



DATSUN 240Z VS NISSAN 370Z



ROAD & TRACK

SEPTEMBER 2010

OUR KIND OF **Rapid** **Transit!**

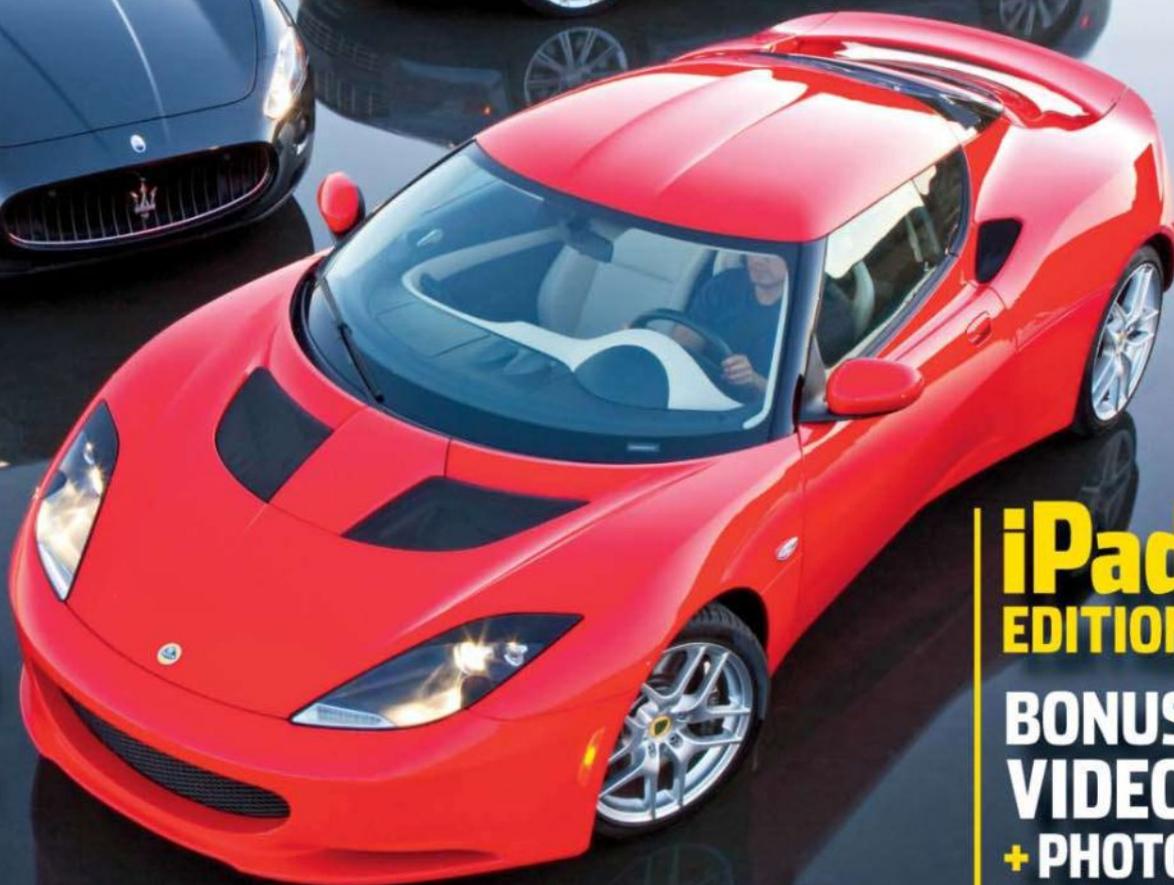
Aston Martin Rapide
FIRST ROAD TEST



**Maserati
GranTurismo**
SEXY & SUBLIME



Lotus Evora
BETTER THAN
PORSCHE CAYMAN S?



**iPad
EDITION**

**BONUS
VIDEO
+ PHOTO
GALLERIES**

NOT SATISFIED

SOMEWHAT SATISFIED



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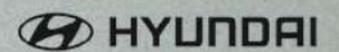
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EX model shown with accessory wheels. © 2010 American Honda Motor Co., Inc.

09.10
CONTENTS

ROAD TESTS

- 42 ASTON MARTIN RAPIDE**
If there's a sportier, sexier 4-seater in the automotive realm, we've yet to see it—By **Mike Monticello**
- 48 LOTUS EVORA vs PORSCHE CAYMAN S**
Mid-mounted 6-cylinders at 50 paces—they square off on back roads and the track—By **Jonathan Elfalan**
- 90 ROAD TEST UPDATE**
● **CALLAWAY CORVETTE SC606**
Reeves is up to his old tricks...making fast, highly desirable forced-induction Vettes—By **Calvin Kim**

FIRST DRIVES

- 34 CADILLAC CTS COUPE**
Seems like a fair trade to us: Lose two doors, gain even more Art and Science attitude—By **Douglas Kott**
- 36 VOLVO S60**
Can this Volvo come to the company's emotional rescue? (Apologies to Mick Jagger)—By **Patrick Hong**
- 38 SAAB 9-5**
After its 11th-hour reprieve, Saab's back with a freshened 9-5. Is it fresh enough?—By **Ian Adcock**

FEATURES

- 56 MASERATI GRANTURISMO CONVERTIBLE**
Thanks to our old Italian friend, Al Fresco, this Maserati is more appealing than ever—By **Shaun Bailey**
- 60 BRE NISSAN 370Z & DATSUN 240Z**
A time-travel evaluation of an exacting BRE 240Z replica and its modern equivalent—By **Andrew Bornhop**
- 71 EVORA ESCAPEDE**
A look back at Colin Chapman's (and Lotus') early days, with the latest Lotus as context—By **Ian Adcock**
- 79 LONG-TERM WRAPUP: NISSAN 370Z**
Highly entertaining, quick, sure-footed, but not without its rough edges—By **Jonathan Elfalan**

COMPETITION

- 98 LES 24 HEURES DU MANS**
Celebrating a British invasion not involving Supermarine Spitfires or The Beatles—By **Barry Hathaway**

TECHNICAL

- 84 EVENT DATA RECORDERS**
What are they? Which automakers fit them? And are these devices friend or foe?—By **Dennis Simanaitis**

COLUMNS

- 13 THE ROAD AHEAD**—By **Matt DeLorenzo**
OUR KIND OF RAPID TRANSIT: Passion rekindled: our continuing, evolving love affair with the automobile
- 16 AMPERSAND**—Edited by **Mike Monticello**
SALEEN'S SMS CHALLENGER: High marks for outrageous style, but only a passing grade for performance
- 28 SIDE GLANCES**—By **Peter Egan**
SIX AND THE SINGLE GIRL: Broaching the subject of so-called "chick cars," with utmost sensitivity
- 96 TRACKSIDE**
CORVETTES AT LE MANS: In 1960 and today, Corvette drivers shared the common denominator of courage
- 104 THE PODIUM**—By **Simona de Silvestro**
OPPORTUNITY KNOCKS IN AMERICA: From go-karts to IndyCar's grand stage
- 108 TECH TIDBITS**—By **Dennis Simanaitis**
REAR-ENGINE MERCEDES SPORTS CAR!: Driving intriguing *Heckwagens* from Stuttgart
- 114 COUNTERSTEER**—By **Sam Mitani**
AUDIO EQUIPMENT AND AUTOMOBILES: Parallels between high-end audio and high-speed race cars

COVER STORY:
**Rapid
Transit**

You can get there from here with high style, extravagant luxury and scintillating performance in our varied group of automotive icons this month: the Aston Martin Rapide, the Maserati Gran-Turismo Convertible and our comparison test duo, the Lotus Evora and Porsche Cayman S. The thrills start on **p. 42**

DEPARTMENTS

- 8 FOCAL POINT**
14 REVVED-UP
32 YOUR TURN
110 TECH CORRESPONDENCE
112 ROAD TEST SUMMARY
116 THE FINISH LINE
128 PS

What Matters to You?

Weath

Today, America needs fresh leadership to lead us as a nation out of this economic crisis. Leadership must come not only from our political leaders but also from the average citizen. The exporting of American jobs is a trend that must be stopped and reversed. When I walk into my local hardware store, I typically find 85% of the goods for sale are manufactured 7,000 miles away. Recognizable American brands have been forced by shortsighted management and buyers at large national chains to build factories overseas just to save a lousy \$.50 on a tape measure. To these ruthless buyers, it is all about the money. Rarely are product quality, the political system, human rights, animal rights and environmental costs to the planet considered, not to mention the cost to our society of exporting not only jobs, but an entire factory!

At MacNeil Automotive, we are doing our part for the American economy and for our 300 million fellow citizens and neighbors. My philosophy is that if my neighbor doesn't have a job, sooner or later I won't have a job either. For example, we used to have our All-Weather Floor Mats manufactured in England by a company that used antiquated, inefficient equipment. They made a decent floor mat for us, but we thought we could build a better floor mat for our customers using modern American technology, American raw materials and skilled American workers. So in 2007 we transferred all of our floor mat manufacturing back to the United States. Today, we build the best fitting, highest quality automotive floor mats in the world, right here in America.

Our machine shop is equipped with 17 CNC machining centers including four 4 axis mills and one 5 axis mill that produce between 30 to 50 injection and thermoforming molds per month. We have one shift of highly skilled American Journeymen toolmakers and apprentices, but our machines run 24 hours a day, 7 days a week. There is not a more efficient tool and mold making operation in the world - and guess what, it's right here in America.

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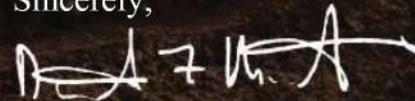
Furthermore, all of our CNC mills are manufactured in Oxnard, CA by Haas. Our 1,000 ton injection molding machines are made in Bolton, Ontario of American and Canadian components. Our thermoforming machinery is made in Carol Stream, IL. The raw steel and aluminum billets which make up our tooling are sourced from American steel and aluminum mills such as Vista Metals in Fontana, CA. The raw materials that make up our All-Weather Floor Mats, FloorLiners, Cargo Liners and Mud Flaps are manufactured in Bellevue OH, Arlington TX, Wichita KS and Jasper TN. Our forklifts are made in Columbus IN and Greene NY. Our warehouse racking is manufactured in Tatamy PA.

At MacNeil Automotive, we are also very aware of sustainability and our responsibility to the environment. We are proactive in controlling waste and recycling all of the unused raw materials from the manufacture of our tooling and products including: aluminum, steel, rubber, TPO, TPE, paper and cardboard.

As you can see, we are as dedicated to designing, developing and manufacturing the finest automotive accessories for our consumer and OEM clients as we are passionate about supporting the American economy, preserving the American industrial infrastructure, and keeping the “money” in our family, a family of 300 million people from all over America.

Life is simple; be good to your fellow man, be kind to animals and the environment, and place building a quality product, supporting your country and your fellow American worker before profit. And, one last thing - let's all do our best to balance family time with work time as our children are the future of America.

Sincerely,



David MacNeil
Founder/CEO

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CATCHING AIR

We love watching NASCAR stockers on road courses. Here, Carl Edwards—who the day before passed Jacques Villeneuve to win the Nationwide race at Road America—drives his Fusion for all its worth at Infineon. Incredible front roll stiffness? Or did he bounce it off the curbing, Sears Point style?

PHOTO BY BRIAN CZOBAT/LAT

Nikon D3 1/1250s at f/8.0.
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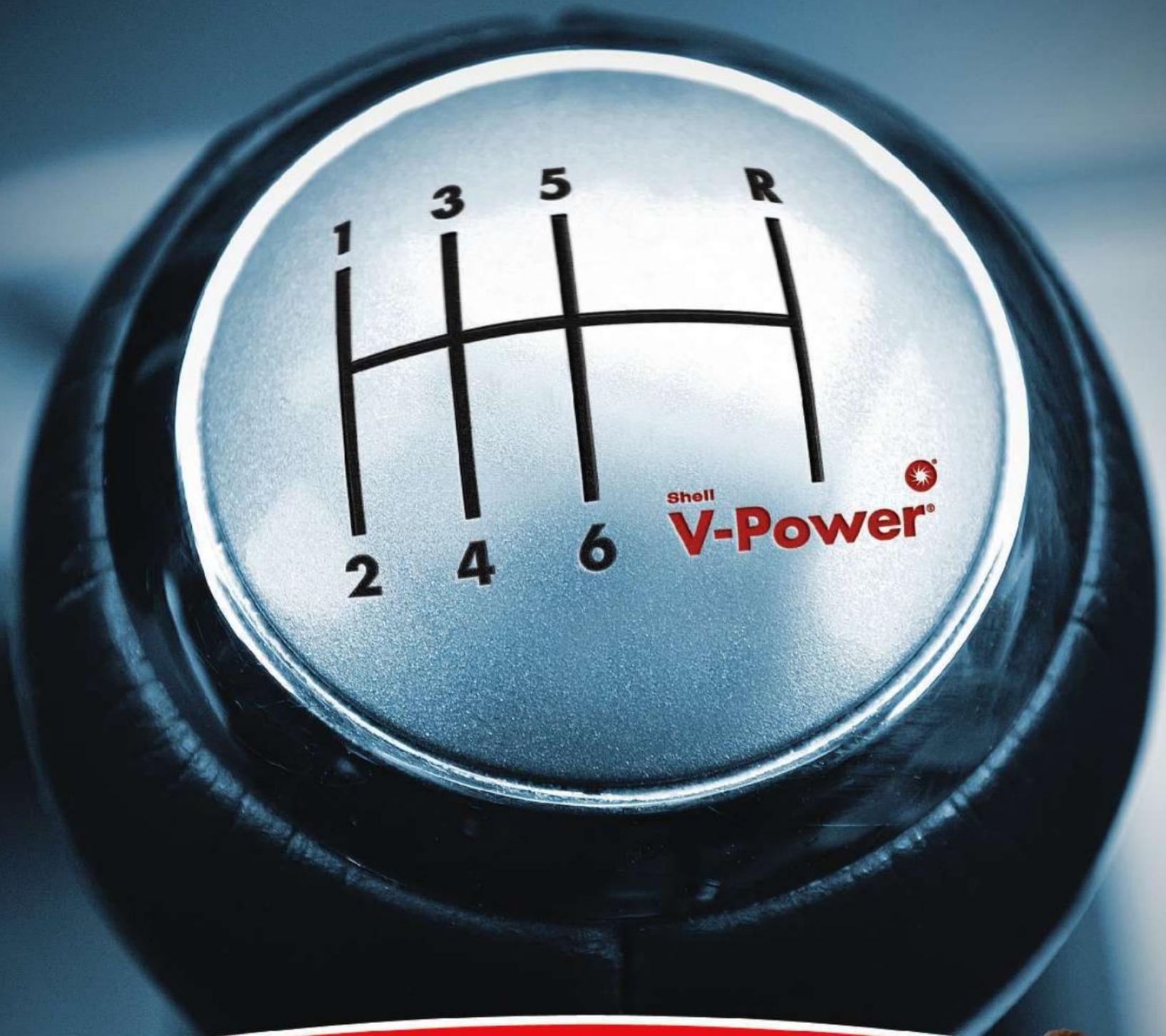


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Where do you look when searching for an invisible solution?



It's the kind of challenge Shuji Suzuki thrives on. As an aerospace engineering student, he was first inspired by manipulating air to keep planes in the sky. Now an accomplished Infiniti engineer, he gets to push the boundaries of his expertise in the opposite direction. Helping to keep the all-new Infiniti QX better connected to the road.

But achieving zero-lift aerodynamics for a full-size luxury SUV would be no small feat. This is where Mr. Suzuki's unique skill set would help him arrive at an equally unique solution.

"The difference is in what we are seeking," he stated. Noting that many automakers either achieve a balance between front and rear lift, but their lift values are too high. Or focus on drag, at the expense of lift. Instead, he took a more comprehensive approach. Balancing zero lift throughout the entire vehicle. While also reducing drag. All to deliver a distinct level of performance you've come to expect from every Infiniti vehicle.

Creating zero front lift meant overcoming the high clearance typical of a vehicle this size. So he relied upon his aeronautic expertise to optimize airflow as it traveled from the front of the vehicle to the rear. This led to a modified grille opening with an air guide to minimize lift. The front bumper, tire deflectors and underbody spoiler were also carefully refined.

To create equally low rear lift, Mr. Suzuki spent countless hours inside Infiniti's full-scale wind tunnel investigating the design of the liftgate spoiler. He meticulously fine-tuned the camber and angle of the spoiler, like a plane's airfoil, one degree at a time until he was satisfied with both its performance and appearance. He even used pressure sensors on the spoiler during testing. This would ensure its design contributed to the QX's low drag coefficient, resulting in improved fuel efficiency.

In the end, Mr. Suzuki's efforts resulted in an uncompromising aerodynamic solution that transforms the intangible power of air into something you can both see and feel. All to build an unrivaled sensory connection between you and the road.

Experience it in the all-new Infiniti QX. This is inspired performance. This is the way of Infiniti.

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The Road Ahead

BY MATT DELORENZO >> EDITOR-IN-CHIEF

Our Kind of Rapid Transit

This month's evocative cover shot of the Aston Martin Rapide, Lotus Evora and Maserati GranTurismo Convertible is our interpretation of rapid transit for the enthusiast. Whether it's carving a mountain two-lane in the tidy Evora, basking in the open air while driving the Maserati along the coast or taking a spirited drive with three of your best friends in the Rapide, each of these cars in their own way embodies the passion and exhilaration to be found behind the wheel of a fine automobile.

It seems some watchers of the culture believe that the American love affair with the automobile may be nearing an end since young people are on average waiting longer to get their licenses and that many 20-somethings rely on mass transit rather than car ownership for their mobility. According to *Advertising Age*, the automobile "is becoming less relevant to a growing number of people under 30." It says the shift reflects the ascendancy of the digital age and the decline of auto culture.

The article states that while in 1978 nearly half of 16-year-old



and three-quarters of the 17-year-old population had licenses, only a third of the former and just under half of the latter today are licensed. And the share of miles driven by the 21 to 30 set has fallen to just 13.7 percent last year from 20.8 percent in 1995, even as this demographic has grown in numbers.

Ad Age, says William Draves, president of the Lern consulting group, believes the internet is responsible for this shift away from cars. He says greater use of digital media means that younger people have the option of working at home or when they do commute, prefer public transportation as a way to make this time more productive. While some may read this as a sign that the love affair with the automobile is on the wane, I believe just the opposite is happening.

What these youngsters are discovering is that most stop-and-go commuting is a chore. Given

that cars and gasoline are a lot more expensive, insurance rates higher and graduated licensing programs the norm, there's no wonder that youths are waiting longer to get their licenses and to buy that first car.

Telecommuting, better public transportation and increased urbanization are trends that will make car ownership less of a necessity. The flip side means that when someone does buy an automobile, it will be more for want than need. This in its own way liberates the automobile from its role as a workhorse and moves it back into the realm of being an object of desire.

In a way, history is repeating itself. We used to rely on horses for transportation and even though they were eventually replaced by automobiles, enthusiasm for riding them did not disappear. Not everyone owns a horse these days, but those who do are a pretty passionate lot. The growth of country club style tracks, like our partners at Spring Mountain Motorsports Ranch, is just another sign of the equestrianization (if I can coin a word) of the automobile. While younger people may wait longer to get their licenses or buy that first car, I'm sure in the end they'll be every bit as enthusiastic as I was 40 years ago as a freshly minted 16-year-old driver. Then as now, they'll be behind the wheel because they want to be there, not because they have to. And that bodes well for those who make the kinds of cars that grace our cover. 



PHOTOS BY BRUCE BENEDICT, GUY SPANGENBERG & BRIAN BLADES

Revved-Up

For notable quotables, video links
and general automotive shenanigans,
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Lewis & Jenson, one car, no team

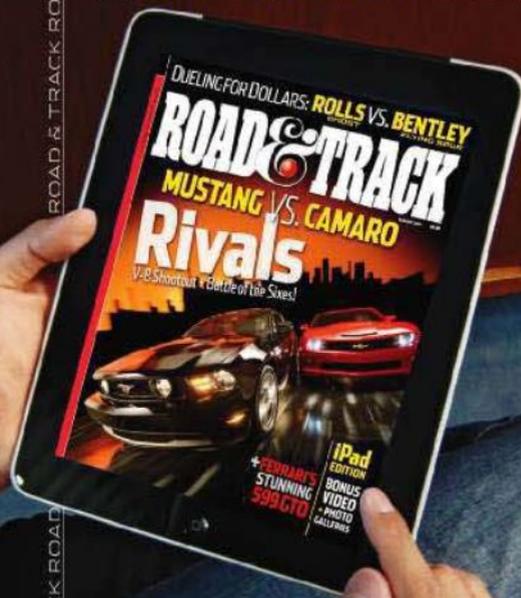
Can the boys build their
own F1 Car? Watch & see...



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Ampersand



Ever wonder what happened to Steve Saleen? The answer is he left the company he founded—Saleen Inc.—in 2007 due to a dispute with investors. But now the noted Mustang tuner, and the man behind the mid-engine S7, is back at the helm of his own company: SMS Supercars (“SMS” stands for Steve Mark Saleen). And he won’t be focusing predominantly on Mustangs this time, as his first product—the Sour Apple Green Dodge Challenger you see here—attests. In fact, you can even expect another S7-like supercar down the road: “Hey, I didn’t call it SMS Supercars for no reason,” Saleen said.

The SMS 570 Challenger (“570” refers to the car’s 5.7-liter Hemi V-8) begins

SMS Supercars 570 Challenger

Steve Saleen returns—with red butterflies

life as a stock R/T. The car is then dismantled and rebuilt with SMS components at the company’s 150,000-sq.-ft. complex in Corona, California. The most important of these is the SMS 296 Supercharger system, which uses a Lysholm twin-screw compressor along with SMS’s Six-Pack Intercooler System. The last features six finned tubes that Saleen

says make the system about 60 percent more efficient than traditional intercoolers. Combined with a cold-air intake and a free-flowing SMS exhaust, the result is 500 bhp at 5700 rpm and 500 lb.-ft. of torque at 3800 from 4.5 psi of boost.

Handling is addressed via new shocks, springs, anti-roll bars and SMS 20-in. wheels wearing 275-width

Pirelli P Zero Rosso tires. The stock R/T’s brakes are tossed in favor of an SMS package with 14.0-in. rotors at all four corners clamped by 6-piston calipers up front and a 4-piston setup at the rear. A short-throw linkage for the 6-speed manual rounds out the mechanical upgrades.

A unique feature of the SMS 570 are the red butterflies on the power

dome of the car’s hood, which open each time you press the throttle. Not only do they look cool, but Saleen says they give the car “direct air injection.” Other styling bits include new front and rear fascias, side skirts, a diffuser and rear wing. Also included on the \$67,581 SMS 570 Challenger (sold through select Dodge dealers) are SMS seats, gauges and



» Want to draw a crowd? Then show up in one of Steve Saleen's SMS 570 Challengers. Along with the 500-bhp supercharged 5.7-liter V-8, SMS reworks the suspension, brakes and interior. The instruments atop the dash include a boost gauge; SMS front seats are redone with new foam and upholstery. Those red butterflies on the hood open with throttle input.

PHOTOS BY JOHN LAMM



door panels with hand-painted pinstriping.

So, is the SMS worth \$26,351 more than a stock, 425-bhp Challenger SRT8? Performance-wise, no, the SMS posting 0–60 and quarter mile times of 4.7 sec. and 13.0 sec., respectively, nearly identical to the 5-speed automatic-equipped SRT8 we tested in our July 2008 issue. Ditto the handling, the SMS returning the same 0.85g as the SRT8 and a 0.2-mph-slower slalom of 64.8 mph, despite wider tires.

Out on the road, the SMS Challenger proved easy to live with—no wild, unruly beast here, despite 500 bhp. The supercharger doesn't come

on boil until about 3500 rpm, making the SMS feel slower in real-world driving than it really is, but once it reaches full boost the extra grunt can be felt and heard, with a mean, high-pitched scream from the supercharger and a burly growl from the dual exhaust system.

The new shift linkage provides marginally shorter throws and snicks nicely from gear to gear without the extra effort required by many short-shift kits. But Saleen's brakes delivered a spongy feel and longish pedal travel, while the heavy action of the accelerator pedal—due to the linkage related to the butterfly system—made heel-and-

toe throttle blipping a bit more difficult. Also, since SMS starts with non-Trak Pak-equipped R/T models, the stability system can't be fully defeated. On an up note, the SMS suspension delivers a decent ride.

Saleen is banking on a select group of customers who desire not only a strong-running Challenger, but a unique-looking one—both of which the SMS can lay claim to. We can vouch for the fact this car draws a crowd everywhere it goes—equal parts styling, supercharger shriek and that crazy color (one of 12 SMS-specific hues). Whether the exclusivity is worth the extra money is up to you.—Mike Monticello

GO ONLINE FOR MORE: ROADANDTRACK.COM/SALEENSMS

MORE PHOTOS

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When it was announced that Nissan/Renault was partnering with Daimler-Benz, we didn't have a clue as to how close this relationship would be. We're now hearing that it will be quite close, with the two companies planning to extensively share platforms and engines. The first reports from Japan suggested that the next-generation Infiniti G sedan and coupe, as well as future M sedans, will be built on the Mercedes-Benz E-Class platform. Then came more interesting news: how this relationship would affect the 370Z.

There are reports that the Z's VQ V-6 may start being phased out soon (this engine was introduced in 1995, meaning it's already 15 years old). Replacing the VQ 3.7-liter V-6 in the Z



Mercedes-Benz-Powered Nissan Z

may be a trio of Mercedes-Benz powerplants. The likely candidates are the E-Class's V-6 diesel engine, a V-6 hybrid setup and quite possibly a V-8.

If a diesel makes its way into the Z, it will be the 3.0-liter unit from the E350 BlueTEC. This

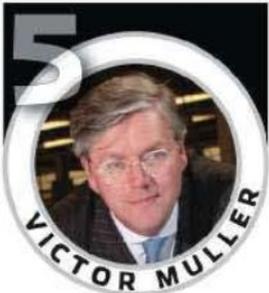
powerplant puts out 211 bhp, making it much less powerful than the gasoline engine in the current Z, but torque is rated at nearly 400 lb.-ft. The hybrid option will most likely be the 3.5-liter V-6 mated with an electric motor—the setup currently in the S400 se-

dan. As for the possibility of a V-8-powered Z, we feel that it's far-fetched at this point, but both Mercedes-Benz's 5.5-liter and Nissan's 5.6-liter make sense. If Nissan engineers design the next Z to accommodate one of these potent engines, then

the Z will have the power-to-weight chops to take on the Chevrolet Corvette. Nissan can even toy with the idea of fitting Mercedes-Benz's 500-plus-bhp AMG engine, creating a beast that'll give the GT-R a run for its money.

—Sam Mitani

PHOTO-ILLUSTRATION BY BEST CAR



SAAB PRESIDENT AND CEO

On the recent launch of the all-new Saab 9-5 (see First Drive, page 38), our man in Europe, Ian Adcock, sat down with Spyker (and now Saab) chief Victor Muller to discuss the Dutch company's acquisition of the iconic Swedish brand from General Motors.

1 You've done the easy bit and bought the company. How confident are you of bringing in the revenues needed to secure Saab's future?

If I hadn't been confident I would never have done it, because we could have stepped out of this deal 10 times. It's a fully funded business plan. In total we have in excess of \$1 billion and we don't need any fresh money for the next five years. That's on the basis of the current product portfolio and doesn't include my little dream car, the 92.

2 Speaking of that, when will we see a concept of the 92? (At this point Muller shows me the sketches of a cute-

looking, more angular version of the original 92 on his mobile phone—it looks good.)

I am glad you like it. We won't be betting the farm on it, but if we can pull off the finance, and I think we will, it will take Saab to another level. It's the missing link in the product portfolio. If I show a concept 92 I have to be pretty darn sure that it's so close to production we can pull it off. If you see it at Geneva next year it means we have it done and it will go into production shortly after that.

3 How are you going to revitalize Saab's image?

That's probably the easiest task, because its incredible heritage has been slightly neglected, to put it

lightly. To bring excitement back, we're going to develop cars that people identify as true Saabs: the 9-5 first and 9-4x second. The 9-3 in 2012 will be one notch up in design statement and be the first true Saab developed as a stand-alone [post-GM] company.

4 What does this deal mean for Spyker?

Spyker wins in three main areas: First, by the end of the year I expect at least 10 new Spyker dealers in the States. Second, there are the engineering resources we can tap into—a wind tunnel, crash test laboratory, climate rooms, 900 engineers and state-of-the-art infrastructure. Saab is dying to help Spyker. And third, materials and



sourcing costs will go down by up to 25 percent.

5 How big a mess did GM leave Saab in?

The way GM reported, it came across that Saab was a 20-year loss-making affair. That didn't do justice to the efforts Saab put in, or to the figures if they had been consolidated in a way that Saab wasn't allowed to do.

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PHOTO BY BRENDA PRIDDY



2012 Lotus Exige V-6



Future Car Happenings:

The latest rumors regarding Lotus, BMW and Maserati

Believe it or not, residing in the rear of this altered Lotus Exige is said to be the same 3.5-liter Toyota Camry-sourced V-6 as found in the new Evora, as opposed to the supercharged 1.8-liter 4-cylinder we're accustomed to. A **Lotus Exige V-6** test mule was originally spotted about a year ago, but then mysteriously disappeared from action—the rumor is that Lotus brass put the plan on hold. The fact the prototype is out running again leads us to believe the plan is back on track. Best guess puts the 275-bhp Exige V-6 arriving for the 2012 model year, also boasting a significantly redesigned body.

Prototypes of the next-generation **BMW 3 Series** have been running around Europe for some time. But recently the first test mule was seen putting in hot laps around the famed Nürburgring. While the body was still fully cloaked with camouflage, we believe the accompanying photo-illustration gives a good idea of what

the car will look like when it hits the market in 2012 as a 2013 model. And the new 3 will offer much more than just a body redesign: Sources tell us BMW will revamp the 3 Series' engine lineup, focusing primarily on a new range of turbocharged 4-cylinders, although we expect at least one model will still offer an inline-6; there's even talk of BMW dropping in a 3-cylinder for Europe. A hybrid 3 Series is also a given, and we hear that BMW's plans include a 5-door hatchback similar to the 5 Series Gran Turismo, possibly in lieu of a wagon model in the U.S.

Another car we've seen out testing lately is the next-generation BMW 6 Series. But recently we were treated to our first sighting of the new **BMW M6**, easily distinguishable by its larger wheels, cross-drilled brakes and M-spec quad-outlet exhaust tips. The new M6 will ditch the current 5.0-liter 500-bhp V-10 in favor of a pumped-up version of BMW's twin-turbocharged 4.4-liter V-8—with nearly 600 bhp.

Shifting duty will be handled by a 7-speed M-DCT twin-clutch paddle-shift gearbox. With the standard version of the new 6 Series expected to come on board late this year as a 2011 model, an educated guess puts the new M6 about a year later, probably late 2011 as a 2012 model. And yes, you can say goodbye to the 6 Series' famed Bangle Butt trunklid.

Not to be outdone by the Germans and Brits, the Italians recently dropped by the Nürburgring with a hotter version of the **Maserati GranTurismo**.



PHOTO BY GLENN PAULINA/KCP

Notable differences included two large, mean-looking exhaust tips poking through the rear bumper and a tacked-on rear wing. Exactly what had been done to the engine was unclear, but our spy photographer said the exhaust

note was far throatier than usual for the GranTurismo. Don't be surprised if the sportiest GranTurismo yet shows up next year with close to 500 bhp from its front-mounted V-8, up from the current car's 433 bhp.—MM

PHOTO-ILLUSTRATION BY MOTOR FORECAST

2013 BMW 3 Series





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TRACK TEST: Dodge Viper ACR-X

PHOTO BY MARC URBANO



As if the Dodge Viper ACR wasn't already a thinly veiled race car, Dodge decided to make it blindingly obvious with the ACR-X, a factory-built race car designed for a single-make spec series called the Viper Cup. ❖ This fully caged and race-prepared Viper was recently made available for a group of journalists to drive at Gingerman Raceway in Michigan. But the ACR-X is not for the timid—everything about the car, from its savage looks to its ultra-wide Michelin race slicks to its over-the-top aero package, says, "I'm out to get you." ❖ The uncorked exhaust snarls upon startup, making me wonder just exactly what I'd gotten myself into. I quickly discovered the ACR-X works with me, not against, and has limits beyond any realistic street car. The race tires combined with the aerodynamics made for amazing traction everywhere on the track. But it wasn't until I got a ride with factory Dodge driver Kuno Wittmer that I saw just how high the limits of the ACR-X are. Rollage or not, there was something about sliding around at triple-digit speeds, even as deftly as Wittmer was doing it, that made me fear for my life. For the ACR-X's roughly \$120,000 price, nothing comes close to this type of performance.—Shaun Bailey

If soaking up the performance figures in our Road Test Data Panels from acceleration to skidpad isn't enough for you, we've developed a driving program with Spring Mountain Motorsports Ranch near Las Vegas, Nevada, that teaches you many of the techniques we use in gathering our numbers.

In addition to mirroring our test format, the two-day program has been tailored by Rick Malone, Spring Mountain's Driving School Director, to include the fundamentals of threshold braking, accident avoidance, heel-and-toe downshifting as well as timed auto-cross and open-lapping sessions, the last after some lead-follow exercises on the road course.

The school uses Mini Coopers, Corvettes and Lotus Elises, all great-handling cars in their own right. And in one of the more novel elements of the R&T Driving Experience, on-board test equipment audibly tells you your peak g forces while lapping the skidpad and safely learning about understeer and oversteer.

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Get the inside line on testing

PHOTOS BY JOHN LAMM



The course's goal is twofold—making you a better, safer driver and imparting a greater sense of how we collect data, and hence a better understanding and appreciation of the cars we test.

For more information on the two-day \$2500 Road & Track Driving Experience at Spring Mountain Motorsport Ranch, please visit roadandtrack.com or call 1-800-491-4479.

—Andrew Bornhop

Dear Mr. Valentine:

Every fighter pilot knows – cover your six. After one day with my new Valentine One, I see why everybody at the base keeps talking about their Vee-Ones.

I picked up a beep on the Interstate, slow at first but quickening, just like I was coming up on something. But the Radar Locator pointed behind – something was coming up on me!

He was hard to spot, a slick-top sneaking up through traffic. He went on by and got small. Then I saw blue flashes in the distance.

When I caught up he had a Mustang, its ordinary detector still winking red in the windshield. Of course, ordinary detectors don't look behind. Vee-One is like driving with a buddy for back-up.

Yours truly,

Slam

L.C. "Slam" Lewis
Tucson, AZ

Dear Mr. Valentine:

Hey, I think I owe you one.

My commute goes past two miles of malls, which my old detector said was one long X-band false. Nope. Now I see it's two miles of little alerts that blur together. The Radar Locator tracks each one as I drive by – pointing Ahead first, then Beside and finally Behind.

Yesterday, it pointed out the usual places. And one more. Hmmmm. The Ahead arrow flashed insistently. Guess what? Radar shooting commuters from the shoe-store parking lot.

My old unit would have beeped, same as always. But yours saw the trap. That could be an ad, right? Valentine One is the one to have when there's more than one alert.

Go ahead, use it, because I definitely owe you.

Sincerely amazed,

Sal Molinari

Sal Molinari
Hartford, CT

Mike Valentine
Radar Fanatic

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Muted-Volume Lever

Sets volume you hear after muting.

Radar Antenna

Scans behind for radar.

Radar Strength

More LEDs glow as radar strengthens.



Memo To: Mike Valentine

Kansas, 54 west to Liberal, so flat I can see next week. No traffic, really, except for the Durango I've been closing on through four or five iPod tunes (George Jones was made for Kansas).

Off the shoulder ahead, maybe a half mile, what, a furniture van? Tailgate up, brown-shirted guy inside; looks like he's rearranging the load. V1 lets loose an EEEeeeEEEE sound. Laser! I hammer the brakes. EEEeeeEEEE.

Can't be laser. There's nothing around. Just me and the Durango, now passing the van. Wait...inside with the furniture, dang, another brown shirt, crouched behind a sofa, steadying his laser gun over the backrest. Double dang! The first shirt is talking into a cop radio as I go by.

And now I see what the deal is; three cruisers backed up in a tight line against the nose of the van. The lead car is rolling, in pursuit of the Dodge I was fixing to pass. The others stay. Whew! V1 must have caught a laser glint as it ricocheted off the SUV.

C. Phillips

Clay Phillips
Tulsa, OK

Dear Mr. Valentine:

Just east of Texarkana on I-30, my Valentine One picked up X-band. The Radar Locator pointed "Ahead." Over the rise, sure enough, flashing lights. Smokey had a semi on the shoulder.

As I eased past, I watched the Radar Locator; it's kinda fun seeing it tracking radar from "Ahead" to "Beside" to "Behind" as you go by. It stayed "Ahead." What the #@?! Man, I saw Smokey. And I put him behind me. But the Locator still pointed ahead. Could it be?

Yep. Over the next hill, another Smokey, harvesting the ignorant. Without the Radar Locator, I would have been one of them. Valentine One is like having my own AWACS.

Thanks, Big Guy

Ted Reynolds

Ted Reynolds
Dallas, TX

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2011 BMW Alpina B7

Who says that a high-performance luxury 4-door has to ride and sound like the pole-sitter at a German Touring Car Championship race? Not Alpina, whose BMW-based and -warranted automobiles are sporty yet refined. Textbook example: the B7, the firm's fourth-generation flagship whose twin-turbocharged 4.4-liter V-8 sends 500 bhp and 516 lb.-ft. of torque

to the sedan's meaty Michelins, thanks to beefed-up cylinder heads and pistons, larger turbos with modified intercoolers and finessed engine management software. The payoff is performance—0 to 60 in 4.5 seconds and an electronically limited top speed of 174 mph. Distinguishable by its lift-reducing front and rear spoilers, the B7 rides on



21-in. Alpina wheels whose 20-spoke design is a company hallmark. Below deck, the 7 Series suspension sports stiffer springs (and a lower ride height) as well as Alpina-tuned electronic dampers, stability and traction control, and larger front and rear brakes.

Set off by a myrtle-wood-trimmed dash, center console and door trim, the B7's interior also features comfortable and well-bolstered sport seats as well as an Alpina instrument cluster with blue-faced gauges.

Looking most striking in traditional Alpina Blue or Green, the B7 is also available in standard BMW colors. With only 500 cars earmarked for North America, this elegant yet exciting 4-door is sure to be a sellout even at \$122,875 for the short-wheelbase version; the L costs \$3900 more.—*Joe Rusz*

2011 VOLKSWAGEN Jetta: A COROLLA FIGHTER?

Volkswagen's recipe for its all-new Jetta is straightforward: Build the biggest and most spacious compact car in the class, and lower the price a bit. To that end, the 2011 Jetta is about 3.5 in. longer than the current car, and an inch wider. Most important, the wheelbase is up by about 3 in., which translates to lots more rear-seat room. In fact, VW says this handsome if a bit plain new Jetta is as spacious as a C-Class Mercedes inside. And in regard to price, there will be a stripped version starting below \$15,000 when the car goes on sale in October, but the high-volume

car equipped as most people would like will be in the \$16,000 range. The base engine is the familiar sohc 2.0-liter inline-4 with 115 bhp, but the current 2.5-liter inline-5 will be the most common powerplant. We're also pleased to report that a TDI diesel will be available early next year, as will the 200-bhp 2.0T, but only in the sporty GLI model. The GLI, of note, is the only new Jetta that will not have a torsion beam rear axle; it's fitted with the same independent 4-link that's on the current car. The Puebla, Mexico-built Jetta is, for the first time, built on its own chassis...it's



no longer just a Golf with a trunk. And although you can tell that some of the interior plastics are less costly, VW may have found a recipe that helps the Jetta become more of a volume competitor for the Toyota Corolla and Honda Civic.—*AB*

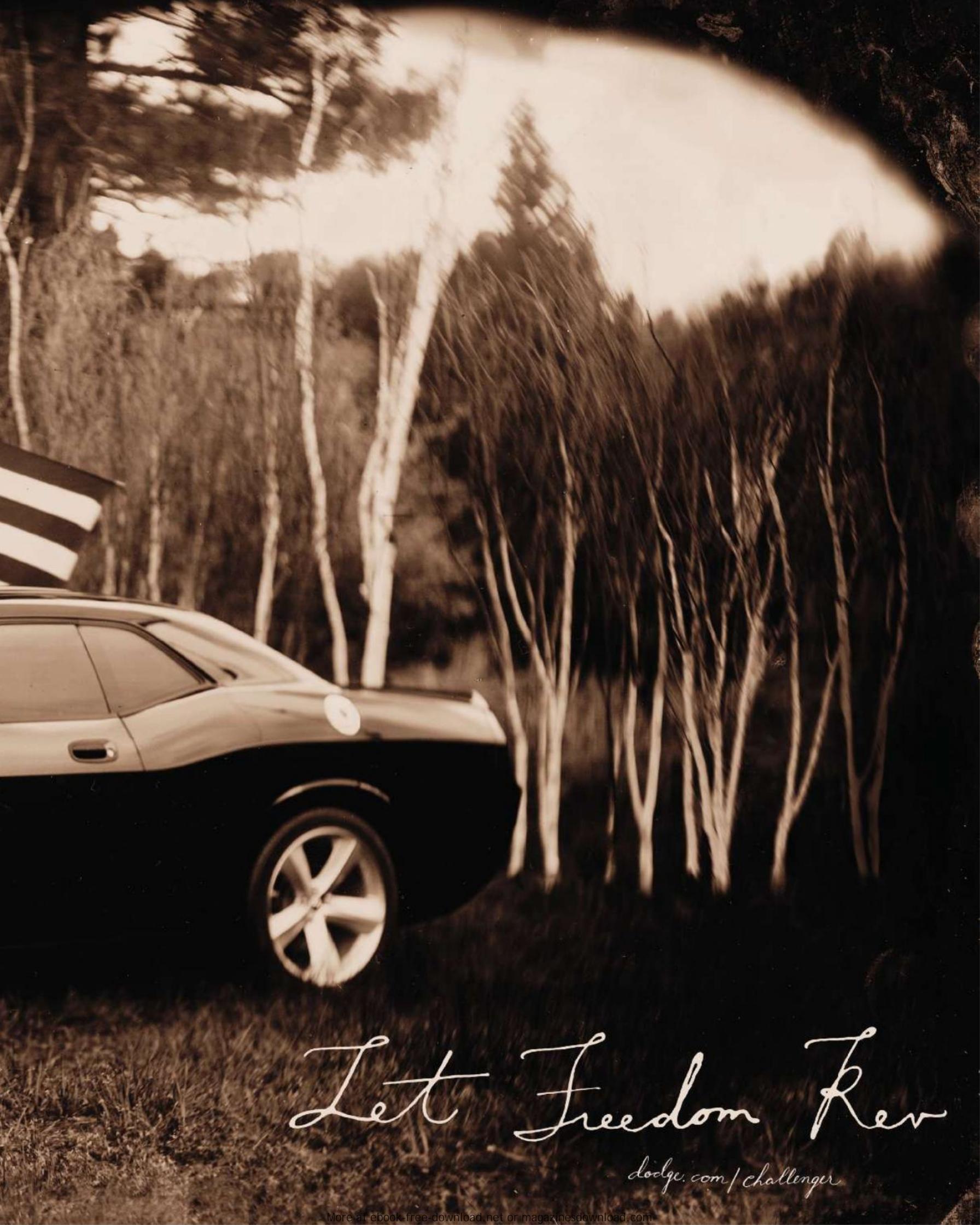
» Living large: New Jetta's trump card is its huge interior volume.



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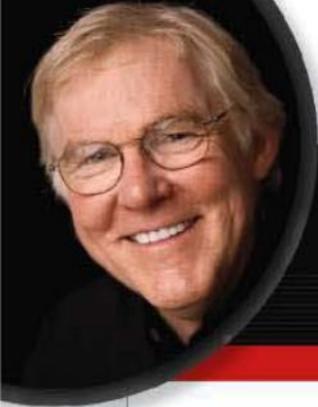


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Side Glances

BY PETER EGAN >> EDITOR-AT-LARGE

Six and the Single Girl

Okay, here's a dangerous subject:

I got a letter this week from a long-time R&T reader asking why I've never done a column on "chick cars."

Some cars, he noted, seem to be aimed specifically at a female audience, while others simply seem to attract more than their usual share of women owners. So exactly what traits, he asked, define a chick car? Why do men and women shy away from slightly different types of cars, and find themselves drawn to others?

To be honest, I've thought about this subject before but have never wanted to tackle it, as it's sort of the third rail of motor journalism. It's a touchy business, because if you imply that, say, a buttercup yellow AMC Pacer is a car that would more likely have been bought by women than men, it'll turn out that the president of the Buttercup Yellow AMC Pacer Owners Club is a guy who looks just like Robert De Niro in *Cape Fear*.

Or De Niro as the psycho cabbie in *Taxi Driver*...or as Jake La Motta in *Raging Bull*...

Jeez that guy is frightening. I should probably ask him what kind of car he drives before I write this column.

But you see the problem; you don't really want to offend people or question their hormonal balance, based on car ownership. Guys, especially, don't like being told they've chosen the wrong gender of automobile.

Still, it's obvious that some car companies build cars aimed at women (usually young women) or modify their designs to move a car one way or another in the market.

The first time my nascent brain became aware of any male/female distinction in car sales came with the first generation Mustangs, when Ford ran full page magazine ads in 1966 under the banner, "Six and the single girl."

They showed a well-groomed coed-type leaning on the hood of her new Mustang and using flower blossoms to form a large "6" on the hood. The ad copy opened with the line, "What makes a quiet, sensible girl like Joan fall in love with a Mustang?"

It explained the sporty features of the Mustang, then added, "What really broke down Joan's reserve was the solid practicality of Mustang's deep breathing Six. She knew she could trust this husky, suave brute of an engine to squire her around town, drive her to the mountains for the weekend, even drop her off for dinner with the girls (who will never guess how little the Mustang costs to own and run)."

Squid around by a husky, suave brute who takes you to the mountains for the weekend?



Six and the single girl.

What makes a quiet, sensible girl like Joan fall in love with a Mustang? Not simply Mustang's sleek good looks or smooth, bucket seats, wall-to-wall carpeting, sports steering wheel, and floor-mounted shift.

What really broke down Joan's reserve was the solid practicality of Mustang's deep breathing Six. She knew she could

trust this husky, suave brute of an engine to squire her around town, drive her to the mountains for a weekend, even drop her off for dinner with the girls (who will never guess how little she costs to own and run). Extraordinarily considerate of a girl's feelings...and her pocketbook.

Take a test drive and see if you should give in to Mustang because of their Six appeal. Smart girls do.



MUSTANG
A DIVISION OF

Now there's a subtle message. It was like having Cesar Romero trapped under the hood, waiting to build a fire and open some Dom Perignon at the cabin.

With all this emphasis on the virtues of the 6, there seemed to be an assumption here that the V-8 might be "too much" for a sensible girl. Maybe so, but it didn't hold true in my family. It was my mother and older sister who liked powerful cars and drove like bats out of hell, while my dad always gravitated toward the sensible Six and drove cautiously.

And years later, when my wife Barb went to buy herself a 1995 Jeep Grand Cherokee, I couldn't talk her into getting the smooth and torquey 4.0-liter inline-6. She absolutely had to have the noisier but more powerful 318 V-8. Still has it and still loves it.

Maybe that's why Jeep hasn't run a "Six and the married woman" ad. Doesn't work; you've got to catch women when

"Guys, especially, don't like being told they've chosen the wrong gender of automobile."

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they're young and feeling guilty about paying off student loans, or worried about rent money.

But back in the 1960s, when social roles were more traditional (some would say medieval), there may have been another unspoken, implicit message here: Women were expected to own cars from which they could be rescued by men, rather than the other way around. No guy with a Chevy II wanted to find out his new girlfriend owned a Hemi Cuda. It just wasn't right. Anybody could see that. We had no mythology based on guys in distress saved by maids in shining armor.

As the 1970s dawned, several other companies tried to market cars specifically to women, usually by putting Flower Power decals on the flanks of an inexpensive coupe, but the first time I ever heard of a complete car design aimed at women came during first year (1984) I worked at R&T.

Editor Emeritus Tony Hogg—who was then semi-retired—and I flew down to San Diego for the introduction of a new Nissan called the Pulsar NX, a wedgy little front-drive coupe with a 69-bhp 1.6-liter engine.

Tony and I got off the plane, were thrown the keys to a Pulsar in the parking lot and given a map for a drive to a resort an hour away in the mountains. Tony asked me to drive, settled back in the passenger seat and lit one of his frequent cigarettes. Off we drove into the mountains, talking about cars, motorcycles and airplanes, our favorite subjects.

After about 45 minutes there was a lull in the conversation and Tony began looking restlessly around the inside of the car. I could tell he was looking for some kind of badge or logo.

Suddenly he turned to me, exasperated, and said, in his growling British accent, "What the hell is this thing?"

"It's called a Pulsar NX," I said.

"A what?"

"A Pulsar NX," I replied.

"God help us. Who makes it?"

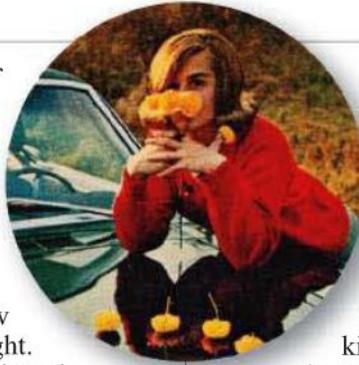
"Nissan."

Tony lit another cigarette, sat back in his seat, inhaled deeply and said, "Well, I don't give a damn."

That evening, the Nissan public relations people explained that the Pulsar NX was aimed squarely at single young women, new to the workplace, who wanted a sporty-looking and inexpensive small car.

This is probably why Tony didn't give a damn. At that time he owned a 427 Cobra and a Jaguar-engined Kougar Roadster (later sold to David E. Davis), both extremely fast and slightly brutal cars. The Pulsar NX was not exactly intended for Tony—or any hardcore car buff. But at \$7749 it was a bargain for those single young women (or non-enthusiast men secure in their sexuality), and it had an EPA city rating of 35 mpg.

Incidentally, I asked Barb (then 36) what she thought of the car and she said, "I could never own a car called a Pulsar." The next year, Barb bought herself a Mazda RX-7—partly on my



recommendation. I think.

But, looking back at this column so far, I see I've successfully dodged the issue of what styling cues, specifically, make for the classic "chick car" about which our reader inquired.

Frankly, I don't know. But, as Supreme Court Justice Potter Stewart said about pornography, you know it when you see it. "Cuteness" seems to be part of the formula, yet there have been all kinds of ostensibly cute cars that charm equal numbers of men and women—as long as they offer something special in handling or performance. Certain levels of cuteness, however, can be cloying.

For instance, some male staffers at R&T absolutely refused to drive the New Beetle—at least in daylight—when we had our long-term test car in 1999. And back in the 1980s, about half the men on the R&T staff seemed to be driving Honda CRXs for their daily transport. We had a whole row of these hot little coupes in the parking lot. Then Honda replaced that car with the Civic del Sol, and none of the CRX guys would go near it. When their CRXs wore out, they all switched brands. Or found a less worn-out CRX. The del Sol was too cute by half, and didn't provide the same hyperactive spirit and boy-racer performance. I didn't know any girl-racers on the staff who wanted one, either.

And that seems to be the division I've noticed most in my lifetime. Real car enthusiasts—whether men or women—seem drawn to the same cars for all the same reasons.

Generally.

I say "generally" (and here I'm about to get myself in big trouble) because I still believe there really is such a thing as a "guy's car." In fact, I rely upon it.

Let me explain.

Barb and I like most of the same cars, so when I buy a fun daily driver for myself—as I did a few years ago with the used 2003 BMW 325i we bought from friends—she soon begins to "take it over." Small cut-glass bunnies suddenly dangle from the rearview mirror, the rear bumper sprouts a Golden Retriever Rescue sticker and the back seat fills with dog toys and bags of cat food for the animal shelter where she volunteers. I'm forced to enter side-saddle because the seat is all the way forward and the steering wheel is down. Then the mirrors are all wrong.

So I must admit that a very small part of the reason I bought my Bullitt Mustang last year was to have a car of my own. Barb likes to drive the Mustang, but still prefers the BMW, which is, frankly, a more refined car in almost every way. She finds the Mustang's live axle and performance suspension package slightly harsh. It also has stiffer shift action and a heavier clutch, and the whole car seems, for a person of her small size, about 10 percent too large. Meanwhile, all of this suits me just fine.

Maybe there are no 100-percent predictable chick cars. There are only a few guy cars and everything else. The guy cars are the ones engineered with just enough bulk and pointless brutality to keep those cut-glass bunny charms off the rearview mirror. 🐰

"It's called a Pulsar NX," I said.

"A what?"

"A Pulsar NX," I replied.

"God help us..."



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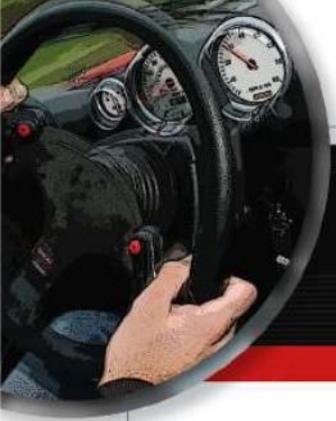


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Your Turn

Bling for the Buck

SUPRA ON STEROIDS

Lexus has always been known for its value (Lexus LFA, July 2010). The LS Series sedan is arguably the equivalent (possibly better in creature comforts) of the Mercedes S-Class for \$20K less in price. However, Lexus clearly lost the formula with the \$388K LFA; almost twice the cost of a Mercedes SLS AMG or a Lamborghini Gallardo...and it looks like a Toyota.

Joel Camarda
SAN FRANCISCO, CALIFORNIA

ECONO-SPORT BOX

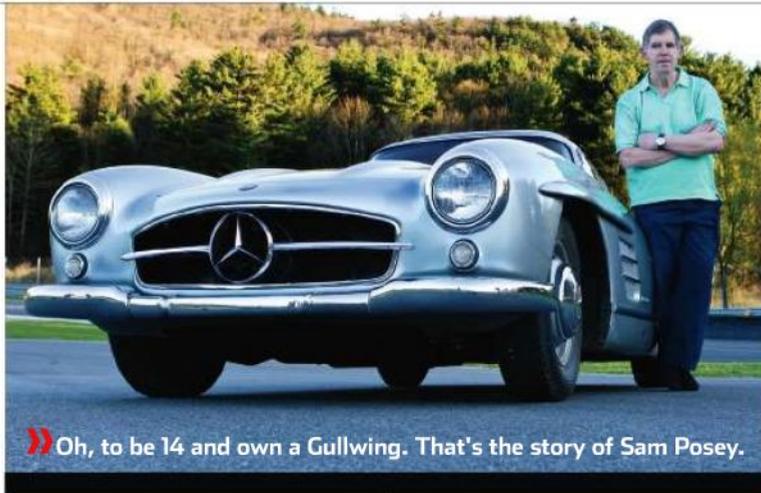
CR-Z? More accurately it should be the CR-Y, as in why would I want one? (Honda CR-Z, July 2010). We currently own an '03 Honda Civic LX coupe that has more interior room than the CR-Z, is entertaining to drive, regularly gets 32 mpg in town, consistently gets 38 mpg on road trips, and gets from 0 to 60 mph in less than 10 seconds. The CR-Z is supposed to represent progress?

Mike Ivanich
TEMPE, ARIZONA

VALIDATION

As the long-standing owner of an original J2 Allard No. 2124, I was delighted to read Doug Kott's article ("Hail Britannia," July 2010) on the new Allard Motor Works J2X MkII, which truly captures the magic of the original cars. Despite a number of earlier attempts, the MkII finally combines the essence of Allard's styling with the safety and performance of modern technology. The new MkII has all the earmarks of a worthy successor to Sydney Allard's creation.

Bill Connell
CINCINNATI, OHIO



» Oh, to be 14 and own a Gullwing. That's the story of Sam Posey.

PHOTO BY RICHARD PRINCE

WHAT A LIFE

Every month I quickly glance through your entire magazine and then go back to the articles and features that pique my interest. Sam Posey's article ("The SL and Me," July 2010) on his 1954 Mercedes-Benz Gullwing was so poignant and well-written that I read it again to be sure I didn't miss a thing. It was even better the second time. I hope to read something soon about his sharing his love of cars with his son.

Peter H. Deutsch
BURLINGAME, CALIFORNIA

KID'S CHOICE

How ironic that Peter Egan's column discussed our influence on our parents' car purchasing decisions in the same issue that Sam Posey tells how he was able to get his mother to buy him a 300 SL before he could legally drive. Some people have all the luck.

John de Planque
KUTZTOWN, PENNSYLVANIA

I, too, had input in a family car-buying decision (Side Glances, July 2010) while attending high school in the Panama Canal Zone in the mid-1960s. Dad thought

Chrysler built a wagon large enough for six kids and stout enough to drive home through Central America to California. Although Dad did agree with me to order the 426 Hemi with a 4-speed, the good powertrain stuff was not available on station wagons. But ours was thoroughly black inside and out, with plenty of chrome and fat Goodyear blackwall tires. It was so long and low and black that Mother could finally drive with confidence in the city streets.

When the officers' wives would go shopping in the downtown district, she would simply lay on the horn as she approached an intersection. All traffic would stop, convinced that El Presidente was passing. And yes, we did drive it home the 2000 miles to California, an unforgettable journey.

Randall Rich
SACRAMENTO, CALIFORNIA

NORWEGIAN WOULD

Regarding Dennis Simanaitis ruminating about the language of the first hydrogen highway road signs (Tech Tidbits, July 2010): I believe the correct answer is Norwegian, since they already have such a highway populated with hydrogen production/refueling stations.

Mike Hanson
SAN DIEGO, CALIFORNIA

Right you are. I've since learned from another reader about this 375-mile highway from Oslo to Stavanger. I understand it's supported by Statoil, Norway's energy company.—Dennis Simanaitis

NIGHTTIME DRAGS

When Peter Egan wrote about Phil Hill's cross-country journey in the Jaguar C-Type (Side Glances, June 2010), it reminded me of a story Phil told to my Porsche Club about his visit to Omaha, Nebraska, on that trip in 1952. Phil had dinner with his friend General Curtis LeMay, Commander of the Strategic Air Command, who also had a strong interest in sports cars and was very proud of his Allard J2R. After dinner, LeMay had every Jeep he could find at Offutt Air Force Base line up along one of the runways, leaving their lights on. Phil and the General then raced the Allard and Jaguar up and down the runway late into the night. Those were indeed the days.

Dennis Strauss
OMAHA, NEBRASKA

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FIRST DRIVE CTS COUPE FIRST DRIVE CTS COUPE

2011

CADILLAC CTS Coupe

Underscoring the “Art” in Art and Science

BY DOUGLAS KOTT

YOUNTVILLE, CALIFORNIA—It’s one thing to see a car in photos; quite another to see it in the flesh. And the new CTS Coupe up close is a head-turner on the scale of *The Exorcist*. Dave Leone, the Coupe’s chief engineer, says the new car represents “the most dramatic expression of Art and Science to date,” the finely sharpened tip of Cadillac’s design-language spear. And it’s truly undiluted from the original clay model’s dimensions (the show car made its debut at the Detroit show of 2008), with surface variances of only a few millimeters.

The first things that grab you are the purity of the wedge shape, that high near-horizontal backlight, and the exaggerated Center High Mounted Stoplight (CHMSL) whose red chevron-shaped lens doubles as a spoiler to reduce rear lift. From the base of the windshield forward, it’s identical to the CTS sedan, but those broad rear fenders bulge, Coke-bottle style, to cover 275-mm rear tires (the fronts are 245s, a size found at all four corners on the sedan). Also note what Cadillac calls “touch-pad

entry” à la Corvette—there are no external door handles; just a recess, a rubber-sheathed switch and a solenoid to open the door.

The number 2 figures heavily in the design. Although sharing the CTS sedan’s Sigma rear-drive platform and 113.4-in. wheelbase, the Coupe has 2 in. less rear overhang, a 2-in.-lower roof, and a 2-degree-faster windshield angle, now at 62.3 degrees. And of course the seating is now 2+2, the rear seat being head room-limited for full-size adults.

The sole engine is the direct-injected 304-bhp 3.6-liter V-6 (that is, unless you opt for the upcoming CTS-V Coupe with its 556-bhp supercharged V-8) with a standard 6-speed manual and optional 6-speed Hydra-Matic auto. Our test cars were fitted with the most aggressive FE3 suspension package with 19-in. wheels, ContiSportContact summer tires and the automatic transmission. All Coupes get a shorter final drive ratio of 3.73:1, versus 3.42:1 for the sedan.

So let’s fling it through a few corners, shall we? The Napa Valley roads near Yountville

were ideal to show off the FE3’s impressive roll control. Handling character is predictable and stable, those wide rear tires keeping the tail planted and, when really pushing it, letting the front tires bleed off excess speed with manageable mild understeer. The stability control intervenes only at high driver aggression levels, lightly dabbing the brakes at individual wheels...nice. The bad? FE3 is strictly a smooth-road suspension; its damping firmness makes it bound from bump to ripple when the surface deteriorates. It doesn’t have the composure of, say, a Sport Package-equipped BMW 335i, that generates grip with less harshness. And the steering feels overassisted in tight corners, going limp in your hands when there should be more resistance. Bottom line: stiff and surprisingly capable, handling better than a 3909-lb. car should.

The engine/transmission pairing is a good one, the 6-speed Hydra-Matic reacting quickly to instructions from shift buttons on the back of the steering wheel (the software’s been

changed so the buttons now work in Drive mode as well as Manual), with expertly timed auto-blips to match engine and driveline speeds. The V-6’s torque (a peak of 273 lb.-ft. at 5200 rpm) and response are satisfying, but it sounds a little strained and reedy near redline. There’s enough low- and midrange grunt, though, that you can extract plenty of performance at more acoustically friendly engine speeds.

We’ve always been big fans of the latest-iteration CTS interior with its seam-stitched dash pad and door panels, “toaster” pop-up infotainment screen, bold metallic center-stack trim and other high-tech shapes and finishes. But the upper seatback contours must have been designed for a person of vastly different morphology than my own...there’s a mid-back bulge, above the range of the lumbar adjustment, that doesn’t allow settling into the bolsters and leaves my shoulder blades unsupported.

On sale the first week of August, the CTS Coupe starts at \$38,990, a reasonable sum especially considering that it includes regularly scheduled maintenance for the duration of the basic 4-year/50,000-mile warranty.

Overall, it’s an impressive new coupe that’s one of the most dramatically styled cars on the road. Just be prepared to be gawked at, a lot.

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LISBON, PORTUGAL—When you think of a Volvo, emotional appeal rarely comes to mind.

Known mostly for safety, the Swedish carmaker is trying to change the consumer's perception of its brand by adding a little styling flair and performance pep to its newest car—the 2011 S60—in hopes of supercharging the marque's lackluster worldwide sales. After having spent a day in this new Volvo on country roads near Lisbon, I can assure you the car does not disappoint.

The all-new S60 4-door sedan comes equipped with a 3.0-liter turbocharged inline-6 rated at 300 bhp and 325 lb.-ft. of torque. Power is put to the ground through a 6-speed automatic gearbox mated to a Haldex all-wheel-drive system. Thanks to peak torque available as low as 2100 rpm, the new Volvo scoots away from a stoplight or passes slower traffic with ease. Putting the automatic transmission in sport mode means you can select gears yourself via the shift lever, or have the gearbox hold gears until higher rpm before shifting. And surprisingly, the computer does a pretty good job of letting the engine wind up a bit through the corners so you can accelerate quickly onto the straights in the fat part of the powerband. Too bad there is no manual gearbox available in the U.S. for the purist.

To compete with the likes of the Acura TL, Audi A4, BMW 3



2011

VOLVO S60

Emotion in motion

BY PATRICK HONG

Series, Mercedes-Benz C-Class, or even the Lexus IS, Volvo engineers have paid special attention to the S60's suspension tuning. The new Volvo comes in three chassis configurations: Touring, Dynamic and FOUR-C. The Touring setup is a no-charge option designed to offer a smoother ride. The Dynamic comes standard with tighter steering, stiffer springs and firmer bushings, giving the S60 more agility and added composure in corners. As we found on the curvy coastal roads near Lisbon, you can push the S60 a bit more aggressively around turns and it reacts progressively to steering input. And thanks to torque vectoring using computer-controlled left/right brake actuation, the new Volvo also tracks in and out of bends with excellent accuracy. Strik-

ing a good balance between ride and handling, even the Dynamic setup is perfectly comfortable on the road.

Can't decide between Touring and Dynamic chassis? Upgrade to the \$750 FOUR-C Active Chassis and it offers three suspension modes (Comfort, Sport and Advanced), which allow the driver to choose a supple ride or two increasingly sporty levels of handling so you can have it all.

In tune with Volvo's intense focus on safety, the new S60 features the world's first Pedestrian Detection with Full Auto Brake system, which identifies people in front of the car and applies full brakes if an impending collision is detected. This optional system can stop the car from speeds as high as 22 mph, which is incredibly helpful if you are traveling in crowded cit-

ies where people can suddenly dart out from behind other vehicles. The Pedestrian Detection is part of an optional \$2100 technology package that also includes adaptive cruise control, City Safe collision warning with full auto brake, Distance Alert and Lane Departure Warning.

Overall, the S60's peppy performance fits well with the car's stylish design. On the outside, the front slopes downward for that road-hugging appearance. And the rear tucks in nicely with a taut, short overhang. Inside the car, the dash has a sweeping design complemented by a cleanly laid out center stack. The infotainment roster is complete with satellite radio, Bluetooth connectivity and multiple music format compatibility. Accessing all these features can be done via various buttons on the steering wheel, the center console, or even through voice control. In the back, the seats are comfortable with adequate head room. And despite having roughly the same exterior dimensions as the outgoing S60, the new car offers 2.1 in. more rear leg room thanks to a longer wheelbase.

Volvo is counting on the new S60 to be its volume seller, spearheading the charge out of its recent worldwide sales slump. And along with its new sporting nature comes a very attractive 5-year/60,000-mile warranty, including regularly scheduled maintenance. Gotta love that! Available at U.S. dealerships in mid-September, the S60 will start at \$37,700. 

» Crisp character lines and swooping bodywork are a far cry from yesterday's boxy Volvos.



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SAAB 9-5

Part GM legacy, part Spyker's new direction

BY IAN ADCOCK

TROLLHÄTTAN, SWEDEN— Nearly seven months ago, almost to the day, you would have rated Saab's chance of launching the 9-5 about as great as the Flat Earth society being proved correct.

On that day, GM started the process of liquidating the marque. All efforts to find a buyer to take over the ailing brand had seemingly failed. Yet on February 23, seven weeks later, Dutch supercar minnow Spyker signed the deal that saved Saab from oblivion.

GM has bequeathed Spyker quite a legacy apart from a 195,000-capacity factory, and we're in Sweden to drive the first inherited product: the 9-5.

Derived from the same GM platform that underpins the Vauxhall/Opel Insignia, the 9-5 is targeted not at BMW nor Mercedes-Benz, but rather as a potential rival to Audi's A6.

At launch, a top-of-the-line 2.8 V-6 turbo generating 300 bhp and 295 lb.-ft. of torque is offered exclusively with Saab XWD. Shortly after launch, a 2.0-liter BioPower E85-capable engine with 220 bhp and 258 lb.-ft. of torque will be intro-

duced. Respective times to 62 mph have been quoted as 6.9 and 7.9 seconds; neither top speeds nor fuel consumption figures were available at launch.

Saab's XWD all-wheel drive includes an electronically controlled limited-slip rear differential (eLSD) standard on the uplevel Aero model. The eLSD can transfer up to 50 percent of torque between whichever rear wheel has more grip. A 6-speed automatic and DriveSense (it alters damper and throttle settings) are standard on the V-6, while a 6-speed manual is optional on the 2.0-liter.

The 9-5 is well equipped with leather upholstery. A head-up display and a Harman/Kardon sound system are also available options, as are tri-zone climate control and a dedicated entertainment system for rear passengers.

With the 9-5, Saab has man-

aged to regain some of its design independence. It appears bold and large with simple surfacing and B-pillars that look reminiscent of, all things, the new Bentley Mulsanne, while viewed from the rear there's an echo of BMW's 5 GT. But Saabs are about simplicity and the faux chrome gills low on the front flanks beg the question, "Why?"

It's not easy to position Saab as a brand: Owners are fiercely loyal, but to succeed the Swedes have to stretch beyond them and attract new devotees.

Adrian Hallmark, Saab's executive director of sales, sees the 9-5 and the brand as a whole challenging Audi. That's a tall order to fill, based on impressions of the 9-5's interior. Swathes of black plastic and trim simply don't challenge Ingolstadt's standard. On this evidence, Saab is stuck in a

price band limbo between Ford/GM and Audi. It's more costly than the former but doesn't really offer that much more, yet it doesn't equal the latter.

The best aspect is the instrument panel with electronic displays that whizz in and out of sight accompanied by the HUD hovering in view over the hood.

Dynamically, the car is something of a conundrum: Play with the trio of DriveSense settings and Sport fails to deliver the expected cornering and ride balance, the steering lacks a degree of fluidity, weighting up unevenly in corners. I found it best to stick with the Intelligent compromise while Comfort would be well suited to loping down highways on cruise control.

The all-wheel-drive system can deliver tire-squealing grip, which seems counter to a car that can't decide if it's a sports or cruising saloon.

I also spent time behind the lesser-powered gasoline engine and came away preferring its balance and response. Maybe the (slightly) lower nose weight helped but the steering fell short, in European terms, of that delivered by Ford's Mondeo.

Saab's management has got a big task ahead to ensure the marque's long-term survival. The 9-5 is a good starting point, but if Audi is the aspired target then heavily upgraded interior materials are a must, as is a concerted effort to hone ride and steering.



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A S T O N M A R T I N

Rapide

Yes, it's fairly rapid, as its name implies.
But is this big sedan a true Aston Martin?

BY MIKE MONTICELLO » PHOTOS BY BRUCE BENEDICT

POSSIBLY NOTHING DEFINES THE ASTON Martin Rapide more than its leather-lined cupholders. You read that correctly: Leather-lined cupholders (albeit too small in diameter to fit a 20-oz. soda)—one in front, and two more in the rear. And it's the rear area that makes the Rapide so different from every other Aston Martin since the, ahem, rather interestingly styled Lagonda of the 1970s and '80s. In fact, Aston calls the Rapide its "first production 4-door sports car," as the Lagonda was more of a luxury sedan.

Helping the Rapide's sports car intent is the fact that, in simple terms, it's a

stretched DB9, underpinned by the same Vertical/Horizontal platform that also serves the DBS and Vantage. But compared to its DB9 donor, the Rapide's wheelbase has been stretched by 9.7 in. to properly accommodate two rear passengers, and there's also some semblance of trunk space (11.2 cu. ft.) beneath the rear hatch. The Rapide is also 12.1 in. longer, 3.5 in. taller and 1.9 in. wider than the DB9.

Keeping it all in the Aston family, the Rapide is powered by the familiar 5935-cc 48-valve V-12 that's also used, at varying power levels, by the DBS, DB9 and the V12 Vantage. There's nothing particularly

advanced about this handbuilt, front mid-mounted V-12—no variable valve timing or direct injection (the latter is coming soon, we hear), but it's an exceptionally pleasing engine regardless, both in terms of its snarling exhaust note and the smooth way in which it delivers its power.

That power comes to the tune of 470 bhp at 6000 rpm. Although that sounds like plenty, keep in mind that the Rapide's V-12 needs to move about 500 lb. more car than the DB9's. The engine also feels soft at lower revs, due to its 443 lb.-ft. of torque peaking at a rather high 5000 rpm.

The net effect? The Rapide never ex-



» Coming at you, you'd never know the Rapide is a 5-door, able to fit Mike and his twin brother Mike...



hibits what you might call hard-to-handle power. The V-12, however, eggs you on to rev it, and the dual exhaust takes on a decidedly meaner tone once the anti-clockwise tachometer needle hits 4000 rpm. You'll want to select the manual shift mode of the rear-mounted 6-speed Touchtronic 2 automatic transmission, with steering column-mounted leather-covered magnesium paddle shifters, to keep the engine in the sweet part of its soundtrack as you enjoy the exhaust reverberations with each shift. What this torque converter automatic (the sole transmission for the Rapide) gives up in terms of blis-

teringly quick shifts, it gains back with a smoothness and sophistication that's rare with single- and twin-clutch systems.

Out at our test track we achieved 4.7 sec. to 60 mph with the Rapide, certainly a reasonably quick figure for such a big sedan. That is, until you compare it with that other ultra 5-door sedan everyone is talking about—Porsche's Panamera Turbo, which, with the aid of all-wheel drive and 500 bhp, claws its way to 60 in just 3.4 sec. and is 1.4 sec. quicker in the quarter mile.

With a longer wheelbase and considerably more heft than a DB9, the Rapide conceivably should be one unwieldy As-

ton. But the engineers have done such a great job in tuning the Rapide's chassis, which features double wishbones front and rear as well as Aston's Adaptive Damping System (ADS), that you rarely think about its extra doors and seats as you toss the car from corner to corner with vigor. Or at our test track, where the Rapide posted a Panamera Turbo-besting 69.7 mph through the slalom, along with a reasonable 0.92g around the skidpad.

The key to the Rapide's sports-carlike handling is its well-weighted steering, felt through a perfectly sized leather-wrapped steering wheel. On twisty sec-

HEAD-TO-HEAD

Porsche Panamera Turbo
Tested: 12/09



» Two top-notch 5-door hatchbacks with two very different intents: The Panamera is all about function over form, while Aston's Rapide places styling—both inside and out—at the top of the list. Although the nimble Rapide posts a higher speed through the slalom, the awd Porsche proves superior in all other performance categories.

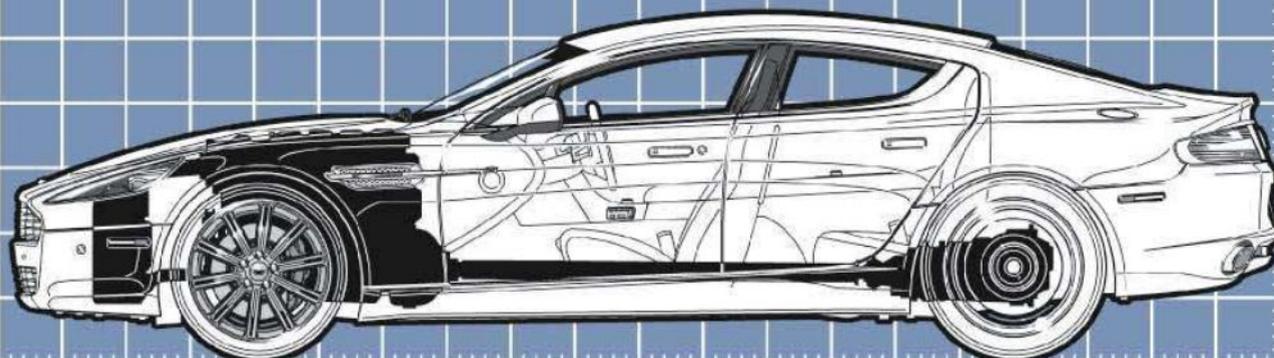
	2010 Aston Martin Rapide	2010 Porsche Panamera Turbo
Current list price	\$197,850	\$132,600
Engine	dohc 5.9-liter V-12	twin-turbo dohc 4.8-liter V-8
Horsepower	470 bhp @ 6000 rpm	500 bhp @ 6000 rpm
Torque	443 lb-ft @ 5000 rpm	516 lb-ft @ 2250-4500 rpm
Transmission	6-sp paddle-shift automatic	7-sp paddle-shift manual
0-60 mph	4.7 sec	3.4 sec
Braking, 60-0 mph	119 ft	116 ft
Lateral accel (200-ft skidpad)	0.92g	0.96g
Speed thru 700-ft slalom	69.7 mph	69.1 mph
EPA city/highway	13/19 mpg	15/23 mpg
Length	197.6 in.	195.6 in.
Width	75.9 in.	76.0 in.
Height	53.5 in.	55.8 in.
Wheelbase	117.7 in.	115.0 in.
Track, f/r	62.6 in./63.5 in.	65.2 in./64.8 in.
Curb weight	4385 lb	4635 lb



Aston Martin Rapide

Aston Martin North America, 9920 Irvine Center Dr., Irvine, Calif. 92618; www.astonmartin.com

www.roadandtrack.com



SCALE: 10 IN. (254mm) DIVISIONS
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SPECIFICATIONS

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Price as tested \$212,445
Price as tested incl std equip. (Bang & Olufsen AM/FM/MP3/6-CD/sat. radio, auto. climate cntrl, navi., cruise cntrl, Bluetooth, heated front/rear seats, limited-slip diff, front/rear parking sensors, anti-theft; pwr windows, mirrors & door locks), rear-seat entertainment (\$3395), Concours blue paint (\$1895), cooled front/rear seats (\$1595), Contemporary Leather (\$750), Tamo Ash Facia (\$750), Wood inserts (\$750), Contemporary carpet (\$450), silver Rapide logo (\$450), silver calipers (\$450), alarm (\$295), smokers kit (\$220), First-Aid kit (\$145), gas-guzzler tax (\$2100), dest charge (\$1350).

GENERAL DATA

Curb weight 4385 lb
Test weight 4550 lb
Weight dist (with driver), f/r %
1030 lb 1190 lb
← 47% 53% →
1120 lb 1210 lb

Wheelbase 117.7 in.
Track, f/r 62.6 in./63.5 in.
Length 197.6 in.
Width 75.9 in.
Height 53.5 in.
Ground clearance 7.0 in.
Trunk space 11.2 cu ft

ACCOMMODATIONS

Seating capacity 4
Head room Front: 38.5 in.
Rear: 35.5 in.
Seat width Front: 2 x 18.0 in.
Rear: 2 x 14.5 in.
Front-seat leg room 44.0 in.
Rear-seat knee room 22.6 in.
Seatback adjustment 50 deg
Seat travel 7.0 in.

INSTRUMENTATION

220-mph speedometer, 8000-rpm tachometer, coolant temp, fuel level

SAFETY

ABS, dual front, side & head airbags, traction & yaw control, TPMS, elect. brake force distribution, front seatbelt pretensioners

WARRANTY

Basic warranty 3 years/unlimited miles
Powertrain 3 years/unlimited miles
Rust-through 10 years/unlimited miles



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ENGINE

Type/layout aluminum block & heads, V-12/longitudinal
Valvetrain dohc 4-valve/cyl, chain drive
Displacement 362 cu in./5935 cc
Bore x stroke 3.50 x 3.13 in./89.0 x 79.5 mm
Compression ratio 10.7:1
Horsepower (SAE) 470 bhp @ 6000 rpm
Bhp/liter 79.2
Torque 443 lb-ft @ 5000 rpm
Redline/limiter na/6900 rpm
Fuel injection elect. sequential port
Recommended fuel premium

DRIVETRAIN

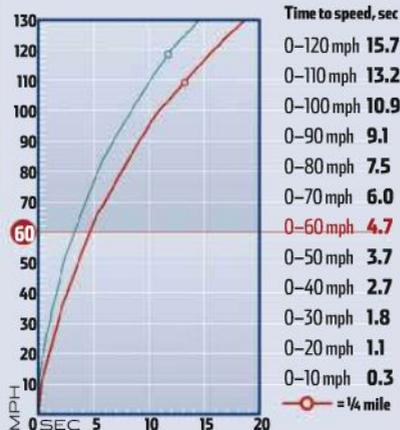
Transmission: 6-speed paddle-shift automatic
Gear Ratio Overall ratio (Rpm) Mph
1st 4.17:1 14.43:1 (6900) **39**
2nd 2.34:1 8.10:1 (6900) **70**
3rd 1.52:1 5.26:1 (6900) **108**
4th 1.14:1 3.94:1 (6900) **143**
5th 0.87:1 3.01:1 est (6900) **188**
6th 0.69:1 2.39:1 na*
Final drive ratio 3.46:1
Engine rpm @ 60 mph in top gear 1750
*Top speed reached in 5th.

CHASSIS & BODY

Layout front engine/rear drive
Body/frame aluminum, magnesium, composite/aluminum
Brakes Front: 15.4-in. vented & floating discs/6-piston fixed calipers
Rear: 14.2-in. vented & floating discs/4-piston fixed calipers
Assist type vacuum, ABS
Wheels Front: forged alloy, 20 x 8½
Rear: forged alloy, 20 x 11
Tires Bridgestone Potenza S001
Front: 245/40ZR-20 95Y
Rear: 295/35ZR-20 105Y
Spare tire puncture kit
Steering rack & pinion, variable power assist
Steering ratio 14.9:1
Steering-wheel diameter 14.4 in.
Turns, lock to lock 2.7
Turning circle 41.5 ft
Suspension
Front: upper & lower A-arms, coil springs, elect. adj tube shocks, anti-roll bar
Rear: upper & lower A-arms, coil springs, elect. adj tube shocks, anti-roll bar

ACCELERATION

Time to distance seconds
0-100 ft 2.8
0-500 ft 7.2
0-900 ft 10.3
0-1320 ft (¼ mile) 13.1 @ 109.5 mph
*10 Porsche Panamera Turbo ¼ mi: 11.7 @ 118.0 mph



BRAKING

Minimum stopping distance
From 60 mph 119 ft
From 80 mph 214 ft
Total swept area 759 sq in.
Swept area/ton 346 sq in.

HANDLING

Lateral acceleration* 0.92g
Balance mild understeer
Slalom speed** 69.7 mph
Balance mild understeer
Lateral seat support average
*200-ft skidpad; **700-ft slalom, 100-ft spacing.

FUEL ECONOMY

Our driving est 12.0 mpg
EPA city/highway 13/19 mpg
Cruise range est 275 miles
Fuel capacity 23.9 gal.

INTERIOR NOISE

Idle in neutral 50 dBA
Maximum in 1st gear 79 dBA
Constant 50 mph 72 dBA
Constant 70 mph 74 dBA

TEST CONDITIONS

Temperature 70° F
Humidity 41%
Elevation 350 ft
Wind light
Location Irvine, California

0-60 mph
4.7 sec

0-¼ mile
13.1 sec

Top speed
est 188 mph

Skidpad
0.92g

Slalom
69.7 mph

Test Notes:
ACCELERATION

Although the Rapide uses a torque-converter automatic, power braking didn't allow for wheelspin at launch. While 4.7 sec. to 60 isn't slow, we suspect a little wheelspin would've resulted in quicker times.

Test Notes:
BRAKING

The Rapide's oversized brakes yielded safe and secure panic stops along with a rock-solid yet linear pedal feel during testing. But some particularly hard back-road charging revealed a surprising bit of fade.

Test Notes:
HANDLING

The Rapide is easy to drive and provides exceptionally tidy handling for a car of its weight and length. Its DSC track mode isn't overly intrusive but faster runs were achieved with the system switched off.

AT A GLANCE



» The 4-seat Rapide cabin—lots of leather and wood, plus a tall center console.

tions of road you realize, “Yes, this is definitely still an Aston.” Grip from the Bridgestone Potenza S001 tires—size 245/40ZR-20 up front and 295/35ZR-20 at the rear—is excellent and there’s only minor understeer as you explore the car’s high limits further and further. Ride quality, in normal or sport suspension modes, is always supple.

The Rapide’s brakes—15.4-in. rotors with 6-piston calipers up front and 14.2-in. rotors with 4-piston calipers at the rear—resulted in decent deceleration numbers, along with a rock-solid pedal feel. But surprisingly the pedal did go a bit soft during a particularly spirited romp on a curvy back road.

Above and beyond high performance, the Rapide is about striking design, inside and out. You’ll note the Rapide barely strays in its production form from the concept that first wowed enthusiasts at the 2006 Detroit Auto Show. And it’s more than just a stretched DB9, as every single body panel on the Rapide is unique.

But the kicker for the Rapide, what might make you need to have this car, is its interior, a jewel of a cabin that’s

rivalled by few in terms of beautifully handcrafted details. Even the rear seatbelt dispensers are sculpted.

Front-seat passengers will find little to complain about in the Rapide, although the new seats—which are high on comfort—are a little low on lateral support. Rearward visibility is also not great, marred by huge C-pillars and a slit of a rear window. Rear-seat dwellers will find a cocoon-like atmosphere and individual sport seats, as well as surprisingly ample head room for a car with such a sleek roofline. Unfortunately, the seatbacks are very upright and foot room is only adequate. Ingress/egress is aided by “swan wing” doors, which move up slightly as they open out, but the Rapide is definitely not an easy car

to hop in and out of gracefully.

If you’re into phenomenal high fidelity, you’ll love the standard Bang & Olufsen sound system, replete with 1000 watts and 15 speakers, including two tweeters that rise magically from the dashboard. The sound from this Danish-built system is crystal clear—it’s as if the artist is sitting right there in the car with you, it’s that good. Through sensors in the seatbelts, the system can even tell how many people are in the car so as to adjust for the “optimum sound experience.”

Despite all the goodness of the Rapide, I still found myself asking this question: “Does this car make any sense?” After all, it’s a large sedan, yet the rear seats aren’t a place you’d want to spend much time. It also has a big, fuel-thirsty V-12, yet its straight-line performance numbers aren’t world-beating. And then there’s its price, north of \$200,000 as-tested. That’s expensive in anyone’s world.

But then I drove the Rapide some more, spurred on by its glorious exhaust note, smooth transmission and crisp handling. And I looked at the Rapide some more. I marveled at that breathtaking, near show car-level interior and its DB9-turned-sedan exterior. And I began to understand. The Rapide won’t make sense to everybody, and it may not be the fastest luxury sedan out there, but when it comes to a satisfying overall driving experience, few automobiles—sports cars or sport sedans—can match the sheer pleasure you get from an encounter with this beautiful Aston.

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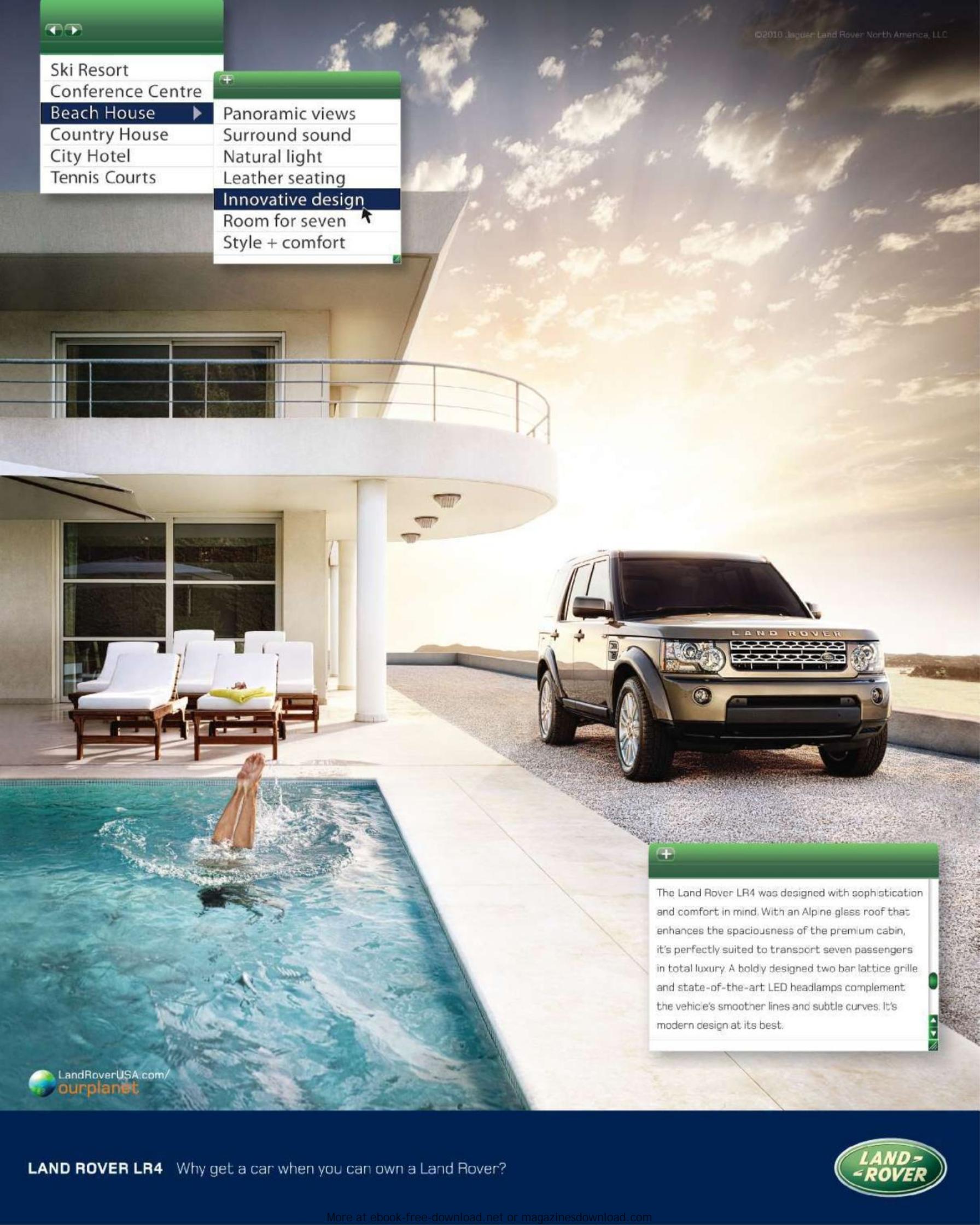
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ROAD TEST

A Duel in DEATH VALLEY

LOTUS EVORA VS.
PORSCHE CAYMAN S

The latest Lotus takes on a Porsche prodigy

BY JONATHAN ELFALAN » PHOTOS BY BARRY HATHAWAY



ONE COULD ARGUE THAT MID-ENGINE SPORTS CARS make the best sports cars. You could back your thesis by saying this layout inherently provides superior balance, or simply state that there are multimillion dollar Le Mans prototypes and Formula 1 race cars that prove your case for you. ❖ Regardless, this logic has found its way into some of the most lusted-after exotics in the world. But for the consumer without a Swiss bank account, or one who simply can't

rationalize spending over \$100K on something he or she can't live in, there are but a handful of choices providing the harmonious goodness that comes only from an engine that takes a back seat to you. ❖ Here, we have two shining examples—one new, the other proven. For a long time, Lotuses were reserved for those who possessed a near masochistic level of car enthusiasm, or had a strange affinity for cocoon-like environments. The British company's minimalist



approach has proven to be effective in delivering exceptional driving dynamics, but also leaves no room for practicality. Those who have been yearning for the day they could get a car with Lotus' legendary handling but that's comfortable enough to drive on a regular basis need to yearn no more—the Evora has arrived. ❖ The Porsche Cayman S has garnered quite a reputation not only for its dynamic capabilities but also for its comfort and usability. In our April 2009

issue it silenced the up-and-coming Nissan 370Z. Now the Porsche has even more refinements, the most notable being its all-new and more powerful flat-6 engine. ❖ With these two now face to face, Assistant Road Test Editor Calvin Kim and I set out into the natural proving grounds known as Death Valley, along with a stop at the high-speed Willow Springs International Raceway, to find out what sets these two contenders apart. May the midship melee begin!



Despite the Evora's striking resemblance to its all-electric distant cousin, the Tesla Roadster, the exterior shape and detail present a refreshing and distinctively masculine alternative to the all-too-ubiquitous Porsche of today. Kim endorses the appeal of the Evora over its popular rival as he points out, "It's hard to roll with any credibility when you look across the intersection at a red light and see another Cayman...one with a fluffy white poodle sticking its head out of the window."

Getting into this Lotus is a new experience in many ways. A lower and narrower doorsill combined with its larger door opening—versus contorting your way into an Elise or Exige—earns the Evora five stars on Lotus' convenience scale, though we'd be hesitant to label it "easy" on a universal level. It still takes some conscious effort and a little dexterity to avoid tallying scuff marks on the leather doorsill when your left leg crosses the door plane. Ingress/egress of the Cayman by comparison requires absolutely no "technique," or thought for that matter, which is something that's often taken for granted.

Fortunately, there are many more interesting bits inside. For starters, this Lotus' cabin is comfortable and quantifiably quieter than the Cayman S'. The wide but well-cushioned Recaro buckets provide phenomenal lateral support with enough adjustability (along with a tilt/telescoping steering column) to accommodate a wide range of driver types. The one aspect that took some time to adjust to, especially on the track, was the lack of a dead pedal. The narrow footwell doesn't allow sufficient space for a U.S.-approved footrest (though there is one in European models), which leaves your left foot camping under the clutch pedal.

The switchgear and gauge layout are chic in their simplicity, neatly inlaid in a sculpted dash swathed in soft leather and accented with swoopy aluminum trim. The overall presentation is more amusing to behold than the Cayman's conservative German interior, due in part to its design, but it also lacks some Teutonic intuitiveness. Trying to figure out the all-in-one Alpine audio head unit—one that integrates both Bluetooth and GPS navigation as part of the Technology Package—was closer to being trapped in an electronic labyrinth than it was useful. We can forgive its misplaced aftermarket appearance but its functionality felt utterly prehistoric considering the technological age we live in—did someone say iPad?

Drive the Evora on a track such as Willow Springs and you'll soon forget about

any of its electronic eccentricities—for it will require your full attention. This is where we first explored the breadth of its absolute knife-edged handling and realized that understeer is simply not in this car's vocabulary. Turn-in is as quick as it is light, and on a fast track like Willow, a slight lift in throttle is all it takes to induce a spine-tingling 4-wheel slide, where even with a staggered tire setup the wider rear Pirellis sometimes feel eager to beat the fronts to the next mark. Try your best to imagine a completely stock street car that makes something as capable as a Cayman S feel like an understeering beast—that's the Evora's handling in a nutshell.

Ultimately, the Evora concedes two-tenths of a second per lap to the Cayman S. Understeer is not always a bad thing,

and often provides that nice safety buffer through fast, critical sections (like Turns 8 and 9 at Willow) that can easily turn a quick lap into a bad day. The Evora's incredible balance, laser-precise steering and ample braking capacity afford it higher entry and apex speeds at nearly every corner of the track, but it loses ground on the corner exits and short straights (and maybe a little through the scary bits) to the Cayman S' superior grip and torquier flat-6.

The thrust propelling the Evora's chassis comes via a transversely mounted all-aluminum 3.5-liter Toyota V-6, massaged through Lotus' proprietary engine management software to produce 276 bhp at 6400 rpm with 258 lb.-ft. of torque available at 4700 rpm. The engine's smooth power is





» Drive this Lotus on the street, and you'll know from the public's response that the designers did their job right. The best angle, we believe, is from the rear, where the Evora's wide haunches are accentuated and you can catch a glimpse of one of the best applications of a Toyota V-6 yet.

» There's nothing overly fancy about the Cayman's interior, but you can't fault its functionality. It'll serve your every technological need, from Bluetooth to GPS navigation, all while preserving an environment conducive to high-performance driving. The clear analog gauges, perfectly positioned shift lever and excellent outward view are much appreciated.





sent through an Aisin transaxle (ours came with the optional Sports Ratio gearing), which we found to be a bit on the notchy side and intermittently opposed to aggressive rev-matched downshifts. The engine provides good midrange power and revs freely, but leaves something to be desired in terms of top-end punch and an inspiring exhaust note—though there's obvious space in the engine compartment for a forced-induction upgrade (wink, wink).

We came away very impressed with what Lotus has packaged into the Evora and I couldn't agree with Kim more when he concluded: "The Evora has genuine character and lots of it. It's a pure driving experience that is sorely lacking in today's techno-centric world."

1st

PORSCHE CAYMAN S

LAP TIME: **1.38.30**

MAX MPH: **127.8**

The Porsche Cayman S is a car that needs no introduction—there are literally thousands of them already roaming the roads. Although it came to market just five years ago, its fraternal sibling, the Boxster, has been around since 1996, which means Porsche has had about as much time to tweak the formula to near-perfection.

Compare the two chassis: The Lotus uses a high-tech modular aluminum design that's stiffer than a double shot of Bacardi 151 and weighs less than a contestant on *The Biggest Loser*. Add on the rest of the hardware plus all the vital fluids and the Evora tips the scale at an even 3100 lb. That's a respectable figure, but what may surprise you is the Cayman S, and its less trick all-steel body, matches it pound for pound. And the Cayman's 3.4-liter flat-6—which tucks down out of view behind the passenger compartment better than the Lotus' canted V-6—gives it the power-to-weight advantage with its higher compression ratio and direct injection providing 320 bhp at 7200 rpm and 273 lb.-ft. at 4750 rpm.

The 6-speed manual transmission is light in its shift action, and delivers the same level of silky smooth precision you get from the inherently balanced boxer engine all the way up to its 7400-rpm redline. We could have specified Porsche's 7-speed dual-clutch PDK transmission, which generally delivers quicker acceleration and better fuel economy. While that's a compelling argument, choosing it would mean missing out on the truly wonderful and engaging experience the manual gearbox offers.

The Cayman's 4-corner strut suspension, fitted with the optional Porsche Active Suspension Management (PASM), allowed us to select a slightly more compliant ride setting than the Evora's non-adjustable Bilsteins during the long haul through Death Valley. Then with the push of a button, we

THE Results

PERFORMANCE

Performance points based on proportional scale (normalization).

		2010 Lotus Evora	2009 Porsche Cayman S
0-60 mph time	30 pts	28.2	30.0
0-1/4 mile time	30 pts	28.9	30.0
Slalom	30 pts	29.7	30.0
Skidpad	30 pts	29.7	30.0
Braking, 60-0 mph	30 pts	30.0	29.2
Braking, 80-0 mph	30 pts	30.0	29.1
Fuel economy, EPA	20 pts	19.6	20.0
SUBTOTAL	200 pts	196.1	198.3

SUBJECTIVE

Subjective ratings based on points awarded in each of 12 categories by editors and scored based on a proportional scale.

		2010 Lotus Evora	2009 Porsche Cayman S
Driving excitement	20 pts	20.0	18.0
Engine	20 pts	18.0	20.0
Gearbox	20 pts	16.0	20.0
Steering	20 pts	20.0	18.0
Brakes	20 pts	20.0	16.0
Ride	20 pts	19.0	20.0
Handling	20 pts	20.0	19.0
Exterior styling	15 pts	15.0	15.0
Interior styling	15 pts	15.0	14.2
Seats	10 pts	10.0	9.0
Ergonomics/controls	10 pts	6.5	10.0
Luggage space	10 pts	7.8	10.0
SUBTOTAL	200 pts	187.3	189.2

TOTAL POINTS (Price independent)	400 pts	383.4	387.5
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Final Standings	2	1
	2010 Lotus Evora	2009 Porsche Cayman S

STANDINGS, PRICE DEPENDENT

Points based on a proportional scale; points range based on percentage of top price.

Price as tested	200 pts	192.5	200.0
		\$83,520	\$70,915
Price-sensitive total points		575.9	587.5
Price-sensitive standings		2	1

could be back to firmer damping better suited for response through the mountain road sections and high-speed track lapping.

Porsche's steering is usually better than most and virtually faultless. But in this case, back-to-back stints with the Evora made it feel a little heavy and sluggish with more front-biased weight distribution. In the spectrum of sports cars, the Cayman's driving dynamics are conservative because of its polite tendency to understeer at the limit. This characteristic allows you to find its limits with more confidence, knowing that you'll have the room to dial back if needed. We did have a few "moments," however, thanks to an uncharacteristically soft and long-travel brake pedal. Even with its stickier Michelin tires, the Cayman could not match the stopping ability of the Evora's larger rotors and AP Racing-sourced calipers, and there's a school of thought that says this is a weakness that will cost you the race.

Nevertheless, Porsche's stalwart build quality could not have proven more important than at high noon under the brutal Death Valley sun. The Evora's air conditioning system simply quit when we needed it most—the culprit, a pinhole leak—and began to circulate cabin air slightly warmer than ambient—sort of like a convection oven. Kim took a more circumstantial perspective, stating that

"this would've been fantastic if the ambient air were slightly cooler than what we'd like it to be." Profound words indeed.

We believe it's the little details that are perhaps most telling of a company's confidence in its machinery. And although there may not be anything super fancy to a Porsche interior, the layout is both accommodating and extremely well integrated—the concealable vent-cooled cupholders are products of genius. The Porsche Communications Management (PCM) system features a large, easy-to-use touchscreen that juggles all your on-road needs (navigation, music and Bluetooth) without missing a step. Not to mention, after all the option boxes have been checked, this well-equipped Cayman S still costs \$2500 less than a base Evora. What are you willing to pay for exclusivity?

THE ENVELOPE, PLEASE

Indeed, mid-engine sports cars do make the best sports cars. And although this battle was a close one, it's the Cayman S that comes out on top by a small 4-point margin and pips the Evora on the track by just two-tenths of a second. If the winds were to blow in a slightly different direction (i.e., if we compared the cars on a different track) the outcome might have been different. But for now, the Cayman S is king of the mid-engine world.

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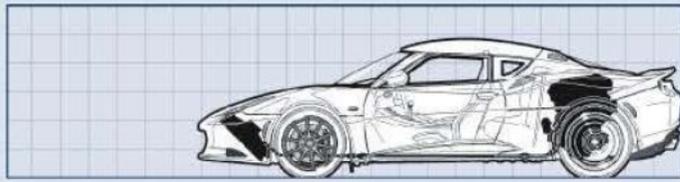
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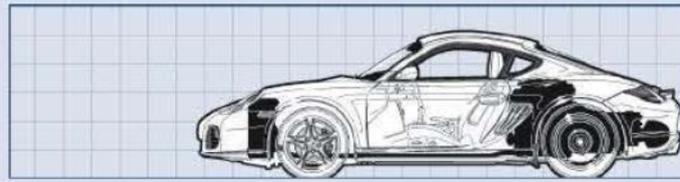
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Lotus Evora Porsche Cayman S

GENERAL DATA

List price	\$73,500	\$60,200
Price as tested	\$83,520	\$70,915
	Price as tested incl std equip. (dual frnt airbags, trac. cntrl, std sound, pwr windows, mirrors & door locks), Tech Pkg (Alpine prem sound w/ USB input, nav, Bluetooth, cruise cntrl, TPMS disp) \$2995, Prem Pkg (leather, accent lighting) \$1990, Sprt Gearbox (\$1500), Sprt Pkg (Sprt mode/trac cntrl, diffuser, titanium exhst, oil cooler) \$1275, metallic paint (\$590), reverse camera (\$495), dest charge (\$1175).	Price as tested incl std equip. (dual front, side & side curtain airbags, yaw & traction cntrl, cruise cntrl, std sound, Homelink; pwr windows, mirrors & door locks), PCM w/nav (\$3110), PASM (\$1995), Bose prem sound (\$990), metallic silver paint (\$710), Bluetooth (\$695), self-dim mirrors & auto. wipers (\$690), auto. climate cntrl (\$550), heated seats (\$500), universal audio interface (\$440), color floor mats (\$90), dest charge (\$950).
Curb weight	3100 lb	3100 lb
Test weight	3260 lb	3260 lb
Weight dist (w/ driver), f/r, %	39/61	46/54
Wheelbase	101.4 in.	95.1 in.
Track, f/r	61.7 in./62.0 in.	58.5 in./60.2 in.
Length	170.9 in.	172.3 in.
Width	72.8 in.	70.9 in.
Height	48.1 in.	51.4 in.

ENGINE

Type	dohc 4-valve/cyl V-6	dohc 4-valve/cyl F-6
Displacement	3456 cc	3436 cc
Bore x stroke	94.0 x 83.0 mm	97.0 x 77.5 mm
Compression ratio	10.8:1	12.5:1
Horsepower (SAE)	276 bhp @ 6400 rpm	320 bhp @ 7200 rpm
Torque	258 lb-ft @ 4700 rpm	273 lb-ft @ 4750 rpm
Redline/limiter	na/7200 rpm	7400/7500 rpm
Fuel injection	elect. sequential port	direct
Rec fuel	premium	premium

CHASSIS & BODY

Layout	mid engine/rear drive	mid engine/rear drive
Body/frame	composite aluminum	unit steel
Brakes Front	13.8-in. drilled & vented discs/ 4-piston fixed calipers	12.5-in. drilled & vented discs/ 4-piston fixed calipers
Rear	13.1-in. drilled & vented discs/ 4-piston fixed calipers; vac assist, ABS	11.8-in. drilled & vented discs/ 4-piston fixed calipers; vac assist, ABS
Wheels	forged alloy; 18 x 8 f, 19 x 9 1/2 r	cast alloy; 18 x 8 f, 18 x 9 r
Tires	Pirelli P Zero; 225/40ZR-18 92Y f, 255/35ZR-19 96Y r	Michelin Pilot Sport PS2; 235/40ZR-18 91Y f, 265/40ZR-18 101Y r
Steering	rack & pinion, power assist	rack & pinion, power assist
Steering ratio	15.4:1	14.5:1
Turns lock to lock	2.8	2.6
Suspension, f/r	upper & lower A-arms, coil springs, tube shocks, anti-roll bar/upper & lower A-arms, coil springs, tube shocks, anti-roll bar	MacPherson struts, lower control arms, coil springs, elect. adj tube shocks, anti-roll bar/struts, lower lateral & trailing links, coil springs, elect. adj tube shocks, anti-roll bar

ACCOMMODATIONS

Seating capacity	2 + 2	2
Head room, f/r	38.0 in./31.0 in.	37.5 in./na
Front-seat leg room	44.5 in.	43.8 in.
Rear-seat knee room	13.5 in.	na
Trunk space	5.7 cu ft	5.3 + 9.2 cu ft



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Lotus Evora Porsche Cayman S

ACCELERATION

Time to distance, seconds		
0-1320 ft (1/4 mile)	13.4 @ 103.9 mph	12.9 @ 108.8 mph



BRAKING

Minimum stopping distance		
From 60 mph	114 ft	117 ft
From 80 mph	198 ft	204 ft
Total swept area	589 sq in.	542 sq in.
Swept area per ton	380 sq in.	350 sq in.

HANDLING

Lateral accel *	0.99g	1.00g
Balance	mild understeer	mild understeer
Slalom speed**	71.9 mph	72.6 mph
Balance	neutral	mild understeer

*200-ft skidpad; **700-ft slalom, 100-ft spacing.

DRIVETRAIN

Transmission	6-speed manual	6-speed manual
Gear/Ratio/Overall/(Rpm) Mph		
1st,:1	3.54/13.34/(7200) 41	3.31/12.86/(7500) 45
2nd,:1	1.91/7.21/(7200) 76	1.95/7.58/(7500) 76
3rd,:1	1.41/5.30/(7200) 104	1.41/5.47/(7500) 106
4th,:1	1.09/4.11/(7200) 134	1.13/4.41/(7500) 131
5th,:1	0.97/3.14/est(6650) 162*	0.95/3.69/(7500) 157
6th,:1	0.86/2.79/est(5900) 162*	0.81/3.15/est(7000) 172*
Final drive ratio	3.78:1 1st-4th; 3.24:1 5th-6th	3.89:1
Engine rpm @ 60 mph in top gear	2150 rpm	2450 rpm

*Drag limited.

FUEL ECONOMY

Our driving	21.8 mpg	20.9 mpg
EPA city/highway	18/27 mpg	19/26 mpg
Cruise range	324 miles	332 miles
Fuel capacity	15.9 gal.	16.9 gal.

INTERIOR NOISE

Idle in neutral	54 dBA	59 dBA
Maximum, 1st gear	81 dBA	82 dBA
Constant 50 mph	70 dBA	75 dBA
Constant 70 mph	75 dBA	80 dBA

TEST CONDITIONS

Temperature	58° F	Elevation	350 ft	Location	Irvine, California
Humidity	75%	Wind	calm		

2010 MASERATI

GranTurismo

CONVERTIBLE

Sun, sound and Italian fury

BY SHAUN BAILEY >> PHOTOS BY GUY SPANGENBERG



Everybody looks. The Maserati attracts sideways glances and oblique stares like a proper exotic, but it does so without a retina-searing paint color, ear-splitting exhaust or a seemingly imminent threat to small animals. Its shape is subtle and organic, yet alluring. Those pinned-back headlamps and hungry suckerfish grille capture our attention. It makes passersby daydream and whistle wistfully. This is the Maserati GranTurismo Convertible. Well, this particular car is actually the European variant called the GranCabrio, but there's only a subtle difference.



As its name implies, this Maserati is a grand touring car. A GT isn't typically the fastest, flashiest or first at anything. A GT car is meant to be something else; something more well-rounded and encompassing, like a degree in fine arts.

Grand tourers are analogous to expensive and well-crafted watches. They signify to everyone else that the wearer has taste, and is likely better off than most. That taste is as variable as the flavors of exotic watches—the known names such as Rolex, Tag Heuer to the unknown A. Lange & Söhne...take your pick.

But it's not only about style, cost or craftsmanship. A car's flavor is determined by the bits beneath it, like the number of jewels in a movement and the feeling it leaves you with long after the lights in the garage are out. Truly great GT cars come with a different set of expectations not only for the driver, but also for passengers and bystanders as well. Lamborghinis and Vipers overwhelm us; this Maserati seduces us.

This *bella macchina* is unlike its predecessor, the GT Spyder, in that it retains its rear seats in the transformation from coupe to convertible. It's a novel first for a Maserati and has been done with little compromise to rear seat comfort. No other performance GT cabriolet comes close to this amount of rear passenger space. A wonderful top-down jaunt through pine-scented sunshine and shade can now be shared with as many as three friends.

The first thing a passenger in the GT will notice are the seats. Like lounge chairs at the beach, they have a relaxed curve that gently cradles. There is a proper amount of lateral support, but rather than oversized bolsters protruding like an afterthought, the seats are deeply dished so as to coddle your backside.

Insert the conventional flip-out key and twist. A light burble emits on ignition, pleasantly alerting bystanders to the Maserati's presence, without being annoying about it. Put the conventional PRND shift lever into gear and release the electronic parking brake. The ZF automatic transmission effortlessly engages. There's no clunk or judder anywhere, even in the manual gear selection mode. The car is stiff, as are its engine and transmission mounts. Goose the throttle and it smoothly, yet quickly, goes. A flick of the optional column-mounted paddles results in a blipped downshift or quick upshift. Not quite as quick as the automated manual available in the coupe, but coupled with the torque converter's smooth nature, quite appropriate here.

As a proper sporting machine, the GT is naturally rear-wheel drive. The Ferrari-



built 4.7-liter V-8 is thoroughly modern; revving to 7200 rpm while delivering 440 bhp in European trim; U.S. cars make 7 less at 433 bhp due to emissions requirements. Its sweet song never falters from being pleasant, but for those who want that unmuted Italian symphony to reverberate through the surrounding valleys, a simple press of the Sport button is key. Aside from stiffening the Skyhook electronically controlled dampers, speeding shifts and quickening the throttle response, Sport mode opens flaps in the exhaust at exactly 3000 rpm to emit a note that stirs the senses and reminds us we're in something passionately Italian. Unlike with many an automatic transmission in which drivers tend to ignore the manual feature, GT owners will use the paddles regularly to

keep the engine spinning above 3000, just to hear that glorious exhaust note.

The boulevardier combination of an automatic transmission and a convertible top isn't something we typically associate with a back-road corner carver, but the GT is exactly that. With the car's top down and Sport mode enabled, a trip up a winding mountain road is a thrilling experience, heightened by the exposure to wind, sun and the shrill howl of the finely tuned V-8. Its steering is nicely weighted, a tad heavy at low speeds, but just right mid-corner in a decreasing-radius bend. Maserati stability control, MSP, is of course standard and can be fully disabled. The car's balance can be seen in our slalom run that's just shy of 70 mph, which is faster than the Ferrari California.



» The two-tone interior, with Bordeaux and Pearl Beige against Moonwood trim, is striking—particularly against the darker Grigio Granito color of the body. Rear-seat headrests house pop-up rollbars. It wasn't easy to get that helmet in the trunk, but the small volume translates to added rear leg room.



PHOTO BY GIDEON GILLARD



Around the skidpad, though, the GranTurismo is hampered by steady-state understeer. This was noticeable on the road where the GT easily enters corners and responds well to trail braking, without the fear of over-rotation. A two-way limited-slip differential that gives 25 percent lock under acceleration and 45 percent on deceleration promotes stability under hard braking. As a car with benign handling limits and active rollover protection, the GranTurismo is quite relaxing on a fast back-road outing.

It's quite another thing to take your friends with you. And that's where the GT really shines. It offers about the same rear seat space as an Aston Martin Rapide, but with a retractable top. And if the elements get to be too much, only 28 seconds are needed to retreat under the triple-layer canvas top.

There is a compromise for that rear seat room—it's the minuscule trunk; easily dealt with by using the rear seats as storage space. But for the well-heeled a better option is available from Maserati in the form of specialty luggage. A set of four fitted bags for the GT is \$5314, and a single larger suitcase that belts into a rear seat is another \$2066.

No matter your taste, it's hard not to enjoy the flavor that is the GT. Beneath its Pininfarina-designed body is a wonderful Italian movement. Not the fastest, nor the flashiest, but possibly a first choice to take three friends on a warm summer evening drive along the coast.

2010 Maserati GranTurismo Convertible

List price	\$135,800
Price as tested	est \$144,335
Curb weight	4610 lb
Engine, transmission	4.7-liter V-8, 6-sp automatic
Horsepower, bhp @ rpm	440 @ 7000
Torque, lb-ft @ rpm	361 @ 4750
0-60 mph	4.8 sec
0-100 mph	11.3 sec
0-1320 ft (1/4 mile)	13.2 sec @ 107.8 mph
Top speed	est 176 mph (170 mph top down)
Braking, 60-0 mph	114 ft
Braking, 80-0 mph	197 ft
Lateral accel (200-ft skidpad)	0.87g
Speed thru 700-ft slalom	69.7 mph
Our mileage, EPA city/highway	15.3, 12/19 mpg



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Déjà Vu Meets Déjà New

Forty years may separate these two Zs, but they both celebrate the BRE Datsun 240Z's historic SCCA National Championships in 1970 and 1971

BY ANDREW BORNHOP ■ PHOTOS BY JOHN LAMM



MOST PEOPLE FAMILIAR WITH BROCK Racing Enterprises immediately think of John Morton and the Datsun 510. With good reason. The boxy red, white and blue No. 46 BRE car won the SCCA 2.5-liter Trans-Am championship in 1971 and 1972. And the affordable 510 adapted so well to racing that scads of them, many painted like original BRE cars, popped up at racetracks around the country. Even today you'll see the occasional 510 road racing, often in BRE-inspired paint.

Before the 510, however, Peter Brock and crew—who were already campaigning Datsun S2000 Roadsters in SCCA club racing—hit the track with the sleek 240Z...and with great success. Aided by Datsun's West Coast President Yutaka Katayama, BRE obtained an early Z (chassis No. 492) in January 1970 and turned it into an SCCA C Production race car at their shop in El Segundo, California. This No. 46 Z, in fact, graced the cover of our November 1970 issue. James T. Crow reported on the build of the car and con-

cluded that the new racing Z was well on its way to doing well. "Watch for it," he wrote. "It will be worth seeing."

Indeed it was. This was the heyday of production-based amateur road racing in America, and at the SCCA's 1970 American Road Race of Champions held at Road Atlanta (the precursor to the Run-offs), Morton's C Production BRE Z won easily, defeating the likes of Bob Tullius and Lee Mueller in Triumph TR-6s, Alan Johnson in a Ginther-prepared Porsche 914-6 and Bob Sharp, who was building



» Peter Brock played a key role in making the Tribute 370Z look just like a modern BRE Z.



240Zs out of his shop in Connecticut.

Quite a debut for the BRE car and the sleek new Z in general, which swept the top three positions that fall day at Road Atlanta. And the following year, it seemed that the harder the Zs pushed, the more the Triumphs and Porsches broke. At the 1971 ARRC, two BRE 240Zs (Morton and Dan Parkinson) were on the front row, alongside Sharp. Allan Girdler, reporting in our March 1972 issue, described Morton's winning drive: "[He] put on an exhibition, leading all the way in his routine madman

style and power always fully on, into each corner at seemingly impossible speed, out with wildly spinning tires, using all the road in the process."

All told, Datsun Zs went on to win 10 straight SCCA C Production titles, but that 1971 national championship marked the end of the BRE Z era. Brock—with Z sales booming and 510s languishing on dealer lots—had decided to go professional racing with the latter in the SCCA's 2.5-liter Trans-Am championship.

And sadly, the original championship-

winning No. 46 BRE Z was destroyed a couple of years later. Brock had handed the car back to Datsun after the 1971 season, who in turn gave it to Parkinson, the former BRE driver who subsequently totaled the car in a rollover crash at Phoenix.

Although Parkinson, who Morton says is very fast, has never publicly admitted writing off the historically significant No. 46 car, one man who knows it's true is Ron Carter, an avid Datsun vintage racer who's built the beautiful BRE 240Z featured here, which is considered by many

to be the most faithful re-creation there is of the original No. 46 BRE 240Z.

"I loved the research; it was so much fun," explains Carter, who said he was the only guy crazy enough to undertake such an historically accurate re-creation of Morton's car. He methodically started collecting parts in 2002, beginning with a clean 1972 Z chassis that he had media-blasted down to the bare metal and stitch-welded.

An early fuel door and rear hatch gave the Z the proper 1970 look. BRE spoilers went on front and rear, as did aerodynamic headlight covers. The rollbar was copied from that of a BRE 240Z pace car used at Ontario Motor Speedway. As for the strut suspension, Carter wanted to keep it as original as possible but still be competitive in vintage racing. In went Hypercoil springs, Tokico Illumina 5-way-adjustable shock absorbers, camber plates and adjustable rear toe. And with the large anti-roll bars and sticky Hoosier DOT race tires, size 205/50ZR-15, Carter thought it prudent to reinforce the Z's suspension pickup points.

Under the hood is an original BRE-built L24 2.4-liter, a sohc inline-6 purchased from a vintage racer who was upgrading his Z to a larger engine. This Z was quite a find, as it supplied Carter not just with the powerplant but also the original triple Solex/Mikuni carburetors, the Nissan Competition intake manifold and original American Le Mans magnesium wheels. The gearbox is also from Nissan Comp, an early 5-speed overdrive unit (with "medium-close" ratios) that sends power to an R190 limited-slip differential with 4.44:1 gearing.

Differences from the original No. 46 are numerous but not that major, done mostly for added performance or safety but without changing the simple, honest character of the car. The ATL fuel cell, by vintage rules, is isolated by a bulkhead, and the original rollbar has been built into a full cage with door bars. What's more, the rear brakes are discs, whereas the original BRE Z raced with finned aluminum drums. All told, Carter's BRE Z weighs about 2100 lb., and the engine, redlined at 7000 rpm, puts out around 240 to 250 bhp. The headers, of note, are an exact copy of the original BRE exhaust on the blue No. 3 BRE 240Z, the sole remaining true BRE Z in existence.

Given that it's the 40th anniversary of both the production Z and the BRE Z's first championship, Nissan helped us take Carter's vintage BRE replica out to Spring Mountain Motorsports Ranch for some lapping fun. Making things even sweeter, we'd get to drive it back to back with Nissan's one-off 370Z BRE Tribute car, a

» The BRE Tribute 370Z looks great going by, so good in fact that Brock says it reminded him of the original BRE 240Z when it blasted past on the straight. Even on street tires, this Stillen-built 370Z lapped quicker than the 240Z on sticky Hoosiers. Yes, the new 370Z is significantly heavier, but it's much easier to drive fast.



modern Z done up in a paint scheme that pays homage to those folks who put the Z on the sports-car racing map.

The BRE Tribute car is a Nissan 370Z built by Stillen essentially to the SCCA's T2 class rules. As such, it's not overly tweaked. It has a gutted interior and a cage, plus race seats and belts. The car started out as a 2009 Touring Sport model, to which Nismo bodywork, wheels and shocks were added, the last teamed with Eibach springs that lower the car a bit. Stillen anti-roll bars are fitted to the car front and rear, and the 4-cam 3.7-liter V-6 is untouched internally. It is, however, stripped of its catalytic converter and fitted with a Stillen cat-back exhaust, a reflashed ECU, a Nissan Motorsports oil cooler, an aluminum flywheel and a heavy-duty clutch. Power is in the neighborhood of 350 bhp, and stock brakes (with braided stainless-steel lines and Hawk pads) handle stopping chores. The car also had a stock viscous limited-slip differential, although Nissan plans to fit the car with a tougher clutch-type LSD from Nissan Comp soon.

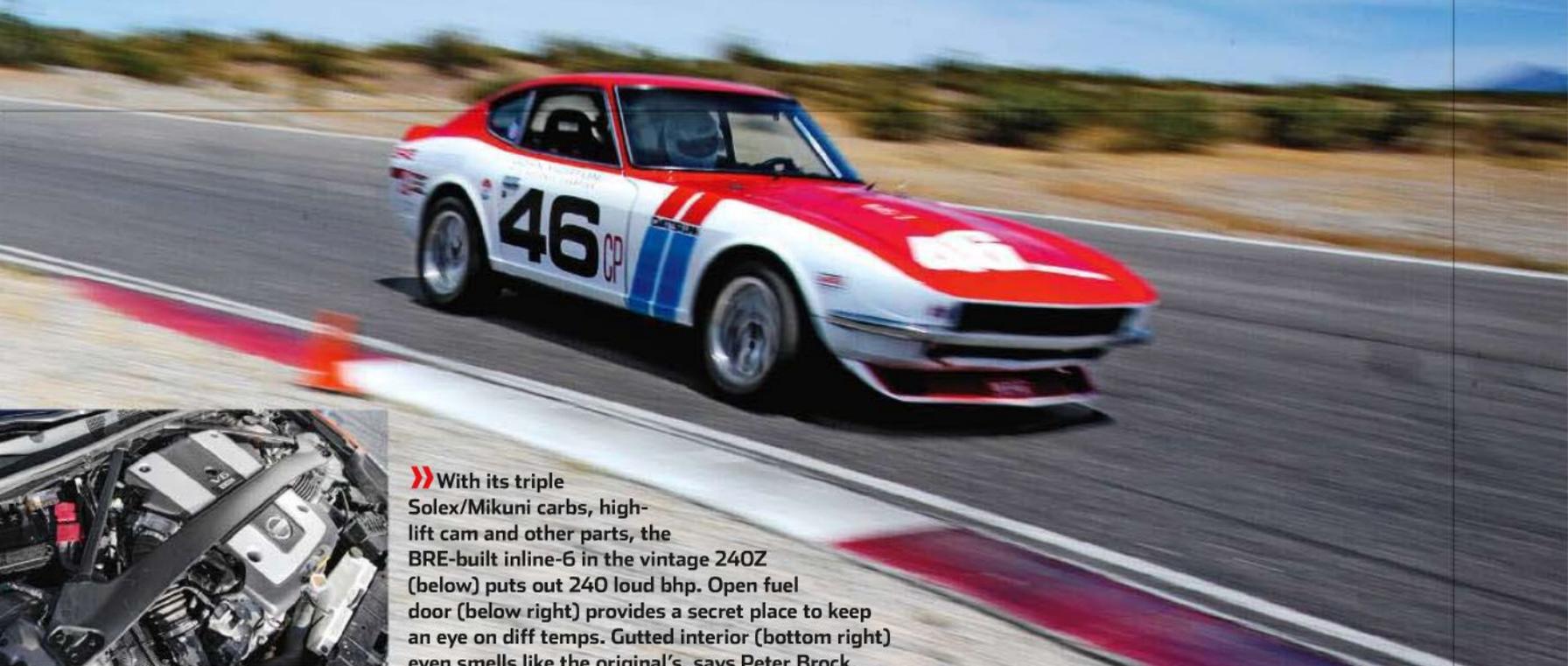
First up, the BRE 240Z. As Ron Carter is a big guy, I fit in his seat well. With this being the first time the car has run in anger on a track—and it being dearer to his heart than just about, well, anything—I tell myself: *Don't do anything stupid*. The car fires easily with the pushbutton starter and a squirt of gas from the pedal. And boy, is it loud! The clutch takeup is simple, and soon I'm out on the track being deliberate with each shift. The Z is spacious but has a narrow feel, and the pedals are placed for easy heel/toe downshifting. Nothing feels assisted. During my familiarization laps, the steering is heavy, the brakes are heavy...drivers really were men back then. I shift at about 6800 rpm, as Ron suggested, and the straight-line

power is excellent. In steady-state corners, the grip is great; however, there's a miss from the engine that only clears out on the straightaway, so I head into the pits.

"Are you channeling John Morton yet?" asks Carter after I shut off the car. "Not yet," I admit. Second time out, though—after Carter's crew tweaked the float bowl levels a bit—I pick up some speed and begin probing limits more aggressively. The grip from the Hoosiers is exceptional. I'm shifting at 7000 rpm now, carrying more speed into corners and exiting them with a lot more side load because of the added pace. It felt fantastic, very mechanical, and the Z really came alive when picked up by the scruff of the neck and driven hard. Only then did I begin to imagine what it must have been like to be Morton in a BRE Z, dicing with the likes of Tullius in a TR-6 at Road Atlanta. As I pulled in, it was hard to wipe the smile off my face. Our best lap of the day: 1 minute, 56.27 seconds, a decent effort given that the engine still sputtered a bit in Turns 1 and 2.

Brock, on hand for the test, quickly pointed to a couple of potential causes for the misfire. One, the car needed a shield between the headers and the carbs to keep heat from causing issues. Two, the carbs needed to be isolated with rubber to keep fuel from frothing in the float bowls at high rpm. Carter took mental notes as Brock, a youthful 73, recalled the details from 40 years ago...

The Nissan 370Z Tribute car—with BRE livery personally created and directed by Brock in the paint booth—felt quite different from the old 240. With its full cage it's actually tighter on space than the 1970 240Z, but it's much easier to hop in and immediately drive faster. And the first time I hit the assisted brakes, I nearly put myself through the windshield. Although the grip of the Yokohama Advan



» With its triple Solex/Mikuni carbs, high-lift cam and other parts, the BRE-built inline-6 in the vintage 240Z (below) puts out 240 loud bhp. Open fuel door (below right) provides a secret place to keep an eye on diff temps. Gutted interior (bottom right) even smells like the original's, says Peter Brock.



AD08s, the stock Nismo tire, felt remarkably good, it was still not quite up to the level of the stickier Hoosiers.

All the controls of this modern Z feel Teflon-coated for ease of use, and the adjustable rear anti-roll bar from Stillen (which was set on full stiff and may not be legal in T2) makes the car quite tail-happy, with power oversteer on tap while exiting tight corners. Road Test Editor Jonathan Elfalan (who did the timed laps) and I both agree that the Z was tuned great for the Corvette Loop we were on but would be hairy on a big fast track such as Willow Springs.

Second session in the car, with all driver aids turned off, I'm having more fun. It's hot, over 100 degrees, and I'm keeping an eye on oil temps as I continue to be impressed with how well the new Z hides its 3300-lb. curb weight and laps with no apparent vices. It's clearly better damped than a stock Z. Toward the end of the session, though, I notice more inside rear wheelspin on corner exit, an indicator that the limited-slip diff was not working well. Turns out that differential cooler hadn't been installed

on the car yet, and our lapping on a hot day proved too much for the diff. Our best lap of 1 min. 55.53 sec. would have been considerably better had the car been on Hoosiers and fitted with the limited-slip diff from Nismo, with a remote cooler.

So, neither the Nissan nor the Datsun had a perfect day at Spring Mountain, but these siblings—40 years apart in age and effectively on shakedown runs—proved to be remarkably close indeed in performance. More important, they provided me with a sense of what it must have been like to be John Morton back in the day, and perhaps what a modern BRE 370Z might be like, had BRE stayed in the business of racing Datsuns or Nissans.

Will we ever see Carter's BRE 240Z on the track at vintage races? "Probably not,"

he admits. "I put too much energy into building the car. I built it too well. I'm afraid to crash it. And I even put a clear coat on it. Everybody knows you're not supposed to do that to a race car." That said, we can only hope to see the Stillen-prepared Tribute car in T2 action soon, keeping the BRE flame alive and putting the Z where it's repeatedly been since 1970...at the front of the field.

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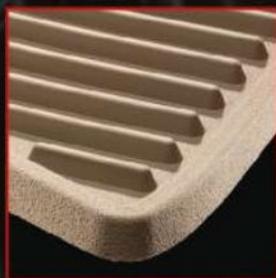
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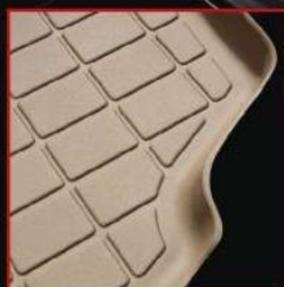
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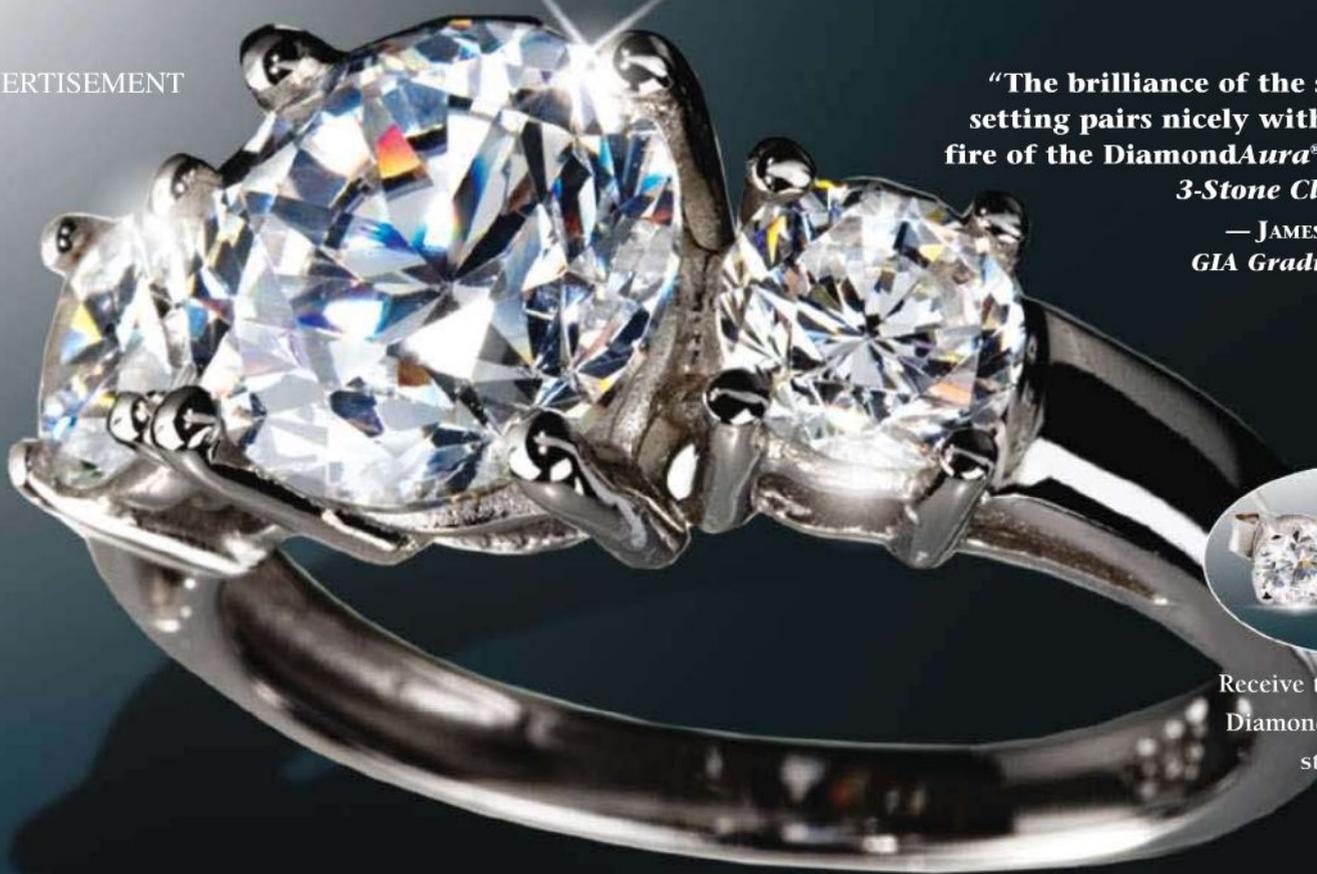
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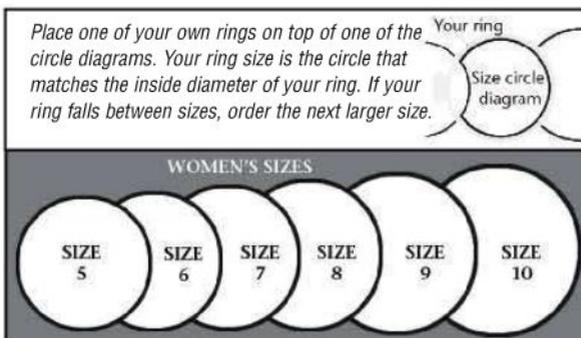
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Evora Escapade

Searching for—and finding—
Lotus' wonderful English heritage
at the wheel of a new Evora

BY IAN ADCOCK » PHOTOS BY IAN DAWSON

I'M ANNOYED AT LOTUS—WHY CAN'T THEY spend a few more pounds and put some elastic nets in the cabin for storing mobiles and sunglasses? My phone has just tumbled out of my pocket for the umpteenth time and has buried itself between the driver's seat and the central tunnel. And it's ringing. Actually that last bit isn't strictly true as the "ring" tone is an Aston Martin V8 Vantage under full-bore acceleration. Boys and their toys...

And I hate London traffic. Snapper Dawson and I are in an interminable jam on the North Circular Road. We've been stationary next to Ealing Common for so long the grass has grown and flowers burst into bloom. The "bespoke air-conditioning system developed by Lotus and Bergstrom engineers"—Lotus' words, not mine—struggles to cope with an

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» This is what the Evora does best, spearing across deserted country roads near Cheshunt (above). That's ACBC's drawing desk (left) and the plaque commemorating Lotus' founding.



early May morning in England. Moreover, the windows have to remain firmly closed to keep us from being gassed by all the diesel exhaust belching from the surrounding trucks and buses.

This inner ring road around central London is taking us from The Orange Tree pub in Richmond, the community where Anthony Colin Bruce Chapman was born May 19, 1928, to Hornsey in the northern suburbs—which is where the Lotus story really begins.

Chapman's old man, Stanley, was a professional pub manager and moved from The Orange Tree to run the Railway Hotel in Hornsey when Colin was 2. With their red brick and white stucco façades, these pub-hotels are typical of those built in Victorian-Edwardian times that, somehow, survived two World Wars.

It was in the old stables at the rear of the Railway Hotel that Chapman started building his first specials while studying structural engineering at University College London where he also joined the University Air Squadron and learned to fly, a lifelong passion.

The best part of 90 minutes have passed since we left Richmond, but the clogged streets of London's suburbs reveal little about the Evora except it's got a good low-speed ride and the Toyota-sourced engine and gearbox cope well with city commut-

ing. Problem is, the Evora feels every fraction of its 72.8-in. width, excluding mirrors, and there are times on the narrow streets when I am convinced the taxi or white van hurtling toward us is going to whip off a door mirror. Sleeping policemen ("speed bumps" to you Yanks) have to be treated with similar caution if shards of glass-fiber spoiler aren't to be left behind.

Just minutes away as the crow flies, but farther thanks to the local tortuous one-way system, stands a nondescript, tumble-down two-story building on the edge of a builder's merchant. High up on the wall,

and easy to miss, is a plaque commemorating the founding of Lotus Engineering in January 1953.

George, the yard's foreman, is only too happy to abandon his forklift truck and give us a quick tour of the facility, warning that if we injure ourselves it's our own responsibility, "'ealf and safety, know what I mean?"

"We've 'ad enthusiasts from around the world come 'ere. One bloke from New Zealand burst into tears when I showed 'im round," adding, "Didn't understand that, meself;" as he left us to explore.



» At right, that's Colin Chapman with his revolutionary fiberglass-monocoque Elite, the first production Lotus.

A small office upstairs still has the desk where ACBC designed his first cars, the peg holes for the drawing board are plain to see. A locked safe dating back to Lotus days still remains cemented in another wall. The key disappeared years ago, but it's tempting to think there might be some long lost designs secured inside. In another room, there's a pair of abandoned fireproof filing cabinets from Chapman's time, too heavy to remove.

It's all very poignant and a bit sad as the office block and the adjacent production building have fallen into administrative limbo: It's listed as a Grade II building, which means it can't be demolished or altered, but the site's owners are unwilling to renovate it and various Lotus enthusiasts' clubs are too impoverished to spend the tens of thousands of pounds needed to secure its future. I am sorry to say we're a bit haphazard in this country about preserving our industrial heritage.

Ten miles to the north lies our next port of call, Cheshunt, where Lotus moved to in 1959. By then Lotus was a "proper" car company, and Cheshunt was a purpose-built facility for Lotus Cars Limited and Lotus Components Limited. The latter has been transformed into the Monster Gym—where the Incredible Hulk goes to work out?—while the production hall (where the revolutionary Elite, with its integral glass-fiber body/chassis, was assembled alongside the original Lotus Cortina) was in the midst of a total refurbishment. With ceiling panels torn away and cabling hanging loose like an eviscerated corpse, this factory at least faces a useful future, even if those working on it when we visited didn't realize its significance.

And for the first time, I got asked the inevitable, "Wot she'll do, mister?" When told, "160, a tad over 5 seconds to 60 for about £50K." He laughingly tells me, "About a week's wages, then?"

Next stop, Cosworth. Like Lotus, the fabled engine manufacturer has had a turbulent time of late enjoying the patronage of both Ford and Audi, but if it's associated with one marque more than any other it's Lotus. Who can forget Jimmy Clark's memorable victory in a Type 49 at Zandvoort in 1967, debut wins for both car and the Ford-sponsored 3.0-liter V-8? That link still exists: Today's Lotus Racing T127 F1 racer is powered by a Cosworth V-8 and



» Next stop? Northampton, Cosworth's headquarters. Then it's on to the Lotus Racing workshops (above) in Hingham.

the tuner is developing the competition engine for the Evora race series.

It's nice to speculate that the Northampton magicians might breathe a little of their magic on Toyota's 3.5-liter V-6, whose 276 bhp and 252 lb.-ft. of torque give the 2976-lb. spirited but not spine-tingling performance.

So far the Evora driving experience has been restricted to urban trawls and a speed camera-imposed 50 mph along the cone-infested M1 motorway. It would have been nice to see someone working in the empty lanes but it did, at least, give me a chance to become familiar with the car's interior.

It's better by a long chalk than previous Lotuses of my acquaintance, but I still can't reconcile poor ergonomics and the red digital readouts obscured by sunlight or the lack of one-touch electric windows with a car in

this price category. The interior trim feels a bit hard and I've already ranted about the lack of cabin storage space, while the back seats are no more than perches—especially with two 6-foot-plus blokes in the front.

And don't get me started on the ignition key—an Alfa Mito's is more stylish than the Evora's, which looks as if it is a hand-me-down from a 1990s' Korean hatch.

Fortunately, as we head from Cosworth's Northampton base toward Hethel the "A" and "B" roads that wind across the Cambridgeshire Fens and briefly into Suffolk before reaching Lotus' home county of Norfolk are relatively unpopulated, either by other road users or white-, blue- and yellow-decaled cars with blue flashing lights on their roof, and offer me the opportunity to ignore the Evora's foibles and home in on its dynamic capabilities.

The landscape in this part of England is pancake flat, bisected by levees to minimize flooding from rivers such as the Ouse. Consequently, there are none of G.K. Chesterton's "rolling English roads." Here, roads appear deceptively straight for miles, spearing between and above fields of brilliant yellow rapeseed or rich black earth waiting for the crops, usually potatoes, to burst through. "Deceptive" because many straights are interspersed by acute combinations of kinks that easily lull the inattentive into thinking the road is straighter than reality proves, as witnessed by tire tracks suddenly disappearing into fields indicating where the unaware have missed a turn-in point. No such worries with the Evora, though.

Having its Sport mode engaged to sharpen throttle response, the Lotus springs to life with immediate turn-in and prodigious front end grip that leads to later and later braking. The steering is super accurate, with feedback that allows you to place the car into the bend, hit the apex and power out with a single, fluid input.

Lotus Racing workshops at Hingham are almost deserted when we arrive as the team is transferring from Barcelona to Monte Carlo, although there is some back-room work being done on aero parts and gearboxes. The green and gold cars are proving to be the pick of the crop of the three new teams on this year's F1 grid, but it will be some time—if ever—before they emulate Chapman's success.

Just how great that was is underlined

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Indeed, the all-new 9-5 Sedan is turbocharged — recycling exhaust gas energy and using it to push more air into the cylinders, increasing performance and doing so quite efficiently. Our obsession continues with Cross-Wheel Drive (XWD). XWD actively works with Saab's ESP (Electronic Stability Program) to help improve grip, acceleration and enhance stability whilst providing agile cornering behavior. To further draw you in, we've added DriveSense. It's an intelligent chassis control system that, with a twist of a knob, allows you to adjust the agility and performance of the 9-5 to match your driving style and road conditions.

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cave of Lotus racing heritage there's a Type 77 and 79, both with Andretti's name on the side, and in another corner Senna's 97T being rebuilt by one of the team that originally assembled the car in 1985.

Then, outside, the *pièce de résistance*: Clark's Indy-winning Type 38. Owned by the Henry Ford Museum, it

had just undergone a 1400-hour rebuild ahead of its appearance at Goodwood's Festival of Speed. The day is running short and we reluctantly leave Classic for Ketteringham Hall, the 500-year-old stately home that ACBC bought in 1970 as Lotus F1 team headquarters. Indeed, I can recall many years ago walking down one corridor gazing at the portraits of all the Lotus F1 drivers.

But Ket Hall also has links to the States: During World War II it served as home to the 2nd Air Division of the 8th Air Force, including the late Hollywood star, Jimmy Stewart. As indeed does Hethel, the Lotus home since 1966: From September 1943 through June 1945, the 55-acre site was headquarters for the 2nd Combat Bombardment Wing of the 2nd Bomber Division.

My Lotus pilgrimage doesn't end at Hethel. I have one final place to visit, a tiny flint stone church in nearby East Carleton. There stands a simple gray marble headstone with the victor's laurel wreath encircling ACBC's initials. It's Chapman's final resting place: "*Crescit sub Pondere Virtus*"—"Courage grows under pressure"—reads the inscription. It's the Chapman family motto.

In many ways this has been a quite remarkable few days tracing Lotus' history; standing before Chapman's original drawing desk being the most poignant.

As for the Evora, it does take his legacy forward in that it's light, efficient and dynamically superb. And I so much want to give it 10 out of 10: There were times when its capabilities wreathed my face in smiles; on other occasions it was frustratingly short of the standards expected in this price category.

The new management led by Dany Bahar should take heart that the Evora is a sound platform for the future. Iron out the minor irritations and it has the chance to become not just a good sports car, but a great one. 🇺🇸

when we pull up at Classic Team Lotus, virtually opposite the main gates into Hethel. Dawson and I are almost dumbstruck as we wander through the cramped workshops. We find ourselves gazing in boy-like wonder at Clark's Zandvoort-winning Type 49, a Type 25 again with Clark's distinctive red steering wheel, Innes Ireland's Watkins Glen-winning Type 21—Lotus' first F1 victory. In this Aladdin's

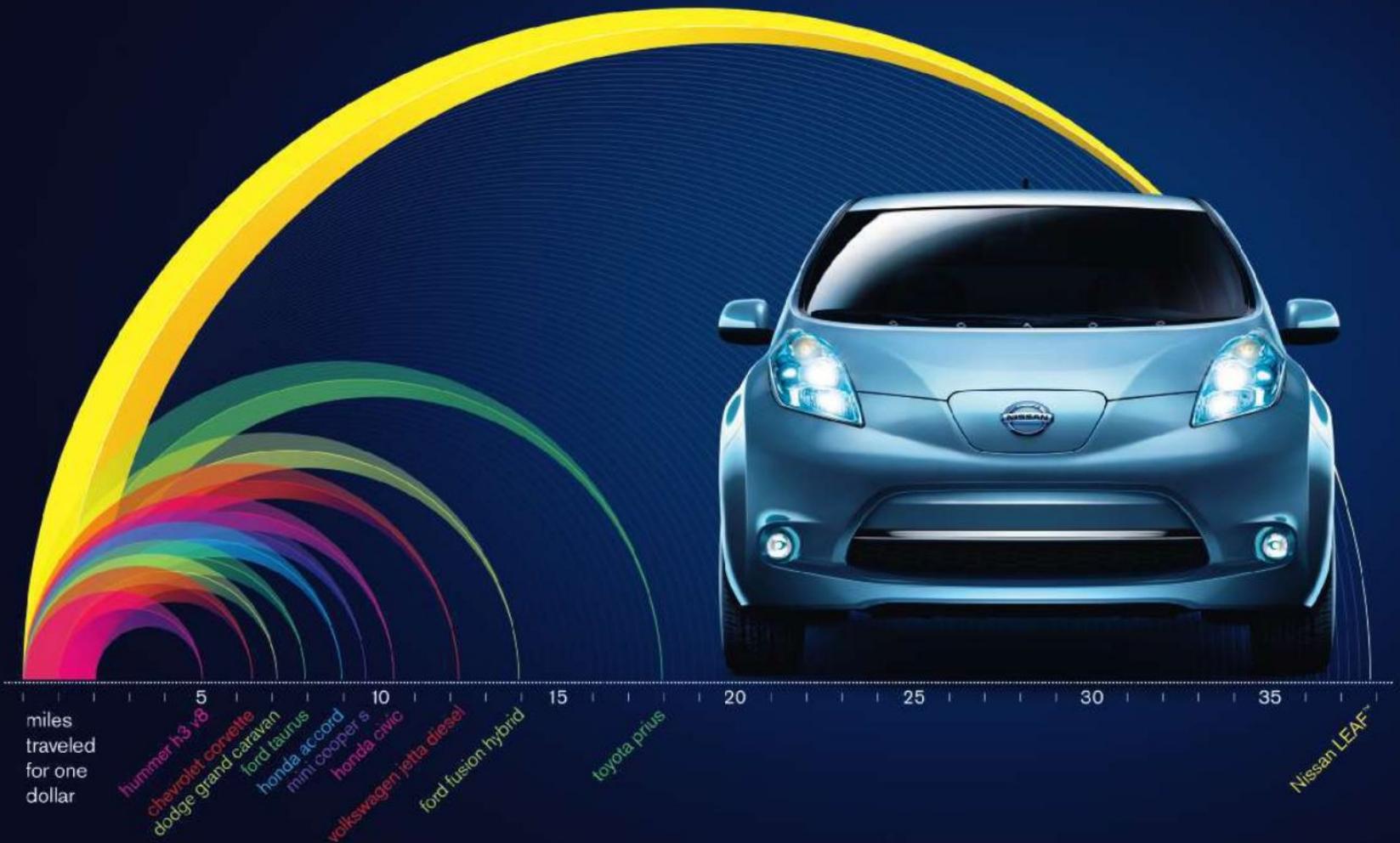
» Lotus must be the only F1 squad to boast a listed 500-year-old manor as its once HQ; it was also home to U.S. fliers during WWII. Adcock is in seventh heaven at Classic Lotus. That's Clark's Indy-winning car with the Evora below. That orange Evora at the end of the Hethel production line is heading for the States.



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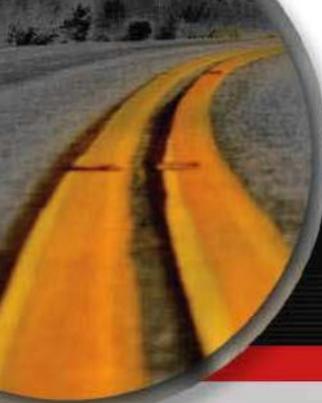
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Long-Term Test

BY JONATHAN ELFALAN >> ROAD TEST EDITOR



2009 Nissan 370Z Touring

Boldly refined with a slightly bitter aftertaste

PHOTOS BY JEFF ALLEN

IN THE WORLD OF AFFORDABLE PERFORMANCE cars, it's hard to argue against the appeal of Nissan's latest Z—turbo-based permutations of econo-compacts and their Nürburgring lap records notwithstanding. Even beyond those belonging to the camp that believes it's rear-wheel drive or wrong-wheel drive, most people just need a car to look and feel worthy of their cash investment, and there are few cars that do this better than the 370Z. So what's it like owning one of the most attractive buys under \$40,000?

Well, it's been pretty good, but it's also not perfect.

The first downside is probably the most obvious; the 370Z is a true 2-seat sports car. This means that if it doesn't fit under the rear hatch, it's going in your passenger seat, or passenger's lap or it's not going at all. As we've mentioned before, the 370Z's cargo space has been greatly improved over the 350Z's thanks to the rear brace relocation, but many editors still found the cargo space a little tight for any real road trip luggage. Editor-in-Chief Matt DeLorenzo had this to offer on the issue: "I believe the Z is a complete package, though there are compromises like

luggage capacity that you just can't get around. But these are more the nature of the beast and if it's that big a problem, you probably shouldn't be in the market for a 2-seater in the first place."

We extol the Z for its great advancements in the handling department too. The new front double-wishbone suspension has given the car new life in terms of turn-in crispness and feel, with a back end that will rotate when

>> The area of most improvement in the current Z is its interior, where the quality is markedly enhanced. Although it was a bit loud inside our Z, the cockpit held up well.



you intend it to. In fact, there weren't any complaints when it came to corners in the Z, but out on less entertaining surface streets or highways, the relatively loud powertrain, tire noise and prodigious C-pillar blind spots started to get to people. Associate Art Director Bert Swift summarized the staff's sentiments with: "There's plenty of torque and good horse-





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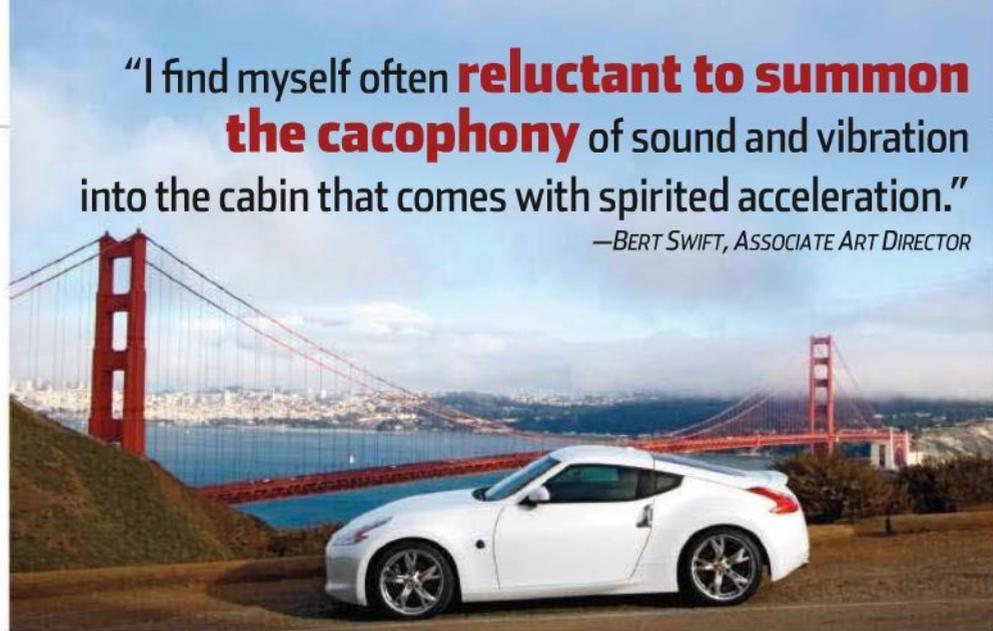


PHOTO BY BERT SWIFT

"I find myself often **reluctant to summon the cacophony** of sound and vibration into the cabin that comes with spirited acceleration."

—BERT SWIFT, ASSOCIATE ART DIRECTOR

power, but I find myself often reluctant to summon the cacophony of sound and vibration into the cabin that comes with spirited acceleration. From the outside, the 370Z has a distinctive and sonorous engine note that I wish sounded that good on the inside—it's sort of like the engine note was perfected for attracting 370Z buyers, but not for rewarding those who bought the car."

The source of the Z's strength is also unfortunately its weakness. The VQ37VHR engine feels like it's reached the limits of its evolution, largely due to its character in the upper half of its rpm range but also because of its propensity for heat generation. Nissan strongly recommends its special Ester-based engine oil blend for reasons of compatibility on a chemical level with the slippery Diamond-Like Coating (DLC) that covers and protects various high-friction internal parts. But even with this "magic sauce" in the sump, we'd recommend installing an ancillary engine oil cooler like the Nismo one we had (Part No. 21300-SS370; \$780) if you plan on doing anything more relevant to sports car activities than cruising the boulevards downtown.

For experimental purposes, we measured interior noise both before and after a switch to conventional oil. We found there was a noticeable gain of about six decibels at middle revs in 1st gear but no real discernible difference in maximum cabin loudness. Sans sound meter, some complained about the increase of whirring sounds at low rpm over time, which are reminiscent of radio speaker feedback from an improperly grounded audio system.

Our 6-speed transmission with its SynchroRev Match feature proved faultless in



At a Glance
2009 Nissan
370Z Touring

SUBJECTIVE RATINGS	
Driving Excitement	4.5
Engine	4.5
Gearbox	4.5
Steering	4.5
Brakes	4.5
Handling	4.5
Touring Comfort	4.5
Interior Styling	4.5
Exterior Styling	4.5
Ergonomics/Controls	4.5
Luggage Space	4.5
Interior Durability	4.5
Reliability	4.5
Fuel Efficiency*	4.5
Ownership Cost	4.5

Based on a scale of 1 to 5, with 5 being best.

Delivered price	\$38,470
Total resale value at end of test	\$28,075
<small>(trade-in price from Kelley Blue Book)</small>	
Total miles covered in test	25,799
Miles since last report	5711
Average miles per gal.	20.1

COSTS, OVERALL & PER MILE	
Depreciation, 383 days	\$10,395
Gasoline	1284 gal. @ \$3795
Additional oil	na
Routine maintenance	\$1828
Overall cost for 25,799 miles	\$16,018
Cost per mile	62¢

REPAIRS & REPLACEMENTS

Normal/routine: Four oil changes with Nissan's recommended Ester Oil blend (\$85 each) plus one regular oil change (\$37). At 15K miles, air filter, fluids topped off, cooling system pressure-tested (\$165). At 19,115 miles, set of Bridgestone Potenza RE050A installed, 245/40ZR-19 f, 275/35ZR-19 r (\$1286 parts and labor).

Repairs: 4188 miles, port-installed Nismo oil-cooler fitting developed a slow leak (fixed by Nissan).

Unforeseen events: none

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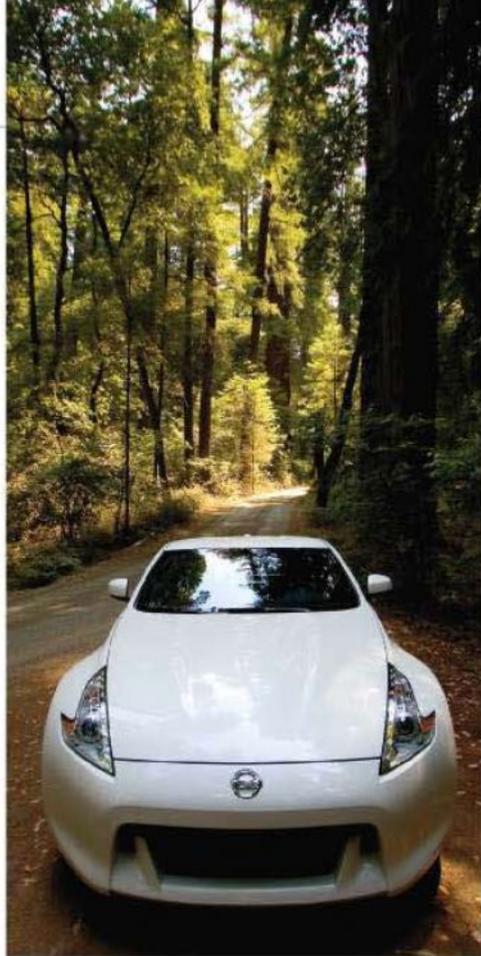


PHOTO BY BERT SWIFT

its operation and was quite entertaining for a while (especially in wowing first-time passengers). But like most creative solutions to problems that never really were, once it was turned off, it was easily forgotten. Engineering Editor Dennis Simanaitis likened it to “a one-trick pony,” albeit one highly respected for its feat.

Perhaps the greatest achievement of this Z? The execution of its interior. Its attractive design, intuitive layout and rich materials left everyone on staff commenting on how it was leagues ahead of the previous-generation 350Z, yet retained all the key elements that make it a Z car.

So this is where you decide what’s important to you. Sure, the econo-rockets may have as much (if not a little more) performance packed within their four door bodies with large trunks (Evo excluded). But none can honestly call themselves a sports car. And what real enthusiast doesn’t aspire to own at least one true sports car someday? 

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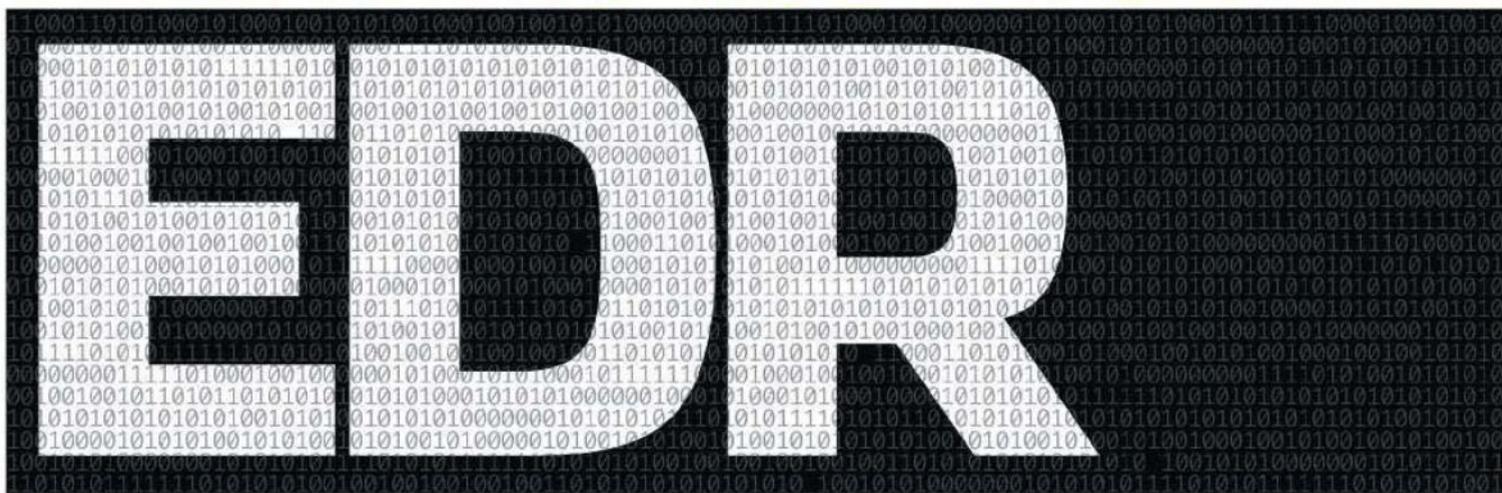
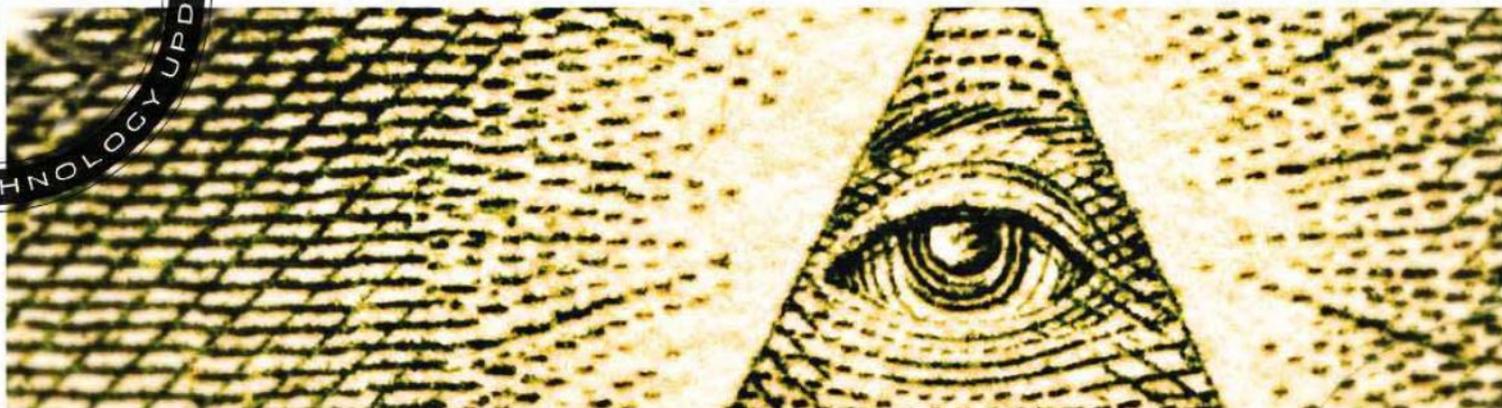
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EVENT DATA RECORDERS: SAFEGUARDS OR SNOOPERS?

What are these devices? Why are they important?

BY DENNIS SIMANAITIS

Event data recorders, EDRs for short, have been in the news of late, as part of Toyota's quandaries and subsequent government actions. There have been misunderstandings and misinformation about the purpose of EDRs, their access and their future utility. I thought we might all profit from learning more about these devices.

- ❖ To do this, I got in touch with automotive specialists at Audi, BMW, GM, Mercedes-Benz, Nissan and Toyota as well as with people at the National Highway Traffic Safety Administration, part of the federal Department of Transportation. I consulted my *Bosch Automotive Handbook*, SAE and other internet sources. Here's what I learned.





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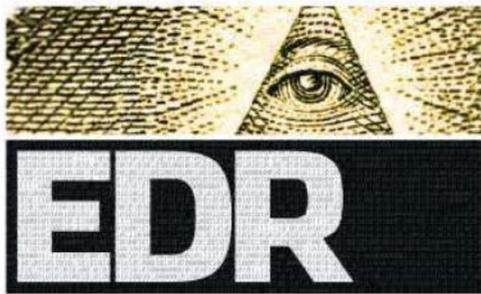
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“If the driver says one thing, and the car says another, it ain’t the car that’s lying.”

NOT A “BLACK BOX”

Don’t confuse automotive Event Data Recorders with aviation “black boxes” (which, by the way, are actually bright orange). Aviation Flight Data Recorders and similar devices used on ships and in rail transportation accumulate a wealth of operational data, even voice communications, over an extended period of time. Flight Deck Recorders, for instance, keep track of at least 88 parameters and retain the most recent 30 minutes of pilots’ conversation. Ships record at least 12 hours of data; locomotives, 48 hours. These can be monitored, their data accessible at any time, in particular in less than catastrophic circumstances. Similarly, police and other government agencies use audio and video recorders as backup substantiation of their activities.

By contrast, an automotive EDR stores vehicle and occupant information in that brief period (seconds, not minutes) before, during and after airbag deployment. Think of a 15-second data spool being continuously monitored and—only in the event of a serious crash—being captured in memory, typically part of airbag-management electronics.

NOR ARE THEY ECU FAULT CODES

Don’t confuse an EDR with an Engine Control Unit’s feature of storing fault codes.

Fault codes are retained by a car’s ECU for purposes of later diagnosis by technicians. Some of these are part of OBD-II emissions control compliance as well. They’re the sort of thing illuminating your car’s Check Engine Light.

On-Board Diagnostics equipment has been required of all new cars sold in the U.S. since the mid-1990s. SAE J1979 defines a protocol of access as well as a list of operational data that might be included. There’s a standardized 2 x 8-pin connector that must be located

within 2 ft. of the car’s steering wheel (unless specifically exempted and still within reach of the driver).

You might think this proximity is only of theoretical relevance, but it turns out your own OBD-II fault code reader/reset tool can be had for less than \$50. However, be aware that you may need additional research to decode your particular car’s alphanumeric jargon. The device might report “P0442,” not “The gas cap is askew, stupid!” What’s more, the full array of fault codes beyond OBD-II requirements may be accessible only with specialized equipment rather more elaborate than a hand-held gizmo.

Specifically, OBD-II focuses on emissions control. And more general ECU fault codes are concerned with power-train operation. Unlike EDRs, they’re not solely dedicated to accidents. On the other hand, fault codes convey lots of data. (And they’ve also been caught up in recent news and misinformation.)

IN FACT, EDRs AREN’T STANDARDIZED EITHER—YET

As already noted, the primary purpose of an EDR is to assess automotive safety hardware; specifically, to gauge the efficacy of airbags and their deployment strategies. Succinctly, if an airbag doesn’t go off, the EDR has nothing to report.

If an airbag deploys, though, a typical EDR may record pre-crash vehicle speed, driver inputs of accelerator or brake, the nature of the crash, seatbelt use/airbag action and any automatic post-crash activity such as collision notification.

Notice, I say “may,” because there’s no standardization of EDR reporting. In fact, at this point EDRs are not even required elements of automotive safety hardware. In 2005, the National Highway Traffic Safety Administration gauged that 64 percent of new cars had some EDR capability. These days, it has been estimated that voluntary fitment may already exceed 85 percent. Ford, GM, Mazda, Mitsubishi, Nissan, Subaru and Suzuki are among automakers with EDRs in many if not all of their products. At the other extreme, for example, Audi, BMW and Mercedes-Benz choose not to fit these devices.

Does your car have an EDR? Check its owner’s manual. Even those without EDRs will typically have a statement noting this.

NHTSA’S INVOLVEMENT

In 1998, long before these devices were hot news, NHTSA set up a working group studying EDRs. In 2004, it issued a Notice of Proposed Rulemaking that evolved in August 2006 into a Regulation on the matter. Subsequent updating brings us to the current status.

Briefly, and only thus far, NHTSA has opted to standardize the data collected and recorded by an automobile’s EDR—but not to require such devices. Those automakers choosing to fit EDRs have until Model Year 2013 to satisfy the criteria shown nearby. Indeed, most devices in production already do.

Note that the first three elements concern vehicle deceleration; these are particularly important in identifying the severity of the crash. The next three trace the previous 5 sec. of travel: vehicle speed and driver actions on accelerator or brake. The logging of engine startups is essentially bookkeeping, though it also indicates when after the accident the data were downloaded. The next two con-

EVENT DATA RECORDER INFORMATION¹

Data Element	Recording Interval ²	Sampling Rate ³
Change in forward speed	0 to 250 ms	100
Maximum of this change	0 to 300 ms	na
Time of this maximum	0 to 300 ms	na
Vehicle speed	-5.0 to 0 sec	2
Accelerator action, percent	-5.0 to 0 sec	2
Brake action, percent	-5.0 to 0 sec	2
Engine starts, prior to impact	at -1.0 sec	na
Engine starts, at download	na	na
Driver seat belt status, buckled?	at -1.0 sec	na
Airbag warning light, on/off?	at -1.0 sec	na
Driver frontal airbag, deploy. time	0 to deployment, sec	na
Passenger frontal airbag, deploy. time	0 to deployment, sec	na
Multi-impacts?	1 or 2	na
Time between multi-impacts	0 to second impact	na
Complete file recorded?	yes or no	na

¹ Required of those EDRs fitted in Model Year 2013 and beyond.

² Relative to impact at time 0; ms = millisecond = 0.001 sec; negative sign indicates prior to impact.

³ Data/sec

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firm pre-crash readiness of the airbag system—and whether the driver was belted. Following these two are airbag deployment times, the clock starting at the instant of impact. Another pair characterizes any secondary impact. And the last one is another item of bookkeeping, namely confirming that all the available data were captured.

There's yet another array of some 30 parameters not shown, things like lateral acceleration, engine rpm, vehicle roll angle, side airbag deployment and any activity of ABS or stability control. If these or others in the array are captured by the EDR, the regulation sets recording intervals and data sampling rates analogous to those already cited.

CONGRESSIONAL ACTION

The U.S. Congress has already reacted, prompted no doubt by Toyota's recalls as well as NHTSA's activities, with the Motor Vehicle Safety Act of 2010. Versions of the legislation are working their way through the House of Representatives and Senate as I write. Provisions range from strengthening NHTSA authority, to addressing vehicle electronics standards, including one specifically involving EDRs, to matters of accountability and transparency. (Maybe you've heard this last one before? This time, though, it's directed toward the automakers, not government.)

Automakers will be required to equip all their products with EDRs no later than Model Year 2015. Thus far, House and Senate committees have approved similar legislation. The Senate committee version requires recording of data "for at least 60 seconds prior to, and 15 seconds after, a crash or airbag deployment." The House committee's version reads "covering a reasonable time..."

Both state that the legislation "may require such recorders to capture certain events"—note the "may," not "shall"—"even if there is not a crash or airbag deployment." The idea is to quantify alleged incidents of "unintended acceleration." However, I find the Senate committee's "full-throttle acceleration lasting more than 15 seconds" as such an event more than a bit chilling.

SOCIETAL ISSUES

An important societal issue is the matter of personal privacy. Who owns EDR data? To whom is this information accessible?

It's generally considered, and federal regulations make clear, that the car owner or leasee owns any EDR information. However, there are also court actions that make these data as well as ECU fault codes available to law enforcement agencies. Like many aspects of motor vehicle regulation, EDR practices vary state by

state. What's more, in some states—and with some insurance companies—the concept of implied consent applies. That is, your consent in sharing the data may be assumed by virtue of your having a driver's license or signing up for the insurance.

Fundamental here is the matter of self-incrimination. It's one reason some automakers are reluctant to fit EDRs yet equip their cars with post-crash notification systems. Pre-crash data, it can be argued, are privy to the car owner. By contrast, post-crash alerts sent automatically to emergency response personnel trump this in the driver's best interest of accident survival. BMW's Advanced Collision Notification, for example, transmits accident dynamics data, things like vehicle deceleration and yaw angle that give an indication of crash severity. Such a system, though, would not capture pre-crash disposition of accelerator or brake pedal, for example.

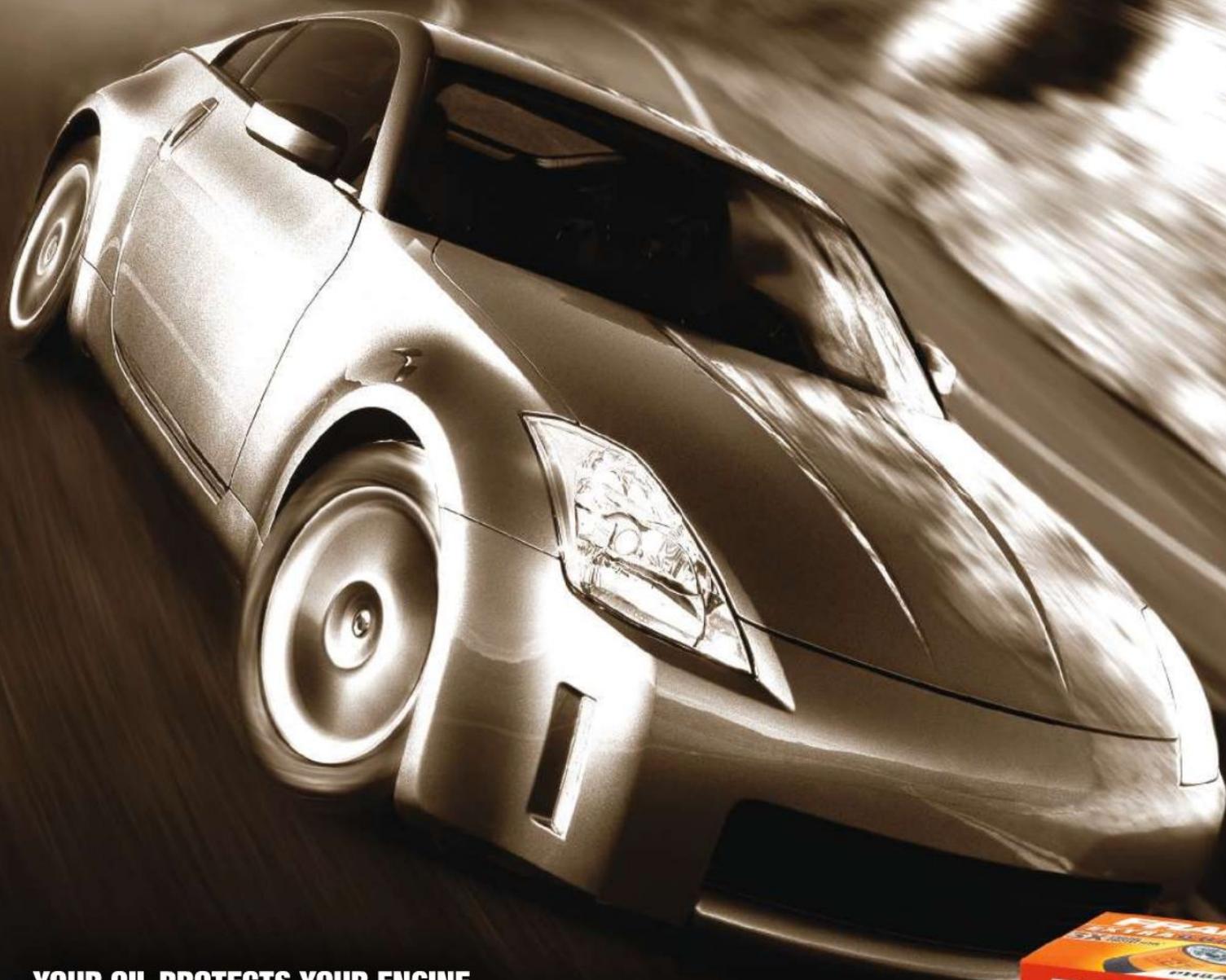
SEPARATING FACT FROM FICTION

On the other hand, as an accident investigator colleague of mine likes to put it, "If the driver says one thing, and the car says another, it ain't the car that's lying." An advantage—and significant societal benefit—of EDRs and related fault-code arrays is in separating fact from fiction.

Had such devices existed back when the Audi "unintended acceleration" debacle transpired, they would have identified misplaced pedal application long before extensive NHTSA investigations came to the same conclusion.

Two highly reported Toyota Prius incidents, one in New York, the other in California, were resolved—with rather less fanfare, I note—through analyses of the hybrids' powertrain fault codes and "misoperation" data capture. The New York Prius had accelerated out of a driveway, across a street and into a wall, all the while with its unfamiliar driver's foot mistakenly on the accelerator, not the brake. The California car, making news in a bizarre 23 minutes of reported panic, cell-phone calls and police pacing, turned out to be responding to full accelerator and more than 250 light applications of the brake. Any firm action would have invoked the brake override feature and stopped the car in short order.

There are costs and benefits of EDRs and related vehicle monitoring. Certainly the wealth of data has enhanced automotive safety. Lab evaluations of vehicle operation and crashworthiness are essential, but the real world offers its lessons as well. From where I see it, particularly with appropriate safeguards of privacy in place, the balance is overwhelmingly favorable to auto users, to automakers, to us all. 



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Callaway Corvette SC606

In pursuit of the perfect sports car



PHOTO BY CHRIS CANTLE

THE C6 CHEVROLET CORVETTE, IN ANY of its iterations, is a well-developed sports car. Upon its introduction, it upped the ante in just about every way and is regarded as a dependable and affordable performance machine that in the right hands can take the fight to just about any sports car out there. But noted Corvette tuner and constructor Callaway felt there was room for improvement and developed the SC580, SC606 and SC652 iterations of the C6. The company finessed the factory compromises and produced a version that outperforms the original in every way. On top of that, Callaway managed to do it while maintaining OEM production standards and a 3-year, 36,000-mile bumper-to-bumper warranty.

Under the hood, or rather Callaway's carbon-fiber PowerBulge, the SC606 is fitted with an Eaton-sourced TVS2300 Roots-type supercharger. Supporting that is an intake manifold with an integrated air-to-liquid intercooler, as well as larger fuel injectors and an auxiliary fuel pump controller. After the conversion, you can expect 606 bhp at 6400 rpm and 553 lb.-ft. of torque at 4600 rpm. The SC580 and SC606 can be built from either a Grand Sport (like our test car) or a regular Corvette, and differ primarily in the super-

charger size as well as some finishing touches. The SC652, meanwhile, uses the LS7-equipped Z06 as its donor.

As Callaway is a bespoke constructor, each car is built-to-order per individual taste. Our SC606 came just the way a track-oriented enthusiast would build one. The Callaway-developed Eibach Multi-Pro coil-over suspension kit is fully adjustable for spring preload, rebound and compression damping. It delivers a stiffer ride, but it's much better controlled in pitch and roll, with much less bump harshness than stock. You notice this most on undulating turns; rather than floating and oscillating,

the SC606 stays planted. The kit is well suited for track work, with the adjustability allowing drivers to dial in the amount of damping they need depending on the track or tire characteristics. These coil-overs augment the standard transverse leaf springs and control 285/30ZR-19 front and 335/25ZR-20 rear Michelin PS2 run-flat tires on Callaway-specific OZ wheels. Slowing all of this down is a greatly updated brake setup: 380-mm (15.0 in.) front rotors are clamped by 6-piston calipers, while out back, 4-piston calipers work on 355-mm (14.0 in.) rotors. Although pedal travel was a little long, feel from this setup was excellent, once you were firmly into the binders.

Callaway didn't neglect the interior either. One must-have option is the Sport-seats package. The stock seats work well enough, but they're designed for touring and day-to-day use, not for 1g-plus corners. Callaway addressed that shortcoming by building leather- and Alcantara-covered, racing-style composite bucket seats. These seats retain the seat heaters and, although they are fixed-back, feature the stock power-seat motors and airbag sensors. A handmade carbon-fiber and Alcantara-clad steering wheel was also fitted to our car, and, combined with the seats, helped to elevate the overall driving experience. Finally, a different shifter was installed to the stock 6-speed transaxle. It provides noticeably shorter and firmer throws, but some found the stick notchy and recalcitrant. Others thought it reflected the track-focused nature, as each shift had to be deliberate, and addressed another common criticism of the stock C6: sloppy shifting.

All of this comes at a price. The Grand Sport donor car checked in at \$61,975 and came with the 3LT preferred equipment group. The additional Callaway hardware tacks on \$54,585. This includes the parts listed above plus a powder-coated chrome finish on the supercharger, and an exhaust slat trim package. Total price comes to \$116,565 for a near ZR1 level of performance with a degree of customization not available from the General. Is it worth it? We believe for a certain buyer, yes. The performance parts that bring the C6 closer to the ultimate track car are well-developed and integrated, and help to keep it up at the front of the sports-car lineup.—*Calvin Kim*

2010 Callaway Corvette SC606

List price (base SC606)	\$76,620
Price as tested	\$116,560
Curb weight	3445 lb
Engine, transmission	supercharged 6.2-liter V-8, 6-sp manual
Horsepower, bhp @ rpm	606 @ 6400
Torque, lb.-ft @ rpm	553 @ 4600
0-60 mph	3.8 sec
0-100 mph	7.8 sec
0-1320 ft (1/4 mile)	11.8 sec @ 125.3 mph
Top speed	est 205 mph
Braking, 60-0 mph	106 ft
Braking, 80-0 mph	193 ft
Lateral accel (200-ft skidpad)	1.05g
Speed thru 700-ft slalom	74.2 mph
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215/45 ZR-17	225/40 ZR-18 ^{XL}	275/40 ZR-18	225/35 ZR-20 ^{XL}
215/50 ZR-17 ^{XL}	225/45 ZR-18 ^{XL}	285/30 ZR-18 ^{XL}	245/35 ZR-20 ^{XL}
225/45 ZR-17 ^{XL}	235/40 ZR-18 ^{XL}	285/35 ZR-18	245/40 ZR-20 ^{XL}
225/50 ZR-17	235/50 ZR-18	295/30 ZR-18	255/35 ZR-20 ^{XL}
235/45 ZR-17	245/40 ZR-18 ^{XL}	235/35 ZR-19 ^{XL}	275/30 ZR-20 ^{XL}
235/50 ZR-17	245/45 ZR-18 ^{XL}	245/35 ZR-19 ^{XL}	275/35 ZR-20 ^{XL}
235/55 ZR-17	255/35 ZR-18 ^{XL}	245/40 ZR-19 ^{XL}	285/30 ZR-20 ^{XL}
245/40 ZR-17 ^{XL}	255/40 ZR-18 ^{XL}	245/45 ZR-19	265/30 ZR-22 ^{XL}
245/45 ZR-17	255/45 ZR-18 ^{XL}	255/35 ZR-19 ^{XL}	295/25 ZR-22 ^{XL}
255/40 ZR-17	265/35 ZR-18 ^{XL}	255/40 ZR-19 ^{XL}	
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Corvettes at LE MANS

Fifty years later,
the beat goes on

BY RICHARD PRINCE » PHOTOS BY THE AUTHOR

Two beautifully crafted GT2 Corvette race cars competed in this year's 24 Hours of Le Mans because a handful of passionate enthusiasts at GM made a successful business case for why they should be there. Fifty years ago, when the Corvette competed at Le Mans for the first time,

nobody gave a moment's thought to whether the return justified the investment. For legendary sportsman Briggs Cunningham, who entered three Corvettes in the 1960 French classic, cost was simply irrelevant. And though he harbored a lifelong dream of winning the world's greatest

endurance race with an American car fielded by an American team and driven by American drivers, even winning was secondary for Cunningham.

"He was a gentleman and to him car racing was a gentleman's sport," recalls Dick Thompson, one of Cunningham's drivers.

"My teammates and I would look at each other in disbelief when Briggs would say 'Just go out there and have fun and don't worry about whether you win or not.'"

A directive to just have fun and don't worry about winning would be equally baffling to the 2010 driving squad.

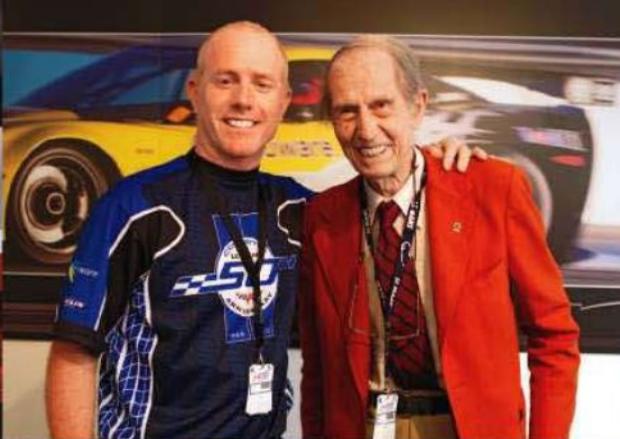
"Our responsibility is to drive as fast as we safely can," explains works pilot Johnny O'Connell. "We're not told 'go out there and win this race' but at the same time we never lose sight of that goal." The unspoken yet unyielding pressure to win has completely transformed the drivers' experience at

SOMETHING NEW FOR LMP2

Responding to a 2011 rules change by the ACO (Automobile Club de l'Ouest), Honda Performance Development has unveiled an all-new, production-based LMP2 engine, which will be sold or possibly leased to customers competing at Le Mans and in next year's American Le Mans Series. Based on the 2011 Accord powerplant, the dry-sump sohc V-6, destroked from 3.5

to 2.8 liters, is fitted with twin turbochargers that boost output to about 450 bhp, as per ACO regulations, which also stipulate a stock block and heads. For racing use, the production engine's VTEC variable timing system has been discarded, and although any make of fuel-delivery system may be used, the HPD V-6 retains much of the stock setup. Because of a €75,000 (about \$92,000) price cap imposed by the ACO, Honda's V-6 will be competitively priced when it becomes available late this year. —Joe Rusz





» Johnny O'Connell, top, has a respect for Corvette history at Le Mans, which began in 1960 with John Fitch (next to him) and Dick Thompson (top right).

Le Mans. "We're at 100 percent every moment of every lap," reports O'Connell. "Le Mans is a 24-hour sprint race."

"Not so for us," remembers Cunningham driver John Fitch. "We understood the cars' limitations, particularly with regard to their brakes, and we had to maintain a

sensible pace if we hoped to be there at the end."

Advances in technology have drastically changed the drivers' experience in another way. "We're in constant contact with the team," Oliver Gavin explains, "and though driving will always be a very individualistic pursuit, the video feeds, telemetry

and radio communications with the team enable us to be aware of what's going on around the circuit."

Corvette drivers in 1960 had quite the opposite feeling, one of near complete isolation. "A unique thing about Le Mans," recalls Thompson, "was the profound feeling of

loneliness it engendered at times, particularly at night. The fog and the rain added to that sensation, the feeling that you're driving through the countryside as fast as you can possibly go, with nothing but the rain, the darkness, your car and your courage!"

"One thing that hasn't

changed," reflects Fitch, "is that it still requires a great deal of courage!"

"One more thing that hasn't changed," adds O'Connell, "like the guys who came here 50 years ago, we're incredibly proud to race an American car carrying America's colors on the world stage!"



FERRARI GOES FOR A STROLL

Hoping to find that special someone to fly its flag in Formula 1, Scuderia Ferrari, which recently established the Ferrari Driver Academy, has been searching the racing world for young talent. Their latest find: Lance Stroll, an 11-year-old Canadian karter who has excelled in Micro Max and Mini Max racing in his native Quebec, where he was voted the 2008 Rookie of the Year and the 2009 Driver of the Year by the Fédération de Sport Automobile du Québec.

"He is very young, but he has already shown in karting that he is exceptionally talented," said

academy boss and former Ferrari F1 team racing engineer Luca Badoer. Unlike other programs, Ferrari's Academy will not only support young drivers, but also will assist in their personal and professional development and mentor them as they progress through the various intermediate series en route to F1.

Young Stroll's father, Lawrence Stroll, owns Circuit Mont-Tremblant, the legendary racing venue some describe as the Canadian Nürburgring. —JR





Les 24 Heures

After more than 1000 years of cross-channel rivalry, the British are still invading France. Annually, in fact. But their methods are changing. Warships and bows and arrows have given way to Lotus Sevens, Saint George flags, and as much Guinness as will fit in the boot. These advancing waves of Brits are met with no resistance by the French, and after several days of Anglo-Français camaraderie, they retreat to Great Britain peacefully, contentedly, quite often a little bit sunburned. ❖ What compels them to abandon Great Britain each June? The world's oldest and most famous endurance race—Les 24 Heures du Mans. And thanks to the good folks at Aston Martin—who sent a rolling fleet of road cars across the channel to support the factory's racing effort—my own personal invasion of France took place at the wheel of one of their finest V-12s. This experience was decidedly more “DB9, champagne and chateau” than the more typical “TVR, ale and camping tent,” but it was an exquisite way to experience firsthand what the Brits savor about Le Mans. ❖ The following photographs are meant to convey a sense of what it's like to be there among the tens of thousands of U.K. petrolheads who pointed their right-hand-drive sports cars south and made the annual trek to La Sarthe, to what many rightfully consider “a British race held in France.”



du Mans

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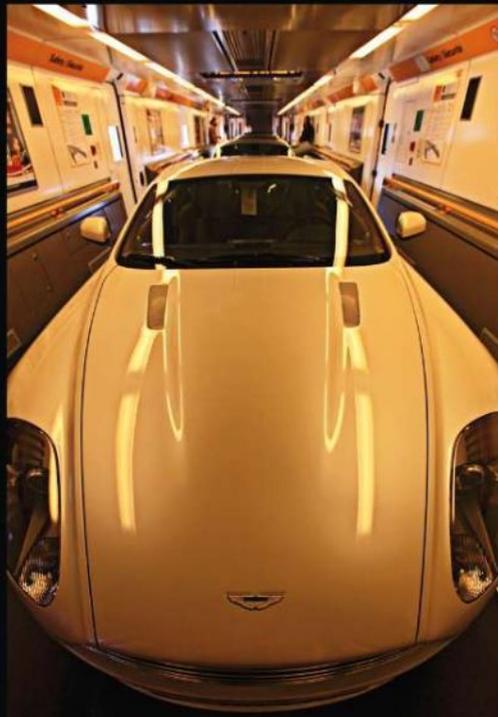
BY BARRY HATHAWAY » PHOTOS BY THE AUTHOR





» If the Brits love anything as much as raising a pint, it's taking to the motorway and burning some rubber and petrol. And if these are all somehow cleverly combined...well, brilliant! An en-route visit to the Louis-Roederer winery (to sample the Cristal) was most appropriate.

» Far enough from home in the British Isles to be a genuine adventure, but near enough to become a treasured annual journey, Le Mans seduces tens of thousands of U.K. race fans every summer. Crossing beneath the English Channel by tunnel train was quite memorable, but exercising the DB9's superb 470-bhp V-12 on the roads of northern France was a far more enjoyable experience.





» The craftsmanship of the Aston Martin DB9 is without peer. As Chief Engineer Dave Doody says with pride, "If it looks like metal on this car, it is metal." Indeed, the DB9 exudes quality, and its cockpit is a wonderfully tactile experience. The lodging that our group enjoyed in England and at the Chateau du Grand-Luce' near Le Mans was also top-notch, up to Aston Martin's lofty standards.





» The Brits are nothing if not competitive, and the desire to conquer the French—if only on the racetrack—still burns deeply. One Le Mans veteran, the bloke who built a campsite mockup of London’s iconic Tower Bridge with his empty beer bottles (below), summed up his thoughts this way: “Jaguar and Aston Martin used to win. We want them to win again. We’re prepared to wait years.”





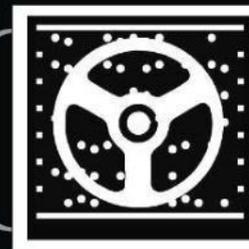
» The most memorable part of my Le Mans experience—standing at dawn just behind the barrier at the Porsche Curves, the sky slowly brightening over the drivers and machines who'd survived the night. One who didn't, however, was American Bryce Miller, above, who crashed his Aston Martin Vantage at the Porsche Curves on Saturday night. This year, the laurels went to a trio of TDI Audi R15s, which swept the podium.



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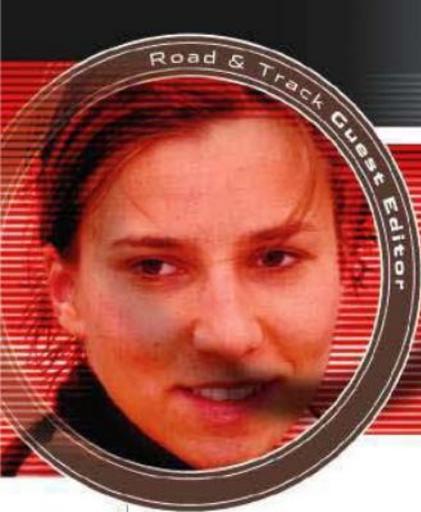
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Simona de Silvestro

Opportunity Knocks in America

When I was 4, my dad put on a karting demonstration at his car dealership in Thun, Switzerland. I saw that go-kart, and I was like “Whoa, I have to try it!” But I couldn’t reach the pedals, so I cried all day. It was pretty frustrating. At the end of the day, he finally gave up and said, “OK, I’ll get you a go-kart when you can reach the pedals.” So I kept begging him for a go-kart pretty much every day until I was 6, which was when I got my first kart.

In the beginning, it was just for fun. I was into a lot of different sports like soccer and tennis, which I was pretty good at. But I enjoyed karting more than anything else, and I couldn’t wait to go out with my dad and go racing over the weekend. I knew I had a little bit of talent, and I was winning a few small races, so I kept at it for 10 years racing mini-karts, juniors and then For-

3rd in the series after leading the championship for most of the year.

I think Atlantic prepared me pretty well to make the jump into IndyCar, which was a little weird in the beginning because of the power. In Atlantic, we had just 300 bhp and an IndyCar has 650. So you really have to pay attention to what you’re doing. An Atlantic car has a lot of downforce so I really got used to using it, which helped me in the IRL car. But every time I go out there, I’m still learning something new. Like pitstops. You have to come in pretty fast and you have all these guys standing in front of you. It’s pretty scary. But you have to keep working on it. And I’m improving, putting those little pieces together and getting better at everything, that’s for sure.

Like pitstops, racing on an oval was also new to me, although my Indy 500 rookie test went very well. And though it was scary

at first, I soon began to get comfortable and eventually enjoyed being out there. The 500 went well and was pretty interesting, especially in the first couple of laps when I started racing in a lot of traffic. But after a few laps, I got used to it and began learning about which lines to drive and I put up some competitive lap times throughout the race. I learned a lot and am honored to have competed in this truly historic race. Also it was such an honor to be selected Rookie of the Year. I’m humbled and so grateful to those who saw fit for me to earn this. Still, it was the craziest race I have ever done.

Someone asked me how it feels to be a woman in a man’s world? I never really had that problem because I think if you’re a woman racer and you have good results, you’re considered a race-car driver. Sure, if you’re always at the back of the pack, fans get annoyed.

“Someone asked me how it feels to be a woman in a man’s world?... Female or male, it’s the results that count.”



mula A, which is the biggest category in Europe.

In 2005, I switched to cars, competing in Formula Renault in Italy. That went pretty well. It was a little bit weird going from go-karts to cars, because they are different. But I really enjoyed it, and I kept working on it until the end of 2005 when we were looking at where we could go next because racing in Europe is really expensive and we didn’t have the budget. So in 2006, I came to the United States to race in Formula BMW. I had a really good season going and almost won the championship, but we had a little bit of bad luck in the last race and finished 4th.

Formula Atlantic was next. It was really competitive. In the three years I spent there I learned a lot, especially in 2009 when I finished

But if you work hard, and keep pushing and finishing up front, you’re thought of as a real race car-driver. Female or male, it’s the results that count at the end.

I always wanted to be a professional race-car driver, so I put everything into it. When I came to the United States, I kind of put school aside and really concentrated on racing. It was a bit of a gamble in the beginning, but I think it was the right choice.

Coming from Europe, my dream has always been to be in Formula 1. It’s still my goal. But this is my first year in IndyCar and I’m really enjoying it. The whole field is so competitive, and you want to go out there and drive your best. We’ll see what the future holds for us.

PHOTOS BY JIM HATFIELD

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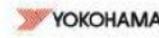
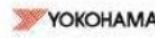
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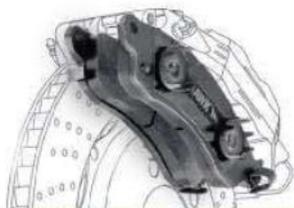
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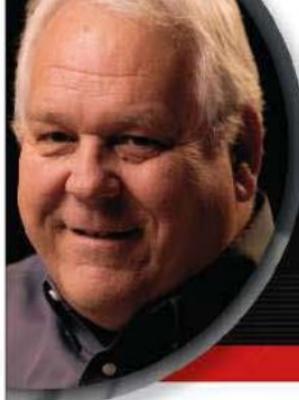
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Tech Tidbits

BY DENNIS SIMANAITIS >> ENGINEERING EDITOR

Rear-Engine Mercedes Sports Car Hits the Streets of California!

Full disclosure: The sports car and its sibling shown here were built in the 1930s.

The term “rear engine” usually isn’t associated with Mercedes-Benz, but in fact I’ve recently driven three *Heckwagens* (German: rear-engine cars), each featuring the three-pointed star. The opportunity came with full road-going restorations of a 130 H, 150 H and 170 H by specialists at our nearby Mercedes-Benz Classic Center in Irvine, California. Hitherto, the two sedans and 150 H Sport Roadster had been static displays at the company’s wonderful museum in Untertürkheim, Stuttgart, Germany. Now, though, they’ve been made roadworthy and we’ve driven them on the streets and roads of Southern California. What great fun!



BEATING THE BEETLE

Taken in chronological (as well as numerical) order, the 130 *Heckmotor* was introduced in March 1934. Note, the more familiar Volkswagen Beetle, also rear engine and likewise designed by Ferdinand Porsche, didn’t appear in prototype form until October 1935. The diminutive Mercedes-Benz (in-house designation W23 Series) was offered 1934–1936 with “the ride comfort of a modern midsize car and the running costs of a small car.” Its rear engine layout certainly leaves plenty of room between the axles for accommodations. Even I, admittedly larger than the average bear, fit just fine.

MERCEDES HECKMOTOR SPORT ROADSTER

Our 150 Sport Roadster is the only known surviving example of this W30 Series. Its split windshield and dual side-mounted spares certainly give the car a rakish appearance. With only a bit of overwrought imagination, I could see its proportions resonating with those of the era’s rear-engine Auto Union Grand Prix cars. Hailed as a “thoroughbred sports car” in a contemporary sales brochure, it promised “acceleration in every gear—

and virtually on a par with that of a supercharged car.” It was a kick to drive this rarest of Mercedes models; however, perhaps I wouldn’t go quite this far as to its performance. Its close-coupled cockpit was a tight fit for me, though Mercedes Classic’s Mike Kurz, sort of linebacker size, also fits. That’s the Center’s Nate Lander driving it in the photo.

A SWEETHEART OF A LIMOUSINE

My favorite of the classic trio was the 170 H Cabrio-Limousine (the two-tone beige car). This W28 Series was built between 1936 and 1939. As its name suggests, the 170 H has a 1.7-liter engine, like the others a water-cooled inline-4. Quite advanced for the era, all Mercedes *Heckwagens* featured hydraulic brakes and a 3-speed plus Overtop Gear-4th gearbox.

A long wiggly shift lever actuates this gearbox with particularly lengthy lateral throws. I found engagement of the Overtop Gear-4th, its highway gear, profiting from some finesse. Upon reaching around 65 km/h (say, 40 mph), you keep the revs constant and move the lever laterally, sans





» Mercedes Classic's Nate Lander pilots the 150 Sport Roadster. That's me at lower left in the 170 H Cabrio-Limousine.

SAN FRANCISCO TO SACRAMENTO

In its home market of Japan, where the car is already on sale, Mitsubishi cites an i-MiEV range of 160 km (i.e., almost 100 miles). There's a footnote, though, linking this to the Japan 10-15 Mode, a city simulation that makes our EPA City Cycle appear positively aggressive. When the i-MiEV comes to our shores in autumn 2011, it'll be slightly wider (for reasons of side-impact regulations) and carry a less optimistic projection of range, 50 to 80 miles depending on load, driving behavior and climate. (Cold weather, for instance, could cut this in half.)

It was 53 freeway miles from San Francisco's Embarcadero to the Vacaville quick-charge. One of the 5-car demonstration fleet—not ours—missed the exit and ran into range issues. We arrived with miles to spare. After a 30-minute replenishment of EV juice (not to say a 60-minute replenishment of human sustenance and chat with Ed Huestis), we made the remaining Eaton-boosted 37 miles to the State Capitol with abandon. EVs are quick off the line, you'll recall, and it's always fun to go trolling for unsuspecting BMWs at broad intersections. 

clutch, then leave off slightly. This artistry promotes engagement of a 4th-gear dog clutch and appropriate dropping of revs. To downshift, again sans clutch, you move the lever to the left and blip the throttle. Get it right, and you're ready to drive a Mercedes-Benz 540K, as this fabled classic has a similar *Schnellgang* (German, loosely: quick-gear) layout.

And, of course, the fun of driving old cars such as these is in this mechanical involvement—something that's missing all too often in today's potentially drive-in-a-daze motoring.

A VACAVILLE CHARGE IN A MITSUBISHI i-MIEV

Literally, Vacaville means "cow town." But this California community between San Francisco and Sacramento has also quite rightly acquired the name Voltville. It was here that Eaton Power Distribution Operations and Mitsubishi set up a quick-charge demonstration of the latter's i-MiEV electric car. It was also here that

I encountered Ed Huestis, a proselytizer extraordinaire of alternative-fuel vehicles.

Almost a decade ago, Ed and others in Vacaville were instrumental in securing grant money and other commitments to set up solar-sourced EV charging. Today, he points with pride to the fact that, on a per capita basis, Vacaville has the largest concentration of alternative-fuel vehicles in the country. What's more, one of its freeway-close charging stations was perfectly sited for a Mitsubishi/Eaton San Francisco/Sacramento adventure.

Eaton's EVSE, Electric Vehicle Supply Equipment, comes in three levels. A Level 1 120-Volt/15-Amp setup gives typical home charging in 12 hours; Level 2 220V/30A could cut this to 6 hours. At Vacaville, we had Level 3, 3-Phase 208 V/150A giving 80-percent charge in about 30 minutes. Also crucial in such hardware is a smart connection, one that communicates the car's charge limitations with the EVSE. Hot ambient conditions, for instance, call for more gentle charging.

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Tech Correspondence

BY TOM WILSON

Conspicuous Consumption

TEXAS-SIZE APPETITE

My dad has a 1976 Chevy truck that he keeps on our ranch. It's a 5.7-liter V-8 2-door and is really beat up. It sits most of the time and is really driven only on weekends during the winter hunting season. The gas tank is always kept full and it has been well maintained and runs great. It is never driven over 40 mph (nearly all driving is done on dirt ranch roads). This past weekend we drove it no more than 15 or 20 miles over a span of three days and it used six gallons of gas. The gas tank has been checked for leaks multiple times and found nothing. So, how or why might it be so inefficient?

Luke Roberts
SAN ANTONIO, TEXAS

Your figures work out to 2.5 to 3.3 mpg, and

yep, that's disgusting mileage. Our guess is the engine is staying in cold start mode, so check the choke on the carburetor. If it's staying closed then this sort of fuel economy is to be expected. Furthermore, there are typically few obvious issues with a rich mixture resulting from an erratic choke, other than a possibly elevated idle speed. An engine running on a rich mixture should be easy to start and will run okay until it's positively drowning in fuel.

Otherwise we would suspect other carburetor faults, such as a punctured float or stuck needle and seat. Typically those result in noticeably bad driveability and black smoke, though. And did anyone change the intake manifold over the years? If so, the exhaust heat crossover may be blocked.

As awful as it is, your fuel consumption is

likely not too far off considering the winter temperatures, slow speeds, short trips and truck gearing. None of these allow the engine to reach operating temperature, which in turn keeps the choke on and positively murders fuel economy.

If the old truck is dedicated to slow-speed, fall/winter ranch duty and the carburetor checks out okay, consider fitting a warmer thermostat. That will slightly speed engine warmup and get the choke fully opened more quickly. The heater will be more effective, too.

VW OILING

I purchased a certified used 2007 Volkswagen Passat station wagon with 43,000 miles in June 2009. The vehicle is equipped with the 2.0-liter turbocharged engine. I am

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concerned about the oil consumption, which is one quart of synthetic in 1500 miles. The dealer says this is normal. In 38 years of driving, this is my first turbo and my first VW so I have no prior experience and would appreciate your insight.

Edward Aumann
FREEHOLD, NEW JERSEY

This is always a tough question to answer because at 1500 miles per quart the oil is definitely being used, but not at a rate allowing cost-effectively diagnosing and repairing whatever is at fault.

Assuming no leaks or PCV system issues, which hopefully the dealer has already checked, the likely culprits are minor variations in piston ring tension or valve guide/valve guide seal integrity. Fixing these issues is expensive, thus there isn't an auto manufacturer who will pay any attention to oil consumption until it gets into the triple digits, i.e., 999 miles per quart or less. It's simply more cost effective to occasionally add oil.

BENDS OVER NITROGEN

I read with interest the January Technical Correspondence piece concerning the advantages, or not, of inflating tires with nitrogen. Costco, for one, uses nitrogen exclusively, and without additional charge. I purchased a set of Michelins from them for my F-150 Supercrew and, indeed, received a nitrogen fill. I was recently surprised when I took the truck to the Ford dealer for routine maintenance and was informed they would not add any air to the tires if needed because they "can't mix nitrogen with air." Sounds a little wacky to me. What's your opinion? Do we always return to Costco to check air pressure? Do we deflate the tire and refill with air? Or do we just mix away and not think much about it?

Thomas Siconolfi
HARTFORD, CONNECTICUT

Just fill away with air and don't worry about it. The worst you're doing is diluting the dried, oxygen-depleted nitrogen fill with some moisture and oxygen, but that's it.

Your letter was one of many recently regarding nitrogen for tires. To summarize, nitrogen does seem to hold its pressure longer than a standard atmospheric fill. Thus, it's good for spare tires, as they are rarely thought about until needed, which is a little late to fill them up.

Nitrogen fills are definitely more stable relative to heat—the tire pressure does not rise as much with nitrogen as with air. Some of this is due to the properties of nitrogen, but much is due to the nitrogen compressor removing moisture from the gas (it's a standard air compressor at heart, fitted with filters and driers to strip oxygen and water). In a truck with 18 tires filled to 100 psi, nitrogen is thus a major convenience, but in a car with four 32-psi tires, the benefits are much reduced.

In typical automotive use, nitrogen fills are of limited value if free and we don't see any way they would pay off at \$10 per tire. We don't begrudge the tire shop the extra money as an expensive nitrogen-generating air compressor is required. But assuming you can easily keep an eye on and fill your tires conventionally for no charge, the finances don't pencil out for nitrogen. On the other hand, nitrogen fills are more thermally stable and pose less oxidation threat to the tire.

We consider nitrogen a premium upgrade, nice, or perhaps useful for specialty cars, but of little practical benefit to daily automotive transport. If you can get nitrogen easily at no cost, why not? But it's not a huge forward step in automotive progress.

RIGID THINKING

I have modified the suspension on my 2000 Mercedes-Benz E430 because it was too soft. It felt like a boat when going over large bumps, similar to an old, heavy American car. I've installed Bilstein sport shocks and Eibach Pro Kit springs. The ride is now firmer and much more controlled. The problem I now have, on rough roads, is the back end feels like it hops or jumps sideways. Is this due to the back suspension just being too stiff or is there another problem?

Sammy Lum
FREMONT, CALIFORNIA

We doubt there is another problem; your rear suspension is now almost certainly overly rigid for the real world. The rear suspension is so stiff that the tires are launching upward over sharp bumps, momentarily losing meaningful contact with the pavement. This allows the car to lurch sideways and is a typical tradeoff of a stiff suspension.

If the shocks were adjustable, reducing their compression damping would help. Adding weight to the vehicle, or driving faster over the bumps will also smooth the bump response, but are obviously not real-world solutions.

You could refit the stock rear suspension, but then the "couple," that is, the balance of the suspension stiffness front to rear would be upset, leading to unpleasant and possibly dangerous handling.

Shocks have the most to do with ride quality and sharp impacts as you describe, so perhaps Eibach could recommend a different rear shock or spring/shock combination that isn't as aggressive, yet is still compatible with your stiffened front suspension.

Do you have a technical question?

Send it to RTLetters@hfmus.com, or Technical Correspondence, *Road & Track*, 1499 Monrovia Ave., Newport Beach, Calif. 92663. Be sure to include your first and last name, hometown and state.

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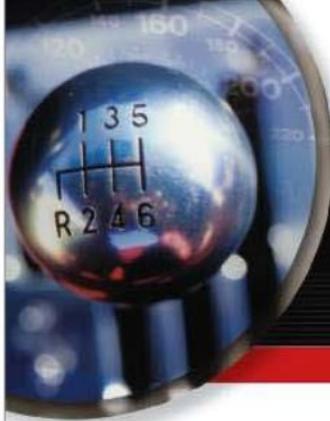
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Road Test Summary

Make & Model	Issue	Price as Tested ³	Engine Type	Horsepower	Torque, lb.-ft.	Curb Weight, lb.	0-60 mph, sec.	0-100 mph, sec.	1/4 mile, sec. @ mph	Top Speed, mph ⁴	Braking from 60 mph, ft.	Braking from 80 mph, ft.	Skip/pt. g	Slalom, mph	Our Fuel Mileage, mpg
Acura RL ¹	5-09 ¹⁰	\$54,860	V-6	300	271 4085	6.2 15.3	14.7@97.8	130 ⁵	126	226	0.86	67.3	17.0 ⁶		
TL SH-AWD	5-10 ²	\$44,195	V-6	305	273 3860	5.2 13.1	13.7@102.3	130 ⁵	113	198	0.91	68.4	15.8		
TSX V-6 ¹	9-09 ¹⁰	\$38,760	V-6	280	254 3630	5.9 14.6	14.4@99.3	130 ⁵	133	241	0.85	64.1	19.0 ⁶		
Alfa Romeo 8C Competizione	1-08	\$253,750	V-8	450	354 3495 ⁴	4.2 9.3	12.4@115.4	181	105	196	1.02	na	14.0 ⁶		
Ameritech McLaren F1	12-97	\$1,131,120	V-12	627	479 2840	3.4 7.7	11.6@125.0	231	127	215	0.86	64.5	11.5		
Aston Martin DBS ¹	3-09 ¹⁰	\$276,140	V-12	510	420 3940	4.1 9.2	12.4@114.9	191	111	193	0.95	71.4	na		
V8 Vantage Roadster	4-10 ^{10,2}	\$157,630	V-8	420	346 3775	4.5 10.2	12.8@113.3	180 ⁵	119	211	0.95	72.5	10.9		
Audi A4 3.2 Quattro ¹	5-09 ²	\$49,975	V-6	265	243 3810	5.9 15.3	14.4@97.5	130 ⁵	125	224	0.86	66.2	18.3		
A5 2.0T Quattro	4-10 ¹⁰	\$45,150	I-4	211	258 3645	6.2 16.4	14.8@95.2	130 ⁵	118	204	0.94	68.9	21.3 ⁶		
A6 3.0 Quattro ¹	6-09 ¹⁰	\$56,025	V-6s	300	310 4125	5.5 13.8	14.0@100.8	130 ⁵	126	227	0.85	64.1	19.0 ⁶		
R8 5.2	2-10 ¹⁰	\$172,250	V-10	525	391 3745	3.3 7.6	11.5@123.1	196 ⁵	118	210	0.99	73.2	14.0 ⁶		
S4 Quattro	5-10 ²	\$58,675	V-6s	333	325 4010	4.5 11.0	12.9@108.6	155 ⁵	114	202	0.96	70.1	14.4		
TTS ²	11-09	\$52,075	I-4	265	258 3235	4.6 11.8	13.2@105.2	155 ⁵	115	202	0.98	72.0	19.9		
Bentley Cont. Flying Spur Spd ¹	8-10 ²	\$226,485	W-12tt	600	553 5575	4.3 11.0	12.9@108.5	201	116	202	0.90	61.2	14.1		
Continental GT Speed ¹	5-08 ¹⁰	\$226,555	W-12tt	600	533 5170	4.0 9.9	12.5@113.4	202 ⁵	116	199	0.90	66.2	11.0		
Continental Supersports ¹	3-10 ¹⁰	\$274,055	W-12tt	621	590 4915	3.6 8.7	11.9@117.4	204	118	207	0.90	66.3	13.0 ⁶		
BMW M3 Coupe DCT	12-08 ¹⁰	\$65,000	V-8	414	295 3670	4.3 10.0	12.7@112.4	155 ⁵	116	205	0.93	71.1	13.1		
X6 M ¹	2-10 ¹⁰	\$95,025	V-8tt	547	502 5095	4.2 10.5	12.7@110.5	155 ⁵	120	218	0.90	65.7	12.7		
Z4 sDrive35i	7-09	\$57,500	I-6tt	300	300 3460	4.8 11.7	13.3@106.7	150 ⁵	116	206	0.89	66.2	21.6		
135i	11-09 ²	\$38,175	I-6tt	300	300 3375	4.7 11.7	13.3@105.3	150 ⁵	117	209	0.92	71.0	19.7		
335d ¹	5-09 ²	\$50,895	I-6td	265	425 3960	5.3 13.4	13.8@101.4	149 ⁵	116	208	0.92	70.5	25.5		
335i	5-10 ²	\$47,625	I-6tt	300	300 3570	4.7 11.7	13.3@105.7	150 ⁵	119	210	0.91	68.4	18.4		
550i Gran Turismo ¹	7-10 ¹⁰	\$74,025	V-8tt	400	450 4720	5.1 11.6	13.4@106.5	150 ⁵	122	220	0.89	66.7	16.0 ⁶		
750Li ¹	8-09	\$110,170	V-8tt	400	450 4735	4.9 11.8	13.4@106.0	150 ⁵	120	207	0.87	68.7	15.9		
Bugatti Veyron 16.4	2-07	\$1,482,700	W-16gt	1001 922	4470 2.6 5.5 10.2@142.9	253	111	199	0.94	68.0	9.0⁶				
Cadillac CTS-V	8-09 ²	\$66,835	V-8s	556	551 4130	4.1 8.8	12.3@118.8	191	114	198	0.90	70.1	15.6		
Chevrolet Camaro ZLT Coupe	8-10 ¹⁰	\$29,175	V-6	304	273 3810	5.9 14.6	14.4@99.4	118 ⁵	115	206	0.85	68.4	18.3		
Camaro SS Coupe	8-10 ²	\$36,265	V-8	426	420 3870	4.6 10.6	13.0@110.7	155 ⁵	119	209	0.88	68.6	16.9		
Corvette Grand Sport	2-10 ¹⁰	\$68,365	V-8	436	428 3360	4.1 9.2	12.4@116.5	190 ⁵	112	197	0.96	70.7	17.0 ⁶		
Corvette Z06	5-08 ²	\$79,595	V-8	505	470 3190	3.4 8.0	11.7@123.7	193	111	189	0.99	70.6	17.5		
Corvette ZR1	6-10 ²	\$121,425	V-8s	638	604 3365	3.5 7.3	11.5@128.7	205	112	194	1.04	74.9	14.0		
Dodge Challenger R/T	10-09 ²	\$38,170	V-8	376	410 4135	5.8 13.8	14.1@101.2	142 ⁵	136	246	0.83	62.7	20.3		
Charger SRT8 ¹	3-09 ²	\$46,125	V-8	425	420 4185	4.9 11.4	13.2@108.8	165 ⁵	124	220	0.88	65.8	18.5		
Viper SRT10 ACR	4-08 ¹⁰	\$98,110	V-10	600	560 3430	3.4 8.0	11.6@122.6	177 ⁵	109	187	1.12	73.4	na		
Ferrari California	2-10	\$200,822	V-8	453	358 3925	3.5 8.6	11.9@116.9	193	106	188	0.96	69.2	14.0 ⁶		
Enzo	7-03	\$652,830	V-12	650	485 3230	3.3 6.6	11.1@133.0	218	109	188	1.01	73.0	13.3		
599 GTB Fiorano F1	5-07	\$319,408	V-12	611	448 3865	3.2 7.0	11.2@129.3	205	109	186	0.97	71.2	10.0 ⁶		
Ford GT	12-03	\$150,525	V-8s	500	500 3390 ⁴	3.8 8.8	12.2@121.6	190	117	199	0.99	69.5	15.0 ⁶		
Mustang GT Premium	8-10 ²	\$39,680	V-8	412	390 3665	4.6 11.3	13.2@109.3	145 ⁵	116	204	0.91	70.6	17.5		
Mustang V-6 Coupe Premium	8-10 ¹⁰	\$33,055	V-6	305	280 3520	5.4 13.5	14.0@101.4	113 ⁵	115	199	0.92	69.2	20.6		
Taurus SHO ¹	12-09 ²	\$42,985	V-6tt	365	350 4285	5.2 12.8	13.6@103.2	131 ⁵	122	216	0.88	64.8	17.5		
Hennessey HPE700 Camaro	4-10	\$125,000	V-8s	725	741 3930	4.1 8.0	12.0@125.4	201	117	204	0.92	71.0	11.0 ⁶		
Honda FCX Clarity ¹	5-09	\$600/mo.	FC	134	189 3575	8.6 27.3	16.8@84.3	100 ⁵	129	241	0.82	64.1	na		
Hyundai Genesis 4.6L V8 ¹	5-09	\$42,000	V-8	375	333 4015	5.5 13.0	13.9@103.8	149 ⁵	120	218	0.86	63.8	18.0 ⁶		
Genesis Coupe Track	6-09 ²	\$30,345	V-6	306	266 3470	5.7 14.7	14.4@99.1	149 ⁵	118	211	0.90	69.3	18.0 ⁶		
Sonata SE ¹	7-10 ¹⁰	\$25,195	I-4	200	186 3340	7.5 20.6	15.8@89.1	130 ⁵	128	222	0.85	65.4	26.6		
Infiniti G37 Coupe Journey ¹	6-09 ²	\$45,045	V-6	330	270 3700	5.4 13.0	13.8@103.2	155 ⁵	118	206	0.89	68.4	19.0 ⁶		
G37S Sport	5-10 ²	\$40,085	V-6	328	269 3665	5.1 12.3	13.6@105.6	155 ⁵	117	210	0.90	67.8	16.6		
Jaguar XFR ¹	8-09 ²	\$80,000	V-8s	510	461 4405	4.3 9.6	12.6@115.3	155 ⁵	117	206	0.88	66.1	16.7		
Kia Forte Koup SX	6-10 ¹⁰	\$20,090	I-4	173	168 2920	6.9 18.9	15.4@92.3	130 ⁵	125	220	0.89	67.2	23.0 ⁶		
Lamborghini Gallardo Balboni	11-09	\$255,295	V-10	550 ⁶	398 3210 ⁴	3.5 7.5	11.5@126.7	199	115	200	0.95	72.5	13.0 ⁶		
Gallardo LP560-4	11-08	\$251,260	V-10	552	398 3595	3.2 6.9	11.2@129.5	202 ⁵	112	192	1.00	72.1	10.0 ⁶		
Murciélago LP670-4 SV	11-09	\$480,325	V-12	670 ⁶	487 3660 ⁴	2.8 6.8	10.9@129.4	209	114	193	0.97	70.0	10.0 ⁶		
Lexus HS 250h ¹	11-09 ¹⁰	\$39,150	I-4/Elec	187	138 3690	8.2 na	16.2@88.6	112 ⁵	126	226	0.77	63.7	28.3		
IS 350C ¹	12-09 ¹⁰	\$49,415	V-6	306	277 3895	5.5 13.9	14.0@100.7	141 ⁵	133	236	0.81	64.5	19.0 ⁶		
LFA	7-10	\$388,475	V-10	560 ⁶	354 3580	3.8 7.8	11.8@124.4	202 ⁵	112	193	1.04	74.2	16.0 ⁶		
Lincoln MKS EcoBoost ¹	10-09 ¹⁰	\$56,625	V-6tt	355	350 4440 ⁴	5.0 12.4	13.6@103.8	131 ⁵	123	214	0.90	62.6	21.4		
Lotus Exige S 260 Sport	10-09 ¹⁰	\$79,420	I-4s	257	174 2005	4.1 10.4	12.6@110.1	150	112	196	0.97	74.5	21.0 ⁶		
Maserati Gran Turismo ¹	8-08 ²	\$118,525	V-8	405	339 4350	4.7 11.7	13.3@106.2	177 ⁵	112	194	0.95	71.0	16.6		
Mazda Mazda3 s	5-09 ¹⁰	\$22,130	I-4	167	168 3035	7.5 20.0	15.7@89.3	130 ⁵	132	230	0.86	66.8	22.0 ⁶		
Mazdaspeed3	2-10 ¹⁰	\$25,090	I-4	263	280 3250	6.1 14.5	14.4@99.6	155 ⁵	126	219	0.90	68.8	17.0		
RX-8 R3	12-08 ¹⁰	\$32,580	R-2	232	159 3110	6.3 16.4	14.8@95.2	148 ⁵	122	218	0.90	70.8	16.6		

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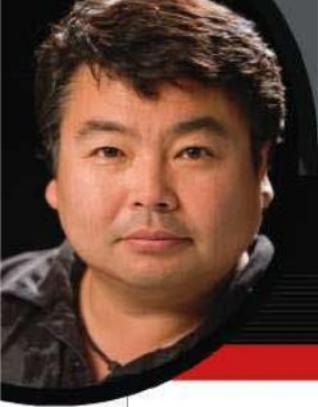
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Mercedes-Benz C63 AMG¹	6-08 ²	\$63,930	V-8	451	443	3920	4.1	9.7	12.5@114.4	155 ⁵	113	201	0.93	69.3	15.1
C350 Sport ¹	9-07	\$44,500	V-6	268	258	3630	5.8	14.8	14.3@98.2	130 ⁵	135	241	0.81	63.8	21.0 ⁶
E63 AMG ¹	6-10 ¹⁰	\$93,075	V-8	518	465	4285	4.1	9.5	12.5@115.1	155 ⁵	119	207	0.92	68.2	15.0 ⁶
E320 Bluetec ¹	7-07 ¹⁰	\$59,375	V-6td	208	388	3860	6.7	17.2	15.0@93.2	130 ⁵	129	232	0.83	62.0	24.0
E550 Coupe ¹	9-09	\$67,225	V-8	382	391	3810	4.7	11.1	13.1@108.9	130 ⁵	137	252	0.84	63.2	15.7
SL63 AMG ¹	4-10 ^{10,2}	\$143,460	V-8	518	465	4420	4.0	9.5	12.4@115.3	186 ⁵	120	211	0.89	66.6	10.0
SL65 AMG ¹	2-09	\$198,175	V-12tt	604	738	4555 ⁴	3.7	8.1	11.8@121.6	155 ⁵	115	202	0.89	67.4	13.4
SL65 AMG Black Series ¹	3-09	\$304,350	V-12tt	661	738	4215	3.9	7.9	11.8@126.3	199 ⁵	112	192	0.99	70.3	14.2
SLR McLaren ¹	7-05	\$455,750	V-8s	617	575	3860	3.5	7.5	11.5@126.1	207	107	186	0.97	69.6	18.0 ⁶
SLS AMG ¹	7-10	\$202,150	V-8	563	479	3795	3.6	7.7	11.6@124.3	197 ⁵	112	194	0.96	71.8	10.8
Mini Cooper S Clubman	7-08 ¹⁰	\$29,100	I-4t	172	177	2845	6.8	18.2	15.3@92.1	139 ⁵	120	213	0.89	67.2	27.0 ⁶
Cooper S	11-07 ²	\$28,850	I-4t	172	177	2665	6.4	17.7	15.0@92.6	139 ⁵	122	214	0.85	67.9	29.8
John Cooper Works	2-09	\$31,450	I-4t	208	192	2655	6.0	14.8	14.4@98.9	147 ⁵	121	210	0.91	71.3	27.0 ⁶
Mitsubishi Eclipse GT	8-07 ²	\$27,694	V-6	263	260	3570	5.9	14.7	14.5@99.3	148	121	217	0.84	63.9	19.6
Lancer Evolution CSR	3-08 ²	\$33,625	I-4t	291	300	3555	4.9	13.3	13.6@100.9	162 ⁵	124	217	0.97	71.7	15.0 ⁶
Lancer Evolution MR Touring	12-09 ²	\$44,234	I-4t	291	300	3690	4.6	12.1	13.2@103.6	162 ⁵	120	211	0.92	69.2	18.1
Lancer Ralliart	11-08 ²	\$29,915	I-4t	237	253	3540	5.4	15.1	14.1@97.2	130 ⁵	129	227	0.84	66.7	17.3
Nissan Altima 3.5 SE Coupe	8-07	\$25,515	V-6	270	258	3200	5.7	13.9	14.2@101.2	130	130	234	0.84	65.2	18.7
GT-R Premium	6-10 ²	\$85,340	V-6tt	485	434	3920	3.3	8.0	11.6@120.4	193	112	190	1.01	74.8	14.4
Maxima 3.5 SV ¹	9-08	\$34,940	V-6	290	261	3610	6.1	15.4	14.6@97.7	149 ⁵	121	219	0.86	65.4	18.8
Nismo 370Z	9-09 ¹⁰	\$39,540	V-6	350	276	3300	5.0	12.0	13.5@106.6	155 ⁵	123	214	0.93	69.9	19.0 ⁶
Sentra SE-R Spec V	6-07 ²	\$22,715	I-4	200	180	3075	6.6	16.9	15.0@94.2	130 ⁵	134	246	0.87	65.3	22.1
370Z	4-09 ²	\$33,740	V-6	332	270	3360	5.2	12.8	13.7@103.9	155 ⁵	115	208	0.98	69.5	18.7
Pontiac G8 GT¹	6-08	\$29,995	V-8	361	385	3910	5.0	12.3	13.5@104.9	140 ⁵	119	221	0.85	64.3	16.0 ⁶
G8 GXP ¹	3-09 ²	\$43,280	V-8	415	415	4000	4.7	11.1	13.1@109.4	155 ⁵	120	221	0.88	65.0	17.8
Porsche Boxster Spyder	3-10	\$79,210	F-6	320	273	2940	4.4	10.4	12.8@109.6	166 ⁵	112	202	1.02	74.6	19.0 ⁶
Carrera GT	6-04	\$460,400	V-10	605	435	3530 ⁴	3.6	7.0	11.3@131.6	205	124	199	0.99	71.1	11.0 ⁶
Cayman S	4-09 ²	\$65,780	F-6	295	251	3100	4.8	11.6	13.3@105.6	171	111	195	0.97	70.8	17.8
Panamera Turbo	12-09	\$153,615	V-8tt	500	516	4635	3.4	8.4	11.7@118.0	188	116	204	0.96	69.1	16.3
911 Carrera S	4-08 ¹⁰	\$94,815	F-6	355	295	3295	4.1	10.3	12.6@111.9	182	111	193	1.00	72.5	19.0 ⁶
911 GT2	12-08	\$198,875	F-6tt	530	501	3265	3.4	7.7	11.5@123.9	204	108	187	1.03	75.9	15.0 ⁶
911 GT3	9-09	\$133,135	F-6	435	317	3075 ⁴	3.7	8.3	11.8@119.5	193	106	186	1.04	75.9	13.0 ⁶
911 Turbo	6-10 ²	\$149,370	F-6tt	500	480	3535	3.5	7.9	11.7@121.8	194	112	195	1.01	73.0	16.0
Rolls-Royce Ghost¹	8-10 ²	\$308,350	V-12tt	563	575	5495	4.7	10.2	12.9@114.3	155⁵	119	209	0.85	60.1	16.5
Phantom ¹	8-06 ¹⁰	\$346,650	V-12	453	531	5810	5.9	15.3	14.5@97.4	152 ⁵	123	219	0.77	57.9	11.7
Rosionn Q1	1-10	\$108,151	V-6tt	450	390	2675	3.2	7.8	11.6@121.6	185	130	217	1.06	73.0	18.0 ⁶
Saab 9-3 Turbo X SportCombi	10-08 ¹⁰	\$44,755	V-6t	280	295	3910	6.4	19.2	15.0@91.8	155 ⁵	127	225	0.80	65.1	17.3
Saleen S7 Twin Turbo	9-06 ¹⁰	\$602,442	V-8tt	750	700	2900 ⁴	3.3	6.0	10.6@139.8	250	119	210	1.03	69.9	13.0 ⁶
Saturn Astra XR	3-08	\$20,330	I-4	138	125	2820	8.6	na	16.6@84.4	129 ⁵	120	213	0.87	67.0	23.0 ⁶
Shelby GT500 Super Snake	12-07	\$70,670	V-8s	605	590	3915	4.4	9.1	12.5@119.9	150 ⁵	118	204	0.93	68.4	15.6
Smart For Two passion coupe	3-08	\$15,625	I-3	70	68	1825	13.3	na	19.2@70.5	90⁵	130	230	0.72	57.6	32.0⁶
Spyker C8 Spyder	3-07	\$296,785	V-8	400	354	2985	4.4	10.3	12.7@112.0	160	120	204	0.92	67.1	18.0
Subaru Impreza 2.5i	12-07 ¹⁰	\$17,640	F-4	170	170	3055 ⁴	8.2	22.9	16.1@85.6	120 ⁵	138	249	0.79	64.2	21.0 ⁶
Impreza WRX	11-08 ²	\$28,660	F-4t	265	244	3230	5.1	13.5	13.8@101.0	140 ⁵	124	221	0.87	67.0	22.2
Impreza WRX STI	3-08 ²	\$39,440	F-4t	305	290	3360	5.0	14.1	13.6@98.2	155	119	209	0.90	69.8	16.0 ⁶
Legacy 2.5GT Limited	5-10 ¹⁰	\$34,146	F-4t	265	258	3500	5.8	15.2	14.3@97.2	150 ⁵	116	222	0.84	67.2	19.0
Legacy 3.6R Limited ¹	12-09 ¹⁰	\$32,383	F-6	256	247	3555	6.5	16.7	14.9@95.6	149 ⁵	129	232	0.81	63.8	19.2
Tesla Roadster	2-09	\$118,400	Elec	248	276	2750	4.0	11.1	12.7@105.3	121	119	210	0.92	68.6	132/dyn ⁷
Roadster Sport	5-10 ¹⁰	\$159,145	Elec	288	295	2790	3.7	10.9	12.6@104.9	125 ⁵	123	210	0.96	70.3	160/dyn ⁷
Volkswagen CC3.6L4Motion	7-09 ²	\$42,630	V-6	280	265	3855	6.1	15.5	14.5@97.0	130 ⁵	127	225	0.91	66.5	19.2
Golf TDI	4-10 ¹⁰	\$27,090	I-4td	140	236	3120	8.8	24.5	16.6@83.9	125 ⁵	132	233	0.84	64.4	38.9
Golf GTI 3-dr¹⁰	8-10	\$31,900	I-4t	200	207	3370	6.1	15.8	14.6@96.9	130⁵	143	247	0.86	66.2	25.0⁶
Golf GTI 5-dr¹⁰	8-10	\$24,789	I-4t	200	207	3285	6.6	16.1	14.9@96.2	130⁵	136	237	0.88	67.1	25.0⁶
R32	12-07 ¹⁰	\$35,430	V-6	250	236	3720	6.0	16.3	14.6@95.0	130 ⁵	134	237	0.85	65.9	18.2
Volvo C30 Version 2.0	11-07 ²	\$27,700	I-5t	227	236	3200	6.5	16.3	14.9@95.8	149 ⁵	122	218	0.85	66.3	22.8
C70	4-07 ²	\$40,400	I-5t	218	236	3785	7.5	18.9	15.7@91.2	150 ⁵	120	217	0.83	65.0	25.8
S80 V8 AWD ¹	6-07	\$56,025	V-8	311	325	4080	5.6	14.3	14.2@99.4	155 ⁵	123	210	0.85	64.6	16.3
V70 ¹	5-08 ¹⁰	\$34,410	I-6	235	236	3530	7.3	18.6	15.6@92.3	130 ⁵	131	230	0.82	63.0	21.5 ⁶

Data apply to the model at the time (issue date) of testing. Legend: For engine types, I is an inline design, F is a flat and R is a rotary. The number following the letter is the number of cylinders or rotor chambers. An additional letter, a "t" or an "s" designates turbo- or supercharging; "d" designates diesel; "FC" designates fuel cell; **boldface**=extremes in that particular category, excluding nonproduction cars; **red**=newest entries; na=not available, na/U.S.; ¹automatic transmission; ²comparison test; ³price at time of test, some estimated; ⁴estimated; ⁵electronically limited; ⁶DIN bhp; ⁷from previous test; ^{8</}



Countersteer

BY SAM MITANI >> INTERNATIONAL EDITOR

The Correlation Between Audio Equipment and Automobiles

There's no better way to spend Memorial Day Weekend than by going to Indianapolis and attending the Greatest Spectacle in Motorsports, the Indy 500. When I received an invite to this year's race, I was excited—and a bit confused at the same time—because this particular invite came from the premium audio company Bowers & Wilkins, sponsor of two cars driven by Alex Tagliani and Bruno Junqueira. Now what does a high-end audio equipment maker have to do with motorsports? Out of pure curiosity (and the fact that I wanted to attend the race), I accepted B&W's invitation.

For those unfamiliar with Bowers & Wilkins, it's primarily an audio speaker manufacturer founded in 1966 by a Brit named John Bowers. The company's products are considered industry-leading and quite upscale. B&W products are currently used by George Lucas' Skywalker Sound Studios and at Abbey Road, arguably the world's most famous recording facility. Recently, B&W entered the automobile market as the stereo supplier for the Jaguar XF and XJ.

The reason for the company's involvement in motorsport? According to Joe V. Atkins, president and CEO of B&W, it's all about expansion of the brand. "Motorsport provides the right profile to increase awareness of the Bowers & Wilkins brand as it expands into new markets, such as automotive. The demographics tie in well with our customer base," he said.

Later, I discovered that the relationship between B&W and racing went much further. For example, just as carmakers use

racing as a tool to experiment with new technology, so too do the engineers at B&W. According to B&W research engineer, Stuart Nevill, there are a lot of similarities between the two disciplines.

"We're always looking for new materials and methods to improve sound reproduction and quality. Racing is a harsh environment that requires durable products that offer genuine performance for an extended period. We think this is an area we can learn from motorsport. We're already using many materials found on an Indy car including Kevlar, Rohacell, aluminum, fiberglass, titanium and magnesium," he said.

As I probed deeper, I found many more similarities between sound equipment and cars. For example, when B&W developed the sound system with Jaguar for the XF and XJ, close attention was paid to the shape of the car interior. Like a race car, a bad shape can create "drag," leading to the loss of performance. As I sat in the XF with Nevill, he described that B&W speakers were like engine pistons in that they both pump air. Bass speakers provide low-end power, while midrange speakers supply exactly that, the midrange. Tweeters fill in the high end. Nevill also pointed out the middle speaker mounted in the center of the dash. The primary job of this speaker was filling in the hole in the middle of the cabin left by the speakers mounted in the doors, giving the sound there a boost (a turbocharger if you will). From the driver's seat, it sounded as if the music were coming from directly in front of me, as if I were sitting in the middle of a concert hall.

It all started making sense, as I envisioned the head unit to be the engine of the car, the voice coil to be the crankshaft (because it provides power to the cone, rather than extracting power from it) and the speakers to be the wheels and tires (where the power is transferred). As Nevill explained, stereo products go through similar development cycles as automobiles. It starts with the actual engineering of the product, followed by the styling, then prototypes are tested until the finished product is presented to the public.

After my encounter with B&W, I was introduced to a whole new way of evaluating sound and listening to music in my car and home. I followed up a week later asking Nevill for information on future products from B&W; he explained that company policy prohibited him from talking about future products. Yet another similarity between car companies and audio companies... 

>>The B&W Nautilus speaker, left, has quite the dramatic look. And even though you won't find B&W speakers in Alex Tagliani's Dallara, below, B&W systems are now found in the Jag XF and new XJ.





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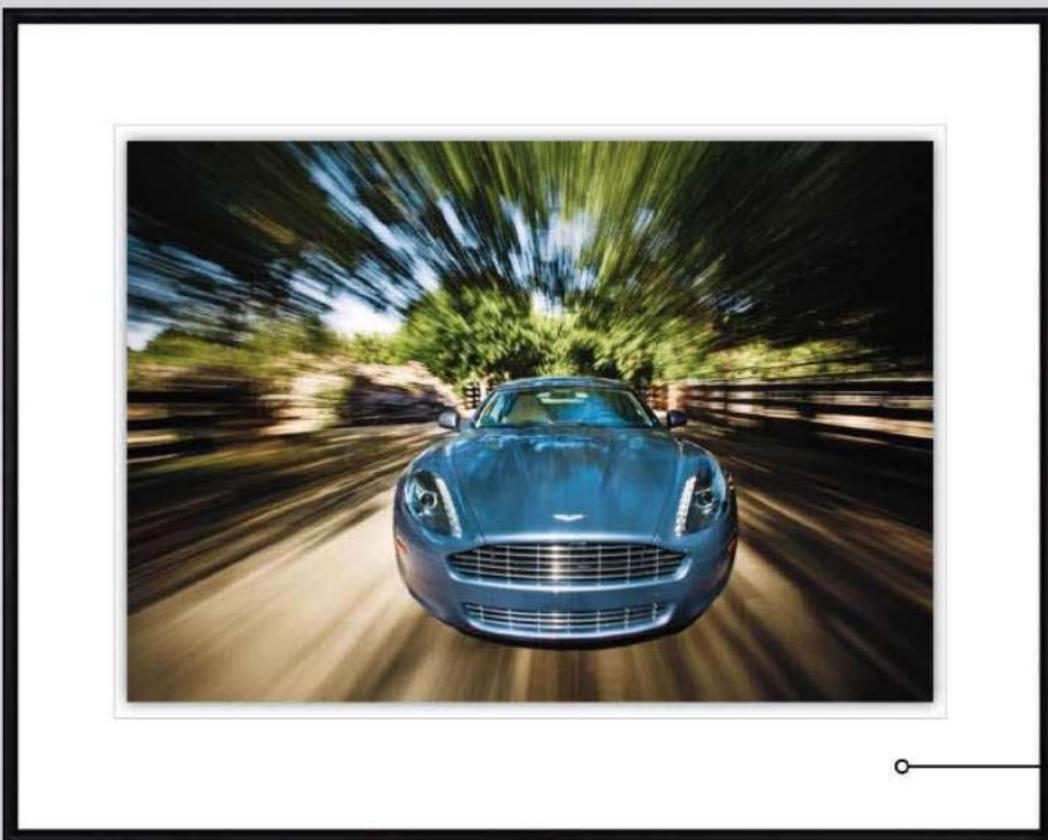
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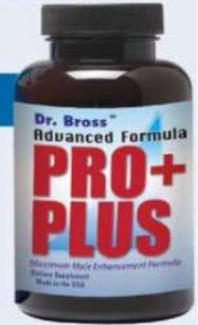
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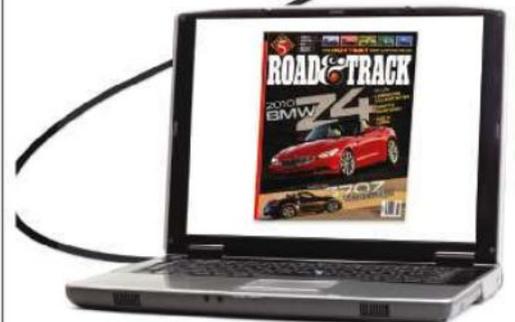
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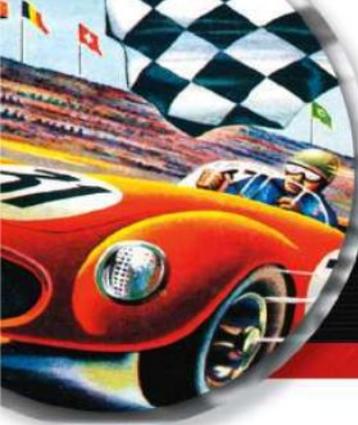
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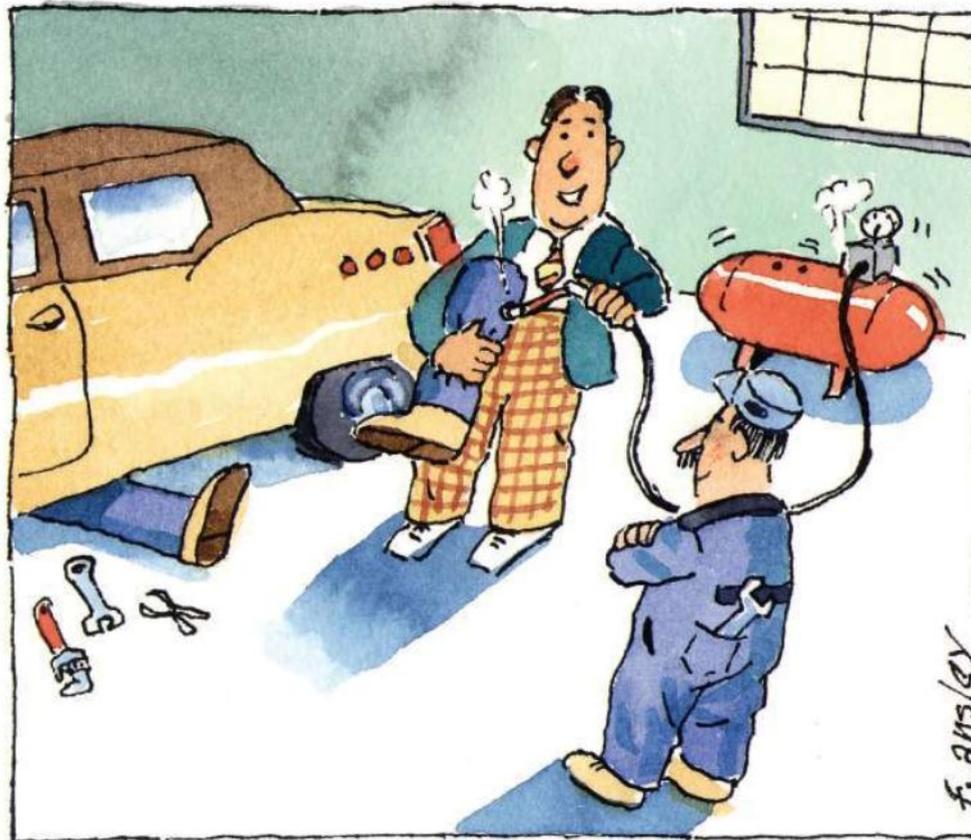
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