

# ARIZONA DRIVER

THE ENTHUSIAST'S GUIDE TO LIFE BEHIND THE WHEEL

VOLUME 16 NUMBER 5  
SEPTEMBER-OCTOBER 2017

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# ARIZONA DRIVER

THE ENTHUSIAST'S GUIDE TO LIFE BEHIND THE WHEEL

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**COVER:** Mazda MX-5 Miata RF Grand Touring, their new retractable hardtop convertible.



**START YOUR ENGINES : FROM THE PUBLISHER**

Every year, technophiles go crazy over one or two new smartphones, parsing every rumor of a revised button for months, then standing in line to spend a few hundred bucks on the latest. The automotive industry meanwhile launches several hundred new models each year, each with tens of thousands of parts, each integrating science, technology, art and innovation on levels far more complex, all capable of propelling their multiple tons and human occupants at extremely high speed. As you cautiously upgrade your phone and hope you can downgrade the OS if it doesn't work right, remember that on a moving vehicle, out in all sorts of weather, it all absolutely has to work.

It's almost hard to recall a time when the instrument panel amounted to basically a steel plate and a keyhole. A new vehicle has all the connectivity of a smartphone built in, plus an increasingly complex system of lane-keeping, autonomous braking, smart cruise and more, with such previous breakthroughs as anti-lock brakes and rear cameras now second nature. Basic mechanicals have become exponentially more complex in the quests for light weight, fuel efficiency, near-zero emissions and ever more power. Imagine 200 or more engine parts spinning at 6000 rpm—that's over a million movements per minute. Snap your finger. The ignition and valve assemblies in your engine go through their motions a staggering 400 times per second. Can your phone do this?

Simultaneously, the industry is hard at work on entirely new propulsion technologies—which we visit in this issue from EVs and hybrids, to businesses and awards—and with the ongoing drive not to drive, visited in this issue as Chandler emergency services work on coexistence with autonomous vehicles.

Meanwhile, classics and pure power still have their place—from high-performance supercars, to collector auctions and shows, to the latest developments at the track, all also in this issue.

Enjoy the ride.

**Joe Sage** - Publisher/ Executive Editor

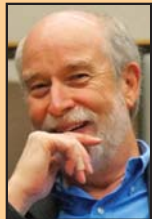


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2018 Jaguar E-PACE

▼ The new **Jaguar E-PACE** five-seat compact performance utility follows the brand's all-electric I-PACE Concept utility and the World Car of the Year-winning F-PACE performance SUV. All models are all-wheel-drive. Models including base, S and SE trim have a 246-hp 2.0L four-cylinder turbo engine, with base price ranging from \$38,600 to \$44,300. R-Dynamic models in S, SE and HSE trim have a 296-hp four (with zero-to-60 time of 5.9 seconds, compared to 6.6 with the base engine) and range from \$47,250 to \$53,100 base. All have a ZF 9-speed automatic. Connectivity includes streaming for up to eight devices via an optional 4G WiFi hotspot, InControl Touch Pro™ infotainment with 10-inch touchscreen accessing smartphones via its InControl Apps function; a 12.3-inch full color TFT driver display, and heads-up display available. Available Configurable Dynamics let you personalize throttle, steering and transmission settings, Active driveline and torque vectoring are available, as are 21-inch alloy wheels. A First Edition model with the 246-hp turbo four, at \$53,550, is available the first year, in three colors: white, black and First Edition exclusive Caldera Red, with gloss black detailing, 20-inch satin grey diamond-turned, split-spoke alloy wheels, special soft grain Windsor leather interior in ebony with red contrast stitching and an ebony suedecloth headliner, plus a next-generation TFT heads-up display, additional charging points, First Edition carpet mats

and tradeplates, roof rails, Configurable Dynamics, gesture-controlled tailgate and Jaguar Activity Key. The new Jaguar E-PACE goes on sale in early 2018.

▼ The 2018 **Ford F-150 Police Responder**—the industry's first pursuit-rated pickup—has a 3.5-liter EcoBoost V6 with 375 hp and 470 lb-ft of torque, 10-speed Select-Shift transmission, four-wheel drive, and is capable of speeds up to 100 mph. Based



2018 Ford F-150 Police Responder

on the off-road F-150 FX4 pickup, the Police Responder has Ford's military-grade aluminum-alloy SuperCrew body atop a high-strength steel frame with 145-inch wheelbase, for the largest passenger volume, payload and towing capacity of any pursuit-rated police vehicle. Additional enhancements include a police-calibrated brake system with upgraded calipers and pad friction material, upgraded front stabi-

lizer bar for improved braking and handling, and 18-inch alloy wheels with all-terrain tires. An upfit-ready interior features a column shifter, center-seat delete, heavy-duty cloth front seats with slim bolsters and anti-stab plates, vinyl rear seating and heavy-duty vinyl flooring for easy cleanup. A high-output 240-amp alternator supports on-board electrical devices. Instruments include a police-calibrated speedometer, and engine hour and idle hour meters. Underbody skid plates protect the truck from curbs and rough terrain. A Class IV hitch gives 7,000-pound tow capacity. The F-150 Police Responder joins a lineup including the Police Responder Hybrid Sedan (the first pursuit-rated hybrid police vehicle), the well known Police Interceptor Sedan and Utility, Special Service F-150 and Expedition, Special Service Police Sedan and Transit Prisoner Transport Vehicle.

▼ The **Mercedes-Benz X-Class** combines a pickup's strength, functionality and off-road capabilities with Mercedes-Benz style, comfort, driving dynamics, safety and technology. The X-Class is

aimed at specific but varying customer groups in other parts of the world: land owners and farmers in Argentina, business owners and building contractors in Australia, families with premium tastes in Brazil, trend-conscious individualists in South Africa and Great Britain, and sporty adventurers in New Zealand and Germany. The X-Class will sell in Germany from about \$43,550 (including

19 percent VAT). Market launch will start with 163-hp X220d and 190-hp X250d diesel engines, as well as a 165-hp gasoline engine in select markets, all with 4MATIC all-wheel drive. Three trim styles



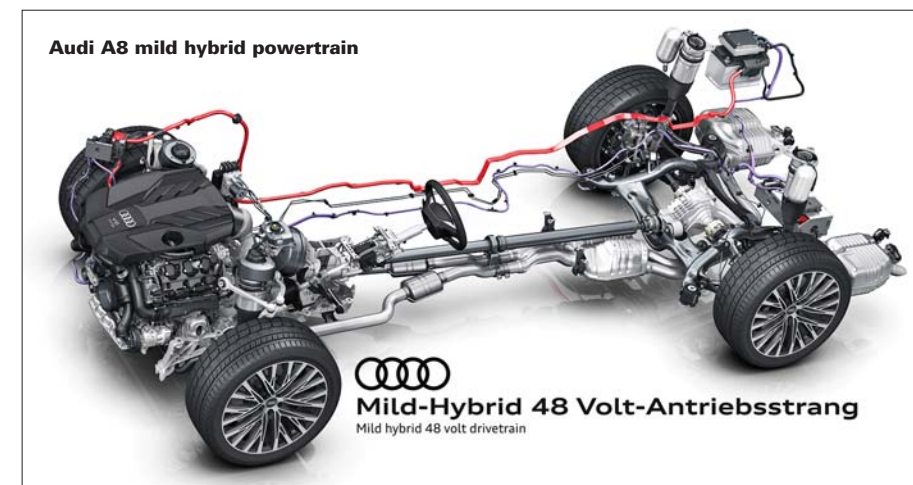
Mercedes-Benz X-Class

for the interior include six seat surface options (including two leathers with contrasting topstitching) and two colors for the headliner. Three distinct builds include a basic PURE variant for classic pickup use, PROGRESSIVE for more premium comfort and feel, and POWER as a high-end variant for urban lifestyles. A wide variety of pickup-specific options will be available. Market launch begins in November in Europe, with South Africa and Australia following in early 2018, then Argentina and Brazil in early 2019.

▼ For the official start of S-Class luxury sedan production in the **Mercedes-Benz Sindelfingen** plant, an S 560 4MATIC drove independently off the final assembly line, without a driver at the wheel, then drove automatically about 1.5 km (0.9 mile) to the loading area within the plant, using newly developed and patented technology. Cameras, radar and ultrasonic sensors work with powerful software to accelerate and brake the S-Class independently and ensure that it stays reliably on track. "The S-Class's independent journey from the production line to the plant's loading area shows the future of how we will be able to use driver assistance systems in production. We are taking the next step in the digitalization of our complete value-added chain. We are systematically applying Industry 4.0 in all areas, from development and production through to the customer. Perhaps, in the not too distant future, a Mercedes-Benz

will even find its own way from the production line to its new owner," says Markus Schäfer, Member of the Divisional Board of Mercedes-Benz Cars, Production and Supply Chain. The Sindelfingen plant

is now piloting the possible use of the system for series production and investigating its further potential. Finished vehicles are currently driven from the assembly halls to the loading car parks by members of staff, and a shuttle service then brings the employees back to their starting point. The pilot test also provides practical experience for further development of autonomous driving on public roads. The new S-Class, revealed in April at the Shanghai



Audi A8 mild hybrid powertrain

Mild-Hybrid 48 Volt-Antriebsstrang  
Mild hybrid 48 volt drivetrain

motor show, plans a plug-in hybrid with an electric range of about 30 miles.

▼ The next **Audi A8**, revealed during the Audi Summit in Barcelona in July, showcases how the brand intends to advance electrification on a broad front. For its fourth generation, the big flagship sedan has an electrified powertrain as standard for the first time, with its gasoline engine

equipped with mild hybrid technology—a big step in mainstreaming hybrid technologies—for a combination of refined running, enhanced performance and greater fuel efficiency. The engineering basis is a 48-volt electrical system, which will be the primary electrical system for the first time in the next Audi A8. The mild hybrid drive includes a watercooled 48-volt belt alternator starter (BAS), complementing the conventional pinion starter needed only for cold starts; and a lithium-ion battery in the trunk as the energy accumulator for the mild hybrid electric vehicle (MHEV), with a 10 Ah charge carrier capacity. The BAS benefit is clear when a driver approaches a traffic light or roundabout: if the light turns green while the vehicle is coming to a stop or if a gap appears in the circle, and the driver lets up on the brake, the engine starts immediately and the car accelerates without delay, thanks to the belt alternator starter, which is permanently connected to the engine. The car can enter a noiseless coasting mode between about 35 to 100 mph and coast with zero emissions for up to 40 seconds with the engine off altogether. Step on the gas again and BAS prompts a swift, smooth restart. Start/stop, active from 13.7 mph, differs notably from previous systems, able to distinguish among



powertrain management uses route data and information from networked sensors and front camera to decide whether the A8 is in coasting or recuperation mode. Energy is recovered not just from braking



**Yokohama Nitro Circus  
Ram 2500 Power Wagon  
Grand Prize**

and coasting, but also when getting too close to a vehicle in front while coasting. The mild hybrid drive reduces fuel consumption by up to two-tenths of a gallon per 100 km (62.1 miles).

▼ **Yokohama Tire Corporation**, along with action sports entertainment brand **Nitro Circus**, brings you the Yokohama Nitro Circus “Get Trucked Up Giveaway.” Grand prize is a custom-built 2017 Ram 2500 Power Wagon Crew Cab 4x4 with Yokohama’s all-new Geolander M/T G003 mud/terrain tires. The truck made its debut at the Nitro Circus show in San Diego and will be on display at all 20 Nitro Circus Live events across the country through the end of September. A free set of Geolander M/T G003 tires will be given away at each Nitro Circus Live event. The sweepstakes runs through October 15. To enter, visit [yokohamatire.com/truckedup](http://yokohamatire.com/truckedup). You can earn extra entries by liking Yokohama Tire’s Facebook page and by sharing on Facebook. The new M/T tire, created for hardcore off-roaders, outdoor enthusiasts and pickup/SUV owners, is initially available in 37 sizes, ranging from 15- to 20-inch. New features include aggressive sidewall styling, Geo-Shield™ technology and a special triple-polymer compound. Yokohama is the exclusive tire of the Nitro Circus Live Tour in the US and an official sponsor of the Nitro World Games. (Ram manufacturer FCA is not a sponsor of the sweepstakes promotion.)

▼ A \$17.3 million network of 34 fast-charging stations for electric vehicles will be installed along 1800 miles of the Trans-Canada Highway in Ontario and Manito-

ba, to encourage Canadians to adopt zero-emissions vehicles. The network is unique because vehicles will be charged by a lithium-ion battery storage system and not directly by energy from the power grid. The system will recharge the battery storage units during off-peak times, such as overnight, reducing users’ costs and stress to the grid. The Canadian federal government and a trio of energy storage companies are paying for the project. Natural



Resources Canada is giving an \$8 million “repayable contribution” toward development of the network. The remaining private investment comes from three companies, including Toronto’s eCAMION, which specializes in community energy storage and EV charging stations. Its customers include General Motors and FCA. The others are Leclanché North America of Dallas and SGEM Group of Geneva,

which develop energy storage solutions for mass transportation and battery storage infrastructure. Each station will have large-format lithium-ion batteries and three outlets so a trio of EVs can charge at once. All stations will have a 480-volt system that offers Level 3 charging or higher, allowing drivers to charge their vehicles in just 20 minutes. Level 2 chargers typically found in homes, parking garages and other municipal sites use a 240-volt system that takes between eight and 10 hours to charge a vehicle. Officials didn’t immediately say how much a driver would have to pay to use the stations. The project should be finished by early 2019.

▼ **Volvo Cars** has announced that every Volvo it launches from 2019 on will include an electric motor, marking the historic end of Volvos that only have an internal combustion engine and placing electrification at the core of the manufacturer’s future vehicles. The new lineup will include fully electric vehicles, plug-in hybrids and mild hybrids. The company will launch five fully electric cars between 2019 and 2021, three of which will be Volvo models and two of which will be high performance electrified cars from Polestar, Volvo Cars’ performance car arm, which is becoming a new separate-

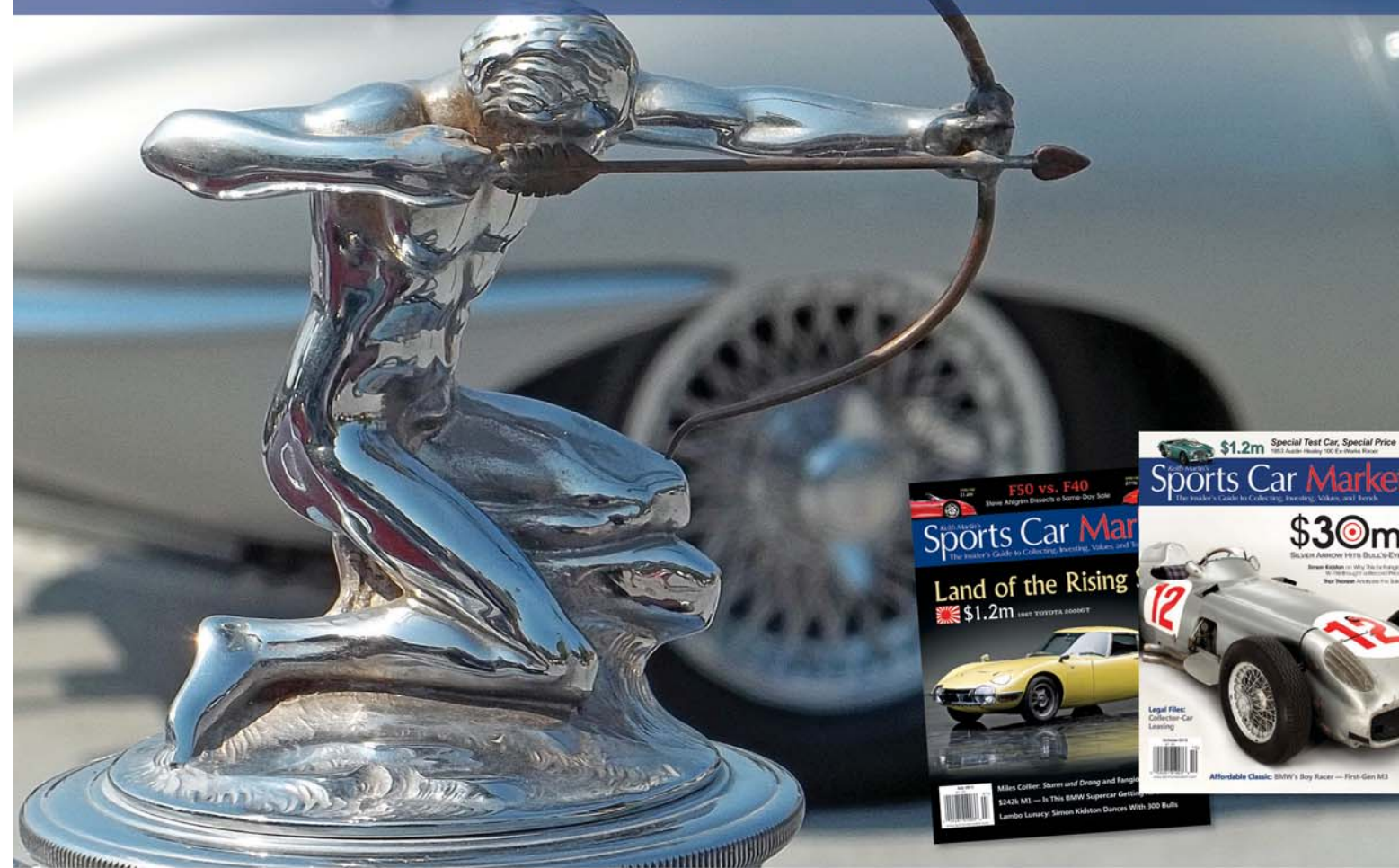
ly-branded electrified global high performance car brand (see our *Briefs & Rumors* pages). The five EVs will be supplemented by a range of gasoline and diesel plug-in hybrid and mild hybrid 48-volt options on all models. Volvo Cars is focused on reducing the carbon emissions of both its products and its operations, aiming to have climate-neutral manufacturing by 2025. ■

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# All heart.

The perfectly balanced retractable fastback version of this perennially popular sports car welcomes anything you can throw at it. by Joe Sage

We drove the Mazda MX-5 Miata PRHT—a power retractable hard top variant of the ever popular roadster—exactly three years ago, just before the car's third generation gave way to the fourth for its 25th anniversary. We noted then that the hard top provided several things—power (the soft top is manual, though quick and easy), security when parked, more soundproofing, added body rigidity and longer materials life. That PRHT added 82 pounds, with fuel mileage unchanged. Those 82 pounds also gave the already well-balanced roadster perfect 50/50 weight distribution.

Mazda now has a new scheme for the same mission: meet RF, the retractable fastback. This

adds 113 pounds to the car (with manual transmission, or 104 automatic), again achieving perfect 50/50 front/rear distribution (with manual; 51/49 with automatic), versus 53/47 for the soft top with either transmission.

We were glad to have scrutinized the specifications early in our week with the MX-5 Miata RF, as that 50/50 spec gave us mathematical affirmation of the superb handling we were experiencing.

The MX-5 Miata RF comes in two flavors: Club and Grand Touring, starting at \$31,555 for a manual transmission Club (a win-win-win for four-limb drivers: not only can you get a manual, and not only is this the one with perfect 50/50 weight distribution, but it's less expensive than the automatic—\$730 less on the Club, \$1205 less on Grand Touring). RF eschews the base Sport trim of the soft top Miata—which starts at just \$24,915, a \$6640 advantage for entry-to-entry soft versus RF comparison—though Club and Grand Touring models differ by just \$2755 and \$2555 from soft top to RF.

The RF also adds a 4.6-inch color LCD with compass, drive information and an entertaining real-time roof operation graphic. The RF offers one color

all its own, a luminescent Machine Gray, though it's darn hard to beat the signature Soul Red of our test sample (either paint is just \$300).

Starting at Club level gives the MX-5 Miata RF such inclusions as sport-tuned suspension with Bilstein dampers, shock tower brace, limited slip differential and induction sound enhancement (those for manual only); 17-inch gunmetal alloy wheels and high-performance tires; front air dam and rear lip spoiler; piano black seat back bar trim; Bose 9-speaker audio with headrest speakers; Mazda Connect® color touchscreen infotainment; upgraded door trim and handles; blind spot monitoring; and rear cross traffic alert.

The manual shift Club has so many features, it's just \$1065 more to move to Grand Touring—which actually makes a strong case for going with either one. Moving from auto-shift Club to Grand Touring adds \$1540. Grand Touring adds noise insulation, automatic climate, heated seats, body-color heated side mirrors (auto-dim on driver's side and inside mirrors), rain-sensing wipers, auto on/off headlights, dark silver wheels, lane departure warning, alarm and a few other details.



Some retractable hardtops gobble up the entire trunk when the top is down. Some just part of it. The new #Mazda MX-5 #Miata RF's top does not take up any at all. (There's a difference of 11/100ths of a cubic foot, same up or down, presumably from a tiny volume for a motor or strut or something... totally negligible.)

The RF's top is a one-button operation, under 15 seconds up or down (and operable up to 6 mph). Its motor reduces trunk space negligibly, from 4.59 cu.ft. in the soft top to 4.48 in the RF, while the stowing of the dropped top does not intrude upon the trunk whatsoever. The buttresses may look like a roll bar, but they in fact separate from the body during retraction. Rollover protection comes from behind-the-seat hoops as on the soft top. Rear glass stows as part of the drop, for a flow-through open air experience, unlike a targa or T-top. The soft top Miata has that totally open car feel when down, but in online debate, some drivers suggest the RF when open feels more spacious to them.

To say we enjoyed our week with the Mazda MX-5 Miata RF would be an understatement. Its ride is sports car firm and responsive, and you have to feel the 50/50 balance to fully appreciate what the numbers imply (beating even the mid-engine Porsche Boxster's ratio). The shifter is per-

fectly gated for a sure and easy intuitive click as intended, with eyes on the road (a rarity).

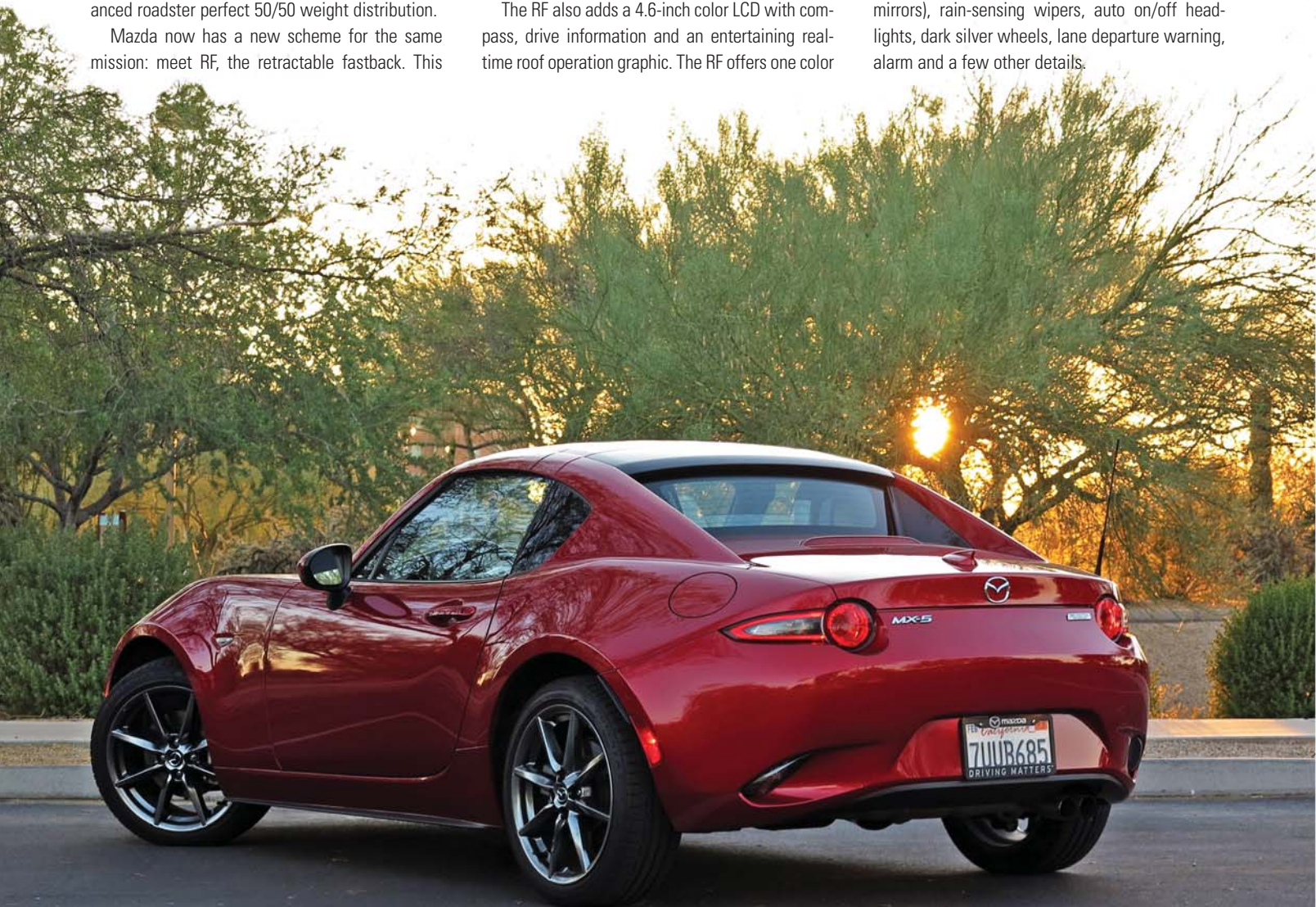
It's not only the kind of car we don't want to give up, but, at least in theory, if you could own just one vehicle, you might be willing to give up your pickup truck or four-door's utility for just this.

The Mazda MX-5 Miata RF is an updated, upgraded version of the basic formula Miata has delivered since day one—a fun, affordable, stylish and not overly-spec'ed sports car. Features, yes; killer horsepower and other things that just add weight, no. The philosophy is more in line with the classic sports cars of the '50s and '60s, but built with fully modern features—and quality control. If they had made them like this then, and were not making this one now, you would happily pay a substantial price for a showroom perfect classic at auction today. Instead, you can just go buy a brand new Mazda MX-5 Miata from under \$25,000 to this line-topping RF at just over \$30 grand. ■

## SPECIFICATIONS

ENGINE	.....SKYACTIV-G 2.0L DOHC 4-cyl
HP/TORQUE	.....155 hp / 148 lb-ft
TRANSMISSION	.....6-spd manual
DRIVETRAIN	.....RWD
BRAKES	.....F: 11-in vented, single-piston; R: 11-in solid single-piston, alum calipers
STEERING	.....double-pinion elec power assist
SUSPENSION	.....F: double wishbone w/ aluminum arms & monotube dampers R: multilink w/aluminum bearing support & monotube dampers
WHEELS/TIRES	.....17" alloy / P205/45R17 high-po
LENGTH / WHEELBASE	.....154.1 in / 90.9 in
TURNING CIRCLE	.....30.8 cu.ft
CARGO VOLUME	.....4.48 cu.ft
WEIGHT / DISTRIB	.....2445 lb / 50/50
FUEL / CAPACITY	.....min 87/ rec 91 / 11.89 gal
MPG	.....26/33/29 (city/hwy/comb)

BASE PRICE	.....\$32,620
INCLUDES:	Leather-trimmed seats and wheel w/control buttons, power locks/windows, power top, wind blocker, rain sense wipers, blind spot & rear cross traffic alert, lane depart warn, 7" touchscreen, nav, Bluetooth, Bose 9-speaker audio, auto A/C, alarm/immobilizer, much more
SOUL RED METALLIC PAINT	.....300
KEYLESS ENTRY SYSTEM	.....130
DESTINATION CHARGE	.....835
TOTAL	.....\$33,885



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## green vehicle champs

Members of the Northwest Automotive Press Association (NWAPA) and journalists from across the nation recently tested 19 of the most energy-efficient and technologically advanced vehicles on the road today—or soon to be. “The market for hybrids, plug-in hybrids, and electric vehicles has matured to the point that consumers aren’t just looking for one car that can go farther than another,” said NWAPA President John Vincent. “To stand out, they need to provide great driving experiences, excellent quality, advanced safety features, and technology that keeps drivers connected to their digital lives.”

The NWAPA Drive Revolution field included gasoline-electric hybrids, plug-in hybrids, battery-electric vehicles and one hydrogen fuel cell car. As a leader in adoption of alternative fuel vehicles and charging infrastructure, Portland, Oregon provides a bellwether backdrop for the event, which also dovetails with an EV Roadmap future mobility conference. Following a full day of testing on the streets of downtown Portland, the journalists selected the 2017 Chevrolet Bolt EV as the Northwest Green Vehicle of the Year. Members felt that the Bolt EV’s exceptional range, reasonable price tag and generous interior room provide consumers with an excellent blend of the attributes they’re looking for in an electrified vehicle.

“The Bolt EV more than doubles the range of other affordably priced battery-electric vehicles,” said event co-chair Sarah Shelton of *US News & World Report*. “With the ability to travel up to 238 miles on a single charge, the Bolt EV is a game-changer in the green vehicle market and a glimpse of things to come.”

Pricing for the 2017 Chevrolet Bolt EV starts at \$37,495, and many Bolt EV buyers will qualify for a \$7,500 federal tax credit, bringing the price just under \$30,000. The Bolt EV Premier model tested at the event had a price tag of \$43,510 before tax credit. Winners in all event categories include:

- NORTHWEST BATTERY-ELECTRIC OR FUEL CELL VEHICLE OF THE YEAR** .....2017 Chevrolet Bolt EV
- NORTHWEST FAMILY GREEN VEHICLE OF THE YEAR** .....2017 Chrysler Pacifica Hybrid
- NORTHWEST PLUG-IN HYBRID OF THE YEAR** .....2017 Chevrolet Volt
- NORTHWEST ALTERNATIVE FUEL SPORTS CAR OF THE YEAR** .....2017 BMW i8

NWAPA produces three signature events each year: the Northwest Outdoor Activity Vehicle of the Year competition (a.k.a. Mudfest); Drive Revolution; and Run to the Sun, a sports car and convertible familiarization event. Proceeds from the events fund scholarships at four universities across the Northwest. ■

### CHEVROLET BOLT EV

**DRIVE** ...single permanent magnetic drive motor/gearset  
**HP/TORQUE** .....200 hp / 266 lb-ft  
**LENGTH / WB / CIRCLE** .....164 in / 102.4 in / 35.2 ft  
**CARGO CAPACITY** .....16.9 cu.ft  
**WEIGHT** .....3580 lb  
**CHARGE TIME** .....DC fast charge up to 90 mi in 30 min  
**DRIVING RANGE** .....238 miles  
**BASE PRICE** .....\$37,495 w tax credits \$29,995

### CHRYSLER PACIFICA HYBRID

**DRIVE** .....3.6L Atkinson V6, 16kWh li-ion 360v battery  
**HP/TORQUE** .....287 hp / 262 lb-ft  
**LENGTH / WB / CIRCLE** .....203.8 in / 121.6 in / 39.7 ft  
**CARGO CAPACITY** .....32.3 / 87.5 / 140.5 cu.ft  
**WEIGHT** .....4943 lb  
**FUEL CAPACITY / RANGE** .....17 gal / 33 EV / 566 total miles  
**MPG** .....gasoline 28 mpg / 84 MPGe est  
**BASE PRICE** .....\$41,995

### CHEVROLET VOLT

**DRIVE** .....elec drive, 18.4 kW li-ion, 1.5L range extender  
**POWER/TORQUE** .....111 kW / 294 lb-ft  
**LENGTH / WB / CIRCLE** .....180.4 in / 106.1 in / 36.4 ft  
**CARGO CAPACITY** .....10.6 cu.ft  
**WEIGHT** .....3543 lb  
**CHARGE TIME** .....120v 13 hrs / 240v 4.5 hrs  
**DRIVING RANGE** .....53 EV / 420 total miles  
**MPG** .....gasoline 42 mpg / all-elec 106 MPGe  
**BASE PRICE** .....\$34,095 / w tax credits \$26,595

### BMW i8

**DRIVE** .....1.5L engine, 5.2 kWh 355v battery  
**HP/TORQUE** .....eng/elec combined 357 hp / 420 lb-ft  
**LENGTH / WB / CIRCLE** .....184.9 in / 110.2 in / 40.4 ft  
**CARGO CAPACITY** .....4.7 cu.ft  
**WEIGHT** .....3455 lb  
**FUEL CAPACITY / RANGE** .....11.1 gal / not stated  
**MPG** .....combined 76 MPGe  
**BASE PRICE** .....\$143,400



## Superformance, Shelby, Caterham and a big dose of adrenaline all under one roof Hillbank Motor Corporation opens Tempe superstore

Hillbank Motor Corporation celebrated the grand opening of their new location in Tempe this summer with a ribbon cutting ceremony, car show, door prizes, lunch and more for dozens of car club members and general enthusiasts. The large showroom and service facility is the operation's second, joining another in Irvine, California.

As Arizona's official distributor, the new location houses a wide inventory of legendary Superformance MKII and MKIII replicars, and Superformance GT40 and Corvette Grand Sport continuation cars; Shelby Cobra 289, Cobra 427 and Cobra Daytona Coupe continuation cars, including 50th Anniversary models and the Shelby Sebring Cobra CSX2000 Special Edition; and the Caterham Seven range. Each is meticulously engineered, factory built and fully licensed. Hillbank is also a leading supplier for a range of body kits, performance parts

and accessories.

Superformance cars are built by Hi-Tech Automotive Ltd in South Africa, who transferred dealer ownership to American hands in 2005. Superformance cars are built as body and rolling chassis with suspension, rear differential, wiring and instrumentation—"turnkey-minus," ready for your choice of engine, powertrain and related details. This gives you a basic car that is built to exacting specifications, plus a chance to customize performance to your own tastes, all with 100 percent new parts and build. Art Manni, general manager of the new shop during its summer opening and transition, says that all built out, a Superformance roadster (which is for all practical purposes a Cobra replica, though he points out that they can not say Cobra in any

way) may run you about \$85,000.

Hillbank also offers Shelby Cobras built by Shelby American, which carry the full rights of the Shelby and Cobra names. These are continuation builds of the same cars as originally manufactured in the 1960s, but with updated materials and components. Models include the CSX6000 Series (a 427 street version), CDX7000 Series (a 289 FIA build) and the CSX8000 Series (the original 1962 "slab side" Cobra), as well as special builds such as that CSX2000 Sebring Special Edition. These cover quite a range, but Manni suggests about \$150,000 as a benchmark comparison.

Places that sell both Shelby and Superformance are rare to nonexistent. If you've found yourself torn between the Shelby continuation lineup and Superformance replicars, even given the price differential, you now have a chance to visit one dealer of both for a test drive and objective comparison. Since it's unusual to have a dealership with both, we asked Manni how

they differentiate when someone walks in the door with no preconceived favorite and needs direction. "Each has its appeals and advantages to various customers," he says. With their cooperative guidance, you should have no trouble solving your dilemma.

Caterham Group's heritage-steeped series of currently seven different powerful, lightweight, open-cockpit Caterham Seven models—direct descendants of Colin Chapman's Series 3 Lotus Seven sports racers—were only available in kit form for years, but since 2014, the company has made the cars available via Superformance dealers, built in England also as rolling chassis, also with your choices on engine and powertrain as part of your purchase decision.

Add to these the Superformance GT40 continuation cars, based on the original race-winning Ford GT40 Mk.II from Le Mans over 50 years ago, and the Corvette Grand Sport, a continuation of the 1963 Sting Ray in both coupe and roadster form, and the Shelby CSX9000 Series Daytona Coupe continuation car, and you will want a 12-car garage if you don't already have one.

Hillbank Motor Corporation is located at 2180 W University Avenue in Tempe. ■





# Luxurious absolute animal

JEEP DELIVERS THE QUICKEST AND MOST POWERFUL SUV EVER BY JOE SAGE

“Hey, you oughta put that Hellcat engine in a Jeep!” That’s easy to say, and most of us probably thought of it sooner than later, once the Dodge Challenger SRT Hellcat and then Charger SRT Hellcat were introduced.

But seriously, how irresistible would that be? A vehicle that seats five roomily, tows 7200 pounds, has over eight inches of ground clearance, a sturdy four-wheel-drive powertrain and has won more awards than we can count? And Jeep has already done a Grand Cherokee SRT, right?

Such a thing is not even a dare to the engineers at Jeep and SRT, just another great idea, now fully executed. Although the Trackhawk bears the handiwork of SRT Powertrain Engineering, rather than branding this an SRT Hellcat, as with the Dodge siblings, they’ve grabbed a clever idea from the Jeep stable itself: if the top dog off-road Jeep is a Trailhawk, then this will be a Trackhawk.

We flew to Maine to talk to the development team, then give the new 707-hp supercharged

Jeep Grand Cherokee Trackhawk a good workout on the scenic two-lanes of New England, and most significantly at the brand new Club Motorsports track facility near Tamworth, New Hampshire.

**Powertrain.** Even with the Hellcats at hand, developing the Trackhawk’s powertrain was no simple matter, with the SUV some 20 percent heavier than a Challenger. SRT Powertrain Engineering senior manager Jamie Standing describes three major challenges in development: packaging such a powertrain into the existing Grand Cherokee; adding the level of refinement this customer expects versus the Hellcats; and dealing with very high G loads at launch. It takes point-by-point precision problem-solving akin to a NASA mission.

A new air induction system avoids the prominent hood scoops of the Hellcats. Front foglights were deleted for engine oil cooling air intakes on one side, positive air flow supercharger induction on the other. “Form follows function,” says Joe

Kubina, SRT’s chief engineer on the Trackhawk. “It’s one hundred percent engineering, but it still looks like classic Jeep.” A new low pressure, high flow clean air tube feeds the supercharger 30,000 liters of air a minute (about 1,000 cu.ft.) at full engine power (with the supercharger running up to 11.6 psi, with a drive ratio of 2.36:1 and maximum speed of 14,600 rpm). A Helmholtz resonator is added to the air induction system, creating a more refined character for the characteristic supercharger whine. “We didn’t want to eliminate it,” says Standing. “We’re quite proud of it, but wanted to make sure the Jeep customer was quite pleased by the overall sound quality.”

Idle stability is provided through a complex set of engineering solutions including improved air distribution below the charge air cooling system, as well as modified cam inlet overlap and timing.

A 1.4 G launch will push engine oil to the back of an oil pan very quickly, so they have engineered a new one with horizontal and vertical baffling to limit sloshing and maintain even distribution.

New exhaust manifolds developed from high nickel content cast iron have very high temperature capabilities—950° C (1740 F)—



thanks to a very low coefficient of thermal expansion and very high thermal fatigue strength.

Grand Cherokee Trackhawk has the first application of FCA’s new second-gen Torqueflite 8HP95 eight-speed transmission, able to handle 1100 Nm (about 860 lb-ft) of torque at the input shaft, via an electronically modulated torque converter with high-strength brazed blades. The unit also has improved shift response, durability and efficiency. This is connected to a new Jeep Quadra-Trac system with single-speed active transfer case and a new electronic limited-slip rear differential. This unit was shortened to accommodate the longer transmission, with a wider chain, redesigned forged steel sprockets, four-pinion geometry for higher torque capacity and a four-point axle mount for better distribution of reaction loads.

The rear axle presented its own challenges, leading to a new half-shaft with higher strength to fit within the same package size, a new eight-ball CV joint outboard, and a bar shaft made from aerospace grade ultra high strength low alloy vacuum melted steel—300M for short.

and town beast, the Grand Cherokee Trackhawk interior is outfitted with premium soft-touch materials, sexy light black chrome finishes, carbon fiber touches and new user-definable instrumentation. A 7-inch driver information cluster features the tach in the middle and a 200-mph speedo at left. The center stack’s 8.4-inch Uconnect touchscreen includes Trackhawk-specific Performance Pages with a variety of performance timers, gauges and readouts, including a new engine dyno screen with instant horsepower, torque and transmission gear (and a snapshot feature to save your heroics to USB). Available entertainment systems include 506-watt, nine-speaker Alpine or 825-watt, 19-speaker Harman Kardon audio, plus dual rear seat screens for Blu-ray/DVD disc or game plug-ins.

Branding touches are subtle but unmistakable. The liftgate features a matte black and liquid titanium chrome Trackhawk badge (stylized after the max-off-road Trailhawk). Front doors bear a low-key Supercharged inscription below Grand Cherokee. Brushed metal sill plates are embossed with Supercharged, and Trackhawk is embossed in the

**Cabin.** For its role as a top trim luxury highway



## SPECIFICATIONS

CONSTRUCTION	.....steel uniframe
SEATING CAPACITY	.....5-passenger
ENGINE	.....6.2L supercharged V8
Deep-skirt cast iron block w cross-bolted main bearing caps, unique aluminum alloy heads w hemi combustion chambers; sequential multiport electronic returnless fuel injection; 16 pushrod overhead valves w sodium-filled exhaust, hollow stem intake / hydraulic lifters; separate dual intercoolers / high-flow variable-speed electric water pump	
COMPRESSION	.....9.5:1
EXHAUST	.....dual 2.75-inch straight-though w twin electronic exhaust valves (EEV)
HP / TORQUE	.....707 hp / 645 lb-ft
ALTERNATOR / BATT.	.....220-amp / H7 700 CCA
DRIVETRAIN	.....full-time 4WD
TRANSMISSION	.....ZF 8HP95 8-sp auto
Adaptive electronic control w driver-interactive manual control via steering wheel paddle shifters, electronically-modulated torque converter clutch w seven available drive modes including: Auto, Sport, Track, Snow, Tow, Eco, Valet	
TRANSFER CASE	.....MP 3015C full-time 4WD
Single speed, electronic proportioning front/rear: 40/60 auto, 50/50 snow, 60/40 tow, 35/65 sport, 30/70 track	
DIFFERENTIALS	.....front: conventional rear: electronic limited slip
REAR AXLE RATIO	.....3.70
SUSPENSION	.....F: SLA w alum lower control arm, alum knuckle, alum clevis, coils, Bilstein adaptive damping susp (ADS), upper/lower control arms (A arms), hollow stabilizer bar.
R: Multi-link, coils, Bilstein ADS, alum lower control arm, indep upper links (tension/camber), separate toe link, hollow stabilizer bar	
STEERING	.....elec rack & pinion, SRT tuned
RATIO / TURNS LOCK TO LOCK	.....16.5:1 / 3.2
BRAKES	.....power, single-rate, tandem diaphragm vacuum, ABS.
F: 15.75 two-piece alum hat performance rotor, directionally slotted w Brembo 6x40 six-piston fixed caliper and ABS	
R: 13.78 performance disc, directionally slotted w Brembo 4x34 four-piston fixed caliper and single-channel ABS	
PARKING BRAKE	.....drum-in-hat
WHEELS	.....20x10 forged alum w titanium II pockets, satin chrome centers.
OPT: 20x10 lightweight forged alum w low gloss black, low gloss black centers.	
TIRES	.....P295/45ZR20 Pirelli Scorpion Verde all-season performance run-flats.
OPT: P295/45ZR20 Pirelli P-Zero three-season run-flats.	
LENGTH / WHEELBASE	.....189.8 / 114.7 in
TURNING CIRCLE	.....38.0 ft
GROUND CLEARANCE	.....8.1 in
front axle.....8.97 in	
chassis (fuel tank).....9.1 in	
rear axle.....8.99 in	
APPR / BRKVR / DEPART	.....18 / 18.4 / 23.1°
DRAG COEFFICIENT	.....11.75 (Cd x cr-sec area)
WEIGHT / DISTRIB	.....5363 lb / 55/45
TOW CAPACITY	.....7200 lb
HEADROOM (F/R)	.....39.9 / 39.2 in
LEGROOM (F/R)	.....40.3 / 38.6 in
LUGGAGE CAPACITY	.....68.3 / 36.3 cu.ft
FUEL / CAPACITY	.....91 octane / 24.6 gal
MPG	.....11/17 (city/hwy)



supple premium leather of its performance front seats, while the winged Trackhawk badge appears at the flat bottom of the steering wheel.

The air induction inlets up front are echoed by a quad set of four-inch black chrome exhaust tips exiting a gloss black valance in the rear.

It's not in-your-face branding. Features, finishes, fitments and performance are what matter.

**On the road.** We headed out of downtown Portland, Maine, a town of just 67,000 people, and were quickly on our way along beautiful two-lane roads through farms, woods and small New England towns, headed to the track in New Hampshire, about a two-hour drive. The spacious cabin of the Trackhawk has lush Berber floormats (with Trackhawk badge) and active noise cancellation, creating a peaceful atmosphere as effectively as your favorite noise-cancelling air travel headphones.

Powertrain acoustics are tastefully applied, from the tempered whine of the supercharger to a rich exhaust note from those quad tips.

Suspension is reengineered for the Trackhawk, with extensive use of aluminum, Bilstein adaptive damping and hollow stabilizer bars, front and rear. "When you hit the track, it's an absolute animal," Jeep brand director Scott Tallon tells us. "But on-road driving dynamics are not changed one bit."

The Selec-Track system has five modes—Auto, Sport, Track, Snow, Tow—each with different front/rear torque split, starting with Auto at a 40/60 per-

cent rear bias. We have a tendency to go straight to Sport, which in the Trackhawk reduces shift times by 50 percent, tightens up steering and paddle response, and pushes torque to 65 percent rear (this sounds like a small difference from 60, but whereas 60/40 is a 50 percent advantage of rear over front, 65/35 approaches a two-fold rear advantage). It's all about response and feel, not competition. Law enforcement kept an eye on us passing through a number of locations, but no worries—take it to the track, they say, and that we were.

On the road, the supercharged Grand Cherokee Trackhawk gives you smooth, quiet confidence, quick acceleration and confident handling

**On the track.** An affinity for the track is spelled right out in this Jeep's name. Here, it unleashes all 707 horses' full power—all at once, if so desired. We so desired. Jeep secured track time at brand new 100-acre Club Motorsports near Tamworth, New Hampshire—a vintage and performance membership facility—two weeks before its Labor Day Weekend opening. We ran as often as we wanted, in sets of three laps (warm up, run full out, cool down), on their 2.5-mile, 15-turn wooded road course with 250-foot elevation changes and great views across the White Mountains.

You don't feel the Jeep's relative bulk or even its 5363 pounds (213 pounds more than the SRT, 30 pounds less than an Overland with 3-liter diesel). Your mind is on the apexes and the cones

(cones were especially useful here, as your next move is often hidden over the next rise, all at track speed). For all practical purposes, you could just as easily be driving the Charger SRT Hellcat.

The Jeep's top speed is 180 mph. It's unwise to look at your speedo on course at speed, but Performance Pages showed our overall lap averages typically in the 125 mph range (enough to drive the whole 2.5-mile track 50 times in an hour).

Track mode pushes power even moreso to the rear wheels, now 30/70. Shift times are reduced by 68 percent, while stability control, steering and the all-wheel-drive system are all maximized for firm, quick response on smooth, dry surfaces.

To experience the quickest acceleration of any SUV ever—3.5 seconds, zero to 60—and quarter-mile times of 11.6 seconds, we then staged at the front straight to try the Trackhawk's Launch Control, exactly as we have done with the Challenger and Charger Hellcats at tracks in Arizona, Michigan, Oregon, Texas and West Virginia. With left foot fully on the brake, you spool up the engine with your right, as its energy pulses increasingly beneath. Let off the brake instantly, and you are near-instantly at the far end of the run. Time to hit the brakes—the largest ever on a Jeep, which stop the vehicle from 60 mph in 114 feet, within respectable range of supercars that weigh only a third as much. This run has us going much faster than that, and the cones come up quickly. Our drive line itself is straight as an arrow, helped by a full



panopoly of control systems. Instantaneous release of your brake foot is key to the best time, just one of many good reasons we ran this repeatedly. It's also fun to watch, as this winds up the supercharger for its best possible soundtrack.

**Off-road?** The Grand Cherokee Trackhawk is all-wheel-drive, yes, but then so is an Audi R8. Off-roading is not its purpose; there are plenty of other Jeeps for that. The front and rear fascias do not provide the approach and departure angles of a Trailhawk, and you're running wide, low profile Pirelli performance tires. It does have 8.1 inches of ground clearance, meeting or beating many other utilities, though an inch less than non-SRT Grand Cherokees (and another three inches or so less than those with air suspension)—so we suppose you could take it fishing, if it's your only Jeep.

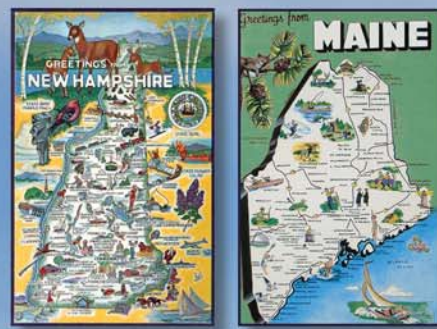
At a Grand Cherokee full-line event a few years ago, we drove the SRT on road and track one day, the Trailhawk and other trims on road and extreme off-road courses completely separately, in a different place, on a different day. This year's event was Trackhawk-only, with off-roading not even mentioned, which really answers the question.

**Towing and snow.** Grand Cherokee Trackhawk does have pedigrees for towing and for winter driving, with drive modes for each. Tow mode switches the torque split from Auto's 40/60 to 60/40 front/rear and applies suspension dynamics to counter pitch and yaw for smooth towing.

Snow mode gives you a 50/50 split and reduces horsepower, to give you an edge in the slick stuff.

**Pricing.** The Trackhawk's premium positioning is clear with the price tag—\$85,900—perhaps startling at first for a Jeep, but not when you consider its comprehensive mix of luxury and unparalleled capability, as well as the price of luxury competitors (and parts and service cost differences). Most enthusiasts' first reaction to the birth of the Trackhawk is, yes! Their second is, an \$86,000 Jeep? And their third, let me check my bank balance!

Jeep chief Scott Tallon says at cost per horsepower, its value is unmatched. Pick a few and do the math; it's interesting in itself and also reveals how distinctive this vehicle is. The Jeep and SRT teams have really done their homework on the Grand Cherokee Trackhawk—and, as always, it's easy to tell they have had a ball doing so. ■



## PRICING

BASE PRICE	\$85,900
DESTINATION CHARGE	1095

## OPTIONS AND PACKAGES

**SIGNATURE LEATHER WRAPPED INTERIOR PACKAGE:** Laguna leather performance seats, Laguna leather reserve door trim, leather-wrapped lower panels (all black or black/dark ruby red).....\*4995

**HIGH PERFORMANCE AUDIO:** 825-watt 19-speaker Harman Kardon high-performance audio ...\*1995

**\*NOTE:** Signature Leather Wrapped Interior Package and High Performance Audio package are only available bundled for a total of.....\*6990

**TRAILER TOW GROUP IV:** Class IV receiver hitch, 7- and 4-pin wiring harness, 20x6.5 aluminum compact spare wheel & tire, heavy duty engine cooling, delete rear tow hook.....995

**COMPACT SPARE TIRE:** 20x6.5 aluminum compact spare wheel & tire (incl in Tow Group pkg)....395

**DUAL PANE PANORAMIC SUNROOF**.....2095

**IVORY TRI-COAT PAINT**.....595

**(NOTE:** Nine colors are available. Ivory Tri-Coat is the only upcharge color; the other eight are at no additional cost: Billet Silver, Granite Crystal, Diamond Black, Bright White, Velvet Red, Rhino (exclusive), Redline 2 (exclusive), True Blue.

**20X10 BLACK SATIN WHEELS**.....995

**THREE-SEASON TIRES:** 295/45ZR20 Pirelli P Zero 3-season tires w increased speed rating .....895

**ENGINE BLOCK HEATER**.....95

**TOTAL all above options + dest**.....**\$99,755**

## ADDITIONAL OPTIONS NOT YET PRICED:

**BLU-RAY ENTERTAINMENT:** two screens on front seatbacks for rear passengers, capable of playing both DVD and Blu-ray Disc w separate ports to input video games or other devices.....\$TBD

**DARK RUBY RED SEATBELTS**.....\$TBD



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**A WEEK WITH : 2017 BMW 530i SEDAN**

## Evolving relativity by Joe Sage

**BMW** doesn't state size classifications quite like most, calling the 3 Series a compact, as does EPA; but while the feds call both 5 and 7 Series large cars, BMW uses executive and luxury, respectively (touching on the usual debate of premium versus luxury). They don't want to market two large cars, nor would they want 5 Series thought of as midsize—relatively pricey yet outselling 7 Series about three to one in the US (while the 3 Series sells almost double the 5). Executive works well for the 5 Series, as it long has, though as the car evolves, large is starting to fit better, too.

The 5 Series of twenty years ago was more of a niche sports sedan for a sporty niche executive. As the wealthy executive class has grown, the 5 Series has grown, too: 6.6 inches in length over 20 years, now just 1.4 inches shy of a 1997 7 Series, though the 5 Series' base price in 2017 dollars has dropped almost 14 percent (though this does not compare base inclusions, and our sample here

climbs by 39 percent, once it is optioned up).

The modern 5 Series has added not only girth but technology that adds a layer between driver and sport. We were reminded that the car is boss about 10 seconds into each drive, as the seatbelt oddly auto-tightened considerably, then let off. Acceleration is strong and smooth, with a precise, light growl from the turbo four, though a bit of a lag from a standstill feels less commanding. The transmission is better than average, with a typical set of variables to adjust to your taste. Handling seems less sports-sedan-like and more large-car-like—the 530i's length is about three inches shy of a big Buick LaCrosse, but its wheelbase about three inches longer. Looked at as a large executive sedan, the 5 Series still starts some \$32,000 lower than 7 Series, defining its sweet spot. For more sportiness, there's the 3 Series, \$18,000 less expensive—and on a wheelbase just 0.8" shorter than that 5 Series of 20 years ago. ■

### SPECIFICATIONS

**ENGINE**.....2.0L TwinPower turbo 16v 4-cyl w/ variable valve control & high-precision direct injection  
**HP/TORQUE**.....248 hp / 258 lb-ft  
**TRANSMISSION**.....8-spd sport auto w/sport & manual modes, paddle shifters and launch control  
**DRIVETRAIN**.....RWD (xDrive AWD available)  
**BRAKES**.....F: 4-piston fixed-caliper vented disc; R: single-piston floating-caliper vented disc  
**0-TO-60 / TOP SPEED**.....6 sec / 130 mph (155 opt)  
**STEERING**.....electromechanical power  
**SUSPENSION**..F: alum double track control arm axle w/ separate lower track arm level, small steering roll radius, traverse force distrib compensation, anti-dive; R: five-link axle in alum lightweight construction  
**WHEELS / TIRES**.....8x18 / 245/45R18  
**LENGTH / WHEELBASE**.....194.6 in / 117.1 in  
**TURNING CIRCLE**.....39.5 ft (AWD 40.1 ft)  
**TRUNK CAPACITY**.....18.7 cu.ft  
**WEIGHT / DISTRIBUTION**.....3746 lb / 51.5/48.5  
**FUEL / FUEL CAPACITY**.....91 octane prem / 18 gal  
**MPG**.....24/34/27 (city/hwy/comb)

**BASE PRICE**.....**\$51,200**

**EFFICIENT DYNAMICS (INCL):** Brake energy regen; auto start/stop; Eco Pro mode; coasting function; intelligent lightweight construction; optimized aero; on-demand ancillary units; map-regulated oil pump; optimized warm-up differential; reduced rolling resistance tires.

**OPTIONS:** Cashmere silver metallic (700); ivory white Nappa leather (1000); cold weather pkg (800); driving assistance pkg (1800); driving assistance plus (1400); driving assistance plus II (1700); lighting pkg (1050); luxury seating pkg (1600); premium pkg (2300); M Sport brakes (650); 19" light alloy wheels (600); integral active steering (1150); dynamic damper control (1000); power trunk lid (500); self-close auto doors (600); SensaTec dashboard (500); ceramic controls (650); power rear sunshade (575); Apple CarPlay (300); gesture control (190); Harman Kardon surround sound (875).

**DESTINATION CHARGE:**.....995

**TOTAL**.....**\$72,135**



# EURO SENSIBILITIES

Kia Rio is the least expensive offering from the brand that has quickly risen to number one in the prestigious JD Power Initial Quality Study (IQS) for two years running. It can be a great entry level vehicle, but is equally popular among any number of people who want something both practical and versatile, even as their only vehicle. It's also popular with those who value its smaller size—for parking, maneuverability or just general fit and feel. In fact, Kia VP of product planning Orth Hedrick, who has the entire fleet at his disposal, has made it his own personal choice for the one-hour commute to work.

This is the fourth generation of Kia's solid little subcompact that looms large as their number one best seller worldwide (branded as Rio in the US or a variety of other names in other markets), with 400,000 units sold last year. Kia expects to sell 1.6 million of this iteration.

B-segment cars are the biggest segment in Europe—home of both autobahns and ancient cities with tight streets—and in Europe this car is Kia's number one seller. Their European operations took the lead in developing the new Rio, "holding it to higher standards than some of our competitors,

who focus on emerging markets such as India and China," says Hedrick. With a focus on driving dynamics and completely updated design language, "it punches above its weight," he adds.

This Euro-designed Korean car will be American-built for our market, at Kia's West Point, Georgia plant, isolating it from currency fluctuations and allowing for localization of the supply chain.

The European influences show up in craftsmanship, efficiency, fuel economy and cost of ownership. The new Rio also adds a wide range of convenience and technology features.

Perhaps less streamlined than the outgoing model, the new Rio's form was developed with a function first philosophy. The windshield is more vertical (as is the rear), creating a more formal, stable and geometric look that not only provides more interior volume, but also relieves the driver of "subconscious head pressure" found in many

subcompacts. This also creates a longer hood, for greater presence. From the driver's seat, it feels like a bigger car. And it is—longer, wider and lower than the prior Rio (by a fraction of an inch for each dimension). A new interpretation of Kia's trademark tiger nose grille sweeps horizontally into the headlights, emphasizing its wide feel.

Inside, passenger volume in the Rio sedan is up by 1.5 cubic feet, and cargo and passenger volume are both up by several cubic feet in the 5-Door. The interior is also visually wider, emphasizing the small car's surprising spaciousness, picking up a sculpted horizontal theme already implemented in Cadenza and Niro and applied to the upcoming Stinger performance car, giving the Rio a modern, premium feel. The instrument panel is lowered for more spaciousness, with its center screen raised up for presence and accessibility. The top trim 5-Door interior is tied together by deep red panels in reengineered seats, instrument panel and doors.

An entirely new platform makes extensive use

of high-strength steel, enabling its roomy shape, as well as upgraded chassis, steering and suspension. Kia sources its steel in-house, from the metallurgists at Hyundai Motor Group, who work intimately with the body engineers. The car's completely new rear suspension is a feat in itself, with new twin tube dampers engineered to not interfere with flat load cargo space, while also opening up the tailgate area and lowering liftover height. Road noise is significantly reduced, both via structural steel changes that reduce body resonance and from joints that are both welded and use advanced adhesives that become highly rigid in the bake oven. The new car also receives more insulation and thicker carpets. It's no wonder Kia based our launch event on the cobblestone streets of historic Baltimore—we arrived in a tooth-rattling premium airport limousine, then departed in the solid comfort of the new Kia Rio subcompact.

The steering column has been reengineered from 33 to 65 splines, for far better on-center feel. Our drive route included freeway time in and out of the city and open two-lane driving through Maryland's countryside, to experience the other main goal of the new suspension, especially for one-car owners: higher stability on long-distance drives.

Power comes from a revised version of Kia's 1.6-liter Gamma engine, with a five percent increase in torque, most notably retuned to deliver below 2000 rpm, as small car drivers have consistently requested more responsive power in lower-speed daily driving conditions around town—during acceleration from the light, turning to enter traffic at a busy corner, and on the freeway ramp. Even with its new pep, fuel mileage is higher in the new Rio by about one mile per gallon in manual transmission models, two with the automatic (with the figures now about the same for both).

Kia Rio comes in three trims—LX, S and EX—LX with choice of manual or automatic transmission, the others automatic only, plus the sedan or Rio 5-Door option, a total of eight basic configurations. There are no options beyond trim inclusions.

Many features are included across the whole lineup, from steering wheel audio controls to driver assist tech including stability control and hill

start assist, with forward collision warning and autonomous emergency braking in top EX trim. LX and S have 5-inch screens, with backup camera kicking in at the S level. In top EX trim, you get a 7-inch screen with the newest iteration of Kia's UVO interface (UVO3), including Apple/Android integration (UVO3), including Apple/Android integration with voice control. You can park your smartphone in a neat dedicated tray beneath the screen. Advanced features include diagnostics, maintenance intervals and such, plus services to monitor any new drivers in your household. A very capable four-speaker audio system with SiriusXM and USB/aux inputs across the lineup adds two tweeters, front and rear USB chargers and Bluetooth in mid and top trims. Keyless entry/start and cruise control also kick in at those levels.

Prices start at just \$13,990 for a manual-shift sedan in LX trim, about a \$400 drop from the outgoing model, despite all the improvements and additions. Prices for upper trims will be available closer to the car's dealer availability later this fall. ■

## SPECIFICATIONS

ENGINE	1.6L 4-cyl GDI
DRIVETRAIN	FWD
HP/TORQUE	130 hp / 119 lb-ft
TRANSMISSION	6-spd manual / 6-spd auto
SUSPENSION	F: MacPherson strut R: compact design w/ coupled torsion beam axle w/ trailing arms; twin tube shocks
STEERING	elec power steering
BRAKES	F: 11" vented disc / R: 8" drum
WHEELS / TIRES	5.5x15 / P185/65 R15
LENGTH / WHEELBASE	5-dr: 160.0 / 101.6 in sedan: 172.6 / 101.6 in
TURNING CIRCLE	33.46 ft
GROUND CLEARANCE	5.5 in
WEIGHT	manual 2648 lb / auto 2714 lb
HEADROOM (F/R)	5-dr: 38.9 / 38.0 in sedan: 38.9 / 37.4 in
LEGROOM (F/R)	42.1 / 33.5 in
LUGGAGE CAPACITY	5-dr: 32.8 / 17.4 cu.ft sedan: 13.7 cu.ft
FUEL CAPACITY	11.9 gal
MPG	manual: 29/37/32 (city/hwy/comb) auto: 28/37/32 (city/hwy/comb)

PRICE (LX)	Sedan / manual	\$13,990
	Sedan / auto	14,990
	5-Door / manual	14,290
	5-Door / auto	15,290



BY JOE SAGE

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## CONCRETE & STEEL

The Phoenix Raceway Project Powered by DC Solar \$178 million modernization has made continued progress over the hot summer months. Concrete elevator towers were already up by the time IndyCar rolled around in late April. The first steel was delivered in late May and the first piece of steel for the new grandstand installed on May 30 (with a "Best Wishes from Daytona" inscription, as that facility had just completed its own redevelopment). By late June, excavation began on a new pedestrian-only tunnel from the grandstands to the new infield's DC Solar Fan Midway and Monster Energy NASCAR Cup Series Garage Fan Zone.

**SIGNED STEEL BEAM AT NEW ENTRY:** In mid-July, a steel beam signed by fans and the entire field of drivers during April's IndyCar event was installed at the top of new Canyon 1, one of the two new en-

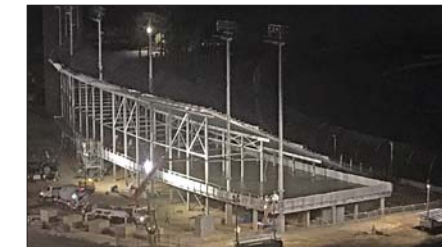


trances to the expanded grandstand, making these drivers and fans forever a part of the new Phoenix Raceway. The beam is part of nearly 250,000 pounds of steel and over 8,500 square feet of metal decking that will make up Canyon 1. When completed in 2018, the two Canyons will serve as immersive, interactive entrances, with escalators to quickly and conveniently take fans to their seats.

**CONCRETE POURS UNDERWAY:** By early August, crews were working at night to beat the midsummer heat, with DC Solar, title sponsor for the modernization project, powering their lighting as they made the first concrete pour for the newly-constructed Allison Grandstand extension. Ultimately, nearly 23,000 cubic yards of concrete will be used in the project. The grandstand will have multiple concourse levels with upgraded concessions, new souvenir shops, new restrooms and more.

**CURVE OPENS NOVEMBER 2017:** Curve will be a brand new, all-inclusive Fan Hospitality Club with

a bird's-eye view of the track from high above Turn One. Originally to be called Club 64, Curve will be completed and open for the Can-Am 500 NASCAR Semi-Final Weekend in November 2017. Here, you



can enjoy all-day culinary service, track action and even mountain sunsets away from the crowds. The 5,840-square-foot club on the Suite Level has a capacity of 300 and includes an air conditioned lounge—with dining tables for up to 126 people, bar tables and stools for 61, plus three large sofas and 21 lounge chairs—which opens to 51 plush stadium seats high above the track for easy mingling. Curve's third seating area is an 844-square-foot private outdoor patio with dining tables for 24 people, plus sofas and lounge chairs. The facility has free WiFi. Included with your package are preferred VIP parking, Pit Road and pre-race ceremonies access (with some limitations for minors)



and an exclusive lanyard. Cost per person is \$1399 for November 2017's three-day Can-Am 500 NASCAR Weekend, \$1099 for the March 2018 two-day Spring NASCAR Weekend, and \$299 for the April 2018 one-day Verizon IndyCar Series Race. ■



## CAN-AM 500 NASCAR SEMIFINAL RACE WEEKEND NOVEMBER 10-12, 2017

Phoenix Raceway features a full weekend of NASCAR action this fall, three races over three days, including semifinal racing in the Can-Am 500 Monster Energy NASCAR Cup Series, as PIR is once again home to the Series' elimination races that set the final four seeking a series championship trophy the next weekend at Homestead-Miami.

### FRIDAY NOV 10: LUCAS OIL 150

Gates open at 9am for pre-race pit access, NASCAR XFINITY Series practice and Can-Am 500 NASCAR Series practice and Gatorade Qualifying to set the starting lineup for Sunday, plus practice and qualifying for the Lucas Oil 150, NASCAR Camping World Truck Series Race at 6:30pm (150 laps/150 miles).

### SATURDAY NOV 11: TICKET GALAXY 200

Gates open at 9am for pre-race pits, additional Can-Am 500 practice, and qualifying for the Ticket Galaxy 200, NASCAR XFINITY Series Race, which runs at 1:30pm (200 laps/200 miles).

### SUNDAY NOV 12: CAN-AM 500

Gates open at 8am for pre-race pits and other fun. Driver introductions are at 11:50am, with the Can-Am 500, Monster Energy NASCAR Cup Series Race at 12:30 pm (312 laps/312 miles). Send off Dale Earnhardt Jr on his last ride out west, before Tucson native Alex Bowman takes over in the No 88 in 2018.

**NASCAR SPRING RACE WEEKEND:** Gatorade Pole Day, DC Solar 200 and champions taking on young guns in the Monster Energy NASCAR Cup Series 500 make a perfect Spring Break weekend, March 9-11, 2018.

**INDYCAR PHOENIX GRAND PRIX:** The Verizon IndyCar Series Phoenix Grand Prix returns on Saturday night, April 7, 2018—the second race of the season, after a March 11 street circuit opener in St Petersburg FL.

**TICKETS:** Buy at PhoenixRaceway.com, call 866-408-RACE (7223) or buy in person at the PIR ticket office, 125 S Avondale Blvd, Suite 200, Avondale AZ 85323. ■

Photos and renderings: Phoenix Raceway



Pasquale Romano, ChargePoint President and CEO  
Mike Talley, ChargePoint VP Services & Support

## Charged up and ready to help

### New ChargePoint customer and driver support center ready for exponential growth and global expansion

Story and photos by Joe Sage

The bustling commercial stretch of Salt River Pima-Maricopa Indian Community along the Loop 101 freeway in the northeast Valley—home to corporate offices, Arizona Diamondbacks spring training, casinos, hotels, a huge auto mall and more—has gained a prominent new tenant. EV charging pioneer ChargePoint recently had their ribbon-cutting for a new facility here.

ChargePoint is the world's largest electric vehicle charging network, with nearly 40,000 charging spots and growing. The company is ten years old as of September, still considered a startup despite its maturity, as it's a young industry overall.

ChargePoint is the only EV charging technology company that designs, develops and manages the manufacturing of charging solutions—from hardware to software, energy management to tech.

"We're the only company in the world, regardless of size, that is in every single segment," says ChargePoint CEO Pasquale Romano. "We want the user's experience to be as simple and transparent as possible, because if it is, more people buy EVs and we have a happier planet. And we have a happier Arizona, because we'll expand the business, we'll hire more people, and all the goodness that comes along with that will happen. And drivers will have a great time."

Most of ChargePoint's 7,000 customers are businesses buying multiple units. Charging stations become an attraction for employees proud to be part of a company with cutting edge thinking, and for business patrons who can top off their charge painlessly while parked for errands anyway.

"Philosophically," says Romano, "the simplest way to think about us is that our customers are business owners, and our products are used to either take care of their employees or their customers. We don't make money on the EV drivers. We take good care of those folks on behalf of our customers. We make money by providing turnkey services so anyone can put EV parking in their parking lot and it just all works. It's all seamlessly

meshed together in one global experience. We feed the locations of chargers, if they want to be known, to every mapping provider under the sun. Several vehicle manufacturers have ChargePoint feed directly into the nav system. We want to make sure we cover the driver from where they live, to where they work, to when they go on a road trip or are doing stuff around town. We are a 360-degree company with respect to life as an EV driver. We really want to make it simple and seamless.

"EV charging is something you're going to do while you're parked. What fueling now becomes is something you do while you're doing something else. It's really not a chore anymore. Your car is always full, where you work, where you live, where you shop, and certainly you'll have it on the highways when you're on a road trip."

ChargePoint is the only company with 24/7 driver support, with hundreds of thousands on their network today. This vital part of the business is where the Arizona facility comes in.

"If we're doing our job correctly," says Romano, "this call center will not get called that often. Life never works that way, but we do have an unprecedentedly low rate of contact into this call center. And when one does get past the goalie, we want to make sure our folks really embrace that driver. We remember what they're trying to do: this is not their primary focus—they're trying to get on to something else. We try to take care of them and get them on their way.

"We invest heavily in support," says Romano, "We all know how big a difference support operations make in the customer experience. We sell service and support packages to companies that install our chargers, just so we can take all the hassle out of it. We're betting our products and services are going to be so good that this team is going to have a fairly light load from that.

"The customer wants the peace of mind that in case something *does* happen, they don't have a big variable cost. We're giving our customers the ability to sort of 'set and forget' EV charging in their parking lot and not have to worry about it, knowing it's just going to work like a clock. While I am an engineer and very proud of our products and services, I know this support organization is every bit as important in our customers' opinion of

us as the products themselves. People just like to feel they're going to be properly taken care of."

Support staff in Arizona has grown from just six in 2014 to about 50 in the new location. It absorbs a center previously based in Costa Rica; despite higher costs stateside, the company recognizes the benefits of engagement in the community they serve. The facility has room to grow to 70 employees, with elbow room for expansion beyond that.

Plug-in vehicle sales in the US continue to grow at record levels, and Arizona has the second-fastest growth rate in the country, 200 percent (three-fold) from 2015 to 2017. In metro Phoenix alone, EV registrations were up nearly 50 percent in the first quarter of 2017 versus first quarter 2016. "It doesn't take that many years of that kind of trend level for EVs to be something absolutely everyone is going to have experience with, at least know someone who owns one," says Romano. "There are about 10,000 EVs on the road in Arizona, maybe more. That's a good start, and the growth rates are so high, that number is going to climb precipitously over the next few years."

Commercial installations abound in Arizona, with GoDaddy, Wells Fargo and Dignity Health among the highest in number of sessions per year.

Scottsdale alone had about 10,000 sessions last year, a lot for a town of 250,000 people and enough to prevent 41,000 kg (about 90,000 pounds or 45 tons) of greenhouse gas emissions. And this was from just the first 69 installations at a variety of employers, resorts, shopping and services such as Westin Kierland, GoDaddy and Mayo Clinic.

Nationally, the list of installations is not only very big but very broad, from Walgreens and Safeway to 3M and John Deere in the Midwest. "This is not a tech trend in tech companies," says Romano. "This is an everywhere trend in every kind of company where people drive and park—where they work, where they live—and most people work at companies like these.

"It's coming, and if you look at charging spots on our network, we're exactly in lockstep with the penetration of EVs. More cars come into the community and more EV chargers go in to support them. It's not a build-ahead model, it's a build-with model. It's a parking model, so as the percent of EVs in a parking lot goes up, more chargers have to go in to support them."

Being able to rely on expert support anytime encourages more drivers to make the shift to EVs. Day or night, EV drivers can call for help finding or using a charging station, or to check on their account. ChargePoint is also dedicated to delivering world-class support to businesses that own its stations, with a warranty and responsive support

to keep stations working smoothly everywhere.

"We assist station owners and our channel partners who resell our products with installing, managing, administering and maintaining their EV charging stations," says VP of Services & Support Mike Talley. "These are devices that are out on a curb, they sit out in the sun, people pull up to them and use them, people back into them, every now and then there are accidents, and they need to be maintained. We are here to help our charging station owners do that. We remotely support them or do on-site dispatch through our Assure warranty and maintenance programs. The warranty includes a full year of on-site maintenance, proactive station monitoring, and monthly and quarterly reporting about its use. All those operations are conducted from here.

"Every month, more than a million people use our 39,000 stations to fuel up an EV. Our 50 employees here today handle 16,000 driver inquiries and 4,000 site owner inquiries a month. We track, measure and provide analytics on our product performance. Once a product is built, sold and put on the curb, no other company has a better touch and feel to what's actually happening. We track that information, we analyze it and pump it back into development, marketing and our processes.

"We measure customer satisfaction to make sure we're doing it right and at the same time making customers happy."

ChargePoint has invested more than \$10 million in Scottsdale since 2014. This latest half-million-dollar investment is underscored by a five-year commitment to the facility, with the ability to double the number of jobs at the location in the future. The center currently dispatches repairs across the US and Canada and is in the process of rapidly—as soon as late September—being operational in four countries in Europe (UK, France, Germany and The Netherlands) with exactly the same products and services as in the US, with the same look and feel to the degree that those countries' regulations allow.

"The shift to electric mobility generates many benefits: cost savings for drivers, new marketing tools for businesses and significant environmental savings," says Romano. "The explosion of jobs related to electric mobility is too often overlooked, but our expansion in Arizona, Europe and around the world reflects that the transition to electric mobility is well under way and represents a massive opportunity to create jobs and revitalize communities. We look forward to continuing to work with the local community in Scottsdale and hiring more people."

The ChargePoint Arizona team is surely going to be busier and busier. ■



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### A WEEK WITH : 2017 KIA NIRO TOURING

## Clean sweep by Joe Sage

When we traveled to San Antonio earlier this year for the new Kia Niro's launch drive, its designer Michael Torpey, who had also penned the original Kia Soul sketches, told us, "There's a lot to love about hybrids, but not their styling." For Kia Niro, he was given a new broom and a blank slate. We love the results. Hybrid drivetrains have been around long enough that they don't need to be stylistically celebrated for their own sake. The Kia Niro's fresh, clean design that simply states its efficiency and purpose, with no pretenses or stigma, works wonders. Kia VP of product planning Orth Hedrick affirms that the Niro is "like low-fat ice cream, not miserable no-fat ice cream." Crisp and lean, the Kia Niro looks ready to gobble up any task in a lighthearted way—and proves to be so.

We received our new Niro at the airport late at night, popped the shifter into Sport (139 hp did not sound like a lot) and headed home. Within just a few miles, our logbook messages set their tone for the week: "We like this! This is a perfect little car, and holycow—it gets 46 miles per gallon, too?" Forget the horsepower—this little hybrid's electric

motor more than doubles the grunt of its gasoline engine, together delivering 195 lb-ft of torque—at 3274 pounds putting your drive experience into near sports car territory. Step on the pedal, power through your first curve, and you'll be hooked.

A hybrid fan will find much to love here, but the real magic may be for non-hybrid fans. If you've only kind of thought about hybrids, maybe even turned your nose up at them, or hadn't followed recent developments, you may not know this is a hybrid when you see it (it bears only a discreet badge), and when you drive it, you may not even believe it. It's not what people have come to expect from a hybrid, and it's likely to change your whole thinking, right out of the chute. The market has responded, with sales off to a brisk start.

The cabin provided outstanding acoustics for an 8-speaker-plus-subwoofer Harman Kardon audio system with Clari-Fi technology, and the UVO 8-inch touchscreen interface is clean and effective.

We pushed the Kia Niro constantly, simply because that's the most fun. The car has a firm ride with great road feel and handling. Yet at the end of an exuberant full week with the car, we had consumed only a quarter tank of gas. ■

### SPECIFICATIONS

ENGINE	1.6L GDI 4-cyl 16v Atkinson cycle w/ 43hp AC synchr perm magnet 240v elec motor
BATTERY	1.56 kWh lithium-ion polymer 240v 6.5Ah
DRIVETRAIN	FWD, idle stop and go (ISG)
HP/TORQUE	engine: 104 hp / 109 lb-ft elec motor: 43 hp / 125 lb-ft combined system: 139 hp / 195 lb-ft
TRANSMISSION	6-speed dual clutch dry multi-plate hydraulically actuated
SUSPENSION	F: indep MacPherson struts, stblzr, gas shocks; R: indep multi-link, twin tube shocks
STEERING	motor driven power steering
BRAKES	vented front, solid rear, AHB active hydraulic boost, w/ motor polarity reversal regenerative braking
WHEELS/TIRES	18-in alloy / P225/45R18
LENGTH/WB/GRND CLEAR	171.5" / 106.3" / 6.3"
TURNING CIRCLE	34.8 ft
WEIGHT	3274 lb
LUGGAGE CAPACITY	19.4 / 54.5 cu.ft.
FUEL CAPACITY / DRIVING RANGE	11.9 gal / 511 miles
MPG	46/40/43 (city/hwy/comb)
BASE PRICE	\$29,650
INCLUDES:	Dual-zone auto climate w/rear vents, Harman Kardon premium audio, 8" touchscreen w/nav & rear camera, UVO eServices, Android/iOS, leather seat trim, Bluetooth, heated/vented front seats, heated wheel w/controls, power driver's seat w/lumbar & memory, keyless entry/start, blind spot detection, front/rear park assist, rear cross traffic alert, projector beam headlights, LED positioning lamps and DRLs, power sunroof, power folding mirrors/signals, roof rails, rear spoiler, privacy glass, 10 yr 10,000 mile warranty
SNOW WHITE PEARL PAINT	395
ADVANCED TECHNOLOGY PACKAGE:	HID headlights, autonomous emergency braking, forward collision warning system, lane departure warning system, smart cruise control, 115v inverter, wireless phone charging
DESTINATION CHARGE	895
TOTAL	\$32,840



In its first few months of life, the new Kia Niro has already won the prestigious JD Power Automotive Performance, Execution and Layout (APEAL) award for its segment (Small SUV). Kia is the only non-premium brand to earn three segment wins in this year's study.





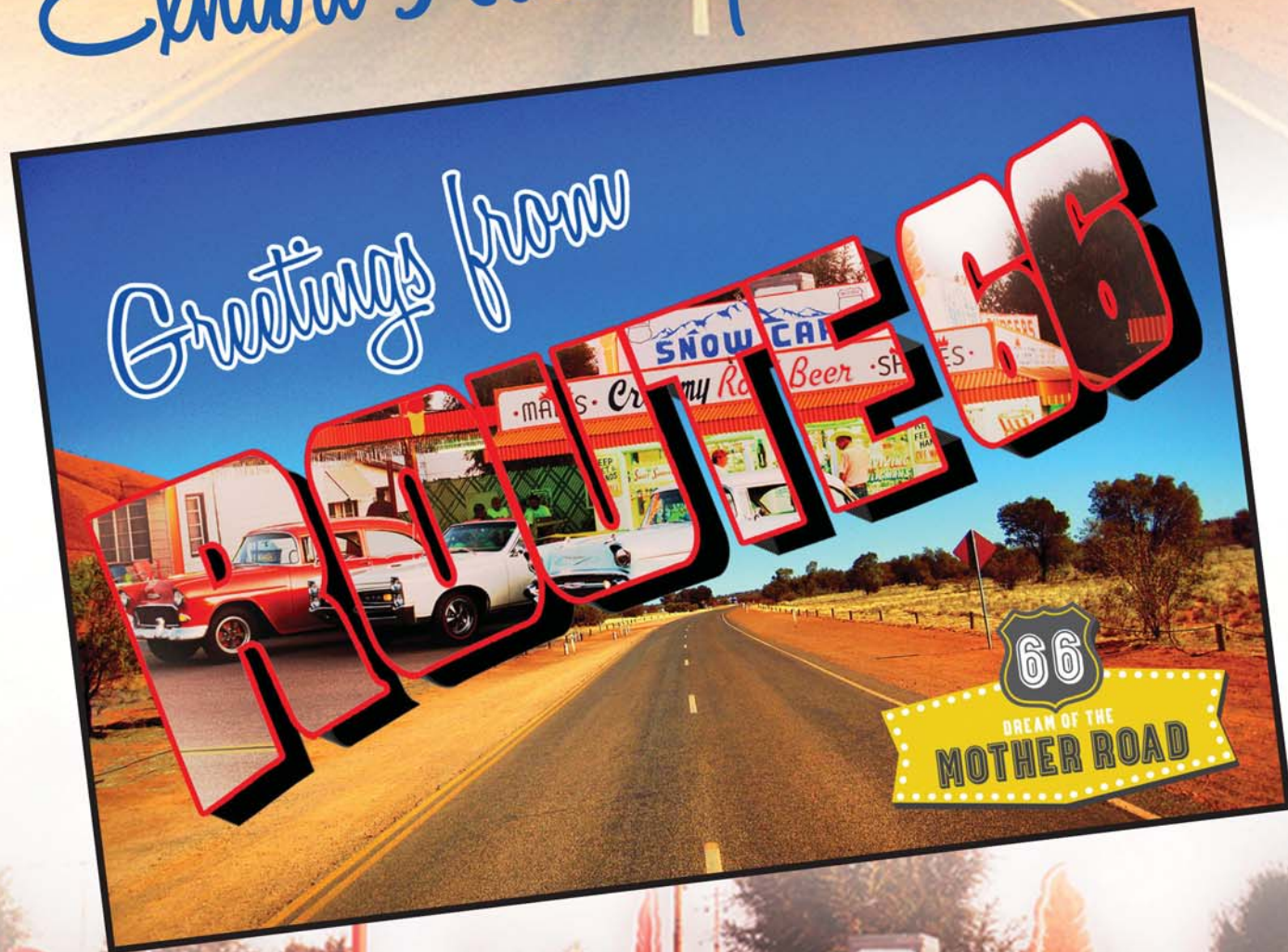
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**A WEEK WITH : 2017 LAND ROVER DISCOVERY HSE LUXURY**

**Ready to play**

BY JOE SAGE

A trend has emerged wherein the Sport name—rather than signaling a trim level with racing stripes, spoiler, bigger engine and sportier suspension—is used by several makers for a new, smaller vehicle with a familiar name. Range Rover and Range Rover Sport have done a version of this for awhile, though the Sport does offer a supercharged engine and other performance edges.

The Land Rover Discovery Sport introduced a couple of years ago (with styling evocative of the Range Rover Evoque) joined the lineup in lieu of the Land Rover LR2. The five- or seven-seat Land Rover Discovery new this year (see our May/June issue) replaces the LR4, completing a regrouping of the family into Range Rover and Discovery sub-brands (note hood badging in the manner of Range Rover). America's LR4 was already a Discovery in the rest of the world; this unifies things globally.

Built on the same platform as Range Rover and Range Rover Sport, the new Discovery has clearly spent a lot of development time in the wind tunnel, smoothed out from stem to stern. The roof retains only a hint of its former stepped-up nature, while a rakish C-pillar (with third-row side glass shortened) adds to the new flow. The new Discovery moves to

the aluminum construction of Range Rover (and Jaguar), shedding over 1000 pounds. This seven-seater is big—about two inches wider than a Ford F-150, with a turning circle about the same as a Toyota Tacoma Double Cab.

We drive in a Pacific Northwest on-road/off-road awards event each spring, Mudfest, where Discovery Sport won the Premium Compact Utility trophy in 2015. This year, this big new Discovery won the Extreme Capability Vehicle class and also top crown as Outdoor Activity Vehicle of the Year.

In this event's toughest stages, we've learned to appreciate the extensive electronic handling features Land Rover includes in their generally higher price of entry—meaningful and useful, implemented by a team clearly enthused by their brand's heritage. You will benefit from spending more time than average learning these features. Ditto its main screen and its binnacle display (which shows more vitals than the big screen). One feature highlight: audio has fully four different flavors, including standard stereo, Meridian, Dolby and DTS.

The new Land Rover Discovery is high equipped and ready to play. Price of entry is reasonable for such a capable premium vehicle. Add-ons take it to another level but are hard to resist, so if you're ready to shop for yours, also be ready to play. ■



**SPECIFICATIONS**

SEATING CAPACITY	.....(5- or) 7-passenger
ENGINE	.....3.0L quad-cam supercharged 6-cyl
DRIVETRAIN	.....4WD
HP/TORQUE	.....340 hp / 332 lb-ft
TRANSMISSION	.....ZF 8-spd automatic
TRANSFER CASE	.....2-spd, active lock center diff
SUSPENSION	.....F: SLA, twin lower links, electronic air suspension, passive dampers, passive anti-roll bar; R: integral link, electronic air suspension, passive dampers/anti-roll bar
STEERING	.....speed-prop elec pwr rack & pinion
BRAKES	.....F: 14.17" vent / R: 13.78" vent discs
WHEELS (STANDARD)	.....20-in 10-split-spoke
LENGTH / WHEELBASE	.....195.67 / 115.08 in
TURNING CIRCLE	.....40.4 ft
GRND CLEAR	.....(stand) 8.7 in / (air) 11.1 in
APPR/BRKVR/DEPART	.....(air) 29.5 / 29 / 25.5°
WEIGHT / TOW CAPACITY	.....4751 / 8201 lb
HEADROOM (1/2/3)	.....39.41 / 39.02 / 37.87 in
LEGROOM (1/2/3)	.....39.07 / 37.56 / 33.50 in
LUGGAGE CAPACITY (1/2/3)	.....82.7 / 45 / (tbd) cu.ft
FUEL CAPACITY	.....23.5 gal
MPG	.....16/21/18 (city/hwy/comb)

**BASE PRICE** ..... **\$63,950**

**INCLUDES:** Power gesture tailgate w power inner tailgate, power sliding panoramic sunroof w power blind, rear privacy glass w infrared reflective windshield, LED auto headlights, fog lights, rain sense wipers, heated washers, power fold mirrors w approach lights, 16-way power driver & front passenger seats w memory, third row seats, power tilt/tele heated wheel, premium carpet floor mats, Windsor leather seats, extended leather trim, 3-zone climate, ambient interior lighting, keyless entry/start, Bluetooth/USB, InControl remote, front/rear park aids, 825w Meridian audio, sat/HD radio, touchscreen interface w/nav, rear camera, cruise, DSC, ABS, CBC, EBD, GAC, HDC, RSC, HLA, emergency brake assist, perimetric alarm w engine immobilizer.....incl

**DRIVE PRO PACKAGE:** Adap cruise w queue assist & intelligent emerg braking, intelligent speed limiter, traffic sign recog, lane keep assist, blind spot assist, reverse traffic detect, driver condition monitor.....2350

**DYNAMIC PACKAGE:** Dynamic body kit, ebony headliner, sport pedals, Narvik Black grille, side cladding, tailgate, appliqué, gloss black Discovery script & mirror caps, 22-in wheel spats, chrome paddle shifters, ebony floor mats w contrast stitching, upper IP & door inserts in titanium mesh trim finish, Windsor leather sport wheel & door top roll, dark brushed aluminum center console.....2000

**CAPABILITY PLUS PACKAGE:** Terrain Response 2, all-terrain progress control, active rear locking diff, 16-way memory seats w/ Windsor leather.....1250

**VISION ASSIST PACKAGE:** LED headlights w LED signature, auto high beam assist, auto-dim exterior mirrors, surround camera.....1000

**FULL SIZE SPARE** + USB charge points 2nd row.....440

**EBONY HEADLINER**.....350

**LOADSPACE PARTITION NET**.....100

**ROVER® TOW PACKAGE**.....650

**21" 5-SPLIT-SPOKE SATIN GREY WHEELS**.....1700

**360-DEGREE PARKING AID**.....275

**FRONT CONSOLE COOLER**.....350

**HEADS-UP DISPLAY**.....950

**ROOF RAILS / BLACK**.....400

**LOADSPACE COVER**.....150

**AUTON EMERG BRAKING**.....125

**ACTIVITY KEY**.....400

**BLACK CONTRAST ROOF**.....650

**PARK ASSIST**.....800

**REAR ENTERTAINMENT**.....2270

**SILICON SILVER PAINT**.....1495

**HEADLINER CREDIT**.....(350)

**DESTINATION CHARGE**.....995

**TOTAL**..... **\$82,300**



# PROOF OF PRODUCT

Fiat Chrysler Automobiles (FCA) chose a beautiful Michigan summer day almost exactly in the middle of 2017 to reveal to us their secrets for 2018. Following suit to prior summers, they held a comprehensive "What's New 2018" event at their top secret Chelsea Proving Grounds, almost 4,000 acres set in the woods about a half hour from Ann Arbor. Most was so secret, we could not reveal it until September. Today is your lucky day.

The entire lineup is present, along with a few concepts and show builds. Our venue comprises three regions, which could be broadly thought of as road, off-road and track, each with subsets. We are free to go back and forth among the three, but it's a very full day, so we generally break it down into extended sessions by locale.

In the first area, where the overall event is based, there are specialized equivalents of everyday pavement driving. On the perimeter is the ADR (Automated Durability Road), a 1.3-mile oval course with three "event lanes": a 50-mph smooth asphalt surface; a 20-to-30-mph lane with trenches, Belgian blocks and other fixed surfaces creating harsh driving conditions; and a 5-mph lane with the harshest obstacles of all. Inside that is the LLR (Lateral Load Road): a sidewinder-snake-shaped asphalt handling course with a succession of nine tight hairpin turns, to be taken at more or less a constant 30 mph. These two courses

were implemented this year in lieu of our usual larger oval and road handling course (more like a two-lane country highway), which were in use this year for something else, too complex and too secret to interrupt with our own complex and secret event.

The next is in a deep and secluded wooded corner of the Grounds, a shuttle ride away—a very long oval, or two long straightaways with semicircles at the ends. For "What's New," they set up a one-eighth-mile dragstrip on one of the straightaways and an autocross course on a huge patch of paved infield between the straightaways. Here, we have a stable of performance sports and muscle machinery for autocross, with Hellcats for dragstrip launch control and braking sessions.

For off-road driving, we use the famous 2.3-mile Lyman Trail evaluation course—a set of trails and obstacles nasty enough and wonderful enough for Jeep engineers to fully test and develop their dominant lineup.

Continuous Improvement has been a mantra in the Dilbert world of corporatespeak for a couple of decades. It comes to mind as we survey the FCA lineup for 2018. Can you think of a single vehicle in the lineup for which you say, I wish they would make an all-new whatever? Neither can we. Alfa Romeo, Chrysler, Dodge, Fiat, Jeep, Mopar and Ram Trucks product stables are so well developed, it's good to see this is a year of refinement but not



replacement. Each brand has a fresh stable of awards from this year's comparos, and each brand has significantly growing sales.

Featured at the event, by brand, were:  
**CHRYSLER:** 300, Pacifica, Pacifica Hybrid.  
**DODGE:** Challenger, Challenger SRT Demon, Challenger SRT Hellcat, Challenger SRT Widebody, Charger, Charger Pursuit, Durango, Durango R/T, Durango SRT, Grand Caravan, Journey.  
**FIAT:** 124 Spider, 124 Spider Abarth, 500, 500 Abarth, 500e, 500L, 500X.  
**JEEP:** Cherokee, Compass, Grand Cherokee, Grand Cherokee SRT, Grand Cherokee Trackhawk, Renegade, Wrangler JK (2-door and 4-door).

**RAM TRUCKS:** 1500 (including Limited Tungsten, Sport Appearance Package, Big Horn Black), 2500/3500 (including Limited Tungsten, Sport Appearance Package), 3500/4500/5500 Chassis Cab, ProMaster, ProMaster City  
**UCONNECT:** 2018 update w/Apple/Android.

A lot of the news was in trims and positioning, and a lot of that was in trucks and SUVs. With one very full day, we chose a string of favorites and newsmakers in each venue.

## RAM TRUCKS

With a string of on- and off-road trophies under its belt, the Ram Trucks lineup's capability is well established—from Tradesman to Rebel to Power Wagon, and from V6 to Cummins 6.7-liter turbo diesel with 31,210-pound tow capacity. For 2018, they are broadening finishes and features.

**RAM LIMITED TUNGSTEN.** Available on Ram 1500, 2500 and 3500 is a new Limited Tungsten trim, building upon prior top-of-the-line Limited, which already includes maximum features plus full high-back heated/ventilated leather interior and other exclusives. We grabbed a three-quarter-ton Ram 2500 version with 800-lb-ft 6.7-liter Cummins inline-six turbo diesel and went for a spin with Jim Morrison, Head of Ram Brand North America.

"We talked to higher end buyers," says Morrison. "They wanted something classy, very distinguished and unique in the marketplace. But they didn't want a lot of flash, such as chrome bumpers and a big chrome grille. They wanted something with a more subtle appearance and an interior that's all luxury. So that's what we've delivered."

Chrome trim has been replaced, from the satin tungsten grille to the body-color RAM name on the tailgate. Wheels are grey or satin with tungsten pockets. A sport hood, body-color mirrors and running boards, and projector headlamps with black surround finish off the exterior. The interior is Frost and Indigo—the first light interior in a Limited, plus a blue so rich it's almost black—with the first suede headliner in a truck, as well as brushed accents. (A black leather interior is also available.)

With all its add-ons and all its class, Ram Limited Tungsten is only \$1600 more than Limited, just over \$55,000 on the Ram 1500. The new package is available all the way up to a one-ton dually.

And yes, the big truck was both powerful and nimble on the Lateral Load Road twisties.

**SPORT APPEARANCE PACKAGE.** The new Sport Appearance Package—available on Ram 2500 and 3500 Big Horn, Lone Star and Laramie trims—is immediately recognizable from its body-color grille to its black Ram's head tailgate badge. It includes 20-inch aluminum or black wheels (or 17-inch aluminum), body-color door handles and wheel flares, black mirrors, and front and rear park assist. Bilstein shocks are added on 2500 4x4s. Inside are heated seats and wheel, and sport seats (cloth/vinyl or leather in Laramie). Prices start at \$45,335 for Big Horn/Lone Star, \$49,640 for Laramie.

**RAM 1500 REBEL.** The 2017 Ram Rebel in special Mojave Sand finish was available with all-black fabric interior in lieu of the familiar red and black interior. For 2018, leather is available in the Rebel for the first time, for customers who love off-roading but also want to head farther upscale. Two new paint colors are Blue Streak and Delmonico



(At left) The 1.3-mile Automated Durability Road (ADR), which circles the Lateral Load Road (LLR).

(Right, top to bottom) 2018 Ram 2500 Limited Tungsten 6.7L Cummins turbo diesel; 2018 Ram 2500 6.4L HEMI® with Sport Appearance Package; 2018 Dodge Durango SRT; Sport Appearance Package details.



Red (a deep wine red as on Laramie). An appearance package adds black wheels and brush guard. Base price for a Rebel 4x2 is \$45,295, \$47,395 as a 4x4. The black package is \$595, leather interior just \$1545, and premium Alpine audio \$595.

Rebel accounts for six percent of Ram sales, but just three percent of those are 4x2. That's less than two-tenths of one percent of Rams overall, but it's an easy build, so they offer it for those who want the look with \$2100 savings. In fact, those buyers get more than the look—the same air suspension, Bilstein monotube shocks, Toyo tires, articulation, ground clearance and traction control system. And it's a way to get a HEMI V8 in a 2WD.

## DODGE DURANGO

**DURANGO R/T AND SRT.** We had the Durango R/T in our Arizona fleet recently, in dark grey metallic, with tinted windows and dark wheels. It was a true sleeper—a seven-seat family hauler that could take on anybody on a freeway ramp. We've driven its cousin the Jeep Grand Cherokee SRT on track at Circuit of the Americas. And we've driven the full lineups of Challenger and Charger, offered in carefully stairstepped models with the R/T at a great balance point of power, price and fuel mileage. Put it all together, and you have the Durango R/T, which we took for a run on the road courses.

Dodge, too, sees the 360-hp 5.7-liter HEMI V8 Durango R/T as a three-row Charger, and for 2018 they are doubling down on that, with a Charger performance steering wheel, Charger electronic T-



KEEP RIGHT >>

Story and photos: Joe Sage

shifter and light black chrome accents. From the cockpit, you feel that Charger DNA, especially as you fire it up and hear its exhaust note. Red accent stitching is available in the seats and console.

For 2018, Dodge is adding a Durango SRT with 475-hp 6.4L HEMI, bigger brakes and Pirelli tires.

As a dividend, the new SRT's performance hood and performance fascia are standard on the 2018 R/T, distinguishing it further from the GT, which also has body-color grille and crosshairs.

Bonus: Durango R/T and Durango SRT are "three-row Chargers" that can tow 7400 or 8400 pounds, respectively. Both have standard heated/cooled front and heated rear Nappa leather seats and heated steering wheel. Durango SRT is AWD only, while others are rear-drive or AWD.

## FIAT

**FIAT 124 SPIDER.** Built upon the bones of the universally acclaimed Mazda MX-5 Miata, the Fiat 124 Spider brings its own engine to the game. Its transmission is Mazda's, but from the prior-gen Miata, matched to Fiat's higher torque (while engine power is just five horses higher, torque is 184 lb-ft in the Fiat vs 148 in the Mazda). We took the Spider on both road courses, nailing it through the hairpins as surely as if we were in the Italian Alps. You can pop its manual soft top down faster than you could ever pull out a stopwatch to time it (2 to 4 seconds), and its trunk is larger than Miata's, all the better for a weekend in those switchbacks. As staff at the event noted, everybody comes back

from this drive with a smile on their face—and we just had to go around the course another time. New for 2018 will be more flexibility in option packages for Lusso luxury and Abarth performance versions, plus three new paint colors, which as usual are as much fun to say as to see: Puro Bianco Perla, Grigio Chiaro and Blu Scuro (white, silver and dark blue). A new Red Top Edition Lusso will be released later in the year.

**FIAT 500 SERIES.** Fiat 500 gets a lower base price, just \$14,995, the 500 Abarth now \$19,995. Any convertible is just \$1495 more, starting at \$16,490 (the most affordable in its class). The Fiat 500e electric delivers 121 MPGe city. Fiat 500X, cousin to Jeep Renegade, makes Uconnect standard on all models, with that system's 2018 updates including Apple/Android. Fiat 500L has its body refreshed stem to stern, adds technologies from Uconnect with Apple/Android, to USB ports, to ambient lighting, plus new colors including pastel orange, metallic bronze and blue denim.

**FIAT ON THE AUTOCROSS.** We drove the Fiat 124 Spider Abarth and 500 Abarth on the autocross course, along with a high-power stable including Dodge Challenger T/A 392, Charger 392 Daytona and Jeep Grand Cherokee SRT—a dream team, to be sure, but as we have found here before, the small, lightweight and highly nimble Fiats were arguably the most fun through the cones.

## DODGE MUSCLE

**SRT HELLCAT LAUNCH CONTROL.** A short walk from

the autocross course is our eighth-mile dragstrip, set up on this track's south straightaway. Vehicles here get right to the point—Dodge Challenger SRT Hellcat and Dodge Charger SRT Hellcat, both with 707-hp, 650-lb-ft 6.2L supercharged HEMI® Hellcat V8. These purpose-built 9.5:1 compression engines feature deep-skirt cast iron block with cross-bolted main bearing caps, unique aluminum alloy heads with hemi combustion chambers; sequential multiport electronic returnless fuel injection; 16 pushrod overhead valves with sodium-filled exhaust, hollow stem intake and hydraulic lifters; separate dual intercoolers and high-flow variable-speed electric water pump; and dual 2.75-inch straight-through exhaust with twin electronic exhaust valves (EEV). All this is fed through a ZF eight-speed automatic to the rear end. The cars' Performance Pages, accessed through the Uconnect screen, include Launch Mode, a form of traction control engineered to provide maximum acceleration in a straight line. It's for closed course use only, where zero-to-60 and quarter-mile times are measured. Or in our case, eighth-mile, and measured only for the curious—the real point is to experience the system, the raw acceleration and the braking, which is coned for the very last bit of the strip. Front brakes are 15.4-inch two-piece aluminum-hat vented/slotted discs with six-piston fixed monoblock aluminum Brembo calipers. Rears are 13.8-inch vented/slotted discs with four-piston aluminum-housed Brembo calipers. Four-wheel ABS is standard. You can't go wrong with this sys-

tem. Or maybe you could—the system is so potent, it's disabled for the first 500 miles of the vehicle's life. Challenger or Charger, the Hellcats are basically indistinguishable on this run. It's a blast. We could do that eighth-mile all day long.

**CHALLENGER DEMON AND WIDEBODY.** The most anticipated halo car was the Dodge Challenger SRT Demon—the world's first showroom stock dragstrip-ready car—on static display, not for driving. You've surely heard of the Demon during its months-long teaser campaign or since its reveal at the New York Auto Show in April. Its own supercharged 6.2L HEMI is engineered for a whopping 840 hp with 100 octane fuel (check your airport or track performance shop) or 808 hp on 91 octane pump fuel. Weight is stripped off inside and out, while its body is widened to accommodate drag-caliber rear wheels (the fronts are narrower; all are street legal). Demon will be built for one year only, limited to 3300 copies.

Demon has also spawned the Challenger SRT Hellcat Widebody, adapting the Demon's wheel flares to a regular (if there is such a thing) Hellcat, fleshed out with 305/35 Pirelli P Zeros all around, on 20x11 wheels. With all this grip, the Widebody is good for zero-to-60 in 3.4 seconds. For those whose timing, budget or sensibilities don't put a Demon in the garage, this can fill the bill nicely.

## JEEP

Lyman Trail is engineered to break a Jeep if it can, a harsh course used by engineers during the toughest off-road development, with rock crawls, extreme articulation courses, deep water troughs, log climbs, approach, breakover and departure challenges and generally rough and narrow trails.

There are two courses here (one shared by all vehicles, plus an extension for the most extreme). We run all vehicles in 4-wheel low range here, as the primitive trail snakes through the woods, with special features known as the Rock Garden, Log Pile, Stairs, Peat Bog and Water Hole—each of which is a substantial understatement, with a recommended speed of just three miles per hour.

We drove every model of Jeep—Wrangler, Renegade, Compass, Cherokee, Grand Cherokee—Trailhawk if available—and all handled their courses flawlessly. One very wet log, highly polished on this busy day, had us back up and find a better spot a foot or so to the side of the first try.

A highlight of our Lyman Trail session was having the perfectly executed Ram Rebel's lead engineer Elizabeth Krear along, right-seating. She is, of course, a seasoned off-roader, but her interest in Jeeps had just amped up. We were among the first to learn she is moving over to Jeep, to take on one of the most challenging and fulfilling tasks imaginable: leading development of Wrangler's



(At left) Fiat 124 Spider Abarths, Fiat 500 Abarths, Dodge Charger 392 Daytona and Dodge Challenger T/A 392 in the grid at the autocross course.

(Right, top to bottom) 2018 Dodge Challenger SRT Demon; Fiat 124 Spider Abarths and a variety of Dodges on the autocross course; Dodge Challenger SRT Hellcat and Charger SRT Hellcat stage for launch control demo; Demon and Widebody details.

highly anticipated next generation, inventing a new version of a vehicle with one of the most venerable souls in the business. With increasingly stringent regulations, she has her work cut out for her. This project is in the best of hands: we are confident her team will take this perfect vehicle and make the next one even better. She's very much looking forward to the challenge, and we're very much looking forward to the results.

**GRAND CHEROKEE TRACKHAWK.** Another halo vehicle is the new 2018 Jeep Grand Cherokee Trackhawk. With the Trailhawk already at the top of this award-winning vehicle's off-road lineup, the Trackhawk picks up where the high-performance Grand Cherokee SRT left off. It has of course been irresistible for enthusiasts to ask whether the Challenger and Charger SRT Hellcats' engine could be dropped into a Jeep. FCA engineers are as enthusiastic as any enthusiast, so of course they have now done so. We drove the Trackhawk at its launch a few weeks later, including highway time, two-lane time, track time and, yes, dragstrip Launch Control time; see our writeup in this issue.

**M**idday break brought classic Michigan hospitality to our event tent, featuring Faygo pop, Vernor's Ginger Ale and sandwiches from Zingerman's Deli in Ann Arbor.

We've said before that it's easy to emerge from this event feeling the need for a seventeen-car garage. Add to that a proximity to mountains, canyons and a racetrack—the Arizona formula. ■



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## Bucket Set with Towel

Cross this Bucket off your List! Even the best of us Car Guys know when to throw in the towel. And sometimes bucket doesn't mean a seat in a car. This is a limited edition set with Pub Glasses and Coasters that will have everyone gabbing about the time the wrench slipped and then..... Great tailgate item. Spend some bucks on a bucket set.

\$34.95 / SKU: 08-BKG-78700



## Key Rack

Stop wasting valuable garage time looking for lost keys! Busted Knuckle Garage Metal Key Rack keeps all your keys organized and ready to go. Features 4 steel hooks and attractive BKG graphics. Dimensions: 12"W x 11.25"H x 1.5"D.

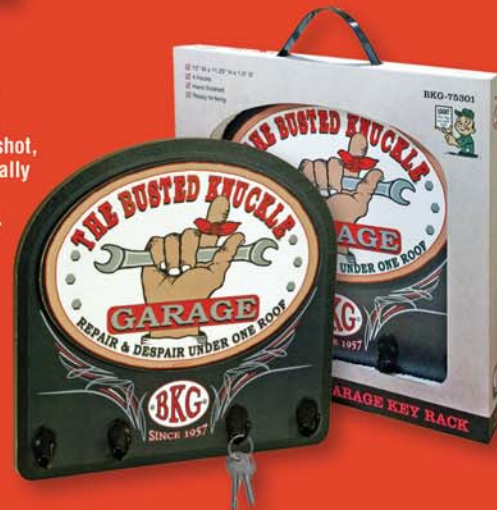
\$29.95 / SKU: 10-BKG-75301

## Shot Glass Gift Set with Mat

That wreck of a car, truck or motorcycle in your garage may be shot, so why not have a shooter yourself? Not that the work is ever really done—but when it's time to celebrate—the Busted Knuckle Garage Shot Glass Set is just what you need. Set includes 2 hand blown shot glasses (2 oz.) and mini beverage mat. Top rack dishwasher safe. Mat Dimensions: 9"L x 3"W. Nifty gift container.

Was \$24.95 / Now \$19.95

SKU: 08-BKG-78703



♥ Not only are your products awesome, but the service and the people are too! I very much intend to pass the word along about how great it is to do business with the Busted Knuckle Garage.  
— Many thanks! Jackie B.

♥ I just had the most wonderful buying experience! I only hope my father asks for something from The Busted Knuckle Garage for Christmas so I can do business with such a wonderful company once more.  
— Cheers! Michelle

♥ My husband just loves everything, especially me for getting him such cool stuff. I'd have to say we will be lifetime customers, oh ya!! Thank you, Greasemonkeys.  
— Sincerely, Pam

♥ First, let me be the one thanking you! I honestly cannot remember such extraordinary customer service.  
— Thanks again, "JR" Jean



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SPECIAL EVENT : 3RD ANNUAL GRAND PRIX OF SCOTTSDALE



# VINTAGE MINI RACING

THE ROARING '20S AND CLASSIC MOTORSPORTS COME ALIVE IN OLD TOWN SCOTTSDALE

Racing teams, spectators and participants alike will take a step back in time at the Grand Prix of Scottsdale. Its 1920s theme includes an opening night Gatsby Under the Stars Gala, a Gatsby Garden Party & Strolling Fun, Kids Zone, Concours d'Grand Prix and the main event—the 3rd Annual Grand Prix of Scottsdale race, with Winner's Circle closing ceremonies. This stylish event celebrates Americana, Arizona-made Vintage Mini Racers, heritage brands and the luxe euphoria of Roaring 1920s-era racing and craftsmanship. Special festivities include:

Friday, November 3

## GATSBY UNDER THE STARS GALA

Step back in time to the 1920s at this VIP evening event. Attendees will enjoy live Jazz Age music, dancing, gaming, complimentary cocktails and passed hors d'oeuvres. Your ticket includes five complimentary cocktails, hors d'oeuvres and a \$200 casino voucher. Tickets, VIP tables and tents are available.

Saturday, November 4

## CONCOURS D'GRAND PRIX

The Vintage Mini Racers used in the Grand Prix of Scottsdale are locally manufactured by Vintage Kart Company. A variety of Mini Racers will take part in a Concours d'Grand Prix from 11am till 4pm on Saturday. Admission to the Concours is free.

## GATSBY GARDEN PARTY

Guests at the Gatsby Garden Party enjoy daytime fun with 1920s style in Gatsby beer, champagne, cocktail and wine gardens, while listening to Jazz Age music. Your ticket includes complimentary drinks, food and 1920s entertainment. The party runs both days from noon till 6pm. General admission and VIP tickets are available.

Sunday, November 5

## GRAND PRIX OF SCOTTSDALE

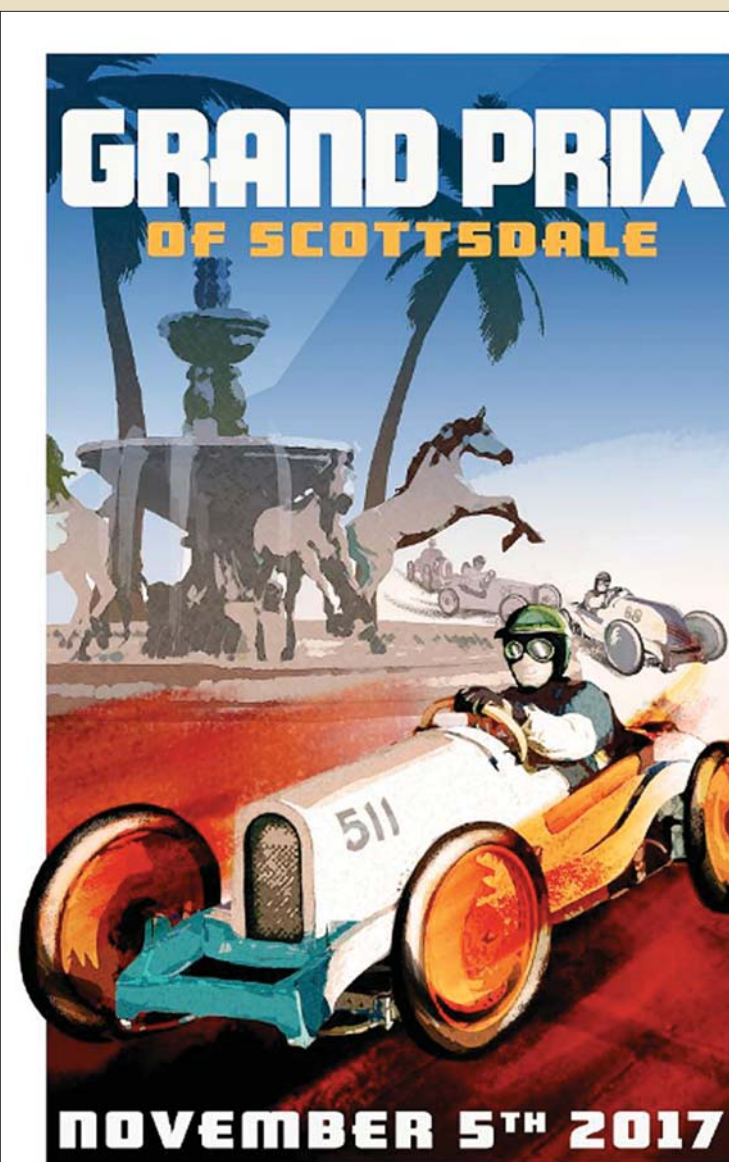
The Grand Prix of Scottsdale runs on city streets in Old Town Scottsdale on Sunday, with Opening Ceremonies at 10:30am and the race starting at 11am. Admission to the race is free.

## Tickets and discounted lodging

Stay all weekend and don't miss a beat—discounted rooms are available at the Courtyard Marriott, Hyatt Regency and Howard Johnson. For tickets, complete details on the event, race team sponsorship and a link to discounted rooms, visit grandprixscottsdale.com.

## Benefiting charity

For 35 years, Southwest Human Development has created a solid foundation for Arizona's children and their families. The agency serves 135,000 children and their families annually, giving away more than 180,000 children's books through early literacy programs, and changing the lives of young children through more than 40 programs. Their investments in early childhood are paving the way for Arizona's future. ■



# Streamliner

Styling and lineup are both streamlined in this updated midsize sedan. BY JOE SAGE

Midsize sedans were the biggest market segment for a long time, but have juggled against compact crossovers for the top spot for awhile now. In fact, at the moment, midsize sedans have slipped to the number four spot (behind pickups, compact crossovers and compact cars—while midsize SUVs have stayed in the number five spot). More than 16 percent of the market as recently as 2012, midsize sedans are forecast to be at around 10 percent for the next several years.

Hyundai is addressing this trend with its popular Sonata midsize sedan by reducing less profitable fleet sales brandwide by almost 30 percent, concentrating on retail sales, which are up, and by making the midsize sedan more competitive as the situation stabilizes. Stable it should be, as some 63 percent of current midsize sedan owners will buy the same again. About 57 percent of compact crossover buyers will stick with that segment, too, but close to 20 percent of each will switch to the other, meaning over 80 percent of the two groups will be shopping midsize sedans next time.

The solution starts with this new Sonata. The model has a head start, with the highest brand awareness of any Hyundai model in the US and almost three million sold since 1989, accounting for 31 percent of Hyundai sales and 18 percent of conquest sales (buyers who come to Hyundai from other brands) in the US. The new Sonata is an all-American endeavor, penned at Hyundai's California

Design Studio and built at their Alabama plant.

This is a refresh, although you would be excused for taking it to be an all new build. All that remains on the outside from the prior model are the doors, roofline and part of the rear quarter panels. The rest has been redesigned as it has been redefined—as a “technical sprinter,” expressive, emotional, distinctive and precise—with innovative technology and features, including many included at every trim level (and only from Hyundai; see specifications sidebar).

Up front on most trims is a new “cascading” grille, with two-level bars that create rich dimension and flow. Sport models feature an aggressive chain-link grille. Rear sheet metal benefits from the license plate being moved low (a sleek presentation we recently saw applied to another new car at three times the price). Alloy wheels have been redesigned (17- and 18-inch, or 16-inch on SE and Eco), and LED lighting is used from front to rear (on top trims), with distinctive stacked DRLs. Aerodynamic hood, fender and headlight shapes converge toward the front, offset by a “catamaran” chrome element bridging the LED inlets and grille to create a wide, fast wave-skimming feel.

The interior has been upgraded to a more premium feel, including a new instrument panel and center stack, three-spoke sport wheel, piano-key buttons for audio and climate controls, and seven-inch touchscreen with Apple and Android connec-

tivity. Wireless smartphone charging is available, and back seat passengers gain a USB charge port.

Engine choices remain the same: a 2.4-liter GDI four-cylinder across four trim levels (SE, SEL, Sport and Limited); a high-output twin-scroll turbo 2.0-liter four (Sport and Limited); and a 1.6-liter twin-scroll turbo for the most fuel-economical and second-lowest purchase price Eco model. The two-liter turbo models have a new 8-speed automatic transmission, mapped over a wider spread at both ends to boost both performance and fuel economy.

It takes a moment of mental adjustment to realize that the sportier 2.0L turbo comes in both Sport and Limited models, while the base 2.4L engine also comes in Sport and Limited (as well as SE and SEL trims). If your sporting blood tends toward style points, you have a choice of naturally aspirated or turbocharged engines. If your sporting blood tends toward performance (the 2.0L turbo), you have a choice of Sport or Limited trim.

We drove both engines and both trims throughout San Diego County, inland where the mountain and desert two-lanes really open up. Our sporting blood tends toward performance, so we chose to spend more time in the 260-hp 2.0T. Suspension is always an area where Hyundai pays extra attention, and all models have been upgraded again in the new model, with rear suspension receiving 21 percent thicker trailing arms for heavier loading, and new bushings for more ride compliance and quicker response. Torsion bar stiffness is increased 12 percent, and steering has been recalibrated, together delivering a more responsive system with improved on-center feel. Steering is



speed-sensitive in all models.

Luxury trim adds several style points, creature comforts (one-touch passenger-side window, for example) and driver assistance features. The final choice is partly hard and partly easy, once you compare the seven basic builds. Concentrating on Sport and Limited (and their two available engines), the price walk to Limited is just \$2200, not bad for a few more features, if you don't mind trading off the chain-link grille, dual exhaust tips, rear diffuser and such of the Sport. If you've decided between Sport and Limited and are choosing engines, it's only \$2400 to jump to the 2.0T in Sport—an easy decision—while it add \$5050 to the Limited. In fact, a 2.4L Limited and a 2.0T Sport

are almost exactly the same price. But the 2.4L Limited does not have all the inclusions of the 2.0T Limited. The price/feature differential is equalized if you go for a 2.4L Limited with Ultimate Package.

At the starting end of the lineup, the 2.4L SE and the 1.6T Eco turbo are just \$600 apart. The Eco comes in one point higher on highway fuel mileage than the SE, but in city traffic beats all others by three to five MPG. Although its horsepower is lower, its torque is higher than the 2.4-liter, and it uniquely has a 7-speed dual clutch transmission, something evocative of a sports sedan, though this one is mapped for fuel economy. Tough call.

The new Hyundai Sonata is at dealers now. Hybrid and plug-in hybrid models arrive in 2018. ■

Sonata's visual strength carries through its smoothed and simplified side panels via a powerful “saber line” front to rear. The car's rear sheet metal appears wider, stronger and faster—and has classier brand presence—with the license plate moved down. The trunk release is hidden in the Hyundai badge (or can be operated hands-free in SEL models and up).



## SPECIFICATIONS

### 2.4L (SE, SEL, Limited, Sport)

ENGINE .....2.4L DOHC D-CVVT 4-cyl  
HORSEPOWER / TORQUE .....185 hp / 178 lb-ft  
TRANSMISSION ...6-spd auto w manual mode  
STEERING .....column-mounted motor-driven power rack & pinion, engine-RPM-sensing  
WHEELS .....17x7 alum alloy / (SE: 16x6.5)  
TIRES .....P215/55R17 / (SE: P205/65R16)  
WEIGHT .....SE 3250 lb; SEL 3311 lb Limited, Sport TBD  
MPG (city/hwy/comb) .....SE: 25/36/29 .....SEL, Limited, Sport: 25/35/28

### 2.0L Turbo (Sport, Limited)

ENGINE ..2.0L twin-scroll turbo D-CVVT 4-cyl  
HORSEPOWER / TORQUE .....245 hp / 260 lb-ft  
TRANSMISSION ...8-spd auto w manual mode  
STEERING ...dual-pinion rack-mounted motor-driven pwr rack & pinion, eng-RPM-sens  
WHEELS .....18x7.5 alum alloy  
TIRES .....P235/45R18  
WEIGHT .....Sport 3483 / Limited 3527 lb  
MPG .....23/32/26 (city/hwy/comb)

### 1.6L Turbo (Eco)

ENGINE ..1.6L twin-scroll turbo D-CVVT 4-cyl  
HORSEPOWER / TORQUE .....178 hp / 195 lb-ft  
TRANSMISSION .....7-spd eco-shift DCT  
STEERING .....column-mounted motor-driven power rack & pinion, engine-RPM-sensing  
WHEELS .....16x6.5 alum alloy  
TIRES .....P205/65R16  
WEIGHT .....3247  
MPG .....28/37/31 (city/hwy/comb)

### DRIVETRAIN .....FWD

SUSPENSION: FRONT: MacPherson strut w gas-charged dual flow damper (DFD) shocks, 23-mm stabilizer bar.  
REAR: indep multi-link w coils, gas-charged DFD shocks, 17-mm stblzr bar  
BRAKES: FRONT: dual diagonal, split circuit, power-assist 12.0-in vented disc w pressure proportioning valves (12.6-in optional on SEL and Limited).  
REAR: dual diagonal, split circuit, power assist 11.2-in solid disc w pressure proportioning valves  
LENGTH / WHEELBASE .....191.1 / 110.4 in  
TURNING CIRCLE .....35.8 ft  
GROUND CLEARANCE .....5.3 in  
HEADROOM (F/R) .....40.4 / 38.0 in  
LEGROOM (F/R) .....45.5 / 35.6 in  
PASSENGER VOLUME .....106.1 cu.ft  
CARGO VOLUME .....16.3 cu.ft  
FUEL CAPACITY .....18.5 gal

### 2018 Hyundai Sonata pricing

Sonata 2.4L	SE	\$22,050
	SEL	\$23,700
	Sport	\$25,200
	Limited	\$27,400
	Limited Ult	\$30,300
Sonata 2.0L Turbo	Sport	\$27,600
	Limited	\$32,450
Sonata 1.6L Turbo	Eco	\$22,650

**NOTABLE INCLUSIONS/OPTIONS:** Every 2018 Sonata includes Blind Spot Detection with Rear Cross Traffic Alert, the only mainstream midsize car with these standard. Available Lane Departure Warning now adds Lane Keep Assist. All 2018 Sonatas have standard 7-inch touchscreen with Apple/Android. Models with Blue Link Telematics get 3 years of complimentary Connected Care and remote services. Many features work with Amazon Echo and Google Home. Available navigation has bird's eye view, realtime traffic data and includes 3 years of update downloads.

## Sexy, sporty Italian utilitarian

Alfa Romeo expands its brand presence by entering the hot compact crossover segment—with, as always, its sexy Italian bloodlines built in. By Joe Sage

### SPECIFICATIONS

<b>FORMAT / DRIVE</b> .....	5-passenger midsize SUV / AWD
<b>ENGINE</b> .....	all-aluminum 2.0L turbo 16v DI 4-cylinder
<b>HP/TORQUE</b> .....	280 hp / 306 lb-ft
<b>TRANSMISSION</b> .....	8-speed turbo automatic
<b>SUSPENSION</b> .....	F: double wishbone, semi-virtual axis R: patented Alfa Link with vertical rod link
<b>STEERING</b> .....	rack & pinion w variable electric assist
<b>BRAKES</b> .....	F: 13.0 Brembo 4-piston / R: 12.5 single-piston
<b>WHEELS/TIRES</b> .....	20x8.5 sport alum / 255/45R20 Conti AS
<b>LENGTH/WB/GRND CLEAR</b> .....	184.6" / 111" / 8.1"
<b>LEGROOM</b> .....	(F/R): 36.6" / 31.9"
<b>WEIGHT</b> .....	4044 lb
<b>TOW CAPACITY</b> .....	3000 lb
<b>FUEL CAPACITY</b> .....	16.9 gal
<b>MPG</b> .....	22/28/24 (city/hwy/comb)
<b>FACTORY</b> .....	Cassino, Italy
<b>BASE PRICE</b> .....	<b>\$46,495</b>
<b>OPTIONS:</b>	Driver assistance static package (650), driver assistance dynamic package (1500), 8.8" display w 3D nav (950), Harman Kardon premium audio (900), dual-pane sunroof (1350), compact spare (450), convenience package (200), Vulcano Black Metallic (600), aluminum interior trim (nc), gloss red calipers w white Alfa Romeo script (nc) .....
<b>DESTINATION CHARGE</b> .....	995
<b>TOTAL</b> .....	<b>\$54,090</b>

The Alfa Romeo Stelvio broadens the brand's US lineup, which since 2014 had consisted of the extremely sporty Alfa Romeo 4C, then the 4C Spider, followed by the 2017 Giulia sedan—which, in Quadrifoglio performance form, won as Performance Sedan and overall Car of the Year at the recent Texas Auto Roundup, held at Circuit of the Americas (see our July/August issue). Stelvio competes in the hottest segment today: the compact crossover. Built on the same platform as Giulia, it shares a subjective trait: as categories increasingly shift and overlap, both are classified as compacts but feel much like midsize from the pilot's seat. Stelvio delivers aspects of a sport sedan experience and a crossover, both—covering all bases, each with no compromise.

From outside, there is no mistaking Alfa Romeo Stelvio's segment niche, nor its sexy Italian bloodlines, drawing attention, admiration and lust. From its trademark nose and Milano-flag-Visconti-dragon badge, to its sculpted aluminum alloy wheels

(20-inchers on our Ti Sport) and Alfa-scripted red brake calipers, to a huge pair of chrome-tipped exhausts, Stelvio delivers that uniquely Alfa Romeo mix of hormones, performance, value and utility.

Step inside and take a seat. Detail after detail spell Alfa—from its firmly bolstered (heated/ventilated) leather sport seats, to its monotone iteration of the badge on the wheel, to the performance-first satin aluminum shift paddles.

Models start with a base Stelvio at \$41,995 or a Stelvio Ti (with additional finishes and options, larger screen, upgraded seats) at \$43,995. There are Stelvio Sport and Stelvio Ti Sport models, as well as a luxury-oriented Stelvio Ti Lusso. A Performance Package for Ti and Ti Sport models adds mechanical limited slip differential, active suspension, larger wheels—and paddle shifters on the base Ti. Options are reasonably priced for a premium-luxe vehicle, as are the vehicles themselves.



Endearing quirks: the Alfa Romeo Stelvio's shift paddles are mounted on the column, so they may not always be where you need them in a turn (though they are huge, to make up for that). And the steering wheel contains the ignition button, so it's never quite in the same place twice.



All have the same turbocharged, intercooled, direct-injected 2.0-liter engine, 8-speed automatic, all-wheel drive and a 5.4-second 0-to-60 time.

Alfa has a lot of cool things flowing in its hot Italian blood. Instead of familiar normal-sport-eco modes, it has "DNA"—Dynamic, Normal and Advanced Efficiency (eco). Suspension calibration is also available. Since DNA is a three-position knob, we set it on Dynamic and mostly kept it there (on most vehicles, this is a single pushbutton that needs to be continually reset). We quickly learned to turn off auto stop/start (a bit more delayed than many) and parking sensor alarms (louder and more disciplinarian than most) via two tiny buttons at the lower left corner of the instrument panel.

Our best moments with the Stelvio were on the open road. Immediately upon delivery, we took it to a twisty, hilly two-lane outside the Valley, where we could really give the drive modes a good sampling and utilize the manumatic (paddles or shift lever) more. Appropriately to its sporting nature, the more aggressively we drove it, the more responsive the steering, gears, suspension and overall tuning felt. In Dynamic, the ride was very firm, with great road connectedness. Powerful shift blips and exhaust note provide the soundtrack. We drove in 3rd and 4th gears for most of this (out of eight), with the tach generally at 3500 to 4000, and had a very spirited drive. On the way back, we tried eco (AE) and forgot we were even in it—there is no apparent efficiency penalty in routine driving, making its 28 mpg rating realistic.

The electronic shifter requires your attention, as is currently common—pushing the lever forward toward "P" at the top will put you in reverse, as Park is actually a separate button, and until you get the lever's safety squeeze to be second nature, you won't be using this as a getaway car, as the jog from R to D will often leave you in N.

Our local driving involved a mix of automatic Drive, with which typical frontage road runs from standstill across four lanes to a freeway merge were powerful and smooth, and paddles, which were frankly irresistible when it was time to discreetly leave the rest of the pack in the dust as a light turned green.

The Alfa Romeo Stelvio competes on many levels. Its features and price range put it in the same league as several other premium-luxury crossovers, while its emotional quotient may make you think twice about exotics at twice the price.

And yes—there will also be an Alfa Romeo Stelvio Quadrifoglio, with a 505 hp twin-turbo V6. Details and timing will be announced before the end of this year. ■

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# ARIZONAFLYER

THE ENTHUSIAST'S GUIDE TO LIFE ON THE WING

## BREITLING DC-3 WORLD RECORD TOUR STOPS OFF IN ARIZONA

The 77-year-old Breitling DC-3 landed in Scottsdale in mid-July on its historic journey to set a new world record as the oldest plane to circumnavigate the globe. With a flight range of eight hours, the plane's route stays fairly close to land. After legs across Europe, the Middle East and Asia, Captain Francisco Agullo and crew headed to Alaska, then the Lower 48. Scottsdale was the fifth of 12 Continental US stops, followed by Dallas.

A final US stop in Boston was followed by Newfoundland and Labrador, Greenland, Iceland and several stops in the British Isles before a tour finale at the 2017 Breitling Sion Air Show in Switzerland in September.

The Douglas DC-3 made its maiden flight in the United States in 1940; its first delivery was

to American Airlines. Nicknamed "the Normandy landings plane," it was used by the Army from 1942 to 1944, where it towed gliders and dropped thousands of paratroopers on the coast of France during World War II.

The Breitling DC-3 World Tour shares the company's passion for aeronautics with a global audience. Their affiliation with aviation dates back to the early 1930s, when they manufactured cockpit chronographs.

We stopped by the Scottsdale Airport to wish the flight well, as they took some folks up for a half-hour tour of the area.

If you haven't flown on a big prop passenger plane, you've missed the anticipatory fun of the engines firing up, one by one, with protracted sputters and plumes of smoke, till all

are running smoothly. The DC-3 is a tail-dragger: unlike modern aircraft that ride level on a nose wheel, there are two wing wheels and a small tail wheel. If you are in the cabin with the cockpit door open as you taxi toward takeoff, you'll wonder how the pilots can see a thing. As you approach takeoff speed, the tail rises up and the cabin levels off. Upon landing, you experience the tail settling back down onto its little wheel.

The DC-3 cabin is very hot in July in Arizona—modern air conditioning and air handling were still a few years off.

In 1952, Breitling launched its Navitimer watch, the oldest mechanical chronograph still in production today and a cult favorite among pilots. To celebrate the DC-3 World Tour, Breitling introduced a 500-piece limited edition of this watch. The collection traveled onboard the DC-3 throughout the tour, to then be made available to enthusiasts with a certificate signed by Captain Agullo. ■



# Human cop meet robocar

Waymo autonomous fleet developing emergency services interaction with Chandler Police and Fire Departments

When Waymo launched the first-ever public trials of self-driving cars, they chose the Phoenix metro area to implement it. This program is the first of its kind, designed so early adopters can use self-driving cars every day, for everything they would in a typical car, on their own, but riding and not driving. Over the course of the program, Waymo will work with hundreds of Arizonans who are interested in self-driving cars and can provide feedback on their experience.

Residents of Chandler were the first, and they report loving the experience, feeling safer, finding commuting less stressful and

having more time to spend with family.

The company's vision is of a future without tired, drunk or distracted driving that contributes to 1.2 million lives lost on roads every year. Google's parent company Alphabet has been working on self-driving cars for eight years, since 2009. On October 20, 2015, they completed the world's first fully self-driven car ride. Steve Mahan rode alone in one of their prototype vehicles, cruising through Austin's suburbs. Steve is legally blind, so sensors and software were his chauffeur. His route reflected the way millions of people could use a self-driving car in everyday life: riding from a park to a doctor's office and through typical neighborhoods.

The effort was spun off under its separate Waymo brand in late 2016. Over this time, prototypes have spent the equivalent of 300 years' driving: over 2 million miles of real-world driving, and last year alone completing a billion miles of testing in simulation.

Waymo is a key player in moving the industry

from seeming like science fiction to one where city planners all over the world are designing for a self-driven future. They see the technology being useful in personal vehicles, ridesharing, logistics, or solving "last mile" problems for goods transport. They expect self-driving technology to also become useful in ways the world has yet to imagine, creating new products, jobs, and services.

Development has necessarily been tackling the most difficult driving tasks: mastering multi-lane four-way stops, anticipating what unpredictable humans will do, and detecting and responding to emergency vehicles.

Whether it's the shrill siren of a fire truck or the flashing lights of a police cruiser, every human driver must recognize the signs of an emergency vehicle. Over the last few years, Waymo has been teaching its self-driving cars to detect and respond to everything from fire trucks and ambulances to police cars and police motorcycles. Their latest efforts to improve the way they detect emergency vehicles are now operating in the Valley, in collaboration with Chandler Police and Fire, using Waymo's new Chrysler Pacifica self-driving minivans. Day and night, their vehicles—equipped with a powerful suite of sensors—observe police cruisers and motorcycles, ambulances, fire trucks and

even a few undercover vehicles as they trail, pass and lead the Waymo self-drivers. As emergency vehicles make their moves, Waymo's sensors collect samples at different speeds, distances and angles, building up a library of sights and sounds to help teach their self-driving cars to respond safely to emergency vehicles on the road.

Waymo self-driving Pacificas are already capable of hearing twice as far as they could with the prior suite of sensors. And with a new generation of sensors, software is learning to discern the direction sirens are likely coming from. We often hear sirens first, so being able to gauge the direction of an oncoming fire truck or ambulance allows autonomous vehicles to make smarter and safer decisions: they may pull over if an emergency vehicle is coming from behind, but yield at an intersection if sirens are coming from up ahead. Or the vehicle may need to pause at an intersection to let an ambulance pass, even as the light turns green and even if other vehicles begin moving.

The custom-built self-driving sensor and audio detection systems are designed in-house. Not only has hearing improved, but they can now see emergency vehicles' flashing lights even farther away and more clearly, with a custom vision system plus radar and LiDAR. As the sensing system learns to reliably detect emergency vehicles in real-time, software is exponentially improved. The mission is to recognize an emergency vehicle even if it has never been encountered before, or if it appears different because of angle or lighting conditions.

Phoenix area residents in Chandler, Tempe, Mesa and Gilbert can check eligibility and apply for the early rider program at [waymo.com/apply](http://waymo.com/apply). ■



# Hatchling

Hyundai ups their game significantly in this hot segment

BY JOE SAGE

Elantra is responsible for 27 percent of Hyundai sales in the US—where Elantra just had its fifth consecutive year with sales of over 200,000 units. Of about five million Elantras sold in 190 countries to date, about three million were in the US. (Hyundai Motor Company turned 50 this year, and Hyundai Motor America turned 30 last year.)

As more buyers flock to smaller vehicles, the lineup has continued to grow. The sixth generation Elantra launched in 2015 as a 2016 model, with an Elantra Eco added that spring—with a smaller turbo engine and dual clutch transmission, much the same pattern as Sonata—and an Elantra Sport by year's end, with more aggressive body details, a bigger turbo, and choice of DCT or 7-speed manual. Last in that series was a five-door body variant for 2017 known as the Elantra GT.

Now joining the Elantra family is an all-new car, a US version of the heavily Euro-influenced global Hyundai i30 (a larger sibling to the i20 World Rally Championship car), joining the American lineup as the Elantra GT. Hyundai used an earlier i30 as the basis for an American model from 2007-2012, the Elantra Touring small wagon. A variety of other i30 variants are marketed worldwide. Since the prior generation, the Elantra sedan for the US market is

built at Hyundai's plant in Alabama; the new GT hatchback is built at their Ulsan, South Korea plant.

There is now a spike in popularity for the compact hatch—Hyundai identifies seven hot current competitors—which offers much of the desired utility of small SUVs and crossovers in a more nimble form factor. Hyundai Santa Fe and Tucson utilities are also experiencing double-digit growth, and Hyundai's new Elantra GT hits all these nails squarely on the head in one new vehicle.

The profile for a compact hatch buyer is higher in education, income, professional career and physical activities than that of compact car, entry crossover or subcompact utility buyers. It also skews a little younger and a bit more male. These buyers are also less interested in price or special deals (though still interested in value) and more interested in the fun-to-drive quotient.

Two flavors of this new hatch both carry the sporty Elantra GT name, with the Elantra GT Sport the sportier of the two. Both are highly featured (see specifications sidebar) and highly styled—penned by world renowned automotive designer Peter Schreyer—with LED lighting standard or optional, a new signature cascading grille design, functional air curtains in the front fascia, a rear spoiler, and available split dual outlet exhaust. The GT Sport ups wheel size from 17- to 18-inch, adds red stitching and red bezels in the interior, and includes several additional convenience, driver assist and comfort features, such as dual zone automatic climate control. Style and tech pack-

ages on the GT add desirable features such as a panoramic sunroof, Infinity premium audio and ventilated seats. A sport tech package for the GT Sport adds more driver assist features, Infinity audio and power seats.

Most fundamentally, the GT Sport moves from the base two-liter four to a 1.6L turbo, for about a 24 percent bump in horsepower and torque. Both are available with a six-speed manual transmission; the GT is also available with a six-speed automatic, while the GT Sport's alternative is a seven-speed dual clutch transmission. Brakes and suspension are also upgraded on the GT Sport, which adds independent multi-link and a 15mm stabilizer bar in the rear, sport-tuned dampers and steering, and higher spring rates front and rear.

Elantra GT's packaging creates a car with about two and a half more cubic feet of cargo volume behind the front seats than VW Golf, on a wheelbase just half an inch longer. Its interior volume ranges from about nine to over eleven cubic feet more than four other key competing cars and from about four to almost nineteen more cubic feet compared to five competing small crossovers.

Connected tech includes Hyundai BlueLink available via Apple/Android smartphone, wearables and smart speakers from Amazon and Google, allowing remote start for cooling or for defrosting windows and mirrors in winter.

A full range of driver assist technologies beats competitors and includes such advanced features as smart cruise with stop/start capability and a



suite of driver attention alerts which can catch you drifting or starting to lose your grip on the wheel.

We spent a day in San Diego County driving two versions of the new Elantra GT: the regular GT with six-speed automatic and the GT Sport with six-speed manual. Each brings something a little different to the party, each compelling—from economy, fit and features to power curves, weight and fuel mileage. Elantra GT was secondary to Hyundai Sonata in a two-day, two-vehicle launch event, but we fell for it in a big way. There's little question the GT Sport has the most compelling performance specs, as borne out on the road. Despite its added weight and power, the GT Sport with DCT even delivers the top fuel mileage of the four variants, at a cost \$4000 higher than the regular GT. ■



## SPECIFICATIONS GT GT SPORT

ENGINE	2.0L	1.6L turbo
HORSEPOWER	162 hp	201 hp
TORQUE	150 lb-ft	195 lb-ft
TRANSMISSIONS	6-spd man or 6-spd auto	6-spd man 7-spd DCT
DRIVETRAIN	FWD	FWD
WHEELS (ALLOY)	17x7	18x7.5
TIRES	225/45R17	225/40R18
WEIGHT (lb):		
6-spd manual	2901-2989	3014-3102
6-spd auto	2943-3040	
7-spd dual clutch		3067-3155
CAPACITIES: fuel	14.0 gal	14.0 gal
oil	4.0 liters	4.2 liters
coolant	2.1 liters	2.2 liters
MPG (city/hwy/comb):		
6-spd manual	23/31/26	22/29/25
6-spd auto	24/32/27	
7-spd dual clutch		26/32/28

**BRAKES:**  
 GT ...F: 11" vented, R: 10.3" solid (11.2" opt)  
 GT SPORT .....F: 12" vented, R: 11.2" solid  
**SUSPENSION: FRONT:** MacPherson strut w coils, hydraulic twin-tube shocks  
**REAR (GT):** Coupled torsion beam axle, gas hydraulic monotube shocks, coils  
**REAR (GT SPORT):** Multi-link independent, gas hydraulic monotube shocks, coils

**STEERING:**.....rack & pinion motor driven pwr  
**LENGTH / WHEELBASE** .....170.9 / 104.3 in  
**TURNING CIRCLE** .....34.78 ft  
**GROUND CLEARANCE** .....5.9 in  
**HEADROOM (F/R)** .....39.1 / 38.5 in  
**LEGROOM (F/R)** .....42.2 / 34.8 in  
**PASSENGER VOLUME** .....96.5 cu.ft  
**CARGO VOLUME** .....24.9 / 55.1 cu.ft

## TRIMS AND OPTIONS

### 2018 Hyundai Elantra GT

**BASE PRICE** .....manual \$19,350 / auto \$20,350  
**INCLUDES:** 4-wheel disc brakes, drive mode select (AT only), driver's knee airbag, driver's blind spot mirror, 17-in alloy wheels w 225/45R17 tires, LED daytime running lights, auto headlight control, wheel-mounted audio/cruise/Bluetooth, 60/40 split rear seat, two-stage rear cargo floor w/cover, 8-in display, AM-FM-HD-sat w 6 speakers, Android/iOS, rear camera.

**STYLE PACKAGE:** Blind spot detection, rear cross traffic alert, lane change assist, keyless entry/start, dual zone auto climate, auto defogger, power driver's seat w lumbar, heated front seats .....\$TBD

**TECH PACKAGE:** Full LED headlights, panoramic sunroof, electronic parking brake w auto hold, 8-in navigation system, Blue Link connected car system, Infinity 7-speaker plus subwoofer premium audio, ventilated seats .....\$TBD

### 2018 Hyundai Elantra GT Sport

**BASE PRICE** .....manual \$23,250 / auto \$24,350  
**INCLUDES:** Elantra GT features, plus: Blind spot detection w rear cross traffic alert, multi-link rear suspension, 18-in alloy wheels w 225/40R18 tires, full LED headlights, LED taillights, keyless entry/start, sport front seats, heated front seats, dual zone auto climate w auto defogger, electronic parking brake w auto hold, rear console air vent.

**SPORT TECH PACKAGE:** Smart cruise control w stop/start capability, auto emergency braking w pedestrian detection, 8-in navigation, Infinity premium audio, power driver's seat .....\$TBD

**PAINTS:** Ceramic White, Symphony Air Silver, Summit Gray, Scarlet Red Pearl, Electric Blue Metallic, Black Noir Pearl.

**INTERIORS:** GT: black or beige cloth or leather. GT SPORT: black leather w red accents.



# EVENTS: MONTEREY/PEBBLE BEACH

© Kimball Studios / PB Concours



## Pebble Beach Concours

• SUNDAY, AUGUST 20, 2017: **RESULTS**

Just having left a New Jersey restoration shop a week earlier, Bruce R McCaw's 1929 Mercedes-Benz S Barker Tourer captured the top prize at the 2017 Pebble Beach Concours d'Elegance. The sporting tourer has its original Marchal lighting equipment and chrome-plated wheels, complemented by low-cut doors and unusual torpedo-style running boards for tools and equipment. The rich blue color was inspired by a peacock feather dress from the 1850s. Also in the final circle was his brother John McCaw with a 1957 Ferrari 315 S Scaglietti Spyder. The 2018 Concours will be held on Sunday, August 26 (the fourth rather than the third Sunday, breaking from the norm).



## Bonhams 20th Monterey Sale

• FRIDAY, AUGUST 18, 2017: **RESULTS**

A single owner 1995 McLaren F1 supercar took center stage at Bonhams, held during The Quail, A Motorsports Gathering, in Carmel Valley. After a fevered run among four bidders to \$14 million, a calm battle continued between two remaining bidders. As a spectator shouted, "C'mon, just do it!" the sale closed at a new world auction record for the most valuable post-1970 automobile at \$15,620,000. A new world record was also set by a Team Cunningham Le Mans 1963 Jaguar E-Type Lightweight Competition Coupe at \$8 million, eclipsing a Bonhams record from Arizona in January. In total, Bonhams had an 80% sell-through rate for a total of \$56,430,000.



## Gooding & Co Pebble Beach

• SAT/SUN, AUGUST 19/20, 2017: **RESULTS**

Gooding & Company, the official auction house of the Pebble Beach Concours d'Elegance, realized more than \$91.5 million at Pebble Beach. The star on Friday was a 1970 Porsche 917K in Gulf livery, used in the film *Le Mans*, becoming the most valuable Porsche ever sold at auction, at \$14,080,000, breaking the previous Porsche record held by Gooding for the sale of a 1982 Porsche 956 at \$10,120,000 in 2015. Saturday's star was a 1966 Ferrari 275 GTB/C, considered the ultimate evolution of the single-cam Ferrari Berlinetta raced in Italy from 1966 to 1970 and one of only 12 GTB/Cs built, also setting a new world auction record price for the model, at \$14,520,000.



## Mecum Auctions Monterey

• WEDS-SAT, AUGUST 16-19, 2017: **RESULTS**

This year's Mecum Daytime Auction in Monterey, at the Hyatt Regency Monterey Hotel and Spa on Del Monte Golf Course, saw 328 vehicles sold for a total of \$34 million. Top sellers were three modern supercars, all at seven-figure prices. A 2014 Ferrari LaFerrari with just 565 original miles sold for \$3.45 million, followed by a one-of-150 2015 Bugatti Veyron Grand Sport Vitesse at \$2.35 million. Third was the auction's newest model, a 2017 Ferrari F12tdf at \$1.25 million. Motorcycles also garnered serious attention, with the oldest-known original-paint Indian, from the Giorgio Motorcycle Collection, selling for \$190,000. In all, 39 motorcycles sold for a total of \$1.54 million.



## RM Sotheby's Monterey

• FRI/SAT AUGUST 18/19, 2017: **RESULTS**

RM Sotheby's Monterey auction is one for the record books, selling the most important Aston Martin ever produced, on Friday night. Part of a group of stunning competition Aston Martins, the 1956 Aston Martin DBR1/1 brought \$22,550,000, a world record for any British automobile sold at auction. Numerous vehicles exceeded estimates, in total generating \$133 million in sales with an 88% sell-through rate. This was one of the most successful Monterey auctions for RM Sotheby's to date and the highest grossing auction of the week. RM Auto Restoration also took home multiple Best in Class wins at the Pebble Beach Concours d'Elegance and was runnerup for Best of Show.



## Russo and Steele Monterey

• THURS-SAT, AUGUST 17-19, 2017: **RESULTS**

Russo and Steele Collector Automobile Auctions announced early Monterey sales results of \$8.6 million and a record attendance increase. Top sale was a 1953 Ferrari 250 GT Europe at \$1,155,000, followed by a 2005 Porsche Carrera GT (\$671,000), 1969 Ford Mustang Boss 429 Fastback (\$355,000), 2008 Mercedes Benz McLaren SLR Silver Arrow (\$352,000), and a 2005 Ford GT (\$305,000). With a nearly 15% smaller docket, Russo and Steele says this represents an emphasis on sell-through and quality. "Our primary objective...was to adhere to a much more selective consignment process and as such offer the cars the market wanted at very appropriate reserves," says CEO Drew Alcazar.



## Acura

• ACURA ARX-05 PROTOTYPE RACE CAR

Acura Motorsports unveiled a new Acura ARX-05 (Acura Racing eXperimental, generation 5) prototype race car at The Quail, A Motorsports Gathering—the latest in a line of endurance prototypes dating to 1991. The new ARX-05 prototype has a race-proven AR35TT twin-turbo engine, based on the production 3.5L V6 in Acura MDX, RDX, TLX and RLX. Acura will join forces with Team Penske in the 2018 IMSA Championship.



## Audi

• NEW R8 SPYDER V10 PLUS, R8 V10 PLUS, RS 5

The Audi R8 Spyder V10 Plus made its US debut at Monterey. With 610 hp and 413 lb-ft of torque, it's the most powerful open-top Audi has ever built, yet rates approximately 23 mpg. Also shown were the Audi R8 Coupe V10 and Audi RS 5 Coupe. Audi Sport celebrated the brand's motorsports history at the Rolex Monterey Motorsports Reunion, displaying the Audi R8 LMS GT3 race car and legendary Audi Sport quattro S1 Pikes Peak champ



## BMW

• BMW CONCEPT Z4 AND CONCEPT 8 SERIES

BMW unveiled two concept vehicles during its annual Monterey Car Week press conference at the Lodge at Pebble Beach Concours d'Elegance Reviewing Stand. The first car unveiled was the BMW Concept 8 Series shown earlier at the Concorso d'Eleganza Villa d'Este in May. Next was the world premiere of the BMW Concept Z4. Both are previews of the series production cars set to be revealed over the course of next year.



## Lamborghini

• AD PERSONAM BESPOKE PROGRAM

Automobili had a global reveal at Monterey of a new collection of vehicles in special trim, a trio of special editions to showcase their Ad Personam bespoke program, which allows customers to choose from an infinite combination of colors and materials to create a truly unique car. The rare collection included the all-new flagship Aventador S the record-breaking Huracán Performante and the open-top Huracán RWD Spyder.



## McLaren

• ONE-OF-KIND MCLAREN 720S

The Bespoke division of McLaren 720S in time for Monterey, to the specification of entrepreneur/philanthropist Michael Fux. McLaren CEO Mike Flewitt presented the car to Mr Fux before its display on the Concept Lawn. The car stands out as custom with its color, Fux Fuchsia, created by Rolls-Royce and redeveloped by MSO; Mr Fux retains exclusive rights to its use on any other McLaren.



## Mercedes-Benz

• VISION MERCEDES-MAYBACH 6 CABRIOLET

Mercedes-Benz presented the Vision Mercedes-Maybach 6 Cabriolet at Pebble Beach, a car with sensual, emotionally appealing design and innovative concept technology, describing the ultimate luxury of the future. The almost 20-foot-long two-seater pays homage to automotive haute couture, reinterpreting classic hand-finished cabriolet design principles in an electric car with an output of 500 kW (750 hp) and range of over 200 miles.



## Rolls-Royce

• NEW ROLLS-ROYCE PHANTOM

An all-new Rolls-Royce Phantom made its North American debut at The Quail, only weeks after its global unveiling at Bonhams in London, a gala event with worldwide broadcast. The new 6.75L twin-turbo V12 Phantom has all-new aluminum "Architecture of Luxury" underpinning the lighter, stiffer, quieter and more technologically advanced car. "The Gallery" is a new dashboard concept showcasing individually commissioned art.



## Shelby American

• BIG BLOCK SHELBY COBRA DAYTONA COUPE

Shelby American will finish Carroll Shelby's "secret weapon" plan for the 1964 24 Hours of Le Mans, with a limited production of six 427 cu.in Shelby Cobra Daytona Coupes, built to Shelby's original specifications. The first (CSX2603) was shown at Monterey. Sometimes called "the car that never was," a lone big block Daytona prototype was built but never raced. Bob Bondurant was one of the development drivers for the car.



## Volkswagen

• I.D. BUZZ ELECTRIC MICROBUS

Volkswagen announced at Pebble Beach that the I.D. BUZZ concept car is being further developed toward launch as a production vehicle, to arrive at dealerships after the compact four-door I.D. model in 2022. Volkswagen is targeting North America, Europe and China with the I.D. BUZZ and I.D. family overall. I.D. Buzz is conceived to echo the classic spacious VW Microbus in an electric vehicle with Level 3 autonomous operation.

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**A WEEK WITH : 2017 KIA SORENTO SXL AWD**

**Variety pack**

by Joe Sage

Kia's exponential growth is rooted not just in product, but in value, and this SUV in the mid-upper 40s is no exception. In this top-trim SX-Luxury (or SXL) V6 AWD sample—with Nappa leather, dual-zone automatic climate (including family-coveted rear controls), 10-speaker surround sound, a full range of driver assist tech, advanced surround cameras, 290-horse V6 and 5,000-pound tow capacity—the Sorento SXL competes with alternatives that cost tens of thousands more. All from the brand that has topped the JD Power Initial Quality Study for the past two years running. That's value.

What's more, you have plenty of choices. There are 13 models—L, LX, EX, SX and SXL; three engines (a regularly aspirated 185-hp four, a 240-hp turbo four and our sample's 290-hp V6); and choice of FWD or AWD on all but the FWD-only L trim. Tow capacity is 5000 pounds on any with both V6 and AWD, 3500 on most others, 2000 pounds with the 185-hp

four. You can get into the Sorento for as little as \$25,600, for a FWD Sorento L; a midrange front-drive EX turbo is just \$31,700.

We took ours to Sedona, easily conquering the rapid altitude gain and necessarily opportunistic lane changes of the Interstate. Its stance provides near-sports-sedan handling. We rocked our return trip with the Infinity sound system, which is so potent we found the equalizer was happy right near neutral defaults. Around town, we'd get a good punch in sport mode, but with 290 hp on tap, we didn't always even think of that. We didn't take our Sorento four-wheeling—few would—but it's able to handle the best gravel road camping, fishing or byway sightseeing trips. On the Sorento's launch drive a couple of winters ago in the High Sierra west of Reno, it handled extreme snow and high wind conditions handsomely—all while getting 23 mpg highway (25 with FWD) on regular gas.

Ours had three-row, seven-passenger seating, as do a range of the higher trims. For 2018, the third row will also become standard on LX all-wheel-drive models. ■

**SPECIFICATIONS**

ENGINE	.....3.3L DOHC dual-CVVT GDI V6
DRIVETRAIN	.....full-time AWD, sport/eco modes
HP/TORQUE	.....290 hp / 252 lb-ft
TRANSMISSION	.....6-speed automatic
SUSPENSION	..F: indep MacPherson, coils, stblzr bar R: indep multilink, stblzr bar, dual flow dampers
STEERING	.....rack mounted motor driven
BRAKES	.....F: 12.6" vented / R: 12.0" solid discs
WHEELS/TIRES	.....19x7.5 / 235/55 R19
LENGTH/WB/GRND CLEAR	.....187.4 / 109.4 / 7.3 in
APPROACH/DEPARTURE	.....16.9 / 21.0 degrees
WEIGHT	.....4101-4343 lb
TURNING CIRCLE	.....37.3 ft
TOW CAPACITY	.....5000 lb
CARGO CAPACITY	.....11.3 / 38.0 / 73.0 cu.ft
FUEL / FUEL CAPACITY	.....87 oct regular / 18.8 gal
MPG	.....17/23/19 (city/hwy/comb)

**BASE PRICE** .....**\$45,700**

**INCLUDED:** Nappa leather, heated leather wheel, 10-way/8-way power front seats w memory, heated/cooled front seats, heated onboard 2nd row seats, wood grain/leather/satin chrome/piano black trim, keyless entry/start, dual zone auto climate w rear vents/controls, Infinity 10-sprkr surround sound, UVO 8-in nav, Android/Apple, Bluetooth, 4.2-in TFT LCD cluster display, backup & surround view monitor, autonomous emergency braking, blind spot detect, lane departure warning, rear cross traffic alert, rear park assist, panoramic sunroof, HID headlights, LED marker-fog-brake lights, heated power fold/signal mirrors, smart hands-free power liftgate and more.

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**DESTINATION CHARGE** .....895

**TOTAL** .....**\$46,990**



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## VEHICLE EVENT : 2017 CHEVROLET BOLT EV

### Spirited

And now on sale. by Joe Sage

**B**y the time you see this, you should be seeing the new Chevrolet Bolt EV on the road. Its rolling introduction—based on EV adoption history, market mindset, charging infrastructure and dealer certification—started in California and Oregon, adding Arizona this summer.

The extended-range Chevrolet Volt (with a V)—the first car to combine pure plug-in power with a gasoline engine—has sold over 130,000 since late 2010. Chevrolet was plug-in and EV sales leader in 2016, with a huge increase over 2105. Volt is the top conquest Chevy, bringing more new buyers to the brand than even Corvette or Suburban.

EV owners and non-EV owners asked Chevy for four things in a new EV: [1] long range (200 miles); [2] affordability; [3] room for kids, cargo and sports gear; and [4] a fun driving experience (eco-efficient not meaning dull and boring).

Chevy assigned Bolt EV several goals in 2016: delivery by year's end; over 200 miles of range; a cost of \$30,000 or less; and 80 MPGe. They delivered on all, with 238 miles of range; a base price of \$37,495 (\$29,995 after tax credit); 580 sold by the end of 2016 (and 8200 through June in just the first couple of states); and fuel economy equivalent (33.7 kWh of electricity equal to one gallon of gas) of 128 MPGe city, 110 highway, 119 combined. And all in a useful and fun—even exhilarating—package. For as little as \$29,995, you get single-occupant HOV lane access, and your power

utility may offer preferential energy usage rates.

A 60 kWh lithium-ion battery pack has 288 cells in five modules—four front to rear, a fifth stacked below rear seats. Each mates to the chassis at two points, for easy build and easy service. Chevrolet has yet to replace a single battery pack for charge degradation over the Volt's seven-year history. The Bolt EV battery packs and propulsion system are warranted for eight years and 100,000 miles.

Most power in an EV goes to propulsion, HVAC and battery conditioning. Bolt EV's new highly efficient battery conditioning system draws almost no power even in extreme temperatures. While Volt's liquid coolant is circulated around each cell group, Bolt EV has new cell chemistry that allows a simple pan design to regulate from the bottom up.

A 110-volt power cord gives four miles of range for each hour plugged in (enough for many people's daily commute). A 240-volt AeroVironment Level 2 32-amp charger sold by Chevy dealers (\$699) gives 25 miles of range per hour, a full recharge easily overnight. (Third party solutions exist, too, though the GM unit can be added to your loan or lease.) DC Fast Charging, a \$750 option, charges the Bolt EV to 90 miles of range in just 30 minutes.

Mated to the battery pack is a single 150-kW electric motor, about a third larger than anything else in the segment, with 200 hp and 260 lb-ft of torque. Step on the pedal for full torque immediately, with a 0-to-60 time of about 6.5 seconds and a very spirited drive throughout its power curve.

An electronic precision gaset has two modes: Drive, using familiar accelerator and brake pedals; and Low, with regenerative braking bringing the vehicle to a complete stop without using the brake

pedal. You can amplify regenerative braking in either mode with a regen-on-demand paddle.

High-strength steel and the absence of a shifter create a large interior with extra storage, while reducing weight, also offset by all-aluminum doors, hood and tailgate. The battery pack provides 28 percent of the car's torsional rigidity, while allowing for excellent ingress/egress, a high greenhouse and ample interior space. A 10.2-inch center screen uses Apple/Android for navigation, and an 8-inch driver cluster is completely reconfigurable. A standard rear camera is upgraded in Premier trim to 360-degree surround vision, as well as a rear camera mirror with vision adjustable from 20 to 80 percent, removing occupants or cargo from your view.

The base Bolt EV LT at \$37,495 (\$29,995 after tax credits) has only two options: DC Fast Charge and a flat cargo panel. Premier trim, \$4285 higher, adds 360-degree surround vision, rear camera mirror, heated rear seats, fancier wheels, body-keyed door handles, luggage rails and such. Totally optioned, you can hit \$43,905 (\$36,405 after credits).

When Chevy brings the Bolt EV to consumer ride'n'drives, it develops a line three times as long as Camaro. The only thing that rivals the Bolt EV for consumer enthusiasm is the Corvette.

We drove the new Chevy Bolt EV at its launch last winter (see March/April). Chevy also brought us both trims for a drive to Saguro Lake this summer, with wide open two-lanes and plenty of hills, twists and turns. Both times, we had a ball with its potent powertrain, planted chassis and electronic shift—especially that spirited one-pedal mode, which lets you power through hills and curves in a continuous arc of smooth power and release.

Few vehicles today make owners want to lift up the hood, show off to their friends and take them for a ride. The Chevy Bolt EV brings this back. ■

**MAJOR AWARDS:** Building on strong customer satisfaction metrics in recent years, current "real people, not actors" advertising highlights Chevrolet's status as the most awarded brand three years in a row. And Bolt EV is fast becoming the award-winningest, with more than 40 awards by the first half of the year, including: ▼ 2017 North American Car of the Year, praised for game-changing range and for making EVs more than a niche solution (the fourth NACTOY win for Chevrolet in four years, with Corvette Stingray and Silverado in 2014 and Chevy Colorado in 2015) ▼ *Motor Trend* 2017 Car of the Year ▼ 2017 *Car and Driver* 10Best Cars list ▼ *Green Car Journal* Green Car of the Year ▼ *Green Car Reports* Best New Car to Buy ▼ NWAPA Drive Revolution: Northwest Battery-Electric or Fuel Cell Vehicle of the Year



# masterstroke

by Joe Sage  
Volvo's premium wagon conquers a wide range of categories

If you were never a wagon person, this will change your mind. If you thought utility meant a compromise in performance, or that performance meant a compromise in utility, this will change your mind. If you never thought twice about Volvo in days gone by, this will change your mind. Even if you thought you could never live without a manual transmission, this may not change your mind, but the rest makes it worth the tradeoff. The new Volvo V90 Cross Country is a tour de force.

One minute, it reminds us of the luxurious new S90 sedan. The next, it reminds us of any premium SUV with 3500 pounds of tow capacity and more than eight inches (or nine with air suspension) of ground clearance, in fact beating many on both. It even reminds us a bit of the one-of-a-kind Dodge Magnum, one of the sexier multi-personality vehicles of the new millennium, built from 2005 to 2008 in a variety of forms including all-wheel-drive, R/T and SRT-8 models, showcasing the best of Detroit in an all-American form. And if the same thing were done by the Europeans? That just

might be the new Volvo V90 Cross Country. (The Volvo is closest to the Magnum R/T in horsepower.) Bonus: the Volvo's fuel mileage is about 30 percent higher. Bonus two: Magnum ceased production almost a decade ago, and while used ones are still a cult favorite, you can buy a brand new, fully warrantied Volvo V90 CC today.

In the finest traditions of Scandinavian design, Volvo has rethought even the most familiar details. A clean sheet approach to the car's touchscreen interface brings features and services that quickly become intuitive and often prove more extensive and useful than average. You start the car with a prominent burly and beautiful knob on the console—an approach that will never be confused with some other button while you're driving (although its chrome bezel is hot as Hades on an Arizona summer day).

We had been highly impressed with the vehicle at launch. Our additional week confirmed this and then some. Factor number one is the both supercharged and turbocharged 2.0-liter powerplant, as found on the equally impressive and endlessly award-winning XC90 and S90, pumping out 316 hp

while getting 30 mpg. Next is the interior space, with cargo capacity rivaling utilities and over six flat feet, enough to work as your lodging on an off-road excursion. Add to that the Volvo's carlike center of gravity and stance, which make it a champ in daily driving—including the aggressive kind. Top it off with instant traction all-wheel drive (plus that ground clearance and towing power), and this is hard to top in the familiar realm of vehicles perfect for both the country club and the great outdoors.

Volvo's research shows that their typical user will gain great benefit from sedan-level roof access for skis, kayaks, cargo boxes, surfboards and bikes, with interior cargo volume rivaling an SUV.

A skim of the specifications tells the rest—the car comes remarkably thoroughly equipped at the premium level in the mid-50s. We are sticklers for excellent audio at a reasonable price (or included), and we have no quibbles with \$3200 for the stand-out Bowers & Wilkins system. We hit some challenging roads in the V90 CC without using the air suspension, but would still buy it, just in case.

We recall one of the national car magazines, about 25 years ago, declaring a certain German all-wheel-drive performance sedan (a rarity then) to be "the best car to drive from Tierra del Fuego to Prudhoe Bay." The Volvo V90 Cross Country could surely take that crown today. ■



## SPECIFICATIONS

ENGINE	2.0L supercharged+turbo 4-cyl
TRANS / DRIVE	8-spd auto / instant traction AWD
HP/TORQUE	316 hp / 295 lb-ft
0-TO-60 MPH / TOP SPEED	6.0 sec / 140 mph
SUSPENSION	dbl wishbone front/rear integral axle
STEERING	rack & pinion elec power assist
WHEELS	19-in alloys /opt 20-in diamond-cut
TIRES	model-specific all-season tires
LENGTH / WHEELBASE	194.4 in / 115.8 in
GROUND CLEARANCE	8.3 in (w opt air susp 9.1 in
LEGROOM	42.2 / 35.9 in
CARGO VOLUME	53.9 cu.ft
WEIGHT / TOW CAPACITY	4221 lb / 3500 lb
FUEL CAPACITY / FUEL	15.9 gal / 91+ octane
MPG	22/30/25 (city/hwy/comb)
<b>BASE PRICE</b>	<b>\$55,300</b>
<b>INCLUDES:</b>	panoramic moonroof/power sunshade, 19" diamond-cut wheels, dual tailpipes, active bending LED headlights, auto high beam, Thor's hammer DRL, LED fogs w corner illumination, LED taillights/side markers, high-pressure headlight washers, front grille w gloss black bars, matt black inserts, chrome frame, silver lower skid plate, tinted windows rear/

cargo, lighted door handles, leather seats, 10-way power front seats w 4-way power lumbar and memory, heated front seats/wheel, dark walnut inlays, Sensus nav w 9" touchscreen (6-mo subscrip), 12.3" driver display (binnacle), drive modes, 330w 10-sprk audio, USB/AUX, SiriusXM (6 mos), Apple/Android, clean zone air system, illuminated aluminum sill plates, auto-dim mirror, keyless entry/start, leather remote key, hands free power tailgate, semi-automatic load cover, rear camera, rear park assist, power-fold rear headrests, 12v power & load strap in cargo area, temp spare w jack, aluminum cargo scuff plate, Volvo On-Call (remote lock/unlock, 6 months send-to-car & vehicle tracking, semi-autonomous pilot assist w/adaptive cruise, collision avoidance w low & high speed mitigation, pedestrian-cyclist-large animal detection, run-off road mitigation & run-off road protection, lane departure warning, road sign info, driver alert, blind spot info, cross traffic alert....incl	
<b>METALLIC PAINT</b>	595
<b>CONVENIENCE PACKAGE:</b> 360° surround camera, HomeLink, mirror compass, park assist, luxe interior lighting, heated washer nozzles, grocery bag holder	1950
<b>BOWERS &amp; WILKINS PREMIUM AUDIO</b>	3200
<b>GRAPHICAL HEADS-UP DISPLAY</b>	900
<b>CHILD SEAT OUTER</b>	500
<b>PREMIUM REAR AIR SUSPENSION</b>	1200
<b>DESTINATION CHARGE:</b>	995
<b>TOTAL</b>	<b>\$64,640</b>

## CASTLE HOT SPRINGS ROAD

We repeated a significant part of our route from the Volvo V90 Cross Country launch event a few months back. N. Castle Hot Springs Road heads north from Highway 74 past the west end of Lake Pleasant. Paved at first, it passes access points to various boat ramps, picnic sites and trailheads; at the right turn to Four Lane Boat Ramp, turn left to continue on Castle Hot Springs Road. The road soon turns to gravel. It's a rough road, even the smooth parts, subject to complete washout after a rain—unless you are in an off-road vehicle or, as we were, in the Volvo V90 Cross Country. In that case, you can just splash on through the worst of it. A neatly spaced row of palm trees marks historic Castle Hot Springs Resort, which is in its latest ongoing process of rebirth. If you take the road its full length, you emerge on Highway 74 almost at US 60 about 10 miles south of Wickenburg, a chance to grab lunch in that hospitable town. ■



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## A WEEK WITH : 2017 SUBARU IMPREZA 2.0i PREMIUM 5-DOOR

### Foundation

BY JOE SAGE

Subaru Impreza is at the heart of a complex ecosystem. Its platform is the foundation of the Impreza lineup itself, as well as the turbo-charged WRX and high-steroid WRX STI, high-bodied Forester and raised-chassis Crosstrek.

The WRX STI hot sedan gets a lot of buzz, with its rally wins around the world, but for a wider audience, there's the basic Impreza, in and of itself a complete family of 12 vehicles—one model as extensive as some brands' entire lineups.

The fifth-generation Impreza, new for 2017, uses a new global platform soon to spread across other models. Four trim levels have CVT, two also offering a 5-speed manual—that's six models—times two, as each is available as a sedan or five-door (for \$500 more). The base model is \$18,395. This five-door Premium is the second-up-the-scale trim. Above that are Sport and then Limited. Premium and Limited are CVT-only, leaving manual fans with the base model or third-up-the-chain Sport.

Packages are kept simple—from none to three per trim, depending what's already added at each level. Our sample with top package, still with man-

ual cloth seats and without keyless entry/start, is within \$505 of a top-trim Limited, which at \$24,095 can still be optioned up with moonroof, driver assist tech and Harman Kardon audio (\$3845 more gets you everything). You trade off some fuel mileage as features increase, but all are close: mid-to-upper 30s highway. This model-feature-price overlap may make your decision hard or very easy, depending.

Our sample's 6.5-inch touchscreen was effective, and though our gut says we'd want the Harman Kardon audio, the standard unit was better than expected, with clean, clear bass. We regretted lack of keyless entry/start. For \$1600, you can move from Premium to Sport, CVT-for-CVT, or for \$800, you can move to Sport with a 5-speed stick, a win-win for manual lovers. That's the end of the line for hand-shifters: top Limited trim is CVT-only.

Performance was strong for its horses and CVT, with faux shift points well implemented for confidence. Freeway lane grabs. The car has a refreshing purity: steering is tight and responsive.

The Impreza's new global platform will be applied next to Crosstrek, WRX, WRX STI and Forester. Legacy and Outback will adapt it in a couple of years. Joining Legacy and Crosstrek, the new Impreza is now built at Subaru's Indiana plant. ■

### SPECIFICATIONS

ENGINE	.....2.0L Boxer hzntly-opposed alum 4-cylinder
DRIVETRAIN	.....AWD
HP/TORQUE	.....152 hp / 145 lb-ft
TRANSMISSION	.....Lineartronic CVT w 7-spd manual mode
SUSPENSION	.....4-wheel indep, Stablex dampers, anti-dive front & anti-lift rear geometry, F: MacPherson-type, lower L-arms, coils, stblzr bar, R: dbl wishbone, pillow ball-joint mnt, coils, stblzr bar
STEERING	.....quick-ratio elec assist rack & pinion
BRAKES	.....F: 10.9 2-piston vented / R: 10.8 solid discs
WHEELS/TIRES	.....16x6.5 alum alloy / 205/55R16 89V AS
LENGTH/WB/GRND CLEAR	.....175.6" / 105.1" / 5.1"
LEGROOM	.....(F/R) 43.1" / 36.5"
CARGO CAPACITY	.....20.8 / 55.3 cu.ft
TURNING CIRCLE	.....35.4 ft
WEIGHT	.....3135 lb
FUEL CAPACITY	.....13.2 gal
MPG	.....28/37/31 (city/hwy/comb)

**BASE PRICE** ..... **\$21,695**

**INCLUDES:** STARLINK 6.5" multimedia system w 6.5" multi-touch high-res display, 6 speakers, AM/FM, Apple/Android, Aha™, Pandora®, Bluetooth® hands-free phone, audio streaming; high grade multi-function display; all-weather package incl 2-stage heated front seats, heated mirrors, wiper de-icer, body-color folding mirrors, lighted power windows switches, keyless entry, roof rails, sound insulated windshield.....incl

**CODE 15 PACKAGE:** EyeSight® driver assist tech incl adaptive cruise control, automatic pre-collision braking, lane departure & sway warning, lane keep assist; also incl blind spot detection w lane change assist & rear cross traffic alert; plus steering responsive fog lights; plus power moonroof.....2395

**DESTINATION CHARGE** .....820

**TOTAL** ..... **\$24,910**



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### A WEEK WITH : 2017 MAZDA CX-5 GRAND TOURING AWD

## Winning formula

by Joe Sage

The first Mazda CX-5 arrived in 2012 as a 2013 model but seems as though it has been with us forever, which is part of its charm—it was born in a fairly traditional two-box sport utility format, just as some others were evolving to more carlike forms. Folks love SUVs, and compact utilities have become the best-selling segment, so the CX-5 formula has led to a million sales in the second-fastest time ever for Mazda (Mazda3 holds the record).

The second-gen CX-5's valuable brand equity is kept intact. Its established big grille styling is blended with slim LED headlights, giving these larger and smaller features a unified look, emphasized by wings from the grille's chrome lower bar extending below the headlights, for an overall clamshell effect between hood and front fascia.

Dig deeper, and you will find much new in the second generation. Dimensions are about the same, although the new CX-5 rides about an inch lower to the ground. Body and chassis are significantly reengineered, tech features are extensive

(see specs), and the 2.5L engine is now used on all trims. Fuel economy is close to identical to the prior model across trims and drivetrains, and tow capacity remains 2000 pounds.

The CX-5's long hood suggests the power that lies beneath, as on the CX-9 (though Mazda SKY-ACTIV engines and transmissions bear the compact precision of a Swiss watch). We found 187 horses plenty to move this all-wheel driver at a swift and potent pace, with quick and smooth acceleration through freeway changes and mountain curves, all the moreso with sport mode engaged.

Ours was the top trim Grand Touring with the top AWD drivetrain, bearing a beautiful black and parchment leather interior, touchscreen interface, dual-zone auto climate, 10-speaker Bose audio and more—yet still stickers at a base just a hair above \$30 grand. (The base Sport model in FWD starts at \$24,045.) Our tester's add-ons are useful but not essential—yet even maxed out like this, the price is still quite competitive.

The buzz in the industry is that Mazda intends to broaden their market share by easing the brand image into premium territory. It's actually pretty much there now, so this might just mean it's a great time to buy one at these prices. ■

### SPECIFICATIONS

ENGINE	2.5L 4-cylinder SKYACTIV-G
DRIVETRAIN	AWD (FWD available)
HP/TORQUE	187 hp / 185 lb-ft
TRANSMISSION	SKYACTIV 6-spd auto w sport mode
SUSPENSION	F: indep, MacPherson strut, coil, stblzr R: indep, multi-link coil and stabilizer bar
STEERING	elec power assist
BRAKES	F: 11.7 vented / R: 11.9 solid discs
WHEELS/TIRES	(Grand Touring) 19x7J / P225/55R19
LENGTH/WB/GRND CLEAR	179.1" / 106.2" / 7.6"
TURNING CIRCLE	36.0 ft
WEIGHT	3655 lb
LUGGAGE CAPACITY	30.9 / 59.6 cu.ft.
FUEL CAPACITY	15.3 gal
MPG	23/29/26 (city/hwy/comb)

**BASE PRICE** ..... \$30,695

**INCLUDES:** Rain-sense wipers, intermittent rear wiper, heated pwr mirrors w signals, LED auto headlamps, LED fogs and DRLs, rear roof spoiler, 19-in alloy wheels, power locks, power windows (driver one-touch), leather-trimmed upholstery, 8-way power driver's seat (6-way passenger manual standard), radar cruise control, electronic parking brake, keyless entry/start, dual zone auto climate w rear vents, Bose 10-speaker audio, 7-in touchscreen display, heated front seats and more.....incl

**CARGO MAT** .....70

**MACHINE GRAY PAINT** .....300

**RETRACTABLE CARGO COVER** .....250

**PREMIUM PACKAGE:** Driver seat 2-position memory, 6-way pwr front passenger seat, heated steering wheel, heated rear seats, active driving display, windshield wiper deicer.....1830

**DESTINATION CHARGE** .....940

**TOTAL** ..... \$34,085



- The 2017 Mazda CX-5 has earned an IIHS Top Safety Pick+ designation, the highest rating. CX-5 has been named a Top Safety Pick every year since its debut in 2012.
- *Digital Trends* named the 2017 Mazda CX-5 SUV of the Year, saying pricier brands meet expectations, while CX-5 beats them in fun, style, and character at its price point.





Jack Roush with his new Ford GT

▼ Motorsports magnate and 2017 Automotive Hall of Fame inductee **Jack Roush** recently took delivery of his 2017 **Ford GT**—one of just 500 customers selected from over 7000 applicants to purchase the first run of Ford's latest flagship supercar. Ford considered Roush's association with the company, media following, and standing as an ambassador for the brand within the car community. His longtime relationship with both Ford Motor Company and Ford Performance began in 1964 when he started as a Ford engine development engineer. He later formed a drag racing team, winning championships in NHRA, IHRA and AHRA Pro Stock drag racing from 1970-75, and in 1984 developed cars for Ford for SCCA Trans-Am and IMSA Camel GT racing series. Roush's cars won the Trans-Am manufacturer's championship for Lincoln-Mercury in 1985 and an unprecedented 119 races and 24 national championships between the two series. Established in 1988, the Roush-Fenway Racing NASCAR team has claimed two NASCAR Cup championships, four NASCAR Nationwide championships and one NASCAR Truck Series title, racing Ford-powered cars. Roush also has a history of making fast Mustangs under the Roush Performance brand and serves as a prototyping, testing and engineering services supplier to Ford. Roush's 2017 GT is serial number 15, matching that of his 2005 Ford GT, has standard 647-hp 3.5L EcoBoost V6, 7-speed dual-clutch automatic, hydraulically-actuated adjustable

suspension and active aerodynamics, and is finished in Liquid Grey with Ingot Silver racing stripes and matte-black carbon fiber wheels. Others receiving one of the first 500 new Ford GTs include Jay Leno and three-time Indy 500 winner Dario Franchitti. Only 1000 total will be built and sold through 2019.

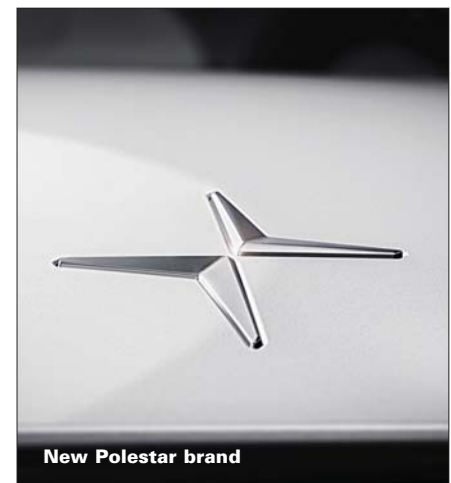
▼ Rapidly expanding **KeyMe** now allows you to copy your specialized car key fob at



a kiosk and have the extra fob sent directly to your home. Hundreds of makes and models supported include premium and luxury brands. KeyMe key fobs start at \$69.99, half the cost or less of a typical dealer replacement. Visit a KeyMe kiosk, select the fob option on the screen, enter your car's make, model and year, and place your current fob against the key slot, allowing secure transponder ID transfer.

KeyMe will code a new transponder, cut a new blade and ship it to you via priority mail with a tracking code. With more than 50 new locations per week, KeyMe promises over 2,000 locations by the end of the year. The kiosks can currently be found in several metro Phoenix and Tucson locations. Partners include 7-Eleven, Albertsons, Bed, Bath & Beyond, Kmart/Sears, and Rite Aid. The system saves a digital record of your key, so you can easily order another. For simple house keys cut in the kiosk, you can recover another copy with your fingerprint. KeyMe advanced robotics and artificial intelligence technologies also claim more accurate copies than traditional duplication. A full list of locations can be found at [www.key.me/kiosks](http://www.key.me/kiosks).

▼ **Volvo Cars** is turning **Polestar**, its performance vehicle arm, into a separately-branded global high performance electrified car company. Thomas Ingenlath, senior design VP behind Volvo's recent award-winning design renaissance, will become CEO at Polestar, joined by Volvo Cars senior communications VP Jonathan



Goodman, who will become Polestar COO. Volvo Cars acquired 100 percent of Polestar Performance in July 2015, after working together in motorsports since 1996. Future Polestar cars will no longer carry a Volvo logo. Polestar will benefit from technological synergies and economies of scale with Volvo Cars and will also make packages for Volvo vehicles under a Polestar Engineered brand.

▼ **BMW** has begun a teaser campaign for an i8 Roadster to come in 2018, bringing the alt-power "i" family to three (with the original i8 and the little i3). Early hints



BMW i8 Roadster

show scissor doors remaining despite the change in roof. They also seem to hint that the roof is a retractable hardtop, which is in line with other recent BMW convertibles, or possibly a removable panel. You can follow things on Facebook, Twitter and Instagram at BMW and BMWi.

▼ Inspired by her work as an art quilter, **Dawn Allen** creates digital art that looks like fabric collage—but isn't. Cars and trucks, mostly from the 1950s and '60s, are one of her specialties. She loves shiny things (cars included), so she prints her art on metallic paper and metal. And "not to confuse you, but," she sometimes prints her art on fabric and stitches over the top of it, creating one-of-a-kind textile art. You can choose from reproductions of existing works in a variety of sizes and on a variety of substrates, starting as low as \$40, or you can commission a work of your own car or truck, starting at \$228. For detailed information, visit [www.dawnallen.net](http://www.dawnallen.net).



Dawn Allen classic car art

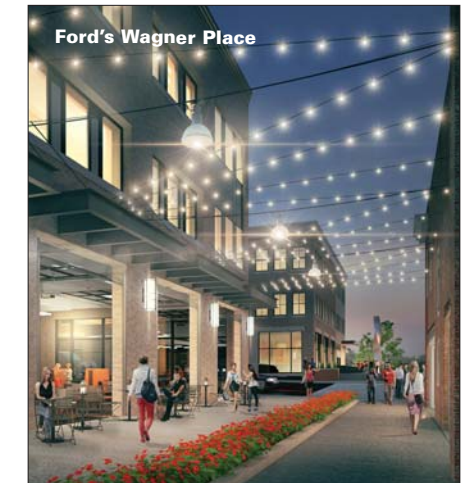
▼ The **Atlanta Concours** has entered a multi-year partnership with Georgia-based VehicleDNA, an engine and transmission testing company that provides a complete analysis of engine and transmission fluids, to inform collector car owners of the cur-

rent health of their vehicle. All cars registered for the event can receive a free fluid analysis throughout the weekend, with a detailed assessment of components' condition and recommendations for address-

ing problems within 48-72 hours. In just its second year, the Atlanta Concours wants to differentiate itself on the concours circuit, and as the event's founders have extensive high tech backgrounds, they think integrate knowledge-based expertise can affect the entire hobby. VehicleDNA evaluates about 20 parameters related to lubricant properties, from viscosity and acid number to oxidation, as well as contaminants including water, glycol and silicon,

along with elements such as iron, copper, aluminum and lead, to large metal wear particles that indicate a component is failing. Results from the show will be used to build a database useful to all classic car collectors. The military and industry have long relied on large commercial labs for oil analysis, which may take several days. VehicleDNA provides laboratory-quality results on-site in about 10 minutes.

▼ A transformation of the **Ford** Dearborn, Michigan campus is expanding to West Dearborn, with the groundbreaking of Wagner Place, a unique urban develop-



Ford's Wagner Place

ment featuring office and retail space. The \$60 million investment ushers in a new era for West Dearborn that will provide Ford employees and residents with new retail and restaurant options, complemented by generous amounts of green space, outdoor seating and enhanced walkability. Ford is transforming about two blocks of largely vacant buildings into this mixed-use urban space. The 150,000-square-foot development will be LEED-certified and resource-efficient with water and energy conservation features. Wagner Place will have first-floor retail and restaurants, two floors of work space and a rooftop patio. About 600 Ford global data insights and analytics (GDIA) employees will occupy Wagner Place. As the company transforms to an auto and mobility company, the growing GDIA team is working to transform the customer experience, enabling new mobility products and services and helping Ford operate more efficiently. The new development is within walking distance of Ford's product development campus. It is part of the 10-year transformation of the company's more than 60-year-old Dearborn facilities, which will collocate 30,000 employees from 70 buildings today into primarily two sites: a product campus and a world headquarters campus. Wagner Place is scheduled for completion in mid-2018. ■

# UPCOMING FEATURES

Valerie Thompson Bonneville Salt Flats record attempt



Range Rover Sport HSE Td6 diesel



Bogi's all-female '57 Chevy Montage show truck build



Honda Civic Si



Texas Truck Rodeo competition and awards



Active Lifestyle of the Year competition and awards



Arizona to Pacific Northwest RV tour



Polaris Slingshot drive



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### RETAIL PRICING:

COMPLETE BLACK KIT \$7895  
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### RETAIL PRICING:

COMPLETE BLACK KIT \$8495  
 COMPLETE BLACK & POLISH KIT \$8595  
 COMPLETE FULL POLISH KIT \$8795

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