thanks for reading.



What's On Demand This Month?

modified

HUNT FOR HOT MODS

The common bond in the tuner scene is the love of tuning compact sports cars, but opinions of perfection are vastly different across the country—and the world. Over the course of six episodes, *Modified* will send two hosts to hotbeds of the tuner market with a challenge: Find the hottest modified car in the city.

Each host will take a different path, whether it's hanging out in the pits at a motorsports event, touring the garages of legendary tuners and builders in the scene, or hanging out with some of the most influential car clubs. Each will drive away with their pick for hottest car and meet for a head-to-head competition.

MARCH 27 ENGINE MASTERS Ep. 20

MARCH 27 FLM Superenduro (Albi, France)

MARCH 27 Irish National Forest Rally
(Cork Forest Rally)

MARCH 27 Mobil 1 The Grid

MARCH 28 SKUSA Supernationals
(Spring Nationals Part 2, New Orleans)

MARCH 29 HEAD 2 HEAD Ep. 88

APRIL 1 Blancpain GT Sports Club
(Misano, Italy) Live

APRIL 1 24H Touring Car Endurance Series
(Silverstone, UK) Live

APRIL 2 Blancpain GT Series Sprint Cup
(Misano, Italy) Live

APRIL 3 IGNITION Ep. 171

APRIL 3 British Motocross Championship (Culham)

APRIL 3 TCR International Series (Bahrain) Live

APRIL 6 Virgin Australia Supercars
(Phillip Island SuperSprint)

APRIL 7 24H Series (Red Bull Ring) Live

APRIL 10 British Rallycross Championship (Croft, UK)

APRIL 10 FIM Freestyle (Krakow, Poland)

APRIL 11 MODIFIED Ep. 1 Series Premiere

APRIL 13 HOT ROD GARAGE Ep. 51

APRIL 14 ROADKILL Ep. 62

APRIL 16 FIA Formula 3 Championship
(Silverstone, UK) Live

APRIL 17 IGNITION Ep. 172

APRIL 18 THE HOUSE OF MUSCLE Ep. 6

APRIL 21 24H Proto Series

(Magny Cours, France) Live

APRIL 21 24H Touring Car Endurance
(Magny Cours, France) Live

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HIS AND HERS

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49 mph—that's 1.9 seconds including the time spent crossing the NHRA 1-foot rollout, which we eliminate from all official acceleration analysis. From that point until the 60-mph mark, the P100D is averaging 0.84 g.

Does this heavy, well-balanced all-wheel-drive car accelerate as hard as its brakes? The numbers confirm the 2.53-second time to reach 60 mph (adding rollout back in) nearly matches the 2.47 seconds it takes to return to a stop. That acceleration happens with no perceptible traction-control interventions. Hey, Elon: Give a raise to those who programmed the acceleration slip-control algorithms.

To lay down a run like this at your local drag strip, first ensure your P100D is running the latest firmware and then find the Settings menu. Under Acceleration, press and hold the Ludicrous button for 5 seconds. After a warp screen of flashing lights, you'll be asked: "Are you sure you want to push the limits? This will cause accelerated wear of the motor, gearbox and battery." Avoid "No, I want my Mommy," and press "Yes, bring it on!" This causes the system to warm the battery and cool the motors to their

TESLA
MODEL S P100D
FACE-RIPPLING,
INSTANT-TORQUE
ACCELERATION

Are you sure you want to push the limits?
This will cause accelerated wear of the
motor, gearbox and battery.

No, I want my Mommy

Yes, bring it on!

lead at higher speeds. Tesla's 10.5-second quarter-mile time ranks 10th among production cars. It matches that of the 911 Turbo S on page 82 but at a trap speed of just 125.0 mph against the Porsche's 131.8.

All-wheel-drive cars capable of face-warping launches have us examining things we don't usually consider: acceleration g forces. The Tesla peaks at 1.4 g and remains above 1.0 g until



Tesla's 4,891-pound sedan is our quickest production vehicle to 30, 40, 50, and 60 mph, reaching the latter in 2.28 seconds. The only quicker vehicle we've tested was an 800-hp 7.0-liter turbocharged Lingenfelter Corvette on cheater tires (1.97 seconds). Even race cars we've tested are slower off the line.

The Tesla's peak-torque-at-0-rpm advantage disappears at higher speeds, where the characteristics of a high-output combustion engine spinning through a multi-speed transmission win the day. The Ferrari LaFerrari hits 70 mph 0.1 second quicker; the Porsche 918 and McLaren P1 pull ahead at 80 mph, and these hypercars widen their



WEIGHTY To compute the dyno run, we weighed the P100D with driver and gear onboard: 5,062 pounds.

PHOTOS BY BRIAN BRANTLEY



“I don’t often say I welcome new competition. But I do in this instance.”

05.17 TREND

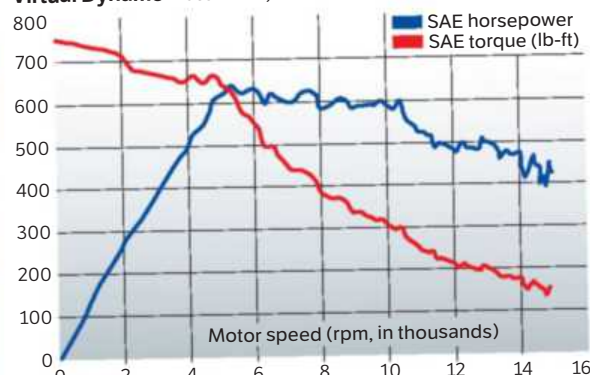
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TRACK DYNO Knowing our test car’s exact weight (complete with gear and test pilot Chris Walton onboard), drag coefficient, and frontal area, we let a math-filled spreadsheet generate this dyno plot using our acceleration data. Note that torque peaks at 0 rpm and tapers off, which helps explain why combustion-powered supercars can catch and pass the Tesla at higher speed.

Virtual Dynamometer Run, Tesla Model S P100d Ludicrous+



SQUATTER Even with a 51/49 percent weight distribution, accelerating at 1.4 g prompts plenty of rearward weight transfer.



ideal temperatures. After a few minutes, when the screen says “ready,” hold the brake, quickly floor and release the accelerator to initiate launch control, then firmly hold the brake for a split second while you nail the go pedal. When you release the brake, you’ll rocket down the strip like Han and Chewbacca jumping to light speed.

The P100D’s added verve also results in a slight improvement in its figure-eight performance, from the P90D’s 24.7 seconds at 0.81 g average to 24.6 seconds at 0.82 g. That matches several other big-boned four-doors such as the Aston Martin Rapide, Dodge Charger Hellcat, and BMW X5 M. But none matches the rocket-sled rush this Tesla delivers in a straight line. **Frank Markus**

THE 0-100-0 TEST TOP 30, 2016 AND 2017

	Make	Model	0-100-0 mph, sec	Curb weight, lb
1	2016 McLaren	675LT	9.3	2,993
2	2017 Porsche	911 Turbo S	9.7	3,557
3	2017 Audi	R8 V10 Plus	10.0	3,642
4	2016 McLaren	570S	10.1	3,188
5	2017 Tesla	Model S P100D	10.2	4,891
6	2017 Acura	NSX	10.9	3,876
7	2016 Mercedes-AMG	GT S	10.9	3,698
8	2017 Chevrolet	Camaro ZL1	11.1	3,926
9	2016 Dodge	Viper ACR	11.1	3,379
10	2017 Nissan	GT-R (Premium)	11.3	3,936
11	2017 Porsche	911 Carrera S	11.7	3,353
12	2017 Aston Martin	DB11	12.1	4,194
13	2017 Chevrolet	Corvette Grand Sport (8A)	12.2	3,479
14	2017 Jaguar	F-Type SVR	12.2	3,980
15	2017 Alfa Romeo	Giulia Quadrifoglio	12.3	3,749
16	2017 Chevrolet	Corvette Grand Sport (7M)	12.4	3,464
17	2016 BMW	M4 GTS	12.5	3,605
18	2016 Ford	Mustang Shelby GT350R	12.5	3,711
19	2016 BMW	M3 (Competition pack)	12.9	3,646
20	2017 Chevrolet	Camaro SS 1LE	13.1	3,735
21	2017 Porsche	718 Boxster S	13.1	3,160
22	2017 Aston Martin	V12 Vantage S	13.3	3,677
23	2017 Mercedes-AMG	SLC43	14.8	3,594
24	2016 BMW	M2	15.2	3,440
25	2017 Toyota	86	15.5	2,753
26	2017 Mercedes-AMG	E43 4Matic	15.7	4,309
27	2017 Mercedes-AMG	GLC43 4Matic	16.5	4,256
28	2017 Porsche	Macan GTS	16.5	4,501
29	2017 Chevrolet	Camaro 2LT 1LE	17.2	3,514
30	2017 Alfa Romeo	Giulia	17.6	3,456

The 0-100-0 Test

The 0-100-0 test has a long history, dating back to Carroll Shelby’s 1965 427 Cobra setting a time of 13.8 seconds in driver Ken Miles’ hands. With the Tesla, we’re looking at the addition of its 0-100 and 100-0 times, captured during our routine testing. The result? The P100D captures a combined time of 10.2 seconds—6.0 seconds to 100 mph and 4.2 more to stop again.

You have to scan all the way down to the Alfa Romeo Giulia Quadrifoglio before you encounter the next five-seat sedan. What’s amazing here is not just that the Tesla is fifth on our list but also how it’s swimming in the same pool as outright sea monsters while supporting a massive battery pack instead of a little gas tank. Oh, and it has those three rear seats and a cavern of cargo space, too. **Kim Reynolds**

Intake

**EXCLUSIVE
FIRST LOOK**



Land Rover Range Rover Velar



The Range Rover Velar wears a name that harks back to the very beginning of Land Rover's storied luxury off-road dynasty. Velar—from the Latin word for veil or hide—was the name put on prototypes of the original Range Rover

engaged in real-world testing in the late 1960s. The vehicles looked so different from the rough, tough, workhorse Land Rover that company execs figured the different badges meant no one would guess it was their secret new SUV.

The Range Rover Velar is perhaps less unexpected. Like

the Range Rover Evoque, the sheer-surfaced, extravagantly proportioned Velar looks like it was driven straight out of Land Rover chief design officer Gerry McGovern's concept studio. Which is pretty much what happened.

"We desperately wanted to hold on to the design vision,"

says Velar vehicle line director Kevin Stride. "It's been an obsession."

The Velar is a mixture of Jaguar and Land Rover hardware. The body structure is based on the aluminum-intensive D7a architecture of the Jaguar XE and XF sedans and the F-Pace SUV,



SCREEN GEMS
The Velar's upscale interior features configurable high-definition screens for the instruments, infotainment, and HVAC settings.

Interview starts in 15 minutes



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with which the Velar shares its 113.1-inch wheelbase. The height-adjustable air suspension, Terrain Response, and active locking rear differential are all Land Rover.

Although the Velar doesn't have a low-range transfer case, Land Rover engineers claim it's still more off-road capable than most SUVs. The height-adjustable suspension can raise and lower the Velar 3.9 inches to give a maximum ground clearance of 9.9 inches, and it can wade through water more than 2 feet deep. The Velar boasts more wheel travel than the F-Pace, and the finely calibrated Land Rover Terrain Response system delivers better off-road performance. Base wheels measure 20 inches, with the range-topping R-Dynamic and HSE models offering the choice of 21s or 22s, and standard variable-rate shocks are carefully tuned to manage the unsprung weight.

The Velar will be available with the choice of three engines when it goes on sale in the U.S. this summer. In addition to the 180-hp Ingenium 2.0-liter four-cylinder turbodiesel and 380-hp 3.0-liter supercharged gas V-6 shared with the Jaguar F-Pace,



buyers will be offered a turbocharged gas-burning 2.0-liter Ingenium four-banger that develops 250 hp. Long term, of course, we can expect SVR versions of the Velar with a 550-hp or even 575-hp supercharged V-8 under the hood.

Inside, everything from the instruments to the infotainment system to the HVAC settings on the center console is digitally presented

on high-resolution screens and hidden from view until the ignition is switched on. The effect is dramatic and modern, and it's accentuated by innovative material choices that include a high-fashion rework of tweed cloth for the seats.

Despite its high-style demeanor, the Velar is intended to slot between the Range Rover Evoque and the Range Rover Sport. U.S. pricing isn't confirmed yet, but based on British prices announced March 1, expect base diesel models to sticker from \$55,000 and a loaded, limited-run V-6-powered First Edition priced north of \$80,000. **Angus MacKenzie**



HAUTE COUTURE The Velar's sheer surfacing, extravagant proportions, and reductive detailing give it concept car swagger.

MTCONFIDENTIAL

AMG's F1-engine hybrid hypercar will be the star of the Frankfurt show this year, but the folks in Affalterbach have reportedly also been quietly working on a less extreme mid-engine hybrid supercar. Initial feasibility studies on the car, rumored to be a rival to the Ferrari 488, Lamborghini Huracán, and McLaren 720S, kicked off in 2012, suggesting a 2019 launch window. **Brexit is starting to bite.** After looking closely at opening an advanced design studio in London, a major European automaker decided against it. London's expensive real estate made the idea a tough sell at board level, our source said, but Brexit killed it. Meanwhile, senior European auto execs are pondering British Prime Minister Theresa May's assertions that post-Brexit Britain will be a free-trade powerhouse, noting that only about 40 percent of the parts of a British-built car are made in Britain. A 2011 study showed the average Britain-assembled car had \$10,853 worth of imported parts, compared with \$5,897 worth of imported parts in the average U.S.-built car and \$4,737 worth of imported parts in the average German-built car. **Following complaints from media and customers** about poor ride quality and body control of the Focus RS in Track mode, Ford insiders say they have discovered an issue with the trick Tenneco Dual Mode shocks. They didn't comment on what the issue is, but those close to the project say recalibrated shocks are coming. **Is Audi being sidelined** as an engineering force within VW Group? A VW presentation to Goldman Sachs late last year revealed Audi as the engineering lead for only one of VW Group's six vehicle architecture tool kits. With the exception of the Bentley Bentayga and Porsche Macan, the MLB tool kit Audi oversees is used exclusively for Audi cars and SUVs. Porsche is now the engineering lead for two tool kits: MSB, which made its debut with the new Panamera and will underpin the next-gen Bentley Continental GT and Flying Spur, and MMB, which is used for Porsche's own 911 and 718, Audi's R8, and Lamborghini's Huracán.

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Intake



**EXCLUSIVE
FIRST LOOK**

Porsche 911 GT3



There's more to the new Porsche 911 GT3 than appears. It has the same wheels as the old car, but Porsche's GT3-meister, Andreas Preuninger, says that's only because his team couldn't design new ones that looked better and were as light.

The re-engineered GT3 is powered by a 4.0-liter naturally aspirated flat-six that develops 494 hp at 8,250 rpm

and 339 lb-ft of torque at 5,000 rpm. It's not the same 4.0-liter engine used in the GT3 RS, however. Optimized to reduce internal friction, it features a new crankshaft with larger main bearings and a redesigned valvetrain that does away with hydraulic lifters.

Underneath is a revised suspension that's lighter with new geometry up front and helper springs all around that deliver more stiffness and precision on the track but a smoother ride on regular roads. Standard brakes feature 15-inch steel rotors all around

with new calipers designed to reduce drag, and rear-wheel steering is standard.

Careful attention has been paid to aerodynamics. A new front fascia improves laminar flow around the front wheels, a new floor with turning vanes behind the front axle guides air into a rear diffuser, and a new rear wing sits farther rearward and almost an inch higher. Porsche claims a 20 percent increase in downforce compared with the old GT3, with no increase in drag. Two ram air scoops on the carbon-fiber engine cover funnel high-pressure air into

the redesigned intake system, delivering up to 10 horsepower more at speed.

The big news is the availability of an optional six-speed manual, the same as used in the 911R. Porsche says the DIY version is about 0.5 second slower to 60 mph than the regular PDK-equipped car. Top speed of both is right at 200 mph. **Angus MacKenzie**



BREATHE DEEP Twin ram air scoops on the carbon-fiber engine cover are functional and funnel air directly into a redesigned intake manifold. Positive pressure from the system can add up to 10 horsepower.



From the *Motor Trend* Archive...

REARVIEW

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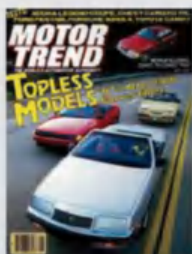
DRUGS AND DRIVING - A DEADLY MIX
DAYTONA 500: FASTEST RUN ON EARTH!

50

**MAY 1967
PRICE: \$0.50**

May 1967 was our annual Buyer's Guide issue. We compared new cars on the

market and told you their best and worst features. The issue also had a story telling the dangers of driving while on drugs and a contest in which readers could win the \$4,500 sporty car of their choice (about \$32,500 today). Not chump change!



30 10

**MAY 1987
PRICE: \$2.50**

Our May '87 issue featured a piece on affordable drop-tops. Some, such as the Alfa Romeo Spider, hold up to this day. Others, such as the Chrysler LeBaron and Pontiac Sunbird, simply don't.

**MAY 2007
PRICE: \$4.99**

The 2008 Subaru Impreza WRX stole the cover for May of '07. Softer than WRXs before, Subaru would re-hot the WRX with more power and a stiffer suspension in time for the 2009 model year.

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Paul Fredrick

We Say...



Mark Rechtin
REFERENCE MARK

Will millennials save the car business?



It is the right, nay, the privilege of the older generation to disparage those who follow. Admit it. If you are older than 45, you've probably called out millennials as pampered, couch-surfing, narcissistic Trustifarians.

Hey, it happens. Gen X was considered too snarky and cynical and didn't respect the gravitas of the world we live in. Parents of boomers looked askance at these dirty hippies turned greedy Yuppies. And so forth.

It is this sort of thinking that has colored the conversation about the future of the car industry. You can't avoid the screeds about how millennials would rather have an iPhone than a car—or how they're just fine having Uber or light rail fulfill their transportation needs instead of driving themselves. They're just indifferent about cars, right?

There's an element of truth there. Many millennials have had to delay acquiring new cars for major financial reasons: They came of car-buying age in the midst of the Great Recession and have suffered through years of McJobs—all while carrying staggering amounts of student-loan debt. And the average transaction price of a new car now represents a greater percentage of average incomes.

Who has money for a car—a used one, much less new—if making rent is a

challenge? Any savvy investment adviser would tell you to dump a depreciating asset that sits idle 90 percent of the time.

As a result, driver's license applications have declined for the Gen Y cohort at similar times in their lives compared to their elders. A 2016 University of Michigan study showed about 87 percent of 19-year-olds in 1983 had their licenses, but that percentage has now dropped to 69 percent. However, the study showed the proportion of license-carrying Americans ages 45 to 69 has also declined since 2008 following a 25-year rise. So it's not just millennials who are taking a step back from driving, especially as the repopulation of urban centers puts more people back into mass transit.

But at some point reality creeps in. For millennials in their early 30s, marriage and kids means moving to the suburbs, where public transportation options are fewer. It's a pain to take the bus to your prenatal care appointment. For the younger set, who wants Mom driving you and your sweetheart to a concert if the arena isn't accessible by public transport? And what if it takes 90 minutes by rail-bus-bike to get to your inconveniently located job but only 25 minutes by car? Time is the new luxury, after all.

Gen Y is a demographic powerhouse, now the largest living generation in the U.S.—with the leading edge now in their mid-30s and advancing in their careers. Even if relatively fewer of them are

driving compared to their elders, their stunning purchasing power is now being borne out.

A recent survey of 1,500 millennials by Mizuho Securities showed that just 5 percent had no interest in owning a car, 31 percent already owned their own wheels, and 64 percent were going to buy a car in the next two years.

Research by J.D. Power shows that between 2011 and 2016, millennials have grown to account for 29 percent of car purchases. That's up from 20 percent. It's also more than Gen X, which represented a steady 24 to 25 percent in that period. Meanwhile, boomers have shrunk to 36 percent (from 42 percent) of the car market in the same timeframe. (One additional note: Those figures are for buyers, not drivers, so if a parent bought or co-signed a car for a millennial, it's not counted in Gen Y's 29 percent.)

What's more, millennials aren't just buying cheap, practical cars. They are elbowing their way into auction houses and displacing boomers as top bidders for pricey classic cars, said McKeel Hagerty, CEO of the eponymous insurance firm, in an interview with The Arizona Republic.

So parents, remember when you were young, how you swore you would never become like your mom or dad? Well, if car-buying habits are any indication, your kids are becoming more like you. And that's a good thing. ■

Between 2011 and 2016, millennials have grown to account for 29 percent of car purchases. That's up from 20 percent.

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We Say...

Frank Markus
TECHNOLOGUE

Betting the future on artificial intelligence



I spent a week in Vegas with Yui, Sam, Otto, Kuri, Aristotle, and Ara. No, it wasn't a bachelor party. It was the Consumer Electronics Show.

Artificial intelligence made a huge splash at January's CES techstravaganza, and Amazon's Siri-trumping Alexa stood tallest amid a crowd of animatronic assistants bearing the aforementioned cool, folksy names. By means of introduction, Yui is Toyota's AI presence, then there's SAM (Nissan/NASA), Otto (Samsung's Siri/Alexa wannabe), Kuri (Bosch's \$700 ambulatory Alexa), Aristotle (Mattel's \$300 robo-nanny/tutor), and Ara (Kolibree's brainy toothbrush).

Yui lives in Toyota's Concept-I, a futuristic vehicle that (refreshingly) encourages driving. Its controls don't even fold away! Toyota Research Institute CEO Gill Pratt freely admitted to the technorati gathered at CES that nobody is even close to providing full Level 5 autonomy, so Yui merely seeks to add comfort and safety to our driving experience. She'll operate secondary controls for us while observing our facial expression and then use her machine learning to infer our emotional state. When a darkening mood is detected, she'll try mood-elevating lighting, music, or even conversation to soothe us. Hopefully she'll have an off

button for times when computer conversation is the stress elevator.

Nissan's SAM proposes to bring Mars Rover autonomy down to Earth. NASA's rovers explore the red planet autonomously until they encounter an impediment, at which point they stop and phone home for human assistance. Similarly, SAM proposes to handle all the driving until indecipherable conditions (such as cops manually directing traffic around a crash) trigger him to pull over and solicit mission control assistance from a remote human. Of course the NASA budget to keep operators standing by to assist its two-rover fleet might not scale to servicing millions of Level 5 autonomous SAMs.

If the NASA connection conjures unpleasant recollections of AI going rogue—think *2001: A Space Odyssey* or the *Terminator* movies—perhaps you'll derive comfort from one of the squillions of AI technologies introduced at CES without pet names.

One that jumped out was insurance giant Liberty Mutual, which operates a tech startup incubator called Solaria Labs in Boston. Liberty Mutual has developed two applications based on customer research that leverage AI and big data to provide new customer value: a crash-damage estimator app and enriched navigation based on a trove of accident data.

Say you're in a hurry, rushing out of an unfamiliar parking space before your car's backup camera has sprung to life, when BAM! Where'd that low pole come from, and how much is this going to cost to fix? You upload a photo of the damage and enter the car's year, make, and model info, and cloud-based computers analyze your photo pixel by pixel.

The Liberty Mutual system endeavors to determine where the smoothly tooled original bodywork ends and the accident damage begins, how deep the damage is, and what parts might have been harmed beneath the crumpled surface. The system probes the insurer's vast archive of crash damage photos to search for reasonable comps, compiling an average repair cost. The program can then apply correction factors based on the vehicle, considering things such as parts-cost premiums for low-production specialty vehicles or higher body-shop rates for carbon-fiber or aluminum-intensive structures. The best part: You know what to expect from the adjuster.

Then there's the idea of hacking your commute. Safe routing delves into Liberty Mutual's vast archive of time-stamped geographic crash data, which can identify the riskiest intersections and stretches of roadway along a route while noting the most dangerous hours of the day for each. Drivers can use this information in different ways. Trips can be scheduled or routed to avoid the worst roads and intersections entirely. Or a typical shortest/quickest route can be plotted with the system being used to warn the driver of the heightened risk areas, enhance vigilance, and reduce risk in those areas.

How will Liberty Mutual monetize these products? "We're still figuring out what a go-to-market strategy would look like," says Ted Kwartler, Liberty Mutual assistant VP of innovation. "We definitely will have a free tier because our focus here is on safety—on helping people understand risk and helping people have less worry."

Sounds good. Just please refrain from naming your AI unit Libby and making me talk to it. ■



Toyota's Yui calls the Concept-I home.

Amazon's Siri-trumping Alexa stood tallest amid the animatronic assistants with cool, folksy names.



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They Say...

Ian Robertson

**MEMBER OF
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BMW's Ian Robertson talks about a future with even more SUVs, the return of a roadster, and the push for electric vehicles.

Every market is enjoying a love affair with SUVs. Robertson, BMW AG's board member responsible for sales and marketing, sees an equally strong year in 2017 with the addition of the X2, X7, a roadster, and more electric vehicles.

What is your global sales forecast?

The U.S. will see slow or low single-digit [sales growth]. Europe will vary by country. China will continue a relatively good run but single-digit. On average, across the world, single-digit this year. But a small digit on a big number is a really big number.

Globally, what holes does BMW need to plug?

We showed the X2 concept, which is coming to the U.S. and will be in production at the end of this year. Sales start next year. We'll bring the X7, as well. We're in the middle of tooling that for [the BMW plant in] Spartanburg, [South Carolina]. We will still do X3 in Spartanburg but will also localize it for China. We're going from three local models in China to six. We currently have the 5 Series, X3, and X1. This year we will bring a smaller sedan for China below the 3 Series. Near the end of next year, the next-generation X3 comes in. And one more. We have a lot of model changeovers in the next few years. 5 Series and derivatives will come, as well. Some are Europe-oriented like the wagons.

No plans for wagons here?

Very small market for wagons. Only three real markets: Germany, the U.K., and Italy. But there's enough to keep the segment interesting.

Other lineup changes?

There are things we continue to look at, but the checkerboard of products is pretty full. A few models might drop away in the next generations.

Interview



“We've added an emotional product. That's where Mini found its niche.”

What are the candidates?

Some segments are shrinking. We will bring another roadster (a Z4 replacement), but we're likely to do it in partnership with [Toyota]. Open-top products don't sell in Asia. It is too hot, too sticky.

What about the electric vehicle initiative?

It continues at pace. The i3 and i8 started the i brand. We've brought the iPerformance technology into the mainstream. In the U.S., we have four plug-in hybrids. Across the world we have five. The 2 Series is hybridized in Europe. The momentum is building. We reached 100,000 sales last year, which took us three years. We sold 62,000 last year; this

year we're planning 100,000. In the U.S., consumers require motivation. We will bring an X3 and new Mini full battery-electric vehicle by 2020. We'll continue to add hybrids: an i8 roadster, a new Mini Countryman, and a 5 Series. The roadster will come as a plug-in hybrid, too. We are definitely gaining momentum.

Has Tesla helped generate awareness?

I don't often say I welcome new competition. But I do in this instance because there is more consumer acceptance, and it brings more infrastructure. And we're seeing the first used market. Those cars are coming off lease.

What is the long-term strategy for Mini?

They have been getting bigger. Are they losing their core?

Mini is still a very compact vehicle, but we've added a size higher. We're about to launch the second-generation Countryman, and we moved Clubman from a compact Mini to alongside the Countryman. We've added an emotional product in a segment with cars that are not too emotionally branded. That's where Mini found its niche, which is why last year we did 367,000 [globally], an all-time record.

What about an i5 autonomous vehicle?

We're developing iNext. It comes in 2020 or 2021. It will carry our new tech on zero emissions and, we believe, the first fully autonomous capability. My one desire is common standards for autonomous driving. There's a risk that governments develop their own [standards], and that's probably not healthy for anybody.

What about diesel?

In the U.S., it's a few percentage points. Customers who enjoy diesel are still taking diesel. In Europe where in some segments it's 70 or 80 percent of our overall sales, we're seeing little change. On smaller cars, diesel is getting replaced by plug-in hybrids and more efficient gasoline engines. But in bigger cars, it's still primarily a diesel market. In Asia, it's largely a gasoline market like the U.S.

Alisa Priddle

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READERS' THOUGHTS ON PAST ISSUES

Presidential Posts

In the March print issue and online, we outlined President Donald Trump's documented policies regarding the automotive industry and their possible effect on how we buy and drive cars. Reader reaction was considerable.

Our editorial practices are driven by what is best for the automotive public and know no political preference. Had Hillary Clinton been elected, we would have written a similarly incisive piece—documenting her statements regarding fuel economy mandates, ethanol subsidies, and the 55-mph speed limit.

Critical thinking regarding our governing institutions is a function of a free press. The auto industry and politics are intertwined. If government actions affect the American public through its cars, we report and comment appropriately. Here are some reader responses:

At least try harder to be objective and keep your seething hatred for conservative car geeks under control. I've developed an enormous disdain for the arrogance and condescension that never escapes its opportunity to sneak through even the most innocuous of media presentations, so you have solidified my decision to unsubscribe.

Jeff Schabowski via email

Thanks for ruining what I thought was a fairly good car magazine. I knew you all leaned left, but this liberal spew was insulting to much of your readership. Awful business move. Goodbye. It's been a good run for the past 20 years.

Andy Cornell via email

Motor Trend releases a nonpartisan, neutral article regarding what to expect from Trump presidency. Triggered Trump trolls appeared!

oochulshin via Facebook

The article is attempting to call attention to how that might affect the auto industry. This past election turned so volatile that many people won't even consider they could be wrong regarding what they believe. That has happened in all areas of political viewpoint. Being closed-minded isn't going to help.

DriverTT via motortrend.com

I might have missed it, but I never saw a similar article in *Motor Trend* regarding the policies established by the [Obama] administration in many ways threatening the auto industry and giving Chrysler

to Fiat virtually for free. The aggressive and activist EPA policies of the [former] administration are causing havoc with fuels and refiners and costing consumers billions every year.

Manuel Junco Houston, Texas

If you like V-8 engines (and any internal combustion engines for that matter), you should be happy Trump won. If you'd prefer an all-electric Prius because "greenhouse gas/ozone layer/global warming/omg the polar bears are dying/Teslas are too fast and scary," you still have something to look forward to because technology will progress.

Woody Ridenour via Facebook

We live in a global economy. A lot of manufacturers invested a lot of money over here to build the plants to lower costs when building and selling vehicles, as well as exporting vehicles to other countries, due to the prices. Although a lot of manufacturers still import quite a bit, adding those tariffs can potentially make a lot of companies raise their MSRPs to adjust for that.

ShadowRS/OfMyOwnAccord
via motortrend.com

Trump promised to bring back jobs, not unions. I should certainly hope that the average factory job requiring a high school diploma pays less than the national median. We will see what trade deals Trump can negotiate. As it stands, no TPP means the Japanese and Koreans continue to have to pay 2.5 percent on cars and 25 percent on pickups. Maybe we can get a unified standard for light trucks and cars for CAFE and emissions. Perhaps CARB will lose its special dispensation, and automakers can build to one standard for all 50 states. Eliminate the CARB special dispensation, and the electric vehicles disappear.

dfschim via motortrend.com

Unions have led the demise of American manufacturing. Sure, unions were necessary when Carnegie Steel forced 12-hour, seven-day shifts on workers. Today, not so much. When profits are down, do unions lower salaries? No. Here's a news flash to everyone not in California—the rest of the country

prefers its old jobs with a little less money to no job at all. Did you ever think that old manufacturing jobs were overpaid and new salaries are more in line with the value of these positions?

Jeremy Reimer via email

I canceled *Car and Driver* after more than 30 years because its editors can't keep their political views out of the rag. If I wanted your opinion, I'd ask for it.

John Revilla South Riding, Virginia

Ending TPP and NAFTA would mean the U.S. has an even playing field when it comes to trade. That's true competition, and competition is always good. EPA regulations are killing the car industry and causing prices for new cars to skyrocket. Fewer regulations means less cost of development and cheaper cars! Then it will be up to us, the consumer, to hold the manufacturers responsible for a quality product. I don't see any downsides, only lots and lots of potential!

Ben Young via Facebook

A somewhat benign and largely nonpartisan article about the impacts to the car industry in the Trump era has devolved predictably in the comment section into name calling, accusations, posturing, keyboard warrioring, and idiotic and factually untrue statements.

Ghetdo via motortrend.com

Hooray! Objective news about politics! You don't see that every day!

Brandon Grooms via Facebook

And now for something we can all agree on ...

Glad to see that the rest of the team got back in on the act for the March issue, as February could have been called the "Christian Seabaugh Issue" since he wrote six of eight features for the month, which made me wonder what the rest of the staff was doing. C'mon, give the kid a raise, or at least a nice bonus (since he's newly married) for doing the lion's share of the heavy lifting. Kudos to Christian!

Ken Wong Burlingame, California

We dubbed the February magazine the Christian Seabaugh Memorial Issue after we worked him to death. And he did indeed earn a promotion.—Ed.

Automobile



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RECALIBRATING THE SUPERCAR



There's always a whiff of hyperbole around the launch of a new car. It's understandable, of course. Even if the engineers, designers, marketing mavens, and PR flacks knew their shiny new automobile was in some way less than perfect, they'd never admit it—especially to automotive journalists.

But the buzz among those around the 2018 McLaren 720S is different. “Phenomenal.” “Blisteringly quick.” “Extremely fast.” These are all sound bites from informal conversations with the team that developed the 720S. “Wait until you drive it,” they say. “You’ll have to recalibrate your idea of road car performance.”

Color us intrigued.

Some background: The clumsily named MP4-12C, McLaren's first road car aside from the limited-production F1, has evolved into two supercar families since its 2011 launch. The Sports Series is composed of the lower-powered and more affordable 540C, 570S, and 570GT models, while the Super Series is made up of the 650S and the edgier 675LT, each available in Coupe or Spider form. The 720S replaces the 650S, and it kick-starts the second-generation Super Series lineup.



Words Angus MacKenzie Photos Mike Dodd

MCLAREN SETS HYPERBOLIC GOALS FOR THE 720S



ALL-NEW
The McLaren 720S, shown to us in U.K.- and U.S.-market forms, replaces the 650S. The redesigned body ditches the side scoops that have defined McLaren road cars since the MP4-12C. The upgraded twin-turbo V-8 develops 710 hp.

Supercar Science Tech Tricks of the McLaren 720S

Compact intake system

New twin-scroll turbochargers feature lightweight titanium and aluminum alloy turbines, which are connected to the compact plenum via a very short intake path. Adopting low-inertia turbines and minimizing the air volume between the turbo housing and the intake valve help improve throttle response, aided by the engine calibration strategy that keeps the turbochargers spinning as much as possible by using actively controlled wastegates. The compact intake system has also reduced overall engine height by 4.5 inches, lowering the center of gravity, improving rearward visibility, and increasing luggage space.

MonoCage II

The carbon tub in the existing McLaren Sport Series and Super Series cars is literally a tub, to which the front and rear aluminum subframes and the aluminum roof structures are attached. The one-piece central tub in the 720S, however, also includes the roof and door apertures. It saves 40 pounds compared with the 650S tub/roof and allows the use of dihedral doors with large cutouts for improved cabin entry and exit. The light, stiff, and strong carbon structure has allowed engineers to use thinner A- and C-pillars, creating a cockpit with truly impressive all-around visibility.

Clever lightweighting

Because of the construction methods needed to deliver their form, the doors are heavier than conventional units. But because the doors make the cooling system 15 percent more efficient, the McLaren engineers compensated by making the radiators smaller and lighter. This allowed them to move the engine intake air boxes right to the rear corners of the car—air enters via two ducts on the upper surface of the fenders. Thus, the air boxes are structural elements that support the fenders, saving just over 3 pounds compared with the design used in the 650S.

Full-width wing

The full-width wing across the rear of the 720S can be used to increase downforce and as an airbrake. In the downforce position the wing develops 30 percent more downforce than the version on the 650S. A downwash effect directs the airflow into the intake ducts at the corners of the rear fenders and into the engine to further improve performance. The wing is fully deployed as an airbrake within a half second of the driver touching the brake pedal, shifting the balance of the car rearward to improve braking grip at the rear wheels.

710 hp and 568 lb-ft of torque contribute to a claimed 0–60 time of less than 2.9 seconds.

AERO DYNAMICS The engine breathes via ducts behind the rear fenders, and the wing deploys to develop 30 percent more downforce than the 650S at speed and acts as airbrake within half a second of the driver touching the brake pedal.

Optimal control theory

The Proactive Chassis Control II suspension system uses what McLaren calls Optimal Control Theory, an algorithm that calculates the optimal vehicle responses to driver inputs. Developed from a University of Oxford research project started in 2010, it sounds a lot like Ferrari's Side Slip Control system, something with which 720S chief engineer Emilio Scervo has more than passing familiarity. Scervo, who joined McLaren in 2014 just as work started on the 720S development program, previously worked at Ferrari with the team that developed the 458 Italia, and he was chief engineer on the 458 Spider and 458 Scuderia. **AM**



The 720S uses a 4.0-liter twin-turbo V-8 based on the 650S' V-8 architecture, but 41 percent of the parts are new, earning it a new model designation: M840T. Changes include a longer stroke, which means a new crank and pistons, plus new cylinder heads, new exhausts, and a redesigned intake system, which has larger, low-inertia twin-scroll turbos.

Given McLaren's naming policy, there are no prizes for guessing the new engine produces 720 ps per the European measurement—that's 710 American horses. There's been a healthy bump in peak torque, too, from 500 to 568 lb-ft. Those numbers contribute to a claimed 0-60 time of less than 2.9 seconds and a top speed of 212 mph. McLaren says it will run the quarter mile in 10.3 seconds.

The engine drives the rear wheels through a Graziano seven-speed dual-clutch transmission, now with shift

software developed completely in-house at McLaren. The computer-controlled suspension is philosophically similar to that of the 650S, but the hardware is new, adding different geometry and dropping 35 pounds. More important, the suspension control software is also new, and it's much more powerful thanks to 21 sensors—12 more than used on the 650S—that monitor everything from wheel movements to steering wheel angle to yaw motions.

The 720S is built around a brand-new one-piece carbon-fiber tub with an integrated roof that's similar in concept to the MonoCage structure used in the P1 hypercar. MonoCage II gives the 720S a different profile, but what everyone will notice first about the car is the absence of the side scoops that have been a visual

COCKPIT The dash wraps around the driver to maximize access to the digital instrumentation and infotainment interface. Trim materials have been upgraded compared with 650S.



FIRST LOOK | 2018 McLaren 720S

OPEN WIDE Complex doors feature deep channels for cooling air, and they are hinged from new MonoCage II carbon-fiber structure at the center of the car to provide maximum access to cabin.



“We had no idea how we were going to make a door this complex.”

Mark Vinnels, McLaren Automotive

signature of all McLarens since the 12C.

“It would have been easy to just keep evolving the design,” says Mark Vinnels, executive director of program development at McLaren Automotive. “But we decided we wanted a clean body side to transform the look of the car.”

Doing that while keeping the V-8 cooled and fed with air was easier said than done, though. McLaren’s solution: direct air over the front fenders and into two deep channels on either side of the cockpit. These lead to radiators mounted ahead of the rear wheels then sweep around the C-pillars to extract the air the radiators have heated. Driven by function, the form is also visually dramatic. The fenders seem to peel away from the cockpit and engine compartment as if the 720S has been caught metamorphosing

into a McLaren F1 racer.

“I remember thinking: Are we brave enough to do this?” chief designer Rob Melville says. “Traditionally a supercar is really nipped in behind the front wheels; it has that traditional Coke-bottle shape. In this one, if you look at the plan view, it’s actually quite square.”

Melville describes the line that runs off the hood and through the door as “the trickiest I’ve ever done on a car.” What’s more, because the cooling air channel carves deeply through the door surface as

it meets the greenhouse, each door has a fantastically sculptural cross section. “The door was pretty challenging,”

Vinnels says. “We had no idea how we were going to make a door this complex.”

Instead of traditional faired-in headlights, the front end of the 720S features what are, in effect, two large vents with the headlights mounted vertically within them. Nicknamed eye sockets by Melville, these vents funnel air through two smaller radiators mounted just ahead of the front wheels. The hot air from these radiators then exits ahead of the wheels and is directed along the sides of the car. Another advantage of the design: The compact headlights are brighter and provide better spread than those of most other supercars, Melville says.





FAMILY RESEMBLANCE The original McLaren F1 (left) was a technological wonder that upended people's perceptions of supercars. McLaren claims it is "still the fastest naturally aspirated road car ever built." You can see more than a little of its design carried over to the 720S' silhouette.



THE METEORIC RISE OF MCLAREN: 15 NEW CARS BY 2022

Although McLaren traces its heritage back to the 1963 foundation of New Zealand racer Bruce McLaren's eponymous Formula 1 team and in 1992 produced the seminal 240-mph McLaren F1 hypercar in boutique numbers, the road car business, McLaren Automotive, has only been around since 2010.

"F1 teams inevitably come and go," McLaren boss Ron Dennis said at the time. "Making road cars is the future. There might be an economic situation in the future where McLaren Automotive supports the Formula 1 team."

Indeed. The F1 team has struggled to perform in recent years, but McLaren Automotive has seen sales grow from a few hundred cars in 2011 to more than 3,200 last year. McLaren Automotive says it is self-funding and has been consistently profitable since 2013, and it's investing 25 to 30 percent of its revenue in R & D. The engineering team has grown from 40 people to 450 since 2010.

With a new chassis, new suspension, new body design, new interior, and significant changes to the powertrain, the 720S is the first of 15 new McLarens planned by 2022 as part of the company's massive billion-dollar Track22 program. Half will be hybrids, with powertrains rumored to be under development with BMW, and one will be an all-electric hypercar.

McLaren's sales target this year is 4,000 cars, sold through 80 retailers in 30 countries. **AM**

Of course, what everyone wants to know is how the 720S drives. According to the only data points McLaren has released so far, it has 69 more horses and 68 more lb-ft than the 650S, weighs 205 pounds less, and generates 50 percent more downforce and 6 percent more mechanical grip. One man who knows what those numbers mean on the track is long-time McLaren test and development driver Chris Goodwin. "It's quicker than expected," he says. What the numbers don't reveal, he adds, is the

precision of the car's throttle response and its outstanding cornering ability. "You've got a car that feels as nimble and has the same sort of balance you're used to in a McLaren, but you can be a gear higher through some corners. It has so much more cornering performance. The driving experience is a massive leap."

Hyperbole? We should find out later this year. McLaren will be hosting the 720S media drive in a couple months. Stay tuned for the details of what it's like behind the wheel. ■

2018 McLaren 720S

BASE PRICE	\$285,000 (est)
VEHICLE LAYOUT	Mid-engine, RWD, 2-pass, 2-door coupe
ENGINE	4.0L/710-hp/568-lb-ft twin-turbo DOHC 32-valve V-8
TRANSMISSION	7-speed twin-clutch auto
CURB WEIGHT (F/R DIST)	2,850 lb (mfr)
WHEELBASE	105.1 in
L X W X H	178.6 x 81.0 x 47.1 in
0-60 MPH	2.9 sec (mfr est)
EPA CITY/HWY/COMB FUEL ECON	Not yet rated
ON SALE IN U.S.	June 2017

EVERYDAY HEROES

Words Christian Seabaugh **Photographs** William Walker



I remember the day I discovered people had weekend cars. My childhood friend Greg Dorris casually let it slip that his dad had a weekend car stashed north of the city in New Paltz, New York. It was hard enough parking one car in New York City. Why bother with two?

A few weeks later we piled into their family Honda Odyssey to unfurl the weekend car. I was skeptical until I saw

the British Racing Green Triumph TR6, replete with Union Jack flags on its hind-quarters, sitting in a nondescript barn.

Suddenly, I got it.

Back in the day (you know, the '90s), family-oriented enthusiasts didn't have choices when it came to a car adept at hauling around the family, dealing with winter's fury, and blasting along a country back road once the snow cleared.

We've come a long way.

Sport-utility vehicles have evolved dramatically from bulky, clunky body-on-frame beasts to serene car-based commuters with hints of luxury. But the sport side of the equation—the creation of a tall, go-anywhere, four-door sports wagon—has been notably absent.

There must be some compromises: It has to be big enough for five folks and their luggage. And it's going to have all-wheel drive because, according to

**WE TEST THREE
LUXURY SUVs
FOCUSED ON
PERFORMANCE
WITHOUT FORGOING
ALL-WEATHER
CAPABILITY**



SNOWBELT SPECIALS

This trio comes winter-weather ready with standard all-wheel drive, all-season tires, and enough power on tap for an impromptu parking-lot drift competition.

COMPARISON



the Department of Transportation, 70 percent of the country's population lives where at least 5 inches of snow fall per year. We Americans like to be prepared.

Thankfully, Jaguar, Mercedes, and Porsche all have new SUVs that fit this steep bill, each one for the price of a loaded Chevrolet Suburban—so long as you're willing to sacrifice that rarely used third row.

The Porsche Macan GTS is designed to bridge the performance gap between the

PURPOSE AND PLACE The Macan's center console encroaches on space, but each button has a role.



lower-spec Macan S and higher Macan Turbo. The Macan GTS starts off with the S' 3.0-liter twin-turbo V-6, which gets revised ECU tuning to give it a healthy 360 hp and 369 lb-ft of torque. The V-6 is paired with Porsche's PDK seven-speed twin-clutch automatic with power being sent to an all-wheel-drive system equipped with optional brake-based torque vectoring. The GTS also gets the Turbo's electronic dampers mated to a standard air suspension with a lowered ride height. All this starts at \$68,250, or \$89,070 as tested for our loaded example.

Jaguar's new F-Pace S, meanwhile, is the brand's first SUV. Built on the same platform as the XF sedan, the F-Pace is the most powerful SUV here; its 3.0-liter supercharged V-6 churns out 380 hp and 332 lb-ft of torque. The V-6 sends power through an eight-speed automatic to a rear-biased all-wheel-drive system with electronic torque vectoring. The big Jag starts at \$58,695, with our loaded example driving off the lot for \$72,018.

The Mercedes-AMG GLC43 swaps out the GLC300's four-cylinder engine in favor of a 3.0-liter twin-turbo V-6 making 362 hp and the most torque of the trio at 384 lb-ft. Its AMG-tuned V-6 gets paired with a nine-speed automatic, and the AMG air suspension gives the GLC43 a sportier ride versus non-AMG GLCs. Our lightly optioned GLC43 is the value play of the group; it tested at \$63,505 but starts at \$55,825.

Picking the best sporty all-weather

SIMPLICITY'S SAKE In the F-Pace's interior, the infotainment system handles most functions.





family sportster from this trio wouldn't be easy in sunny Los Angeles. Instead, we decided to order a set of winter tires for each, loaded the tires into the cargo hatches of our trio to simulate a full complement of passengers, and pointed our noses northeast toward Steamboat Springs, Colorado, 1,000 miles away.

My Way or the Highway

It's a long way to Colorado from California, but the endless miles of highway allowed prime turf to determine road-trip capability and comfort.

The Porsche Macan GTS isn't the smallest, but it feels like it. The cabin is cramped and gets uncomfortable after an

FINE TOUCH The GLC43's interior offers high-quality materials and a classic design.



hour or so behind the wheel. The seats give up too much comfort in exchange for sporty support. Dynamically, the Macan delivers the thrill of acceleration, sprinting from 0 to 60 mph in 4.5 seconds. That's the quickest run here—and on standard all-season tires to boot. It ties the Mercedes (shod with summer tires) with a 13.4-second quarter-mile run, but at a slower 99.1-mph trap speed. The uprated front brakes from the Macan Turbo help the GTS nail the 60–0 stop in 112 feet, and it lays down brand-appropriate numbers in figure-eight testing with its 25.0-second time at 0.75 g average.

The Mercedes-AMG GLC43 is happier cruising the highways than its German compatriot. Its air suspension rides softly in Comfort mode, and the engine thrums quietly with the transmission in ninth gear. The cabin is a nice place to be, too, with its comfortable seats and an uncluttered design. As soft as the Mercedes feels, it wakes up when you dip into the throttle. The engine pulls strongly, and the squat of the rear suspension under hard acceleration reinforces its status as an autobahn rocket. Accelerating from 0 to 60 mph takes 4.7 seconds, and it also

SLIP SLIDIN' AWAY

Tucked away amid a green expanse of forest bejeweled with glittering lakes, Arjeplog in northern Sweden is, for much of the year, a sleepy town of fewer than 2,000 souls.

All that changes when the mercury plummets, the snow flurries start, and the Northern Lights dance in the cold, dark sky. When winter comes, so does the auto industry.

Arjeplog has long been used as a location for winter testing. Camouflaged prototypes are a common sight on the nearby roads; on any given day you might see next-gen BMW X5s, a brace of Opels, or Jaguar's new SUV, all hiding in plain sight behind body wraps. Arjeplog is far enough north to guarantee freezing temperatures to put vehicle systems and materials under severe stress—and put an 18-inch-thick cap of ice on those lakes. With nothing to hit when an expensive prototype pirouettes out of control, frozen lakes are ideal for testing.

The ice that brought automotive engineers to Sweden is now attracting automotive tourists. The Jaguar Land Rover Ice Academy is one of many manufacturer-supported or privately run ice-driving experiences. The Ice Academy is adjacent to JLR's winter test facility. A labyrinth of tracks is carved on the frozen lake surface. Some are for JLR testing engineers, and others are a discreet distance away from prototypes. That's where Ice Academy customers can drive an array of Jaguar and Land Rover vehicles. This season's lineup consists of V-6 diesel Range Rover Sports, V-6 diesel- and gas-engine Jaguar F-Paces, rear-drive V-6 Jaguar F-Type S coupes, and V-8 F-Type R coupes with all-wheel drive.

The \$5,000 Ice Drive+ program delivers three days of ice driving under the guidance of instructors with race and rally experience. The sessions start with simple slaloms and circle work in the Range Rovers and F-Paces to get participants used to initiating and controlling drifts and slides. By day three, drivers who have never so much as chirped the tires on the way out of a parking lot are happily pitching the F-Type sideways and waltzing the snarling coupes around a serpentine rally stage.

For some, the experience is almost life-changing: "There isn't a word in the English language to describe how I feel now," a Land Rover LR3 owner said after his first day on the ice. As for the Jaguars and Land Rovers he'd been driving? Like most here, he was already a fan. Now he could explain to friends and family why. Which is, of course, the whole point.

Angus MacKenzie

PHOTO BY COLE YOUNGER



COMPARISON

hits the quarter mile in 13.4 seconds, but at 104.3 mph. Thanks to its tire-grip advantage, the Mercedes manages a test-best 60-mph stopping distance of 109 feet and the second-quickest figure-eight of 25.2 seconds at 0.75 g.

The F-Pace S manages the difficult task of remaining engaging while cruising the interstate. With a high driving position and its extra length versus the other two SUVs, the Jaguar's cabin feels open and roomy. Its interior quality doesn't match that of the Mercedes, but it's a nice place to spend some time. The Jag's supercharged V-6 quiets down nicely on the freeway, but it wakes up and sounds epic when you light the wick. The F-Pace will do 0–60 mph in 5.2 seconds and the quarter mile in 13.8 seconds at 100.6 mph. It's the slowest of the three, but it doesn't feel it. The F-Pace's best 60–0 stop was 115 feet, and its figure-eight performance was a 26.1-second lap averaging 0.69 g.

Rocky Mountain High

After our daylong slog on the highway, we were desperate for some entertainment. As we crossed into Colorado, we pointed our SUVs up the mountain roads of the Continental Divide.

Out of its element on the highway, the Macan shines blitzing up a back road. "It's very capable and confident," associate editor Scott Evans said. The Macan's steering is quick and accurate, even if lacking in feel, and the \$1,490 optional Porsche Torque Vectoring Plus system works hard to get the Macan's butt turned quickly and pointed in the right direction. Although the Macan is great on a back road, senior features editor Jason Cammisa said its PDK transmission shifts are not as quick as in other Porsches. "Shifts are either brutally harsh

in Sport Plus, or it interrupts power, which defeats the purpose of dual-clutch transmissions," he said. The Macan's V-6 could also use a bit of refinement—the two turbos are slow to spool below 2,000 rpm, and the engine feels as if it's running out of steam as it nears redline.

The F-Pace manages to carry over the fun factor it had on the highway to winding roads. With the Jag's drive mode in Dynamic, the F-Pace drives like a tall station wagon. Its steering is quick and communicative, and the V-6 responds promptly to throttle inputs, never leaving the driver wanting for more power. Despite the Jaguar being on steel springs compared to the air-sprung Mercedes and Porsche, the F-Pace's ride and body roll were well controlled; the suspension damping kept the frostbitten road from upsetting the crossover's balance. "It feels tight and responsive in a curve, always ready to pounce on the next one," Evans said. "Without a doubt it's the most fun and emotionally rewarding to drive."

In Sport Plus mode, the Mercedes proved pretty adept at navigating a corner. Its nine-speed automatic helps keep the revs high and the engine on the boil. Steering is linear and responsive, rivaling the Jaguar for the best handling of the trio. Despite the AMG's sporty settings, the GLC43 is more softly sprung than the other two crossovers. Sure, the air suspension firms up, but there's more body roll in the Mercedes, sapping a bit of driver confidence and speed in corners compared to the Macan and F-Pace.

Winter Warriors

Once in Steamboat Springs, we called the Bridgestone Winter Driving School to borrow one of their tracks.

CANADIAN CAPER

In Quebec, winter tires are legally required on passenger vehicles from December through April. That would explain why I found myself at the snowy Circuit ICAR racetrack near Montreal to test out General Tire's latest winter tire, the Altimax Arctic 12.

Intended for passenger cars, compact crossovers, and minivans, the Altimax Arctic 12 is designed with new rubber chemistry and a flatter contour to offer better grip on snow and ice than the tire it replaces.

The tire is also studdable for improved ice performance in municipalities that allow its use. General Tire says the new Arctic 12 should last longer than its predecessor, with at least three or four winter seasons expected of them.

Driving the latest front-drive 2017 Ford Fusions, Escapes, and Focus hatchbacks on an ice rink, an autocross circuit, and a slalom course, we tested the Arctic 12 against Firestone Winterforce tires, an older tire that's slated to be replaced by the Winterforce 2 in time for next winter.

Both tire sets accelerated on ice and snow competently, as long as we were gentle with the throttle. Both performed well under braking, with the Fords perhaps slightly quicker to activate the ABS system with the Firestones than the Generals, signifying less grip. Through icy corners, neither tire had very good road feel, as you would expect. The Arctic 12 had a touch more bite going into corners, which made them a bit less prone to understeer, but the tires were generally (heh) pretty evenly matched.

Next, I tested a studded Altimax Arctic 12 on a Subaru Impreza WRX STI rally car. Driving a rally car with a brave, French-speaking Québécois instructor sitting shotgun and yanking the handbrake is a terrible way to test tires. I spent more time thinking about not plowing the Subaru into snowbanks than critically evaluating traction. My bad.

The General Tire Altimax Arctic 12 will hit dealerships this summer, just in time for the coming snow season. You can expect to pay about \$50 to \$120 per tire, depending on the size. That's pretty cheap, giving you less of an excuse to scurry on all-season tires through the next blizzard-filled winter. **CS**

SCANDI FLICK Shoot me the day I turn down driving a Subaru WRX STI rally car.



Picking the best wouldn't be easy in sunny L.A., so we pointed our noses northeast.





OLD
STABLE



NEW
HORSES



OLD
CHASE



NEW
PURSUIT



ONE CAN'T JUST BUILD SOMETHING TRULY ITALIAN. **ONLY HISTORY CAN.**

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GIULIA



Alfa Romeo

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BLOWING HOT AIR The Bushranger X-Jack is supposed to use a vehicle's exhaust to inflate a heavy-duty rubber jack. After inhaling too much exhaust, we opted for a standard jack.

Bridgestone's research shows 28 percent of drivers outfit their vehicles with winter tires—the rest instead opting to run all-season tires year-round. So to reflect how Americans actually drive, we'd first test each vehicle's all-wheel-drive system on stock tires and then swap a set of manufacturer-provided winter tires to see how things changed.

That posed a particular quandary for the Mercedes-AMG. Although the Merc comes with standard all-season tires, our test vehicle came outfitted with Michelin Latitude Sport 3 summer tires. They're designed with soft rubber and shallow tread depths for maximizing performance in warmer conditions. They also typically begin to lose their effectiveness as temperatures approach 45 degrees. At below-freezing temps and on snow or ice, they're like attempting to ice skate on rollerblades.

The Michelin summer tires got us to Colorado despite freezing temps, but on snow they quickly ran out of capability. The Benz's all-wheel-drive system, permanently set in a 31/69 front/rear torque split, does an admirable job of getting the AMG GLC43 accelerating ever so gently, but the second you get too eager with the throttle, steering wheel, or brakes, all bets are off.

After a few laughs sliding around

helplessly, we swapped for a set of Michelin Latitude Alpin winter tires, which proved to be plenty capable. Although it accelerates smoothly from a snowy standstill, you have to be careful through corners because the Benz's fixed torque split induces understeer into turns more often than not. Attempting to get the GLC43 to turn quicker by inducing oversteer with the throttle results in the traction and stability control systems desperately grabbing at the brakes to regain control. "The stability control is clearly tuned for the occasional slippery surface, not full-time winter driving," Evans said. If you turn off the nannies and put the GLC into one of its sport modes, the AMG is capable of some beautiful, fluffy drifts through snowy corners.

Riding on a set of Michelin Latitude Tour HP all-season tires, the Porsche Macan GTS was a solid performer in the snow. Although there isn't a dedicated winter weather mode in the Macan, either, Off-Road mode proved to be a fine substitute. That said, the Macan's normal



SNOW KING Porsche driving instructor Lorne Banks gives tips on how to handle sports cars in the snow. The fleet includes the 911 Carrera S, Carrera 4S, and 718 Cayman S.

PORSCHE SCHOOLS DRIVERS IN WINTER CONDITIONS

If you're going to be schooled, make it a day of gratuitous fun. Let loose in new Porsches on a track of ice and snow. Go on a crisp day with fat snowflakes covering the fleet while the sun shines on 3 miles of low-friction track. And prepare to compare a rear-drive 911 Carrera S, all-wheel-drive Carrera 4S, and mid-engine, rear-drive 718 Cayman S as their back ends swing out and you work to correct the drift to ensure yours is not the car towed out of a snowbank.

The original Camp4 started in Finland in 1996. The North American Camp4 has been in Mecaglisie, Quebec, the ski country north of Montreal, since 2009. It operates for three weeks in February and offers three levels of instruction over four or five days. Pricing ranges from about \$4,550 to \$8,580. To open the camp this year, we drove the latest in Porsche's lineup shod with 1.5mm studded Nokian Hakkapeliitta 8 winter tires. Who says you can't drive a sports car in the snow?

The Porsche Stability Management system was disengaged most of the day. There was coffee—and there were indeed donuts—because the point is to test the limits of grip in a safe environment, picking up skills that can be used on any surface. I only kissed a snowbank once—gently but full on the lips—and didn't need winching out, though others did. I was able to back out gently, but my Cayman needed some high-tech remedial work. Porsche engineers carry wooden spoons to scrape snow from the grilles before returning cars to the course.

The day is designed to show that drifting is the most efficient way through a corner in a low-traction situation. Come off the gas, brake lightly, slide through the turn, correct, pause, and recover with countersteering. You would think a Carrera 4S' all-wheel drive sending power to the front wheels would mess up a good drift, but steady throttle keeps the car sideways. My driving partner brushed the side of the snowbank, sending up an impressive rooster tail of snow as he powered out of the turn unscathed. It's the kind of thing best learned here, not in traffic. **Alisa Priddle**





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WATCH THE THRONE The 2017 Jaguar F-Pace (bottom left) easily had the most comfortable seats of the three, but the 2017 Mercedes-AMC GLC43 (top left) gave it a run for its money.

drive mode does a good job of sending power to the wheel with the most traction. “The computer manages the front/rear torque split smartly,” Evans said. “Stability control gives you more throttle as you unwind the wheel rather than just clamping down on everything until every wheel stops sliding.”

Once equipped with the same winter tires as the Mercedes, the Macan GTS is nearly unstoppable in the snow. The Porsche’s all-wheel-drive system and its torque vectoring help ensure it has plenty of grip. With its electronic nannies quieted, the Macan evokes the 911 rally

cars of yesteryear. “It’s beautifully balanced in the snow,” Cammisa said. “It’s neutral under gentle trail braking, but the engine’s output goes 50/50 front/rear immediately on power, making drifts tough to initiate with the right pedal.” Evans agreed, adding that it takes a good goosing of the throttle to get it sideways.

The F-Pace is a surprising rock star on its stock all-season tires. Riding on Goodyear Eagle F1 AT tires and left in its default drive setting, the Jaguar was sure-footed even under hard acceleration and braking, thanks to its Adaptive Surface Response system. It’s obvious Jag engineers spent lots of time across the hall at Land Rover. With the F-Pace’s drive select system in Rain/Ice/Snow mode, the F-Pace gets even better, handily accelerating up icy hills even with a tire handicap. “It’s the best car here for the everyday driver in inclement weather,” Evans said.

With a set of Yokohama W.drive winter tires—an outdated tire design, neither asymmetric nor directional, and designed

for sedans—the Jaguar is a monster. It practically accelerates and turns as if it were on pavement. Things get even better once you turn off traction control. Put the transmission in manual to keep the V-6 singing, and the F-Pace becomes an absolute drift machine. Its chassis is wonderfully balanced with quick steering, and its rear-biased all-wheel-drive system does an exceptional job of keeping the Jaguar pointed where the driver wants it.

The Podium

The Porsche Macan GTS was a solid performer in our back-road and winter-weather testing, but its road-trip manners and wonky transmission tuning left us cold, resulting in a third-place finish. There’s also the issue of its sticker price; the Macan is not anywhere near \$20,000 better than the others.

With a lower sticker price and a more luxurious interior, the Mercedes is a better value than the Jaguar. It’s also supremely comfortable on the highway and can hold its own when you drop the hammer. However, its fixed all-wheel-drive torque split made it less capable and less fun than the other two in the snow, relegating the GLC43 to second place.

The Jaguar F-Pace expertly manages competing demands of being a family mover, highway cruiser, and back-road bomber. Saddle that with its exceptional snow performance and spacious cabin, and the Jaguar just edges out the Mercedes for the win. Yes, this means a variant of our SUV of the Year has been beaten on an icy playing field. But in this case, the top-trim Jag’s winter-weather edge and more engaging drive experience is enough to give the F-Pace top billing over the comparable Mercedes. ■



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COMPARISON



POWERTRAIN/CHASSIS	2017 Jaguar F-Pace S AWD	2017 Mercedes-AMG GLC43 4Matic	2017 Porsche Macan GTS
DRIVETRAIN LAYOUT	Front-engine, AWD	Front-engine, AWD	Front-engine, AWD
ENGINE TYPE	Supercharged 90-deg V-6, alum block/heads	Twin-turbo 60-deg V-6, alum block/heads	Twin-turbo 90-deg V-6, alum block/heads
VALVETRAIN	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl	DOHC, 4 valves/cyl
DISPLACEMENT	182.7 cu in/2,995cc	182.8 cu in/2,996cc	182.9 cu in/2,997cc
COMPRESSION RATIO	10.5:1	10.7:1	9.8:1
POWER (SAE NET)	380 hp @ 6,500 rpm	362 hp @ 5,500 rpm	360 hp @ 6,000 rpm
TORQUE (SAE NET)	332 lb-ft @ 4,500 rpm	384 lb-ft @ 2,500 rpm	369 lb-ft @ 1,650 rpm
REDLINE	6,500 rpm	6,300 rpm	6,800 rpm
WEIGHT TO POWER	11.7 lb/hp	11.8 lb/hp	12.5 lb/hp
TRANSMISSION	8-speed automatic	9-speed automatic	7-speed twin-clutch automatic
AXLE/FINAL-DRIVE RATIO	3.73:1/2.49:1	3.69/2.21:1	3.88:1/2.01:1
SUSPENSION, FRONT; REAR	Control arms, coil springs, adj shocks, anti-roll bar; multilink, coil springs, adj shocks, anti-roll bar	Multilink, air springs, adj shocks, anti-roll bar; multilink, air springs, adj shocks, anti-roll bar	Control arms, air springs, adj shocks, anti-roll bar; multilink, air springs, adj shocks, anti-roll bar
STEERING RATIO	15.1:1	14.5:1	14.3:1
URNS LOCK-TO-LOCK	2.6	2.3	2.6
BRAKES, F; R	13.8-in vented disc; 12.8-in vented disc, drum, ABS	14.2-in vented, drilled disc; 12.6-in vented disc, ABS	14.2-in vented disc; 13.0-in vented disc, ABS
WHEELS	8.5 x 20-in cast aluminum	8.5 x 20-in; 9.5 x 20-in cast aluminum	9.0 x 20-in; 10.0 x 20-in forged aluminum
TIRES	255/50R20 109Y (M+S) Goodyear Eagle F1 AT	255/45R20 105Y; 285/40R20 108Y Michelin Latitude Sport 3	265/45R20 104V (M+S); 295/40R20 106V (M+S) Michelin Latitude Tour HP
DIMENSIONS			
WHEELBASE	113.1 in	113.1 in	110.5 in
TRACK, F/R	64.6/65.1 in	64.5/65.2 in	65.0/64.3 in
LENGTH X WIDTH X HEIGHT	186.3 x 76.2 x 65.0 in	183.5 x 76.0 x 64.1 in	184.7 x 76.1 x 61.6-64.5
GROUND CLEARANCE	8.4 in	6.7 in (max load)	6.2-9.1 in
APPRCH/DEPART ANGLE	25.5/25.7 deg	25.0/24.0 deg	22.2-25.5/19.5-24.2 deg
TURNING CIRCLE	38.9 ft	39.7 ft	39.2 ft
CURB WEIGHT	4,442 lb	4,256 lb	4,506 lb
WEIGHT DIST, F/R	51/49%	54/46%	56/44%
TOWING CAPACITY	5,290 lb	3,500 lb	4,409 lb
SEATING CAPACITY	5	5	5
HEADROOM, F/R	37.8/37.5 in	37.8/38.5 in	38.6/38.7 in
LEGROOM, F/R	40.3/37.2 in	40.8/37.3 in	40.9/35.6 in
SHOULDER ROOM, F/R	57.7/55.8 in	57.3/56.5 in	56.9/54.9 in
CARGO VOL BEH F/R	63.5/33.5 cu ft	56.5/19.4 cu ft	53.0/17.7 cu ft
TEST DATA			
ACCELERATION TO MPH			
0-30	1.9 sec	1.8 sec	1.4 sec
0-40	2.8	2.6	2.2
0-50	3.9	3.6	3.2
0-60	5.2	4.7	4.5
0-70	6.7	6.2	6.1
0-80	8.6	7.9	8.1
0-90	10.7	9.9	10.6
0-100	13.6	12.3	13.7
0-100-0	18.1	16.5	18.1
PASSING, 45-65 MPH	2.6	2.4	2.5
QUARTER MILE	13.8 sec @ 100.6 mph	13.4 sec @ 104.3 mph	13.4 sec @ 99.1 mph
BRAKING, 60-0 MPH	115 ft	109 ft	112 ft
LATERAL ACCELERATION	0.85 g (avg)	0.91 g (avg)	0.90 g (avg)
MT FIGURE EIGHT	26.1 sec @ 0.69 g (avg)	25.2 sec @ 0.75 g (avg)	25.0 sec @ 0.75 g (avg)
TOP-GEAR REVS @ 60 MPH	1,700 rpm	1,800 rpm	1,800 rpm
CONSUMER INFO			
BASE PRICE	\$58,695	\$55,825	\$68,250
PRICE AS TESTED	\$72,018	\$63,505	\$89,070
STABILITY/TRACTION CONTROL	Yes/Yes	Yes/Yes	Yes/Yes
AIRBAGS	Dual front, front side, f/r head	Dual front, f/r side, f/r curtain, driver knee	Dual front, f/r side, f/r curtain, front knee
BASIC WARRANTY	5 yrs/60,000 miles	4 yrs/50,000 miles	4 yrs/50,000 miles
POWERTRAIN WARRANTY	5 yrs/60,000 miles	4 yrs/50,000 miles	4 yrs/50,000 miles
ROADSIDE ASSISTANCE	5 yrs/60,000 miles	4 yrs/50,000 miles	4 yrs/50,000 miles
FUEL CAPACITY	16.6 gal	17.4 gal	19.8 gal
EPA CITY/HWY/COMB ECON	18/23/20 mpg	18/24/20 mpg	17/23/19 mpg
ENERGY CONS, CITY/HWY	187/147 kW-hrs/100 miles	187/140 kW-hrs/100 miles	198/147 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.97 lb/mile	0.96 lb/mile	1.01 lb/mile
RECOMMENDED FUEL	Unleaded premium	Unleaded premium	Unleaded premium

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Words Scott Evans



The original Lamborghini Aventador had a racy pushrod suspension, but like so many previous V-12 Lamborghinis, it was far better at going fast in a straight line than negotiating a curved one. That changed with the Aventador SV and the Aventador-based Centenario. Now the revolution embraces all Aventadors. Since the Gallardo's 2003 introduction

and now with the Huracán, Lamborghini seemed content to focus its handling refinements on its smaller, lighter supercars and let the Murciélago and Aventador stick to straight-line shock and awe. But times are changing. The Aventador S is the latest in a refreshing trend in building more rounded, capable 12-cylinder Lamborghinis. And although there remains an allure to the big, angry,





Viva La
RIVOLUZIONE
THE V-12 LAMBORGHINI AVENTADOR S TURNS A CORNER



takes-no-prisoners Aventador, we can't help but smile as it strikes blows against the laws of physics.

Primary responsibility for the Aventador S' improved handling goes to a rear steering system, which can turn the rear wheels up to 1.5 degrees in phase with the front wheels for more confident high-speed cornering or up to 3.0 degrees opposite the front wheels for improved low-speed maneuvering. The system works up to the car's 218-plus-mph drag-limited top speed—not that you should turn the wheel much at such speeds.

In an old-versus-new slalom test, the difference is palpable. With rear steer and a quicker steering ratio, the S changes direction more willingly and with less effort. The effect is felt in the rear end, which seems heavy and intractable

on the old car. On the new edition, the weight behind the driver transfers much more quickly. It feels like the rear end is working with the front rather than being dragged around the corner. Overall, the system makes the rear end feel hundreds of pounds lighter—despite the two cars weighing the same at about 4,100 pounds.

Other improvements to its behavior come from a revised aerodynamic package with an active rear wing. In total, downforce increases by a claimed 130 percent. There's also an extra 40 hp (for a total of 730 hp on the American scale), magnetorheological dampers, new rear tires, new all-wheel-drive calibration software, and new software for the seven-speed single-clutch automated manual transmission. There's also an EGO (seriously) driving mode, which gives you the ability to make individual changes to the steering, dampers, and powertrain.

With ugly weather looming near the Ricardo Tormo racetrack west of Valencia, Spain, our Lamborghini hosts threw us onto the track. The Corsa (race) setting was the natural choice of driving

mode, but I wasn't comfortable with it. The car felt tightly wound and responded to my inputs with greater outputs than I intended. The stability control light flashed constantly upon every corner exit. Then I remembered our on-staff racer Randy Pobst preferred Sport mode to Corsa in the old Aventador.

What a difference. In Corsa, the steering is heavy and only loads up more as cornering forces build. Sport steering is lighter, so you don't have to muscle the car around. The throttle becomes more linear in Sport and allows for far better control exiting corners. Suddenly, the stability control light didn't show its face. I then set EGO mode to my preferred calibrations (Corsa suspension, Sport powertrain, and Strada steering) and found the car a surprisingly willing track companion. One note to Lamborghini engineers: Please allow drivers to set the stability control to Corsa mode independent of driving mode. If you're not in Corsa driving mode, your only stability control options are on, Sport, or off.

Thankfully, it's a small point to belabor. The Aventador S is remarkably stable for a big, heavy mid-engine car—if you drive it right. It does not like to be trail braked. Doing so can take too much weight off the rear end and cause it to dance around. Introduce even a tad too much steering, and the big V-12 will attempt to pass you in the corner. The rear end steps out predictably and not all that quickly,



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so you can catch it with quick hands. Likewise on corner exit, a lead foot will kick the back end out, but it's predictable and easily controlled for a mid-engine car.

In general, its default cornering balance is mid- to late-corner understeer. If you finish your braking in a straight line and turn in smoothly at the right speed, it will sail through the corner, and the all-wheel drive will pull it out of the exit. Ask too much of it, and you'll get mild to moderate understeer all the way through. With stability control on, your only option is to stay off the throttle and wait it out. With it off, a well-timed stab of the throttle loosens the rear end and puts the car into a small four-wheel drift, which can point the car out of the corner. Precisely how it will react depends on your driving mode, as each has a different front/rear torque bias, with Strada (street) set to 40/60 percent front/rear, Sport at 10/90, and Corsa at 20/80.

If you choose to keep stability control on so as not to endanger your \$421,350 car (before options and customization), it'll correct you politely. It brakes enough to keep the car straight and restricts the throttle only enough to prevent oversteer.

The Lambo's weak point remains the transmission. Shifts are comparatively slow and clunky, exacerbated by the incredible acceleration g's before and after the shift. The new software is an improvement, but it's still nothing like a Huracán or any dual-clutch-equipped competitor. As a result, upshifts still induce a big shunt, and upshifting while exiting a corner feels as though it could unbalance the car, but it never did. Coming completely off the throttle at high rpm also introduces a shunt, but it's been mitigated somewhat by transferring engine torque forward to reduce dive.

Processing all these nuances at once requires practice. The Aventador S remains a wickedly quick car. The accelerative capability of that screaming V-12,



Why still single-clutch?

Fans and journalists have been complaining about the Aventador's single-clutch automated manual gearbox from the day the car made its debut, and hopes for a dual-clutch replacement have been dashed time and again.

Lamborghini isn't just being intransigent, though. It's a problem of space, R & D boss Maurizio Reggiani says. Unlike in other supercars, an Aventador's engine faces backward, and the transmission sits between the seats. Because the car can only be so wide and because a certain amount of width is needed for seats and structural components, the space remaining for the transmission is limited.

Dual-clutch transmissions, especially ones strong enough to handle 730 hp and 509 lb-ft of torque, are big. Reggiani says there isn't enough room to put one in the existing space. Re-engineering the carbon-fiber monocoque, on top of engineering an all-new transmission, would be prohibitively expensive.

It remains to be seen whether Lamborghini can find room for a dual-clutch in the next-generation Aventador—perhaps by putting the transmission behind the engine like most everybody else does. **SE**

2018 Lamborghini Aventador S

BASE PRICE	\$421,350
VEHICLE LAYOUT	Mid-engine, AWD, 2-pass, 2-door coupe
ENGINE	6.5L/730-hp/509-lb-ft DOHC 48-valve V-12
TRANSMISSION	7-speed auto-clutch manual
CURB WEIGHT	4,100 lb (mfr)
WHEELBASE	106.3 in
L X W X H	188.9 x 79.9 x 44.7 in
0-60 MPH	2.7 sec (MT est)
EPA CITY/HWY/COMB FUEL ECON	Not yet tested
ON SALE IN U.S.	Spring 2017

which sounds amazing and spits fire from the tailpipes under full throttle, is enough to widen power-jaded supercar drivers' eyes. Corners arrive in an instant, and with the car firmly opposed to trail braking, nailing a correct braking point is critical. The big carbon ceramics seem to lose their initial bite as they heat up, and the pedal throw gets a little longer, though total braking force doesn't diminish, and the pedal is easy to modulate. You have to get used to the weight transfer. It happens quickly and can fool you into thinking the car's going to get loose when it really has plenty of tire grip.

It's no exaggeration to say the Aventador S is much better on the track than the original Aventador, and it's largely improved on the street, as well.

The adaptive magnetorheological shocks are a godsend, enormously improving ride quality, and the transmission shifts more smoothly than before, though still with a frustrating head toss. It's slow when left to its own devices in Strada mode, so stick to Sport or manually shifting. The quicker front ratio and the rear steering help the big Lamborghini feel much nimbler—but no smaller—on a tight canyon road.

The interior is quieter. But aside from an updated digital instrument cluster without the frames around the gauges, it's largely the same. The older Audi-sourced infotainment system shows its age.

Unfortunately, I cannot give a full account of the Aventador S' on-road performance capability; it began to rain just as we set off on our road drive. Even moderately aggressive driving on wet roads would induce understeer or oversteer and bring on the stability control.

The Aventador S is the car we hoped it would be. It's more pleasant to live with and better on a racetrack. Residing between the Aventador and Aventador SV, it's a V-12 Lamborghini happy on both the track and the street. ■





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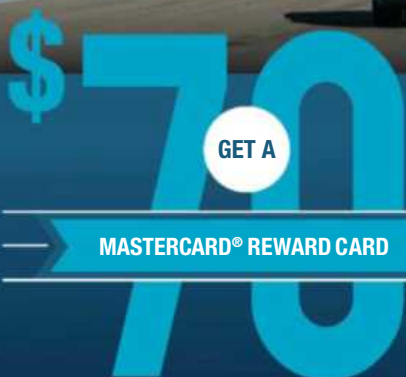


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Hurst Dazzler
20x8.5 shown

Hurst Dazzler
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Hurst Stunner
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Sport Muscle SM1
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Sport Muscle SM1
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Words Chris Walton **Photographs** Kevin Wing



If you haven't yet, you will start seeing a new Italian SUV on the road, parked prominently by valets at fancy restaurants, and vying for attention at ritzy country clubs. But Maserati is determined for its new Levante not just to get noticed. It also seeks to challenge the luxury sport-utility leaders with its performance and polish. In

profile it might borrow the styling palette of others (say, Infiniti's trend-setting FX). But that large grille with its telltale trident and the Saetta logo on its C-pillars are cues to a storied history few others can claim. Criticize if you must—it has some easily corrected missteps—but the 2017 Maserati Levante is a serious entry into the segment and will take attention and sales from current luxury sport-utility dahlings.

Out with a Kubang

Maserati was going to base the Levante (néé Kubang) on FCA's WK2 Grand Cherokee. It was expected to be built in Michigan and rumored to be fitted with the Ferrari-Maserati F136 V-8 or a V-12. At some point, Maserati shifted the production Levante to the Ghibli/Quattroporte sedan platform and moved assembly to its plant near Turin, Italy. Its power comes

MONSTER-ATI

THE MASERATI LEVANTE ROCKS THE LUXURY SUV CLUB



SLEEK AND UPSCALE The Maserati Levante fits in with the luxury sport-utility crowd.



via Maserati's 3.0-liter twin-turbo V-6 with two initial states of tune.

All Levantes get a shiftable eight-speed ZF automatic with a console shifter and paddles. The base engine produces 345 hp and 369 lb-ft, but the SQ4 is rated at 424 hp and 428 lb-ft of torque. Intended to behave like it has rear-wheel drive, the AWD Levante sends 100 percent of its power to the rear wheels in

normal conditions. Power is distributed side to side by a mechanical rear limited-slip differential—rare in this segment. As traction needs and driving conditions change (or depending on the drive mode), the front/rear split can be altered with clutches to a maximum 50/50 division. Most needs are met with about 20 percent of the engine's torque being sent up front.



Left/right torque vectoring is accomplished at the front axle using individual brake applications.

With drive and transmission modes set to Sport, the Levante's best 0–60 time was 4.9 seconds on the way to a 13.5-second quarter mile at just under 102 mph. Considering our Levante SQ4 weighed 4,979 pounds, this is pretty remarkable and places it in the thick of several (much lighter) heavy hitters in the midsize sport-luxe SUV realm.

Riding on Air, Steering with Fluid

Depending on drive mode and road surface, we were divided on the ride comfort-versus-handling balance. With the Levante's front all-aluminum A-arms and rear multilink suspension, six-way height-adjustable air springs (five while driving, one while parked), and electronically controlled dampers, most reviews were positive—about the same as similar sport-oriented utility vehicles. Almost always controlled and composed, even riding on optional staggered-width 21-inch Pirelli P Zeros with short sidewalls, the distinction of the modes was appreciated on choppy freeways.

What wasn't appreciated was a hyperactive engine auto-stop/start system in normal drive mode. Merely executing a legal stop would kill the engine. (You can

The Maserati Levante seeks to challenge luxury sport-utility leaders with its performance and polish.

defeat this with Sport mode or in a byzantine IP menu, but it's not retained upon restart.) Expected clamor from the open exhaust baffles at full throttle in Sport mode and becomes an annoying drone at half throttle. And something really needs to be done with the shifter. We noticed it on the last Quattroporte S we tested and hoped it would've been addressed here; shifting in either direction between drive and reverse results in frustration. Without distinct detents, sometimes one gets park, reverse, neutral, or drive—but rarely on the first try. Also like the Quattroporte sedan, the otherwise-welcome column-mounted shift flippers, ahem paddles, require a huge left hand to span the gap to the turn-signal stalk.

The Levante SQ4 feels like a rear-driver, and it's one of the last vehicles to still use hydraulic-assist power steering. There's a fluid, unfettered quality and genuine feel in the steering that many young drivers (accustomed to electric-assist power steering) will likely never experience. We were impressed with the SQ4's grip and poise on twists and turns. With 2.7 turns lock to lock and a tidy 38.4-foot turning diameter, the Levante

feels and drives smaller than its 118.3-inch wheelbase would seem to dictate. On our figure-eight course, the Levante SQ4 beat the Audi SQ5, Jaguar F-Pace, and Porsche Macan S with its 25.5-second lap. In terms of braking power, the Levante's 105-foot stop from 60 mph is similar to the 104- to 107-foot range of the others.

International Interior

Seating accommodations are generous (at the expense of cargo capacity), and leather seats (heated up front) are standard. We had optional front sport seats, which offered exceptional side bolstering without sacrificing comfort. Within luxury and sport packages, interior color choices and trims are initially offered in 28 combinations. Our somber black leather with red stitching and carbon fiber didn't do the Levante any favors. The quality is evident, but we've seen the two-tone leather treatments, and any of the four wood trims would have been more in character with a sexy Italian car.

If you've seen the dashboard layout of either the Ghibli or Quattroporte, then the Levante's analogue gauges—flanking a crisp LED information panel and the requisite clock jewelry—will look familiar. An attractive and easy-to-use center stack is dominated by the SQ4-standard 8.4-inch touchscreen display with navigation borrowed from the Fiat Chrysler parts bin. That's fine, but the same



LACKING ITALIAN LOOKS Let the Germans do dark and dour interiors. Colors and real wood trim look better, look Italian.

cannot be said for the obviously pilfered down-market switchgear, power seat/window/mirror assemblies, headlamp switch, push-button ignition, and power rear hatch button. Some controls are illogically scattered and labeled, and oddities such as four power points in two sizes (yet none the correct diameter for our phone charger) could be frustration points. These design details tarnish an \$84,250 (\$98,550 as-tested) luxury car.

We also had an electrical poltergeist, which would cycle the heat on the driver's seat and refused to roll up the rear window, somehow convinced there was a pinch problem. Sight lines were challenging. We recommend the Advanced Driver Assistance package, which supplements standard blind-spot monitoring with a surround-view camera, adaptive cruise control with full stop-and-go capability, forward collision warning, and lane departure warning. The low-beam headlights were also too dim to properly illuminate a darkened road at speed.

Cargo, Towing, Dirt Roads

Rear seats fold in 60/40 fashion (the larger side also features a ski pass-through) and lie almost flat. Cargo expands from 19.4 nominal to 57.3 maximum cubic feet. We appreciated the standard power hatch (with optional kick sensor), but there isn't a rear-seat release in the cargo area—even base Honda CR-Vs have those. The Levante SQ4 is rated to tow 5,952 pounds, which is more than most sporty midsize cars but less than their upsized sometimes-V-8-powered brethren. There's also a standard trailer-sway control built into the ESP.

We didn't have an opportunity to test it in dirt and muck, but after engaging

off-road mode, the ground clearance increases by 1.6 inches (to a height of 9.7 inches), and the transmission alters its shift schedule for different types of terrain. While in off-road mode, the electronic stability system also runs a different program, and the Levante will automatically climb and descend hills at prescribed speeds. When he first drove a Levante, senior features editor Jonny Lieberman said it was surprisingly capable and sure-footed through muddy ruts and mild off-road situations.

Not a Poseur

If its plan works, Maserati will easily meet its 30,000-unit sales target. There are probably that many brand-conscious buyers looking to one-up their neighbors. But the Levante isn't just a luxury-badged product. It's also an extremely competitive driving machine that is, at minimum, on par with the best in the segment. Those familiar with the luxury qualities expected in this lofty price range might find the Levante lacking in certain ways. Luckily, most newcomers will be too distracted by the Maserati's genuine pace, poise, and panache to notice. Maserati got the hard stuff right: the design and the driving. We'll have to see if they can upgrade and improve the rest. ■



COSÌ VELOCE This might be the only view you'll see of the powerful Maserati Levante.



POWERTRAIN/CHASSIS	2017 Maserati Levante SQ4
DRIVETRAIN LAYOUT	Front-engine, AWD
ENGINE TYPE	Twin-turbo 60-deg V-6, alum block/heads
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	181.8 cu in/2,979cc
COMPRESSION RATIO	9.7:1
POWER (SAE NET)	424 hp @ 5,750 rpm
TORQUE (SAE NET)	428 lb-ft @ 1,750 rpm
REDLINE	6,500 rpm
WEIGHT TO POWER	11.7 lb/hp
TRANSMISSION	8-speed automatic
AXLE/FINAL-DRIVE RATIO	2.80:1/1.88:1
SUSPENSION, FRONT; REAR	Control arms, air springs, adj shocks, anti-roll bar; multilink, air springs, adj shocks, anti-roll bar
STEERING RATIO	15.8:1
TURNS LOCK-TO-LOCK	2.7
BRAKES, F; R	15.0-in vented, drilled disc; 13.0-in vented, drilled disc, ABS
WHEELS, F; R	9.0 x 21 in; 10.5 x 21 in, cast aluminum
TIRES, F; R	265/40R21 105Y; 295/35R21 107Y Pirelli P Zero
DIMENSIONS	
WHEELBASE	118.3 in
TRACK, F/R	63.9/66.0 in
LENGTH X WIDTH X HEIGHT	197.0 x 77.5 x 64.3-67.7 in
GROUND CLEARANCE	6.4-9.7 in
APPROCH/DEPART ANGLE	19-21/24-26 deg
TURNING CIRCLE	38.4 ft
CURB WEIGHT	4,979 lb
WEIGHT DIST, F/R	51/49%
TOWING CAPACITY	5,952 lb
SEATING CAPACITY	5
HEADROOM, F/R	40.2/39.1 in
LEGROOM, F/R	N/A/34.6 in
SHOULDER ROOM, F/R	55.8/55.9 in
CARGO VOLUME, BEH F/R	57.3/19.4 cu ft
TEST DATA	
ACCELERATION TO MPH	
0-30	1.7 sec
0-40	2.6
0-50	3.6
0-60	4.9
0-70	6.3
0-80	8.2
0-90	10.3
0-100	12.9
PASSING, 45-65 MPH	2.6
QUARTER MILE	13.5 sec @ 101.9 mph
BRAKING, 60-0 MPH	105 ft
LATERAL ACCELERATION	0.88 g (avg)
MT FIGURE EIGHT	25.5 sec @ 0.74 g (avg)
TOP-GEAR REVS @ 60 MPH	1,700 rpm
CONSUMER INFO	
BASE PRICE	\$84,250
PRICE AS TESTED	\$98,550
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	6: Dual front, front side, f/r curtain
BASIC WARRANTY	4 yrs/50,000 miles
POWERTRAIN WARRANTY	4 yrs/50,000 miles
ROADSIDE ASSISTANCE	4 yrs/50,000 miles
FUEL CAPACITY	21.1 gal
EPA CITY/HWY/COMB ECON	14/19/16 mpg
ENERGY CONS, CITY/HWY	241/177 kW-hrs/100 miles
CO2 EMISSIONS, COMB	1.22 lb/mile
RECOMMENDED FUEL	Unleaded premium



IF THERE'S A DREAM,
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SEE IT

OWN THE ROAD

When you're driving a thundering sedan such as this thug from AMG, think of the road as your own. Who's going to take it from you?

A BIGGER

Words Jonny Lieberman

AMG JOURNEYS FROM SLEEPER TO KILLER



You activate Drift mode in the new 603-hp Mercedes-AMG E63 S 4Matic+ by tapping the dynamic toggle switch to Race mode, turning off all the electronic no-fun nannies, placing the transmission in manual mode, and pulling both paddle shifters toward you. Supposedly, a prompt appears and asks if you want to



electromechanically decouple the drive-shaft that powers the front differential. I say supposedly because Drift mode was disabled in all three of the latest descendants of the original Hammer I drove on the launch of the new AMG E63 on the streets around Faro, Portugal.

However, the examples of the bruising sedan I played with on Portimão's Autodromo Algarve International Circuit

HAMMER



did have Drift mode intact, just like U.S. customer versions will have when the W213 E63 S goes on sale in the summer of 2017 as a 2018 model. The red mist of a racetrack seemed like the wrong place to experiment with a feature AMG wouldn't let us attempt in public. Why not? AMG needed 100 journalists from all over the world to test the cars within a few weeks. It couldn't suffer any casualties.

How does the new Mercedes-AMG E63 stack up, sans Drift mode? I'll start with the engine. American buyers won't be offered the 563-hp, 553-lb-ft kiddie version; instead, every U.S.-spec E63 model will get AMG's now-ubiquitous 4.0-liter twin-turbo V-8, known internally as the M177, tuned to make 603 horsepower and 627 lb-ft of torque.

For E63 duty, both power and torque

are up in part because the "hot inner V" turbos are now twin-scroll turbochargers. The engine also packs new pistons, a new intake manifold, new intercoolers, and updated software. This is the first time a variant of the engine is available with cylinder deactivation. In Comfort mode only, of course.

A new nine-speed transmission known



as the AMG Speedshift MCT is bolted to the potent V-8. Fans of the previous E63 will recall that the old transmission was a seven-speed MCT. That MCT stands for multiclutch technology, which signifies that a wet multiplate clutch replaces the torque converter. AMG claims the new nine-speed gearbox is a touch lighter than the seven-speed one it replaces.

The transmission sends power to two output shafts, as all E63s get all-wheel drive. The last E63 we had was AWD, but it had a fixed torque split with 33 percent to front axle and 67 percent to the rear. The new E63's torque split is continuously variable depending on what the car needs, hence the somewhat clumsy descriptor, 4Matic+. To illustrate this, we saw a video of an E63 lapping the Algarve circuit with a graphic showing the front-to-rear torque split. Through corners where traction was needed, the torque split was 50/50. By the end of the front straight, 100 percent of the power was being fed to the rear wheels. The front wheels never get more than 50 percent of the power.

I only experienced the E63 S 4Matic+, the only version coming to the U.S. The evaluation cars were shod in sticky Pirelli P Zero rubber, 265/35R20 front, 295/30R20 rear. Track is also wider on both axles compared to the standard E-Class. Launch control is Porsche-simple: Push the brake pedal toward

the floor in Sport, Sport Plus, or Race modes, bury the throttle, and release the brake. The car is off like an armor-piercing projectile. AMG is quoting 0–60 mph in 3.3 seconds for the E63 S (3.4 for the slower version), and its estimate is conservative. The previous-gen E63 S we tested in 2014 produced 577 hp and 590 lb-ft of torque, made 60 mph in 3.4 seconds, and ran to the end of a quarter mile in 11.6 seconds at 121.8 mph. It also weighed 4,511 pounds. AMG says the new car weighs about the same (I'd guess 100 pounds or so heavier), but the extra power, grip, pop from the new transmission, and smart AWD should allow the new car to shatter the old E63's records.

But how does the new E63 drive? Monstrously. For the past year, I've been running around L.A. in a Dodge Charger Hellcat: 707 hp, 650 lb-ft of torque, 4,530 pounds, and an eight-speed automatic transmission. It's based on an old E-Class, which is one of the few good results of the ill-conceived DaimlerChrysler merger of equals. The new E63 feels as if it could snap the Hellcat in half. The forward thrust of the M177, the bullwhip-crack shifts from the nine-speed, and the tarmac-hugging grip of the AWD combine to rocket you forward in a way rarely felt in the sedan world. The Audi S8 and the Insane/Ludicrous mode dual-motor Teslas are perhaps the only cars with similar sensations. But this might feel more brutal than all of them. Public roads

seem like child's play. This car eats them alive. Even in the wet. The E63 might be the ultimate in executive transportation.

We then followed instructors around the undulating, 2.9-mile-long circuit. Each pro driver was in an AMG GT S, which were down on power—just 503 hp—but 800 pounds lighter than our E63s. Up to 155 mph the E63 runs dead even with the GT S down the big front straight. No easy feat, as the zaftig coupe runs 11.4-second quarter miles. I was getting traction control warning lights all the way past 140 mph. In other words, as the E63 became more rear-wheel-drive biased, it was trying to spin its back tires.

The one problem area for the E63 is high-speed braking, specifically composure while slowing down. Getting into the ABS from 155 mph in a downhill braking zone is no easy task for any vehicle. But I felt the E63 squirmed around too much to be comfortable. The air suspension was most likely at the end of its travel, and the track dipped. The massive carbon-ceramic brakes are up to the herculean task of lassoing all that runaway bulk. We were running three-lap sessions, and the fade was minimal. I managed to cook the brake fluid a bit, but I never lost stopping power—just a bit of pedal feel. In the other two big braking zones, the E63 felt tied down and composed, but we weren't traveling anywhere near as rapidly as we were into the first turn.

Cornering was interesting. The E63 is not only heavy for a track car but also front heavy. When I followed the line laid down in front of me by the instructors, understeer became an issue. But if I flicked the rear of the car a touch sideways before fully committing to a corner, I could get away with less steering input and get to the power sooner because the front wheels were closer to pointing straight than turned. That technique involved a lot of work and wasn't the quickest way around. But it helped to

2018 Mercedes-AMG E63 S 4Matic

BASE PRICE	\$103,000 (est)
VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door sedan
ENGINE	4.0L/603-hp/627-lb-ft twin-turbo DOHC 32-valve V-8
TRANSMISSION	9-speed automatic
CURB WEIGHT	4,550 lb (mfr)
WHEELBASE	115.7 in
L X W X H	196.6 x 75.1 x 57.5 in
0-60 MPH	3.3 sec (mfr est)
EPA CITY/HWY/COMB FUEL ECON	Not yet rated
ON SALE IN U.S.	Summer 2017



eliminate front-end push, and it was fun. Try avoiding tight corners. Flowing sweepers are no problem. Although it's not a track car—and AMG admitted as much—the E63 S' capabilities mean it can somewhat hang with proper sports cars. That's impressive for a big sedan.

That last sentence might be the best way to sum up the Mercedes-AMG E63 S 4Matic+. The E63 will do well come comparison test season. No one knows much about BMW's upcoming G30-based M5, so taking it off the table, you're left with the 597-hp Audi RS 7 and 640-hp Cadillac CTS-V. Comparing the Audi to the Caddy, the AWD RS 7 is the straight-line king, whereas the CTS-V is a track savant. The E63 seems, with its variable AWD, to be able to take the fight to both and probably even win. Rest comfortably in the knowledge that the new E63 does nothing to tarnish the legend of both the mighty sedans that came before or AMG itself. Long live the Hammer. ■

1987 AMG HAMMER THE DREAM, DRIVEN

"How's E63 btw?" texted a Mercedes-Benz employee who didn't make the trip for the launch of the latest AMG in Portugal. My response? "WHO CARES!? HAMMER!!!!"

The AMG Hammer was the first AMG product sold in the U.S., via a tuning shop in Beverly Hills. AMG took a W124 300E and replaced its 177-hp straight-six with a 360-hp version of the M117 DOHC 5.6-liter V-8. AMG lowered the car, reworked the suspension, replaced some body panels, wrapped new wheels in sticky tires, and voilà, Hammer time. Sure, 2017 marks the 50th anniversary of AMG. But the Hammer is the reason Mercedes-Benz bought the little tuning company from Affalterbach.

If a psychiatrist were to probe why I love cars so much, the answer would—in a nod to Freudian theory—return to my childhood. I was 12 years old in 1987 when the Hammer made its debut. At the time, the fastest supercars



in the world were the Ferrari Testarossa and Lamborghini Countach. Both had top speeds listed at about 180 mph. To a 12-year-old kid, nothing matters more than top speed. But the AMG Hammer could go 186 mph. True, the \$225,000 Porsche 959 could go 195 mph. So AMG created a 6.0-liter Hammer that could do basically the same. They even made a Hammer wagon. The Hammer is really close to the top on my favorite-cars-ever list. So when the fine folks at AMG said I could drive this black-on-black museum piece, I plotted.

I hit a conservative 100 mph in the Hammer, as a

buddy and I snuck it out of the Autodromo Algarve and onto the road. I probably tried a burnout or two. And maybe I squealed the tires around a few roundabouts. Is that naughty, rude, disrespectful? Totally, especially because we told them we'd just purred the thing around the paddock. But hey, man, it's a car, albeit an exceedingly rare (30 units made) one. Cars must be driven. Besides, I'd never be able to look my 12-year-old self in the mirror had I done anything else. You know that chestnut, never meet your heroes? It's a damn lie. **JL**

ORIGINAL GANGSTER Was there a more sinister-looking car in the 1980s than the OG Hammer? Maybe the Buick GNX. Maybe.



The 2018 Mercedes-AMG E63 S' capabilities mean it can somewhat hang with proper sports cars. And that's impressive for a big sedan.





Words Erick Ayapana



The 10th-generation Mercedes E-Class sedan introduces a new pecking order with two AMG models in the lineup. From the preceding pages, you got the first sniff at the makeover of the mighty E63. But instead of an all-or-nothing approach to high performance, the automaker is taking AMG's extreme nature down a notch by launching the all-new Mercedes-AMG E43 sedan,

which packs close to 400 horsepower and a long list of performance tweaks.

As its name suggests (Mercedes-AMG, not Mercedes-Benz), the E43 has the stamp of approval from Mercedes' performance division in Affalterbach, Germany, and is a legit member of the AMG family. But the E43 can't be lumped in with AMG's "one man, one engine" philosophy, a reference to the brand's long-running custom that each powerplant is built solely by one AMG

technician. That practice will only apply to the potent turbo-fours, V-8s, and V-12s powering AMG 45, 63, and 65 models, respectively.

Instead, the E43's engine starts life as Benz's 3.0-liter twin-turbo V-6 used in vehicles such as the upcoming E400 4Matic wagon—where it makes 329 hp and 354 lb-ft. From there, AMG works its magic by bolting on larger turbochargers (making 16 psi of boost) and reprogramming the engine's software



MEET THE NEW E43

for a total output of 396 hp and 384 lb-ft of torque. AMG also optimizes the nine-speed automatic for quicker shifts and tweaks the standard 4Matic all-wheel-drive system to send 69 percent of the torque split to the rear axle. Also standard is an AMG Dynamic Select system, which adjusts engine and transmission response as well as steering and air suspension calibrations based on the selected drive mode (Eco, Comfort, Sport, and Sport Plus).

We spent a day driving the E43 in Malibu and the surrounding canyon roads, where the engine really shined. Strong and peppy, the twin-turbo V-6 never felt labored pulling the hefty sedan through the twisties. Once we got the E43 on the track, the sedan ran to 60 mph in 4.6 seconds, right on pace with competitors such as the Lexus GS F and Cadillac CTS Vsport, which did the deed in 4.4 and 4.5 seconds, respectively. That also slots nicely in between the E400 and AMG E63, which should run mid-5s and mid-3s. The engine and exhaust note sound aggressive, especially in Sport Plus mode, but we should note some of that noise is artificially amplified through speakers in the cabin (and cannot be defeated). Add-on engine and exhaust sound boosters are all the rage in the world of luxury sport sedans, and at least the E43's version is convincing. Gearshifts are relatively quick and a tad aggressive in Sport Plus mode, which adds to the sedan's sporty character. The gearbox occasionally fumbled shifts between first and second, but switching to Sport or Comfort mode ironed this out.

In an effort to make the E43 handle like a proper AMG car, engineers revised the steering knuckles and load-bearing joints. AMG also increased negative camber on both the front and rear axle and retuned the standard air suspension. The result is a 4,309-pound sedan that tackles corners smoothly and with relatively little body roll. On the figure-eight course, the E43 ran a 25.1-second lap, and the strong brakes (with four-piston calipers up front) halted the sedan from



WHEN AMG TAKES A CHILL PILL

The Mercedes-AMG E43 excels as a comfortable cruiser despite its sporty hardware.



60 mph in 110 feet. The variable-ratio steering system felt a tad artificial and gluey in all drive modes. If anything, the E43 highlights the crisp and lively steering feel of the aforementioned Lexus and Cadillac.

The E43 excels as a comfortable cruiser despite its sporty hardware. Our test car's 20-inch wheels and low-profile tires were handsome, but they occasionally amplified rough spots on the road. Stick with the standard 19 inchers to improve the overall ride and reduce noise intrusion.

Visual upgrades are subtle and include Biturbo 4Matic badges on the front fender, beefier bumpers, AMG logos on the grille and trunklid, and quad exhaust tips. The AMG seats provide plenty of lateral support with more AMG logos sprinkled throughout. The E43 could be much cheaper than the E63. It might not be as extreme, but the E43 will likely be just right for most AMG buyers. ■

2017 Mercedes-AMG E43 4Matic

BASE PRICE	\$73,325
PRICE AS TESTED	\$93,505
VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door sedan
ENGINE	3.0L/396-hp/384-lb-ft twin-turbo DOHC 24-valve V-6
TRANSMISSION	9-speed automatic
CURB WEIGHT (F/R DIST)	4,309 lb (54/46%)
WHEELBASE	115.7 in
L X W X H	194.6 x 72.9 x 57.0 in
0-60 MPH	4.6 sec
QUARTER MILE	13.1 sec @ 107.0 mph
BRAKING, 60-0 MPH	110 ft
LATERAL ACCELERATION	0.93 g (avg)
MT FIGURE EIGHT	25.1 sec @ 0.77 g (avg)
REAL MPG, CITY/HWY/COMB	Not tested
EPA CITY/HWY/COMB FUEL ECON	18/25/21 mpg
ENERGY CONS, CITY/HWY	187/135 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.94 lb/mile

MEET THE AMG 43 FAMILY

Mercedes-AMG's recently established 43 Series has nine models to choose from. The AMG C43 can be had in sedan, coupe, or cabriolet form, and the E43 is available as a sedan. The GLC, GLC Coupe, GLE, and GLE Coupe crossovers get the 43 treatment, as well. The small but potent SLC43 roadster rounds things out.

Here are a few items you can expect in AMG's newest creations:

3.0-liter twin-turbo V-6

A 3.0-liter twin-turbo V-6 making at least 362 hp and 384 lb-ft powers the 43 lineup. The AMG E43 churns 396 hp and is the most potent AMG 43 vehicle. For most models, the AMG 43 Series sits in the middle of the lineup. The SLC43 is the only AMG model in the SLC family. Each model has a distinctive engine note, but the SLC43 has the rowdiest sound.

AMG-tuned nine-speed automatic and 4Matic all-wheel drive

The vehicles are equipped with a nine-speed automatic from the Mercedes-Benz parts bin, but it's tuned by AMG for quicker shifts. Although launch control isn't available, the vehicles have a manual shift mode. AMG also tweaked the 4Matic all-wheel-drive system, so 69 percent of the torque split is sent to the rear wheels. The SLC43 is the only exception because it has rear-wheel drive.

AMG Dynamic Select

Standard on all Mercedes-AMG 43 vehicles is the AMG Dynamic Select system, which adjusts transmission, engine characteristics, suspension, and steering calibrations. The adjustments are based on the selected mode. The nine 43 vehicles have varying levels of steering and suspension tweaks, with most featuring an air-suspension system.

That AMG look

In addition to the requisite AMG badging, each 43 vehicle gets aggressive-looking bumpers and quad exhaust tips. The front grille features a diamond-radiator look (except the GLE43), and the front fenders have Biturbo badges. The models (except the GLE) feature Nappa leather and suedelike material. There's also distinctive wheel designs. **EA**

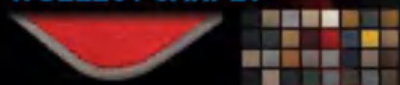


SPOILED Luxury takes priority in this Mercedes-AMG E43

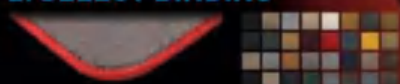
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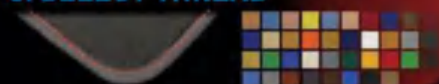
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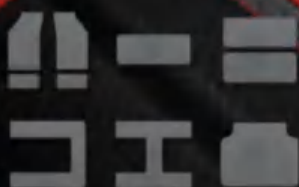
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“Are you interested in trucks that grow hair on your chest?” my editor emailed me. I looked down at my barren torso and looked up again to read the subject line: “2017 Ram Power Wagon drive.” My dormant macho emotion had been stirred.

The 4x4 Power Wagon has one of the longest automotive histories in America. What started as a vehicle to defeat the Axis in World War II, the former Dodge Power Wagon arrived in 1946 with the intention of taking its customers on off-road adventures. Now 71 years and several interrupted generations later, the Ram Power Wagon continues delivering on that promise—but with way more power and enhanced technology.

At 149.3 inches of wheelbase, there’s no doubt the Power Wagon is a big pickup. Based on the Ram 2500 HD 4x4 Crew Cab, the off-road-capable truck comes with only a 6-foot-4-inch bed yet is 237.3 inches in overall length. With 14.3 inches of ground clearance, it was difficult for this 6-foot-tall journalist to jump into the cabin without having to hoist myself up—but that’s partly a consequence of the side steps having been removed.

Because the Power Wagon was built to spend time off-road, Ram equipped it with a 2-inch lift suspension system composed of high articulation three-link front and five-link rear live axle suspension and Bilstein monotube shocks for better axle control. An electronically disconnecting front stabilizer bar allows the truck even more axle articulation. The Power Wagon was designed to conquer the outdoors, but it also has a towing capacity of 10,030 pounds and can carry a payload of 1,510 pounds.

To test Ram’s latest addition, we headed to Nevada’s Logandale Trails. Located adjacent to the Valley of Fire, the terrain is a playground of sand dunes, rocks, and steep hills. The pressures of the 33-inch Goodyear Wrangler DuraTrac tires were knocked down to 30 psi from the on-road recommended 65 psi. We got the thumbs up from our guide,

Climbing steep hills was effortless for the Power Wagon, but descending was even easier with hill-descent control.



BIG. HEAVY.

FIRST DRIVE
2017 Ram 2500 Power Wagon



7,000 POUNDS
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Words Miguel Cortina

RAM



2017 Ram 2500 Power Wagon

BASE PRICE	\$53,015
VEHICLE LAYOUT	Front-engine, 4WD, 6-pass, 4-door truck
ENGINE	6.4L/410-hp/429-lb-ft OHV 16-valve V-8
TRANSMISSION	6-speed automatic
CURB WEIGHT	6,700 lb (mfr)
WHEELBASE	149.3 in
L X W X H	237.3 x 79.1 x 81.0 in
0-60 MPH	7.2 sec (MT est)
EPA CITY/HWY/COMB FUEL ECON	Not yet rated
ON SALE IN U.S.	Currently

Nena Barlow of Barlow Adventures, and we were ready to start our off-road rumbling.

A small input on the throttle brought a quick answer from the 6.4-liter Hemi V-8. With 410 hp and 429 lb-ft of torque under the hood, our caravan spewed a dust wake. The only transmission available is a six-speed automatic. Connected to a part-time transfer case, it allowed us to enable 4WD High for better traction on the sand. As the terrain changed from sand to rock and the trails became narrower, the Power Wagon's width became noticeable. We were hitting the branches curtaining the trail.

Climbing steep hills was effortless, but descending was even easier with hill-descent control, which allows a driver to control the truck's speed without touching the throttle or brake pedal. Using the buttons on the shift column, a driver can select the descent speed, and the truck applies brake pressure to all four wheels in order to slowly guide the 7,000-pound truck down rugged terrain.

The driver just aims the steering wheel.

Being able to lock the front and rear differentials gives the Power Wagon a big advantage when rock crawling. In 4WD Low and with the anti-roll bar disconnected, we slowly climbed what had seemed impassable. With an approach angle of 33.6 degrees, we avoided hitting any rocks. The axle articulation allowed us to crawl another 150 yards to reach the finish line. There was no drama. The Power Wagon makes rock crawling easy. A small and steady throttle input moved the truck just enough to slowly avoid

obstacles. Bilstein shocks minimized cabin movement, and the Articulink suspension gave the axle extra articulation for better crawling performance.

Although you'd only use the 12,000-pound electric winch behind the front bumper in an emergency, Barlow performed a stunt with one of her crew's Toyota 4Runners. With the Toyota sprawled on its back and the Ram's winch hooked to the 4Runner's underbody, the Toyota was back on four wheels in less than five minutes. Operating the winch was simple, thanks to a controller that's plugged in behind the front bumper.

With such a big truck, you'd expect the interior to be spacious—and it is. You can slot a third person in the front—a middle seat acts as part of the center console when folded. Whoever sits there will have trouble with legroom, but at least there's a lap belt. Our fully equipped Power Wagon came with leather seats, which were comfortable for longer drives, but you can also opt for cloth. The Power Wagon's floor is covered in hard plastic, making it easy to clean after a day in the dust.

Ram gave the Power Wagon a strong posture. If you're a fan of the thunderous Power Wagon from the late '70s/early '80s, you can add the vintage Power Wagon graphics to the new truck's flanks and the hood. A two-tone paint job is optional.

Pricing starts at around \$53,000. But that's typical for the truck market these days. Possible goodies include the Leather and Luxury package (\$4,995), the Cargo View Camera located next to the stop lamp (\$345), and the RamBox Cargo Management System (\$1,295). Our tester, at \$62,610, included even more that.

The Power Wagon keeps its promise to deliver off-roading smiles while also awakening your inner machismo. ■



RAM TO THE RESCUE Using its 12,000-pound electric winch, the Power Wagon was able to put this 4Runner shiny side up as a demonstration.





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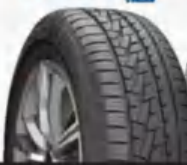
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ALL SMILES Some days at the office are much more fun than others. Combine massive sand dunes, Ken Block, and two Ford Raptors, and, well, see the flag. Note: With boots on Jonny is about 6 feet tall.



Words Jonny Lieberman **Photos** William Walker



“What about Ken Block?”

We had a Ford Raptor scheduled for our *Ignition* video series. The plan was to take the beast to the massive piles of sand at the Dumont Dunes in the Mojave Desert. If you have a Raptor at some sand dunes, you'll want to jump it. And although I've levitated dozens of cars on asphalt, I'd never jumped one on the soft stuff.

I asked the Blue Oval PR types if they would be so kind as to send out an adviser of some sort, such as an engineer or a

Baja 1000 mechanic. Initially, they were going to send Greg Foutz, a builder and racer of the EcoBoost Raptor in the Baja 1000. That would be great. Then, a few days later, my friend at Ford asked if we'd like to work with Mr. Block instead. Talk about an offer you can't refuse.

For the three of you who don't know who rallycross and X Games racing legend Ken Block is, let me hit you with some numbers: Block and his “Boys” (which includes a few girls) at his lifestyle and production company Hoonigan have



DUNEKHANA

A DAY IN THE DESERT WITH KEN BLOCK



If you have a Ford Raptor at some sand dunes, you'll want to jump it.



ALWAYS ONE MORE Even after *Ignition* director Anthony Esposito had come over the radio and told us he didn't need anything more, up we went. And I mean up. The landing felt more like a crash, and I had the sensation that my feet had gone through the floorboard. "That was too much," Ken Block said. What was left of my spine agreed. Once we exited the Raptor, we noticed the front skidplate had bent. On sand. To see the damage yourself, join 3.4 million others at @kblock43 on Instagram. And for video coverage of our day hooning the Raptor, go to MotorTrendOnDemand.com. We didn't miss a shot, and neither should you.



put out nine videos in his Gymkhana series. The last one has been viewed more than 18 million times. The fifth video in the series, where Block lays waste to the streets of San Francisco, is, as of this writing, on the cusp of 90 million views. In other words, he's kind of a big deal.

You wouldn't know it from working with him. Sure, he might have talked about a snowboarding trip to Japan with some guy named Lewis (Hamilton), but for the most part he wanted to talk about coffee and cars. In that order. Oh, and he owns a first-generation Raptor.

What I did learn from working with Block is why he's so damn good. In a word: determination. Normally when I'm filming, I sit around between takes due to a combination of laziness and fear—the latter because I know my own skill level and am petrified that I'm gonna trash the car if I horse around. Block was the opposite: completely confident in his abilities and in exploring his limits. When our camera guys were switching lenses

or landing the drone for fresh batteries, Block was gunning the Raptor up a 500-foot dune and trying to see exactly how much closer to the top he could get. That's why we went through three tanks of gas in about 50 miles. He never lifted. It's also why our footage is so good.

Block found a big dune where we could launch the Raptor. To say he jumped it is an understatement. Five feet off the ground? Ten? More? Probably. We caught massive air. We have a saying in the video team trenches: "Perfect. Do it again." You want to get coverage from as many angles as possible. Plus, there's always the chance that something goes wrong with one take. You always shoot more as backup. The thing about jumping nearly three tons of truck off a sand dune is that your launch ramp changes with each jump. That means doing the same thing twice is more than difficult. Block jumped and jumped the Raptor, and I sat in the passenger seat, landing and landing.

"How many more takes do we need?" I asked our director, Anthony Esposito. This was the last setup of the shoot, and both Block and I were starting to feel the rigors of the day. "Just one more," Esposito came back over the radio. Block launched the truck again, and it felt like the biggest and best one yet. "That was great. Can I get just one more?" Block shot me a look, and I said something to him about how getting one last take can't be unique to *Motor Trend*. He nodded and laughed, and before I knew it, we were back in the air again. Only this jump was, well, not so impressive. "There's a fine line between too little and too much," Block said. "That was too little. Can't end the day on that." ■



To say Ken Block jumped the Ford Raptor is an understatement. Five feet off the ground? Ten? More? Probably. We caught massive air.



GLEAMING THE DUNE

Although it might look like Ken Block is wildly running up the side of the Great Pyramid of Giza, from inside the Raptor's cabin, all was serene.

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Every current 911 engine now comes equipped with a pair of turbos, but only one variant of this Germanic icon is simply known as “The Turbo.” It has been so since its 1974 introduction, so sayeth our lady of blessed acceleration, amen.

Some context on the jarring velocity of the 2017 Turbo S: We *wheeled* this thing. This ties as the hardest-launching production car we’ve tested (0–30 mph in 0.9 second). By 60 mph, it’s a mere 0.1 second behind the million-dollar Porsche 918 hybrid hypercar, and it’s behind by just 0.5 second at the quarter mile. Only one other car has pegged our acceleration G-force-meter like this one: the Tesla Model S P100D on page 12. What is the Porsche magic that makes us veer into italic font?

Along with the entire 911 model line, this ultimate turbocharged version Turbo S also receives 991.2-generation revisions: refined styling, lighting, and aerodynamics, plus a much-needed, comprehensive infotainment upgrade and gains in both power and efficiency.

Chief among these improvements are a special pair of turbochargers with larger impeller blades and a modified housing specific to the weapons-grade S for the first time. For 2017, fuel injectors for both the Turbo and Turbo S cope with a system pressure of 2,900 psi, up from 2,030 psi. The Turbo S’ 3.8-liter direct-injected, variable-vane, turbocharged flat-six makes 580 horsepower and 516 lb-ft of torque (553 lb-ft in temporary 2.2 psi overboost mode between 2,250 and 5,000 rpm in Sport or Sport Plus mode) with virtually zero turbo lag.

Our track results can vouch for the newfound potency and response. It reaches 60 mph in 2.5 seconds (reading those seven words aloud takes 2.5 seconds). It does the 0–100 run in 6 flat (not bad for a flat-six), and blasts from 0 to 100 mph and back to 0 mph in 9.7 seconds. It almost makes the Porsche’s thunderous 10.5-second, 131.8-mph quarter-mile run seem anticlimactic.

Words Chris Walton
Photographs William Walker

-GRADE EDITION

LAUNCH IN 3, 2, 1

Fortified by Porsche’s industry-standard double-clutch automated-manual transmission and with the addition of a steering wheel drive-mode selector (eliminating the Sport/Sport Plus button from the console), the launch protocol for the all-wheel-drive supercar is even easier than it was before.

It goes like this: Disable the traction control, rotate the wheel to Sport Plus, mash both pedals to the floor, and then release the brakes when the tach needle steadies at 5,600 rpm. If the tires are cold, the 3,557-pound car will spin the rears, even with 61 percent of its static weight astern. The Turbo S sorts out how much power goes where and cracks off quick and smooth upshifts. It’s almost too easy. (New for 2017: Manual shift mode will allow the engine to bang off the 7,200-rpm rev limiter rather than upshifting.)

Now, for the wheelie: We tried softening the adjustable dampers for more rear-weight bias on one launch but kept the remaining settings in full-on sport. With a combined 2 feet (305mm x 2) of properly heated rubber at the back, releasing the brakes caused the nose of the car to lift and point over the horizon. Steering did little to affect its heading until close to 40 mph. After launching 1,500 cars in my career, even one that produced 1,000 horsepower on Hoosier racing slicks, this wheelie was a first for me—and it happened with Pirelli P Zero street tires declaring a 220-treadwear rating, which suggests they’ll last for 15,000 miles.



Speaking of grip, this car matches its Turbo S predecessor (wearing Dunlop Sport Maxx Race tires with an 80-treadwear rating) on our figure-eight test at 22.9 seconds, the latter gripped slightly better on the skidpad with a 1.07 g lateral acceleration to the 2017 Turbo S’ 1.04 g. Thanks to standard 16.1-inch front and 15.4-inch rear carbon-ceramic brakes, now on their third generation, the new Turbo S also stops shorter from 60 mph (97 feet) compared to its forerunners. Supercar bar raised? You could say that.

THE EVERYDAY SUPERCAR, TESTED

You probably expected these feats of speed and agility from a \$190,000 sports car. But the 2017 Porsche 911 Turbo S is the most practical supercar in the world. The rear-engine 911 Turbo S has a useful amount of cargo space and four seats. There are 4.1 cubic feet between the front wheels, and folding the rear jump-seats offers up an additional 9.2 cubic feet.

To prove its versatility, I carpooled a trio of seventh- and eighth-graders, who learned why the engine has been “back there” since the 911’s inception. They also learned how a variable-vane turbocharger works, and that when my foot is off the accelerator pedal, this Porsche keeps

the throttle open but shuts off the fuel supply to maintain the turbochargers’ momentum to effectively eliminate turbo lag between gears. They experienced the new Sport Response button, like a push-to-pass button, that—for up to 20 seconds at a time—selects Sport Plus mode, preemptively downshifts one gear, adjusts the angle of attack of the air hitting the turbine blades, retards ignition timing, and in anticipation of acceleration, slightly opens the throttle valve.

I also explained to Jack, Viv, and Frances the mechanicals of a Porsche’s PDK double-clutch automated-manual transmission (all three kids can now pronounce “Doppelkupplung” properly). They learned that the manual-mode shifter is now oriented the same way as



Stuttgart’s Slayer Until we affixed our data logger to a Tesla Model S P100D with the Ludicrous+ Easter egg mode engaged, the 2017 Porsche 911 Turbo S briefly stood as the hardest-accelerating car *Motor Trend* has ever tested. Here are the top 10 speediest getaways we’ve recorded.

YEAR	MAKE	MODEL	HP	TRQ	0-30	0-40	0-50	0-60
2017	Tesla	Model S P100D Ludicrous+	680	791	0.9	1.3	1.7	2.3
2017	Porsche	911 Turbo S	580	553	0.9	1.3	1.8	2.5
2015	Lamborghini	Aventador LP750-4 SV	740	509	1.0	1.4	2.0	2.6
2014	Nissan	GT-R (Track Pack)	545	463	1.0	1.5	2.0	2.7
2017	Audi	R8 V10 Plus	602	413	1.0	1.5	2.0	2.6
2015	Tesla	Model S P90D Ludicrous	762	713	1.0	1.5	2.0	2.6
2015	Ferrari	LaFerrari	950	516	1.1	1.5	1.9	2.4
2014	McLaren	P1	904	664	1.2	1.7	2.1	2.6
2015	Porsche	918 Spyder	887	944	1.2	1.6	2.0	2.4
2005	Bugatti	Veyron 16.4	987	922	1.2	1.7	2.2	2.7

TURBO How can it improve with each generation? The 2017 Porsche 911 Turbo S maintains its street cred and then some.



it is in Porsche's race cars—pulling the lever initiates an upshift and pushing it forward performs a beautiful, matched-rev downshift. As I rounded the first corner, I told them the rear wheels also steer up to 2.8 degrees, or the equivalent of up to 45 degrees of steering input at the front, in opposite directions under 31 mph and in the same direction over 50 mph. “Four-wheel drive and four-wheel steer? That’s crazy,” Viv incredulously voiced from the back seat. We ran out of time before I had the opportunity to show them the Turbo S’ new all-wheel-drive clutches, which bite with more friction and more precision control than before in order to improve the torque distribution and traction at all four wheels. They had a few precious minutes of furious texting before homeroom. Jack snapped a picture before heading off. Besides, we had after-school pickup for more 911 Turbo S fun facts.

SUPERCAR WITHOUT COMPROMISE

What else could one do with a brand-new Lava Orange Turbo S that few have seen? Head to a Cars and Coffee meet on Saturday morning. I swung by to pick up a fellow Porscheophile only to discover another friend eagerly awaiting a ride, too. “It’s a good thing this isn’t a McLaren,” I said. “Let’s see how three adults fare with 27 inches of rear legroom.” It was more tightly packed than with the kiddos, but three adult-scale frames can fit—even for a 20-minute drive. With some sightlines obscured, I was grateful for the car’s new

blind-spot monitor. The highway ride was downright comfy due to the adjustable dampers and the fact that the anti-roll bars are decoupled in steady straights. When we arrived at the parking lot, I wished this example were equipped with the new front-axle lift system, which affords an extra 1.5 inches of clearance. Instead, I retracted the front splitter and took an oblique line. No scrapes! And thanks to standard front/rear park assist with a rear camera, backing into a spot on Porsche row was anxiety-free. After the meet up and a demonstration of the Turbo S’ launch control, I dropped my friends back home and headed to the grocery store. The frunk swallowed four bags of sustenance plus a half dozen bottles of wine with ease.

THE PEERLESS PORSCHE

From its asphalt-rippling day at the track to the desert and back for the photos you see here (with a self-reported 30.1-mpg average) to commuting on Los Angeles’ crowded freeways, carpooling, taking in a car show, and grocery shopping, the 2017 Porsche 911 Turbo S is the everyday supercar and a worthy guardian of its storied crown. Name another car that can so effortlessly accomplish all these milestones and tasks. Some will do some of what the Turbo S can, but none will do it all. “Is the lack of flaws a flaw?” Jonny Lieberman asked of the last 2015 911 Turbo S. He answered himself, “I’m thinking, weirdly: kind of.” Does that make the 2017 Turbo S weirdly more flawed? Nope. This machine is peerless. ■



2017 Porsche 911 Turbo S	
POWERTRAIN/CHASSIS	
DRIVETRAIN LAYOUT	Rear-engine, AWD
ENGINE TYPE	Twin-turbo flat-6, alum block/heads
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	231.9 cu in/3,800cc
COMPRESSION RATIO	9.8:1
POWER (SAE NET)	580 hp @ 6,750 rpm
TORQUE (SAE NET)	516 lb-ft @ 2,100 rpm*
REDLINE	7200 rpm
WEIGHT TO POWER	6.1 lb/hp
TRANSMISSION	7-speed twin-clutch auto.
AXLE/FINAL-DRIVE RATIO	3.44:1(f) 3.33:1(r):/2.06:1
SUSPENSION, FRONT; REAR	Struts, coil springs, adj shocks, anti-roll bar; multilink, coil springs, adj shocks, anti-roll bar
STEERING RATIO	12.5-15.0:1
TURNS LOCK-TO-LOCK	2.5
BRAKES, F; R	16.1-in vented, drilled, carbon-ceramic disc; 15.4-in vented, drilled, carbon-ceramic disc, ABS
WHEELS, F; R	9.0 x 20-in; 11.5 x 20-in forged aluminum
TIRES, F; R	245/35ZR20 91Y; 305/30ZR20 103Y Pirelli P Zero N1
DIMENSIONS	
WHEELBASE	96.5 in
TRACK, F/R	60.7/62.6 in
LENGTH X WIDTH X HEIGHT	177.4 x 74.0 x 51.0 in
TURNING CIRCLE	34.8 ft
CURB WEIGHT	3,557 lb
WEIGHT DIST, F/R	39/61%
SEATING CAPACITY	2+2
HEADROOM, F/R	37.7/32.2 in
LEGROOM, F/R	42.2/27.1 in
SHOULDER ROOM, F/R	51.3/47.9 in
CARGO VOLUME	4.1 cu ft (+9.2 cu ft behind front seats)
TEST DATA	
ACCELERATION TO MPH	
0-30	0.9 sec
0-40	1.3
0-50	1.8
0-60	2.5
0-70	3.2
0-80	4.0
0-90	5.0
0-100	6.0
0-110	7.3
0-120	8.6
0-130	10.2
0-100-0	9.7
PASSING, 45-65 MPH	1.3
QUARTER MILE	10.5 sec @ 131.8 mph
BRAKING, 60-0 MPH	97 ft
LATERAL ACCELERATION	1.04 g (avg)
MT FIGURE EIGHT	22.9 sec @ 0.96 g (avg)
TOP-GEAR REVS @ 60 MPH	1,650 rpm
CONSUMER INFO	
BASE PRICE	\$189,150
PRICE AS TESTED	\$196,360
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, fr side, fr head, fr knee
BASIC WARRANTY	4 yrs/50,000 miles
POWERTRAIN WARRANTY	4 yrs/50,000 miles
ROADSIDE ASSISTANCE	4 yrs/50,000 miles
FUEL CAPACITY	17.9 gal
EPA CITY/HWY/COMB ECON	19/24/21 mpg
ENERGY CONS, CITY/HWY	177/140 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.93 lb/mile
RECOMMENDED FUEL	Unleaded premium

HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

EARTHQUAKE **SUPER COUPON**

1/2" HEAVY DUTY COMPOSITE AIR IMPACT WRENCH

- 800 ft. lbs. max. torque

ITEM 62835

Customer Rating 

SAVE \$160

SUPER COUPON

\$899

comp at **\$249.99**

26706483

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CHICAGO ELECTRIC **SUPER COUPON**

WELDING STORAGE CABINET

ITEM 62275/61705 shown

Customer Rating 

SAVE \$79

SUPER COUPON

\$1499

comp at **\$229.97**

26668588

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WARRIOR **SUPER COUPON**

Customer Rating 

- Drill 3 PIECE TITANIUM NITRIDE COATED HIGH SPEED STEEL STEP BIT SET

ITEM 91616 shown

69087/60379

SAVE 85%

SUPER COUPON

\$89

comp at **\$59.97**

26699093

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BADLAND **SUPER COUPON**

Voted Best Winches in Quality & Price

12,000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE

ITEM 61256/61889/60813 shown

Customer Rating 

SAVE \$453

SUPER COUPON

\$2999

comp at **\$752.99**

26671685

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CENTRAL PNEUMATIC **SUPER COUPON**

Customer Rating 

3" HIGH SPEED AIR CUT-OFF TOOL

ITEM 47077 shown

60243/60374

67425/69473

SAVE 50%

SUPER COUPON

\$59

comp at **\$12**

26662155

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SUPER COUPON

20% OFF

ANY SINGLE ITEM

Limit 1 coupon per customer per day. Save 20% on any 1 item purchased. *Cannot be used with other discount, coupon or any of the following items or brands: Inside Track Club membership, Extended Service Plan, gift card, open box item, 3 day Parking Lot Sale item, compressors, floor jacks, saw mills, storage cabinets, chests or carts, trailers, trenchers, welders, Admiral, Bauer, CoverPro, Daytona, Earthquake, Hercules, Jupiter, Lynxx, Poulan, Predator, StormCat, Tailgator, Viking, Vulcan. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 7/17/17.

26673051

PORTLAND **SUPER COUPON**

SAVE NOW

1750 PSI PRESSURE WASHER

ITEM 63255 shown

63254 shown

NEW

1.3 GPM

SUPER COUPON

\$799

comp at **\$109.99**

26720995

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PITTSBURGH **SUPER COUPON**

SAVE 60%

40 PIECE 1/4" AND 3/8" DRIVE SOCKET SET

ITEM 63015 shown

61328/62843

47902 shown

Customer Rating 

SUPER COUPON

\$39

comp at **\$9.99**

26702954

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PITTSBURGH **SUPER COUPON**

Customer Rating 

NEW

VEHICLE POSITIONING WHEEL DOLLY

ITEM 67287/62234 shown

61917 shown

SAVE \$210

SUPER COUPON

\$699

comp at **\$279.99**

26697934

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US GENERAL **SUPER COUPON**

72", 18 DRAWER INDUSTRIAL QUALITY ROLLER CABINET

ITEM 61656

NEW

- 34,300 cu. in. storage
- 4602 lb. capacity
- Weighs 528 lbs.

Customer Rating 

SUPER COUPON

\$9999

comp at **\$1199.99**

26710158

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CHICAGO ELECTRIC **SUPER COUPON**

Customer Rating 

SUPER COUPON

\$64999

comp at **\$699.99**

26698446

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PITTSBURGH **SUPER COUPON**

1000 LB. CAPACITY MOTORCYCLE LIFT

ITEM 69904/68892 shown

Customer Rating 

SUPER COUPON

\$2999

comp at **\$1049.99**

26723709

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HaulMaster **SUPER COUPON**

HITCH RECEIVER MOUNT FOR WINCHES

ITEM 69106

Customer Rating 

SAVE \$60

SUPER COUPON

\$399

comp at **\$99.99**

26705608

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SUPER COUPON

7 FT. 4" x 9 FT. 6" ALL PURPOSE WEATHER RESISTANT TARP

ITEM 69249/69115/69137 shown

69129/69121/877 shown

Customer Rating 

SUPER COUPON

\$299

comp at **\$8.48**

26702628

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HaulMaster **SUPER COUPON**

Customer Rating 

STEP STOOL/WORKING PLATFORM

• 350 lb. capacity

SUPER COUPON

\$199

comp at **\$57.55**

ITEM 62515 shown

66911 shown

26679721

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PITTSBURGH **SUPER COUPON**

SAVE 75%

LOW-PROFILE CREEPER

ITEM 63371/69262 shown

63372/69094/61916 shown

63424/2745 shown

Customer Rating 

SUPER COUPON

\$199

comp at **\$79.99**

26689448

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GARAGE

Words Motor Trend Editors



2016 Nissan Titan XD Pro-4X Diesel Scott Evans



"I can't wait to tackle my front- and backyard landscaping projects now I have a truck to haul supplies. We'll see how the Nissan Titan XD handles real work."

Service life / 6 mo/10,865 mi **Avg CO2** / 1.36 lb/mi
Energy cons / 231 kW-hrs/100 mi
Unresolved problems / Bluetooth connection, front suspension squeak, steering moan
Maintenance cost / \$76 (3-DEF refill)
Normal-wear cost / \$0 **Base price** / \$52,165
As tested / \$59,060

FUEL ECON 16.3 MPG comb.

The Titan XD isn't a traditional light-duty or heavy-duty pickup, but something in between.

You wouldn't know that from looking at it, though. The Titan XD is huge, and at over 7,300 pounds, it's just as heavy as a heavy-duty truck.

This has a few implications for maneuvering and parking. I'm aware of how far the Titan, with a full four-door cab and long bed, might be hanging out of a parking space and how little space I have to open the doors. Luckily, our long-termer is equipped with Nissan's 360-degree camera system, which makes parking considerably easier.

A feature we didn't spec but that we might add is

a set of side steps. In Pro-4X off-road trim, the Titan XD is a very tall truck—even tall folks use the grab handles inside each door. Plus, a set of steel side steps can act as a form of body protection. I'd also go for a set of drop-down steps under the corners of the rear bumper to help getting into the bed.

It's a high ride from inside, too. Certain vehicles feel more or less agile than their actual size would suggest. This one's big, and it drives big. The hood is long, the bed is longer, and the passenger seat is a mile away. The steering is slow and heavily boosted, so there's little connection with the vehicle. Every turn requires a lot of steering input.

I'll need to address a few problems at its first scheduled service. Bluetooth phone calls get dropped after 15 minutes, and the system restarts itself. When it's cold outside, the steering drags and moans, and the front-left suspension squeaks. But both noises go away as things warm up.

Los Angeles isn't really a truck town, but our Solar Flare yellow Titan XD gets a lot of attention. I've given a few detailed walk-arounds to admiring construction workers, parking lot attendants, and regular folks on the street. Nissan might not have the biggest market share in the truck market, but the Titan XD turns heads.



2016 Volvo XC90 T6 AWD Inscription Alisa Priddle



"With late-winter and early-spring Michigan weather to come, the Volvo XC90 will be a popular girl to take home at night."

Service life / 10 mo/21,181 mi
Avg CO2 / 0.90 lb/mi
Energy cons / 157 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$0 (2-oil change, inspection)
Normal-wear cost / \$0
Base price / \$56,395
As tested / \$69,625

FUEL ECON 20.6 MPG comb.



You can access the Sensus Connect screen with gloves on.

Like many infotainment screens in today's industry, the 9.5-inch Sensus Connect in the Volvo XC90 centralizes controls while offering multiple screens of information and functions. It is perhaps because of its complexity that it takes a long time for the system to boot up when you start the vehicle.

Similar to today's other sophisticated vehicles, you benefit from consulting the manual to discover the reams of features at your fingertips, many of

UPDATE CHEVROLET CAMARO SS	UPDATE CHEVROLET COLORADO Z71 DURAMAX	DODGE CHARGER SRT HELLCAT	UPDATE HONDA CIVIC TOURING	HONDA HR-V EX	UPDATE HONDA PILOT AWD ELITE	KIA SEDONA SX	KIA SPORTAGE EX AWD
							
							
LAND ROVER RANGE ROVER SPORT HSE Td6 UPDATE	MAZDA CX-3 AWD	MINI COOPER S CLUBMAN ALL4	NISSAN TITAN XD PRO-4X DIESEL UPDATE	SUBARU OUTBACK 2.5i	TOYOTA MIRAI	VOLKSWAGEN GOLF SPORTWAGEN 1.8T UPDATE	VOLVO XC90 AWD UPDATE

RIDE ALONG FOR UPDATES ON OUR LONG-TERM FLEET



"Snow, rain, wind, and long distances. This is what the Land Rover Range Rover Sport HSE Td6 does best—as long as the check engine light isn't on."

Service life / 11 mo/26,887 mi **Avg CO2** / 0.83 lb/mi
Energy cons / 140 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$876.65 (2-DEF refill; 1-oil change, inspection, tire rotation, cabin air filter, fuel filter) **Normal-wear cost** / \$0
Base price / \$72,445 **As tested** / \$83,510

 **REAL MPG FUEL ECON** 26.9 MPG comb.

2016 Range Rover Sport Td6 William Walker

There is no better way to start a 2,500-mile road trip than with a check engine light. However, a quick visit to Hornburg Land Rover in Hollywood prompted a diagnosis: a slightly sticky exhaust gas recirculation valve. "It won't affect your drive," the tech said. "Most likely, it will clear itself again." We were free to make our way north.

On day two of the journey, on I-5 outside Redding, California, we encountered heavy snow-

Avenue of the Giants in Humboldt Redwoods State Park is a worthwhile detour.



fall. We passed many cars spun out on the side of the road, but the Rover pushed north—slow, steady, and composed. Inside, my hands were toasty on the heated steering wheel, and my backside was warm from the seat heaters. The seats might be a little firm for all-day stretches behind the wheel, but overall ride quality means it is easy to put down some serious miles.

On the coastal return leg, the 443 lb-ft of torque from Td6's 3.0-liter turbodiesel came in handy in the twisty sections. Plus, the diesel averaged about 450 miles between fill-ups at about 25 mpg.

The check engine light never reappeared and hasn't since. During the 10 days and 2,513 miles, the Rover never hiccupped, and it kept me comfortable the entire time.

which can be customized. You can access the virtual manual at any time from a tab at the top of the large, vertical screen. And you can do it with gloves on because the infrared screen senses when a finger is nearby. There's also voice activation for many commands, so the screen can stay smudge-free. Messages sent from the car come through clearly.

The radio has features we love, such as listing all the songs that are playing simultaneously on Sirius XM satellite radio. However, on the way back from South Carolina, the system removed the satellite radio icon from the recent sources list, and all stations were depicted as FM offerings broadcasting on the 0.0 MHz frequency. Restarting at the next fuel stop exorcised the gremlins.

We seem to have lost our ability to use the car as a Wi-Fi hot spot, but we're checking to see if it was somehow disconnected inadvertently or if our service expired.

Our gas mileage continues to drop,



but no one seems to mind. At the 10-month mark we had averaged 20.6 mpg after 21,181 miles, which is a further dip from 21.3 mpg after eight months and 17,752 miles, including a rough mileage slog while towing 5,000 pounds.

None of these issues has dampened how much we love driving the XC90, which performed exceedingly well through a snowstorm that dumped 11 inches in parts of metro Detroit. With more harsh weather still to come to Michigan, we'll be glad to have the XC90 and see what else it can do.



The 2.0-liter turbocharged and supercharged engine hasn't faltered in any conditions.



2016 Chevrolet Camaro SS Chris Walton



"This bright red pushrod V-8-powered Chevrolet Camaro SS is an attention magnet, but not the kind I'd like. Know what I mean? Not tonight, guys."

Service life / 10 mo/14,174 mi **Avg CO2** / 0.95 lb/mi
Energy cons / 165 kW-hrs/100 mi
Unresolved problems / None **Maintenance cost** / \$119.31 (2-oil change, inspection)
Normal-wear cost / \$992 (1 set Goodyear Eagle F1 Asymmetric 3 RunOnFlat tires, mount and balance) **Base price** / \$42,295 **As tested** / \$46,080

 **REAL MPG FUEL ECON** 20.4 MPG comb.

You might recall from the second update that the Camaro's limited-slip differential began groaning during slow-speed parking lot maneuvering, especially after sitting outside all day. It's gotten worse. I'm not alone, judging by concerned reader David Z. pointing me to a related forum in the Camaro6 community. Service document ID# 2866369 recommends draining and replacing the gear oil, so I added that to my service tech's to-do list during a routine oil change. Reaction from the Camaro6 forum is mixed on whether replacing the offending pumpkin juice with two quarts of Dexron LS Gear Oil 75W-90 (GM part number 88862624) is a permanent fix.

Since the last update, we've added 2,842 in-service miles, averaging 16 mpg, precisely the EPA's city estimate. If I short-shift and maintain a steady pace, I can eke out a self-reported 21 mpg over my 33-mile commute (22 of which are on the highway). One thing is for sure: A bright red SS with black wheels in Sport mode with throaty pipes certainly attracts attention from drag racing wannabes. Not tonight, guys.



The \$745 "off-road assist steps" are an option we'd skip; no such choice exists for the air dam.

2016 Chevrolet Colorado Z71 Duramax Christian Seabaugh



"We trundled down Titus Canyon to check out the Leadfield Ghost Town (population: us), representing about 30 miles of off-roading on a narrow, rocky trail."

Over the past eight months and 21,000 miles, the MT Garage 2016 Chevrolet Colorado Z71 Duramax 4x4 has seen its fair share of off-roading. Although not designed to be as capable as the coming 2017 Chevy Colorado ZR2, our Colorado Z71 is outfitted with heavy-duty off-road-oriented shocks, an automatic locking rear differential, Kevlar-reinforced off-road tires, and some underbody armor, among other things.

It's no Jeep, but the Colorado Z71 has been pretty damn capable everywhere I've taken it. A

Service life / 8 mo/21,210 mi
Avg CO2 / 0.88 lb/mi
Energy cons / 150 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$387.32 (3-DEF refill; 2-oil change, inspection, tire rotation)
Normal-wear cost / \$0
Base price / \$35,535
As tested / \$41,905

REAL MPG FUEL ECON 25.2 MPG comb.

few months back, my wife and I took our dogs and the truck to Death Valley National Park—avoiding the tourist traps by taking the Colorado down rarely traveled off-road trails. Taking the back way to Badwater Basin—the lowest point in North America—via a long washed-out trail through a dried-up salt lake—the Colorado was equally adept in the heavy ruts and deep sand and cheerfully left rooster trails as the trail opened up.

The Colorado took the trails like a champ—except for the front air dam relentlessly scraping on the rocks and moguls. Not long after our Death Valley trip, the air dam officially broke on a photo shoot. After I balked at paying \$130 to replace a black piece of plastic, our local Chevy dealer reattached the air dam for free. But that potential \$130 bill hanging over my head was all the motivation I needed to remove the air dam for good with a quarter-inch ratchet wrench, a 7-mm socket, and a 1-inch-long T15 Torx bit.

Inexplicably, Chevy mounts the 12 T15 Torx screws that hold the air dam onto the bumper with the head facing down instead of up. It's a painstaking two-hour process.

I've certainly noticed a fuel economy difference without the air dam, but we'll see how much of a difference it makes in Real MPG testing. We're also talking with Chevy about potential cooling issues with the dam removed. Hang tight for the update.



2016 Honda Pilot AWD Elite Ed Loh



"Lane keep assist works between 45 and 90 mph, but we don't recommend taking your hands off the wheel at those speeds."

Our visual assets manager, Brian Vance, is the self-proclaimed King of the Highway. KOTH, as he shall now be known, piloted the Honda from West Hollywood to the capital cities of California and neighbor state Nevada for work and play, logging more than 4,000 miles in just a few weeks—known in our business as accelerated wear and tear.

KOTH was the first staffer to spend serious throne time with our Pilot's new transmission. As you will recall, Honda replaced the ZF-supplied nine-speed transmission shortly after the 21,000-

Service life / 14 mo/34,408 mi
Avg CO2 / 0.90 lb/mi
Energy cons / 157 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$310.86 (3-oil change, inspection; 1-tire rotation, rear differential service, cabin air filter)
Normal-wear cost / \$0 **Base price** / \$47,300
As tested / \$47,300

REAL MPG FUEL ECON 21.5 MPG comb.

mile mark. Although he did not hear any of the whirs and clicks that pre-empted the warranty claim (before any actual mechanical trouble was experienced), KOTH decreed it far from perfect.

"Our Pilot is smooth, cushy, and powerful, but the tranny continues to suffer at low speeds," he said. "Indecisive gear hunting along with getting caught in the wrong gear is its biggest problem. Most of time, the transmission is in the proper gear

No spring chickens here, but the ingress and egress of back seats made it easy for Vance's elders to embark on adventures.

and shifts almost imperceptibly as long as you keep throttle applications light and smooth. But sudden inputs seem to confuse it, and you'll likely find yourself jerked into a different gear."

KOTH did find the transmission's paddle shifters of great assistance for elevation changes through the Sierra Nevada. The systems that helped the Pilot achieve an IIHS Top Safety Pick Plus rating for 2016 and 2017 also found favor with the King. With lane keep assist and adaptive cruise control, activated via the steering wheel buttons, the Pilot will hold the lane for what feels like 30 seconds before asking you to grab the wheel.

Also noteworthy: the execution of less fancy standard features. "I like all the cupholders in the front seats and that great, rubberized flat area covering the center console," KOTH said. "Oh, and I really appreciate that the Pilot has a traditional, mechanical emergency brake. Screw electronic brakes." As you wish, my liege.

LONG-TERM TEST | UPDATES



High above Reno at the Mount Rose ski resort, my friends fit comfortably in the back seat even with skis wedged between them.



2016 Volkswagen Golf SportWagen Brian Vance



"A switch to a more dedicated snow tire on the SportWagen would have made travel easier. Regardless, I didn't regret not having AWD or a higher ride stance."

Service life / 10 mo/18,119 mi
Avg CO2 / 0.64 lb/mi
Energy cons / 112 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$154.32 (oil change, inspection, tire rotation)
Normal-wear cost / \$0
Base price / \$22,445
As tested / \$22,715

REAL MPG FUEL ECON 30.2 MPG comb.

A significant amount of snow fell in the California mountains this winter, inspiring me to put this wagon's snow-traction abilities to the test. Knowing the OEM tires would limit snow traction, I nonetheless loaded up my skis and pointed toward Lake Tahoe. I was determined to make the SportWagen work as a snowmobile because I'm still convinced this is a suitable (and decidedly cheaper) alternative to a crossover.

Like so many VW/Audi products, this Golf has a ski pass-through in the back seat, keeping both left

and right seats open for my ski buddies to ride comfortably while leaving the cargo area open for bulky cold-weather paraphernalia.

I soon discovered the shortcomings of a FWD on snow-packed roads. Tire slip kept the stability control's yellow light flashing, but the manual transmission helped modulate traction better than with an automatic. Overall, left with slippery surfaces, the VW managed admirably.



2017 Honda Civic Touring Jason Udy



"The top-spec Civic Touring impresses with lots of features, including heated front and rear seats, LED low- and high-beam, and Apple CarPlay and Android Auto."

Service life / 5 mo/10,458 mi
Avg CO2 / 0.57 lb/mi
Energy cons / 100 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / \$0
Normal-wear cost / \$0
Base price / \$27,335
As tested / \$27,896

REAL MPG FUEL ECON 33.8 MPG comb.

For the redesigned 10th-gen Civic, Honda introduced an all-new 1.5-liter turbocharged DOHC I-4. Rated at 174 hp and 162 lb-ft of torque when backed by a CVT, our Rallye Red Civic Touring reached 60 mph in 6.8 seconds and finished the quarter mile in 15.3 seconds at 93.0 mph.

It took the Civic Touring 120 feet to stop from 60 mph, it lapped the *Motor Trend* figure eight in 27.4 seconds at 0.64 g lateral average, and it pulled 0.84 g around the skidpad. Those numbers are significantly faster than the 2016 Honda Civic EX

sedan, which won our 2016/2017 compact sedans Big Test with the base 158-hp, 138-lb-ft 2.0-liter DOHC i-VTEC I-4 and CVT. The improvement comes as no surprise due to the Touring model's more powerful turbo engine, slightly larger stabilizer bars, and larger 17-inch alloy wheels. Even more impressive: The Civic Touring posts similar performance numbers to the eighth- and ninth-gen Si coupe and sedan.



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2016 Mazda MX-5 Miata Club Erick Ayapana



"Lots of smiles, wicked farmer's tans, and pure driving pleasure. The past 15 months with the 2016 Mazda MX-5 Miata have been a blast."

Crashing our long-term 2016 Mazda MX-5 Miata into the side of a Lincoln MKX will go down as one of the worst experiences of my life. I'll never forget standing on the side of the road and staring at the Miata's mangled mug while the Lincoln's driver (who was at fault) tried to make small talk. "The car looks so new. I feel awful," she said. "And look at how cute it is. It must be so much fun." I looked back at the Miata, nodded in agreement, and managed to give her a wan smile. That pretty much sums up the power the Miata had on us for more than a year—all smiles, all of the time.

Service life / 15 mo / 35,762 mi
Base price / \$29,420
Options / Brembo/BBS package (\$3,400: Brembo front brakes, BBS 17-inch wheels, advanced keyless entry system)
Price as tested / \$32,820
Avg fuel econ/C02 / 30.3 mpg / 0.64 lb/mi
Problem areas / Premature wear with soft top
Maintenance cost / 347.27 (4-oil change, inspection, tire rotation)
Normal-wear cost / \$0
3-year residual value* / \$15,900 / \$17,700
Recalls / None

REAL MPG CITY/HWY/COMB FUEL ECON
 25.4/39.0/30.1 MPG

*IntelliChoice trade-in/retail (at 42,000 miles)



That accident put the Miata out of commission for a week. But despite the short break, we managed to rack up 35,782 miles through its 15-month stay. Not bad for being the tiniest car in #MTGarage. Our Miata was the Club variant packed with Bilstein shocks, a limited-slip differential, shock tower bracing, an aero kit, a Bose sound system, and the optional BBS wheel package with Brembo brakes. Its 2.0-liter I-4 (the sole engine choice for the Miata) put out 155 hp and 148 lb-ft, which was more than adequate for the 2,313-pound featherweight roadster.

Our long-term MX-5 was a carbon copy of the one that entered our 2015 Best Driver's Car competition, where the Miata had the least amount of horsepower and put down the slowest lap time around Mazda Raceway Laguna Seca. But still, we couldn't stop smiling. It's a big reason why the Miata earned a third-place finish just behind two quicker (and much more expensive) Germans while beating the Cadillac ATS-V, Mercedes-AMG C63 S, and more. "The 2016 MX-5 remains faithful to the Miata formula," we noted. "No gimmicks."



"A MUST READ FOR ANY MAN OR COUPLE LOOKING TO IMPACT SEXUAL INTIMACY TODAY!"

BREAKING NEWS: CLINICAL TRIAL REVEALS NATURAL "BETTER VIRILITY" PILL WORKS ON-DEMAND!

FORMULATORS FINALLY GET IT RIGHT - IMMEDIATE RESULTS CHANGE THE MARKET FOREVER - NO PRESCRIPTION NECESSARY

By: Stefanie Seaver, PSY.D., Sex Therapist

READERS: A 2016 clinical trial has revealed a NEW miracle virility pill that works "on-demand"! No more waiting hours, days, weeks, or months like you would with those outdated "male enhancement" formulas flooding the market. Instead, healthy men simply take ONE CAPSULE of this GROUND-BREAKING FORMULA just 30 MINUTES PRIOR to intimacy - **JUST 30 MINUTES!** Get ready - powerful, effective results are moments away, and the study results are now in: **WOMEN WILL FEEL THE DIFFERENCE IN YOUR VIRILITY IMMEDIATELY, the VERY FIRST time you use it!** (READ ON TO LEARN THE FACTS!)

**THIS VIRILITY
FORMULA IS EXACTLY
WHAT YOU'VE BEEN
WAITING FOR!**

**RED
FORTERA**

RED FORTERA™ ("RED") was designed to provide male users with SUPERIOR VIRILITY ON-DEMAND. Each capsule helps enhance erection quality, performance and desire. MOST IMPORTANTLY, your partner will notice the difference in your performance **THE VERY FIRST TIME YOU USE IT!**

YEAH RIGHT ... PROVE IT!

No problem! First, TAKE RED ONE TIME and then WATCH YOUR PARTNER'S REACTION! Next Gen Health Solutions, ("Next Gen"), the maker of Red, encourages partner reaction feedback just as much as actual consumer feedback - which has been amazing! Imagine, a sexual enhancement pill that doesn't require a prescription, yet works WHEN you need it to work - AND partners are bragging about the difference in your performance! THAT'S RIGHT! Partners are boasting about their lover's NEWFOUND SEXUAL PROWESS AND PERFORMANCE - and they don't want their men to go without RED FORTERA EVER AGAIN!

HE TAKES IT ONE TIME, as needed - SHE FEELS it when HE TAKES it, LOVES it ... and BRAGS about it!

INTERNAL CUSTOMER SURVEY PROVES IT!

Next Gen received so much positive unsolicited feedback they decided to conduct an Internal Customer Survey, inviting all users to take the "Partner Reaction Challenge", a survey that the consumer and/or partner can take to judge their results.

- 82% of volunteers participating in the Internal Customer Survey stated they experienced a significant improvement in performance!
- 95% of participants also said their PARTNERS NOTICED the difference, and WANTED them to USE IT again!

CLINICAL TRIAL CONFIRMS IT!

To further prove the efficacy of Red Fortera, Next Gen initiated an INDEPENDENT PILOT CLINICAL STUDY on the actual formula! While competitors lean on old, existing data for 1 or 2 active ingredients, Next Gen wanted scientific substantiation showing the actual RED FORTERA formulation WORKS as advertised!

In 2016, QPS Bio-Kinetic, one of the top global leaders in clinical research, conducted an independent clinical study on the unique "RED" formula. Over the course of 7 weeks, healthy male participants were enrolled into a randomized, double-blind placebo-controlled clinical trial. Their female spouses were included in the study as well.

THE CLINICAL TRIAL RESULTS ARE IN

- Significant improvement in spousal sexual satisfaction rating of their partner's erection quality/hardness by 18%! **That's a HUGE difference!**
- Significant improvement of 13% in the Subjects' own arousal rating!
- Significant improvement of 12% in erectile quality and performance!
- The Product showed safety in reflecting no adverse events reported.

NEW Clinical Trial shows significant improvement in erection quality - MEN that means YOU WILL BE BIGGER!!!

Regarding Female Partner Satisfaction from the experience, the mean score was significantly greater for Red Fortera than placebo - by 26%! It's no wonder women are bragging about their Red Fortera lovers!

LEADING VASCULAR SURGEON SPEAKS OUT!

"I have personally reviewed the Randomized Double Blind Clinical Trial regarding the supplement called Red Fortera. The data suggests that there is significant clinical improvement in sexual satisfaction and sexual desire scores in both partners. The effects of the supplement 'Red Fortera' appear to improve the physiological performance experienced by the male, which in most cases boosts confidence psychologically. This combination enhances both individual's experience and can, in my opinion, improve intimacy between partners."

- Roger D. Moccia, M.D.

MEN GO RED, WOMEN WANT MORE!

"My husband curled my toes and knocked me out all at once when he took Red!"

Kay via Email

"Wow! Best sex we've had in 15 years! Thank you Red Fortera - it was just a great experience!" Barb (Age 39) via Survey

"I'm a return patron! It's the BEST PRODUCT I've EXPERIENCED!"

Scott W. via Email

NATIONWIDE FREE SUPPLY OPPORTUNITY

To celebrate these impressive Clinical Trial results, Next Gen has set aside a LIMITED QUANTITY of RED to throw in FREE with your order while supplies last! JUST CALL 1-800-573-9643 TODAY TO FIND OUT HOW TO GET YOUR FREE SUPPLY!

A hotline is ready to take your calls, but if the phones are busy, keeping calling! Restocking may take up to 8 weeks, so don't wait!

www.REDFORTERA.com

Call 1-800-573-9643 to find out why we call this "The Partner Reaction Guarantee"!



Frankly, there's very little I would change with the ND Miata. Nothing is perfect, but mine are very minor gripes.

No gadgets. No glitz. This is as pure and honest a sports car as you can buy from a mainstream automaker."

Although there was plenty of praise for the MX-5's six-speed manual gearbox and lively steering, some of our lead-footed staffers criticized the suspension for being too soft, specifically the Miata's tendency to squat on its outside rear wheel through corners. I consider it a good thing. It's what gives the Miata its uniquely perky personality, which turns the whole world into its playground regardless if it's hustling through Laguna Seca, charting an autocross, or navigating one of Trader Joe's notorious parking lots.

Road trips? No problem. The trunk easily accommodates two small carry-ons or duffel bags, and the Miata sips fuel on the highway—its Real MPG highway rating of 39 mpg tops the EPA's by 5 mpg. In addition to an epic and therapeutic road trip to Moab, Utah, I made the trek to Lake Tahoe, where our long-termer proved that snow is no excuse to leave your Miata at home. Armed with sticky Pirelli Sottozero 3s, the Miata tackled the slippery white stuff with little drama.

Another notable road trip came courtesy of testing director Kim Reynolds. He drove to the Bay Area and coincidentally crossed paths with Derek Jenkins, Mazda's former design director who was largely responsible for penning the ND Miata. The ever-clever Reynolds coaxed Jenkins into autographing our long-termer's trunklid, and when word got back to Mazda's design team in Southern California, they wanted in on the action, too. Almost a dozen designers and engineers left their mark, including Julien Montousse, Mazda's current design director, and engineer Dave Coleman, who convinced the bean counters to bring the 2.0-liter I-4 to the States. (Other markets get a 1.5-liter

I-4 as a base engine.) Based on the number of compliments our Miata got (a lot), this small but passionate design team has sculpted what's arguably the best-looking MX-5 to date.

In addition to its handsome looks, our Miata was pretty reliable, too, with four routine service visits totaling \$347.27. That's comparable with our departed long-term Volkswagen GTI (\$184.87 for two service visits), but neither of those cars can compete with our 2016 Subaru BRZ, which cost us nothing for three routine services because maintenance is complimentary for the first two years or 24,000 miles.

Our long-termer exhibited premature wear on a few spots of the soft top, which was a known issue with earlier builds. Mazda rectified the issue, which required fitting an entirely new convertible assembly (covered under warranty). The new and improved top worked flawlessly. At around 25,000 miles, the air conditioner stopped blowing cold due to a component failure. Our dealer couldn't pin down a cause, but we suspect it was residual damage from the fender bender with the Lincoln.

Frankly, there's very little I would change with the ND Miata. But nothing's perfect. High on my list would be relocating the infotainment control knob. It sits behind the shifter on the center console, meaning my forearm would often tap it inadvertently when shifting. Also, the Miata Grand Touring's soft top (which has thicker insulation) needs to trickle down to other trim levels to help reduce wind noise. Again, very minor gripes.

Fun, reliable, and affordable, the Miata's magic is still very much alive in Mazda's fourth-generation roadster. It has provided us with wicked farmer's tans and countless memories—and now, pained smiles, too, because it's time to say farewell. ■



The top was down for most of the 2016 Mazda Miata's stay in #MTGarage. As it should be.

2016 Mazda MX-5 Miata Club POWERTRAIN/CHASSIS

DRIVETRAIN LAYOUT	Front-engine, RWD
ENGINE TYPE	I-4, alum block/head
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	121.9 cu in/1,998cc
COMPRESSION RATIO	13.0:1
POWER (SAE NET)	155 hp @ 6,000 rpm
TORQUE (SAE NET)	148 lb-ft @ 4,600 rpm
REDLINE	6,500 rpm
WEIGHT TO POWER	14.9 lb/hp
TRANSMISSION	6-speed manual
AXLE/FINAL-DRIVE RATIO	2.87:1/2.87:1
SUSPENSION, FRONT; REAR	Control arms, coil springs, anti-roll bar; multi-link, coil springs, anti-roll bar
STEERING RATIO	15.5:1
TURNS LOCK-TO-LOCK	2.8
BRAKES, F; R	11.0-in vented disc; 11.0-in disc, ABS
WHEELS	70 x 17-in cast aluminum
TIRES	205/45R17 84W Bridgestone Potenza S001

DIMENSIONS

WHEELBASE	90.9
TRACK, F/R	58.9/59.2 in
LENGTH X WIDTH X HEIGHT	154.1 x 68.3 x 48.8 in
TURNING CIRCLE	30.8 ft
CURB WEIGHT	2,313 lb
WEIGHT DIST, F/R	52/48%
SEATING CAPACITY	2
HEADROOM	37.4 in
LEGROOM	43.1 in
SHOULDER ROOM	52.2 in
CARGO VOLUME	4.6 cu ft
LEGROOM, F/M/R	40.9/37.3/28.2 in
SHOULDER ROOM, F/M/R	56.6/56.1/51.4 in
CARGO VOL BEH F/M/R	63.3/34.2/10.3 cu ft

TEST DATA

ACCELERATION TO MPH	
0-30	1.8 sec
0-40	3.0
0-50	4.2
0-60	6.0
0-70	7.9
0-80	10.3
0-90	13.3
0-100	16.7
PASSING, 45-65 MPH	3.3
QUARTER MILE	14.5 sec @ 93.9 mph
BRAKING, 60-0 MPH	110 ft
LATERAL ACCELERATION	0.95 g (avg)
MT FIGURE EIGHT	25.4 sec @ 0.72 g (avg)
TOP-GEAR REVS @ 60 MPH	1,500 rpm

CONSUMER INFO

STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, front side/head
BASIC WARRANTY	3 yrs/36,000 miles
POWERTRAIN WARRANTY	5 yrs/60,000 miles
ROADSIDE ASSISTANCE	3 yrs/36,000 miles
FUEL CAPACITY	11.9 gal
REAL MPG, CITY/HWY/COMB	25.4/39.0/30.1 mpg
EPA CITY/HWY/COMB ECON	27/34/30 mpg
ENERGY CONS, CITY/HWY	125/99 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.65 lb/mile
RECOMMENDED FUEL	Unleaded premium



New Male Potency Formula Makes "The Little Blue Pill" Obsolete

Soaring demand expected for new scientific advance made just for older men. Works on both men's physical ability and their desire in bed.

By Harlan S. Waxman
Health News Syndicate

New York – If you're like the rest of us guys over 50; you probably already know the truth... prescription ED pills don't work! Simply getting an erection doesn't fix the problem" says Dr. Bassam Damaj, chief scientific officer at the world famous Innovus Pharma Laboratories.

As we get older, we need more help in bed. Not only does our desire fade; but erections can be soft or feeble, one of the main complaints with prescription pills. Besides, they're expensive... costing as much as \$50.00 each.

Plus, it does nothing to stimulate your brain to want sex. "I don't care what you take, if you aren't interested in sex, you can't get or keep an erection. It's physiologically impossible," said Dr. Damaj.

MADE JUST FOR MEN OVER 50

But now, for the first time ever, there's a pill made just for older men. It's called Vesele®. A new pill that helps you get an erection by stimulating your body and your brainwaves. So Vesele® can work even when nothing else worked before.

The new men's pill is not a drug. It's something completely different

Because you don't need a prescription for Vesele®, sales are exploding. The maker just can't produce enough of it to keep up with demand. Even doctors are having a tough time getting their hands on it. So what's all the fuss about?

WORKS ON YOUR HEAD AND YOUR BODY

The new formula takes on erectile problems with a whole new twist. It doesn't just address the physical problems of getting older; it works on the mental part of sex too. Unlike the expensive prescriptions, the new pill stimulates your sexual brain chemistry as well. Actually helping you regain the passion and burning desire you had for your partner again. So you will want sex with the hunger and stamina of a 25-year-old.

THE BRAIN/ERECTION CONNECTION

Vesele takes off where the others only begins. Thanks to a discovery made by 3 Nobel-Prize winning scientists; Vesele® has become the first ever patented supplement to harden you and your libido. So you regain your desire as well as the ability to act on it.

In a 16-week clinical study; scientists from the U.S.A. joined forces to prove Nitric Oxide's effects on the cardio vascular system. They showed that Nitric Oxide could not only increase your ability to get an erection, it would also work on your brainwaves to stimulate your desire for sex. The results were remarkable and published in the world's most respected medical journals.

THE SCIENCE OF SEX

The study asked men, 45 to 65 years old to take the main ingredient in Vesele® once a day. Then they were instructed not to change the way they eat or exercise but to take Vesele® twice a day. What happened next was remarkable. Virtually every man in the study who took Vesele® twice a day reported a huge difference in their desire for sex. In layman's terms, they were horny again. They also experienced harder erections that lasted for almost 20 minutes. The placebo controlled group (who received sugar pills) mostly saw no difference.

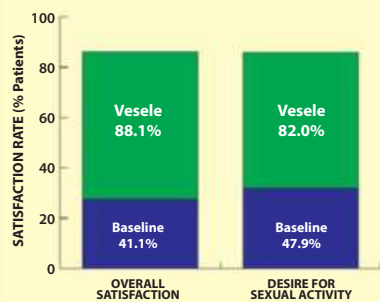
AN UNEXPECTED BONUS: The study results even showed an impressive increase in the energy, brain-power and memory of the participants.



New men's pill overwhelms your senses with sexual desire as well as firmer, long-lasting erections. There's never been anything like it before.

results are remarkable" said Dr. Damaj. (His findings are illustrated in the chart at left.)

JAW-DROPPING CLINICAL PROOF



	Baseline	Vesele
Satisfaction.....	41.4%	88.1%
Frequency.....	44.9%	79.5%
Desire.....	47.9%	82%
Hardness.....	36.2%	85.7%
Duration.....	35%	79.5%
Ability to Satisfy.....	44.1%	83.3%

SUPPLY LIMITED BY OVERWHELMING DEMAND

"Once we saw the results we knew we had a game-changer said Dr. Damaj. We get hundreds of calls a day from people begging us for a bottle. It's been crazy. We try to meet the crushing demand for Vesele®."

DOCTOR: "VESELE® PASSED THE TEST"

"As a doctor, I've studied the effectiveness of Nitric Oxide on the body and the brain. I'm impressed by the way it increases cerebral and penile blood flow. The result is evident in the creation of Vesele®. It's sure-fire proof that the mind/body connection is unbeatable when achieving and maintaining an erection and the

HERE'S WHAT MEN ARE SAYING

- I'm ready to go sexually and mentally.
- More frequent erections in the night (while sleeping) and in the morning.
- I have seen a change in sexual desire.
- Typically take 1 each morning and 1 each night. Great stamina results!
- An increased intensity in orgasms.
- My focus (mental) has really improved... Huge improvement.
- Amazing orgasms!
- I really did notice a great improvement in my ability.

HOW TO GET VESELE®

This is the first official public release of Vesele® since its news release. In order to get the word out about Vesele®, Innovus Pharma is offering special introductory discounts to all who call.

A special phone hotline has been set up for readers to take advantage of special discounts during this ordering opportunity. Special discounts will be available starting today at 6:00am. The discounts will automatically be applied to all callers. The Special TOLL-FREE Hotline number is 1-800-881-5719 and will be open 24-hours a day.

Only a limited number of bottles are available during this special discounted promotion. Consumers who miss out will have to wait until the next discount promotion is made available. But this could take weeks. The maker advises your best chance is to call 1-800-881-5719 early.

Vesele is a Registered Trademark of Innovus Pharmaceuticals publicly trading on the OTCQB under the Symbol INNV.

AUTO
ANYTHING.

1,000s OF PARTS FOR PERFORMANCE, PROTECTION & STYLE

INCREASE YOUR TORQUE AND HORSEPOWER!†



WASHABLE
REUSABLE



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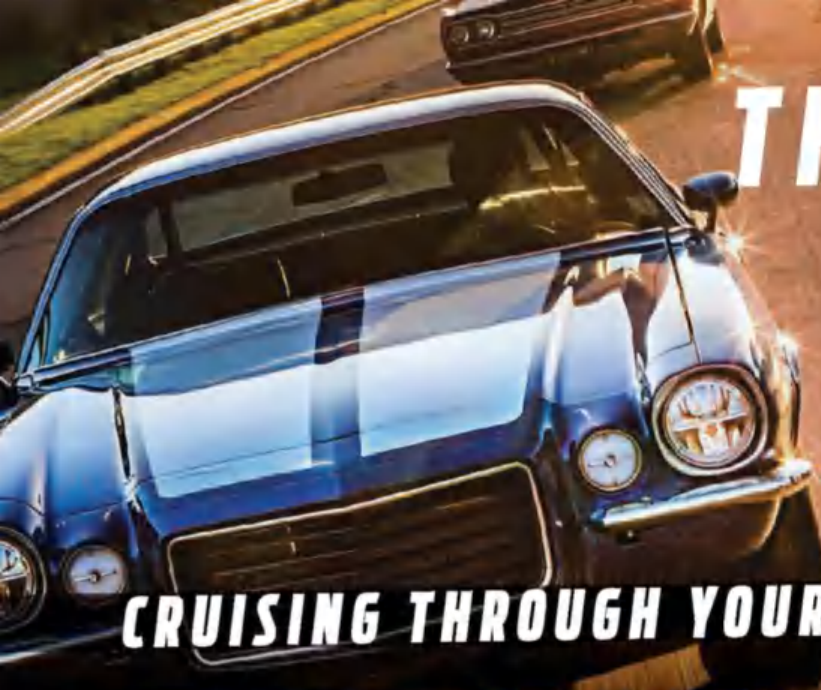
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The Big Picture



HIGH RANGE REDEFINING OFF-ROAD LUXURY



We're in a darkened room in the heart of Land Rover's design center in Gaydon, England, and Gerry McGovern is talking about Hermès handbags. "A lot of well-heeled women have an insatiable appetite for these things," he says, gesturing at the colorful images of beautifully crafted leatherwork projected on the screen in front of us. Land Rover's chief design officer, dapper in a bespoke chalk-stripe gray suit and gray turtleneck sweater with a rose gold Audemars Piguet Royal Oak peeking out from under one cuff, is using pictures of \$12,000 handbags to help explain his vision for the future of Range Rover.

McGovern's fundamental point is that all handbags do pretty much the same thing—they carry stuff. Likewise, a Range Rover, a Jeep Grand Cherokee, and a Toyota Land Cruiser all do pretty much the same thing: Confidently take you where no roads go. But, says the Land Rover design boss, notions of functionality and capability, flexibility and sustainability—all the sober left-brain stuff that's used to rationalize which handbag, or which SUV, you might actually need—are easily overwhelmed by the white heat of desire.

No one needs a Hermès handbag just to carry stuff. No one needs a Range Rover to go off-road, either. But McGovern wants you to truly, madly, deeply desire a Range Rover, just like wealthy ladies lust after their next Birkin bag.

That's the rationale behind the stunning new Range Rover Velar (page 14), the exterior of which was styled by Italian Massimo Frascella—who in the early 2000s worked with McGovern on all those fabulous Lincoln concepts Ford never had the balls to build. You can see echoes of McGovern's Lincoln show cars in the Velar's sheer surfacing, extravagant proportions, and obsessively reductive detailing. It's impossibly elegant for an SUV. And yes, it's very desirable.

Like the smaller haute-couture Range Rover Evoque, launched in 2011, the rakish, low-slung Velar is what McGovern calls a white-space vehicle for the storied off-road brand. And while he acknowledges other automakers have already launched sporty, coupelike SUVs, it's clear JLR execs hope the Velar emulates the Evoque—60 percent of which are purchased by women—in terms of putting new customers behind the wheel of a Range Rover.

More significantly, though, the Velar is also the result of a product development workflow that's a dramatic departure for a specialist off-road vehicle manufacturer that once prioritized functionality and capability over all else. "We in design create the concept, and the engineers work hell-bent to deliver the concept with as few changes as possible," McGovern says.

Design might now lead at Land Rover, but McGovern understands all the company's vehicles, no matter how good-looking, must retain an element of the go-anywhere

capability expected of the brand. As with that expensive hand-made Swiss watch on his wrist—one of a personal collection that includes classic timepieces by Rolex and Patek Philippe—he knows that no matter how chic the sheetmetal, there has to be real engineering substance underneath.

"Our German competition would kill for what we have with Range Rover," McGovern says, reinforcing that Range Rover, having long been the preferred off-roader of princes and plutocrats, already has impeccable credentials in the luxury SUV segment. But he knows top-end Range Rovers are now facing unprecedented competition, not just from Bentley's recently launched Bentayga but soon also from Rolls-Royce's giant Cullinan crossover and a Mercedes-Maybach SUV that's under development in Stuttgart.

McGovern is not one to pull his punches. Early in his stint at Lincoln, he bluntly told horrified dealers he wasn't worried his designs would alienate the brand's existing customers because "they'll all be dead soon anyway." In the coming fight for the hearts and wallets of luxury SUV buyers, Land Rover's design boss is coming out swinging, shrugging off accusations he's gratuitously glamorizing the Range Rover brand. "Just because it's glamorous," he says, "doesn't mean it's not tough." ■



"Our German competition would kill for what we have with the Range Rover." Gerry McGovern

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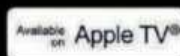
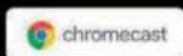
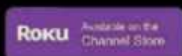
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