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/// My Blue Angel – Beck 550 Spyder /// Jesterz '33 Ford

REINCARNATION

CONTINUATION, REPLICA AND LOW VOLUME AUTOMOBILES



GRAY PHANTOM

Creating a Ghostly Cobra That Might Have Been

Page 40



'63 Corvette Grand Sport Page 26

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REINCARNATION

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Steve Temple
Editor

What's in a Name? Different, But the Same

Replicas and other project cars combine mechanical components in innovative and unusual ways. A classic re-creation with a late-model engine is just one example of many variations on a theme. Chassis engineering and cockpit layouts usually improve on the original setups significantly. That's what makes specialty cars so intriguing – the rebirth and reinvention of an iconic design. In other words, change is good.

The same is true for this magazine. As you no doubt have already noticed, it has a new name – a play on words that emphasizes our core subject matter: replicas, reproductions and continuation cars. Along with a new name, we have a new corporate owner, COLE Publishing, a successful trade publisher from a totally different field.

How will it affect this magazine? Well, let's answer that by looking back on some previous changes the magazine has gone through over the last 14 years. Originally founded by Jim Youngs as *Kit Car Builder*, it was conceived as direct competition for another kit magazine. Ultimately that competition went away, but Jim continued to man the helm despite some stormy economic times and a volatile marketplace.

Jim and I are lifelong friends and colleagues, and when he decided to retire and devote more time to his grandchildren and car projects, he handed the torch to me, since I had already been doing some writing and marketing for the magazine. For a variety of reasons, the magazine morphed from its original print format into digital distribution, and we also dropped the "K-word" from the title. The latter change was well received, and allowed us to broaden our coverage.

Now we're taking other big steps to further grow this publication. Starting with this issue, COLE Publishing is relaunching a print edition (as well as digital), along with a weekly e-newsletter and revamped website, among other new developments and enhancements. But the subscription price for readers will remain the same: free!

By way of background, COLE Publishing was established in 1979 in the northern Wisconsin town of Three Lakes. The firm has grown to become North America's largest trade publisher for the wastewater industries. If you're wondering what wastewater has to do with car builders, it turns out that the principals of COLE are enthusiastic car guys, and fans of replicas in particular. And with nearly 40 years of publishing experience, they have a great track record.

With all of these changes, one thing will remain the same – I will still be serving as editor of the magazine, so you don't have to worry about breaking in a newbie. Feel free to contact me directly about covering your personal car in the pages of *ReinCarNation*.

So stay tuned. Our publishing vehicle is now reworked with new components for a much higher level of performance, and we've got a strong foot on the throttle.

Steve Temple
editor@reincarnationmag.com

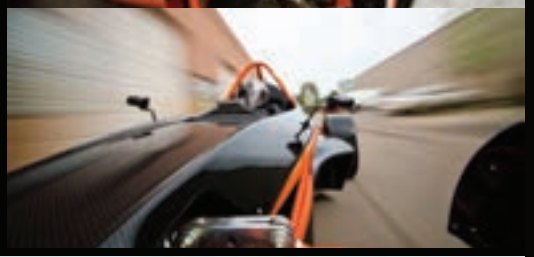
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Bring It FORWARD

Old-School Looks, But Newer Technology in a Unique 427 Cobra

Story and Photos by Steve Temple



Time marches on, and so do replicas. While they strive to reincarnate the style and experience of iconic cars, that doesn't mean they have to do everything the way they used to.

That's a good thing, since mechanical engineering has come a long way in the last several decades. So what we often find on a repro are newer, better components, even though it looks like it was pulled from the pages of a classic novel. Case in point: Rick Bagley's Cobra replica from Unique Motorcars.

Rick's Cobra has a traditional paint job, with Ford Candy Apple Red and Performance White stripes. Underneath the hood is a bona fide 427 Side Oiler, dressed with a period-correct turkey pan and puke tank, and backed by a 4-speed Toploader. In the cockpit are Stewart Warner gauges with a reverse-reading speedo. What could be more original? In fact, Rick once won a "Best in Show" award because the judges thought his car was an authentic Shelby!

Well, let's go a little deeper. The original Cobra's frame used 4-inch round tubes for the main rails, but Unique chose 2- by 4-inch rectangular tubing instead on both its 427 and 289 models. Why so? In a word, "strength," points out Unique's Maurice Weaver. "Put a corner on a tube and there's less chassis flex," he says. The company MIG-welds on gussets as well, for extra bracing.

"Of course, it's easier too, to cut and weld up a square-tube frame," says Maurice. A 2- by 3-inch frame is also an option, providing extra room in the cockpit, and allowing a 1-inch lower seating position and 2 more inches in the footbox.



A traditional pin-drive wheel should always have a safety-wire on the knockoff spinner.



Truth be told, the frame design for the original 427 "coil-spring" Cobra didn't turn out as intended by Ford engineer Bob Negstad. Instead, AC Cars insisted on using some shorter round tubes that happened to be in stock, which required AC Cars' design engineer to develop an elaborate box structure to carry the rear suspension – an account related to me in person when I met with Shelby and Bob at Shelby American's Los Angeles offices a few decades ago. So even an original Shelby doesn't follow the design as initially conceived!

As for the suspension, availability dictates the choice of certain parts. While many Cobra replicas have Mustang II parts – a favorite configuration for many project cars, Unique prefers to use custom-fabricated, tubular control arms designed specifically for its chassis. These mount on Mustang spindles that are designed for a much heavier car, and thus are overbuilt.

Completing the front end are adjustable coil-over shocks (Rick chose Bilstein) and Wilwood vented brakes. The original Shelby came with solid, unvented Girling discs, which were subject to heat-induced fade. An MGB rack, basically the same as original, handles steering duties.

As for the rear end, the Shelby IRS had a Salisbury (now Dana 44) third member, which is the same found in the Jaguar IRS fitted to the Unique frame. A 3.54:1 ratio is the most popular since most of Unique's customers order a TREMEC T5 with



Instead of a wooden rim wheel, Rick went with a thickly padded steering wheel that affords a better grip.

an overdrive gear. Rick's is a 3.73, since he's found that his 427 is happiest when running over 2,000 rpm.

The difference between the two IRS designs is the pair of upper control arms on the Shelby, while the Jag uses the half-shafts as supports. For additional bracing, Unique adds rear trailing arms, which adjust toe in, along with center bracing that bolts to the bottom of the differential and the rear of the frame. What's the effect of this setup?

"It stabilizes the pinion angle," Maurice says. That in turn ensures proper anti-squat characteristics for

Unique's 2- by 4-inch, rectangular frame is used under both its 427 and 289 FIA Cobra replicas. The latter version of original Shelbys had 3-inch round tubes, known for their lack of rigidity, especially under hard cornering. To compensate, Shelby had to use super-sticky Goodyear racing tires to keep them on the track.

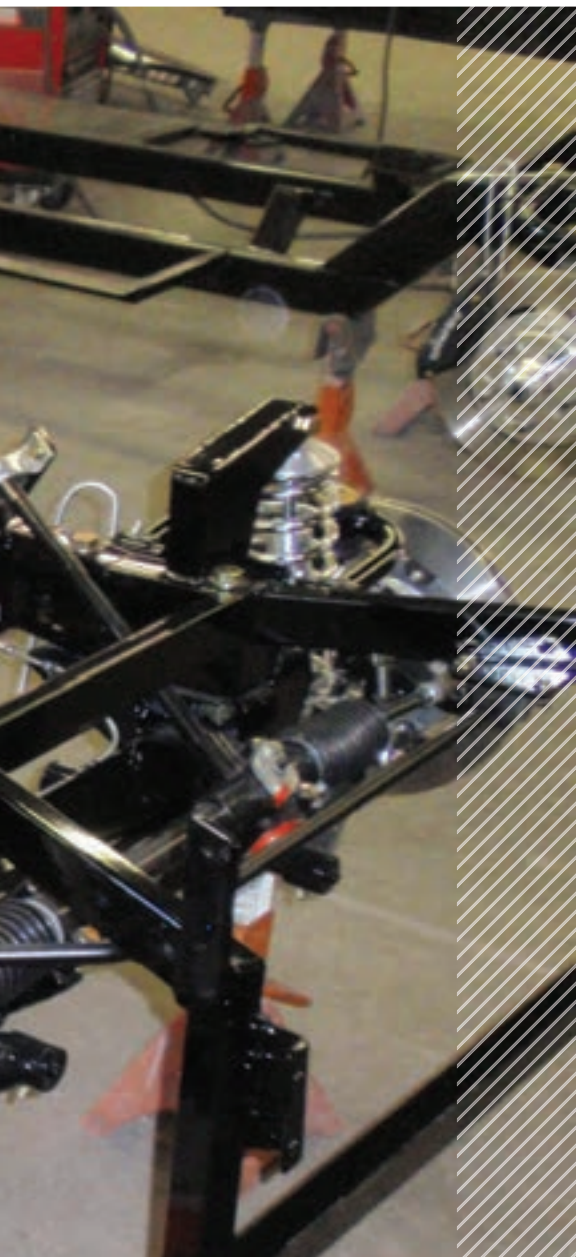


It doesn't get much better than rompin', stompin' 427 FE Side Oiler, with a period-correct accessory treatment.

a crisper hookup under hard acceleration. Rick added a 1/4-inch aluminum plate, fabricated by a fellow car builder, to secure the sides of the differential as well.

Another reason for the Jaguar IRS is the plentiful supply. Unique orders them from the United Kingdom, and reconditions them locally.

While space doesn't permit covering every single Unique upgrade, some other highlights include a plug-and-play custom wiring harness, and heavy-duty door hinges made of 1/4-inch steel plate and braced with 1- by 2-inch steel beams. Rick's car in particular has MSD electronic ignition, a McLeod dual-disc clutch, a Lakewood scatter shield, a Tilton high-torque mini-starter and ceramic coating on the sidepipes, all items





A modern ceramic coating on the sidepipes prevents corrosion and contains heat better, for a better exhaust flow out of the tailpipe.





A closer look into the engine bay reveals a remote oil filter setup with AN6 hoses.

that were simply not available back in the day.

Another factoid about original Shelbys was that basically no two were alike. They were constantly evolving to respond to the demands of competition and performance, which is what replica manufacturers such as Unique do as well.

Even the aluminum bodies varied on Shelby Cobras. "They looked like they were banged out by bunch of winos under a bridge," Carroll once complained, referring to the inconsistencies in the fender shape and headlight openings.

AC Cars took exception to this remark, of course, insisting that its panel beaters were skilled craftsmen, as if they were "by appointment to Her Royal Highness." The truth is likely somewhere in between these extremes, but today's fiberglass bodies are far more consistent due to the molding process. Unique relies on layup by hand, and squeezing out excess resin. This technique is more time consuming, but lends itself to a higher degree of quality control than a chopper gun, which can result in a resin-rich laminate that's inherently weaker.

All told, Unique's nearly 40 years of experience has proven its design and engineering over time. No, its Cobras are not precisely original in configuration. And for that, we're grateful.



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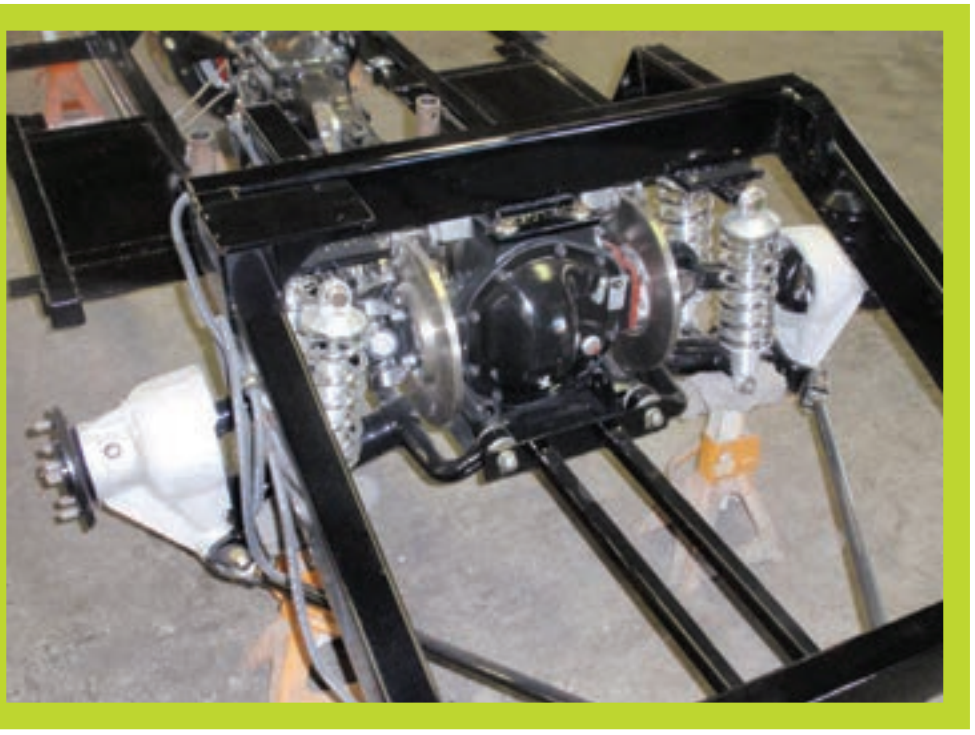
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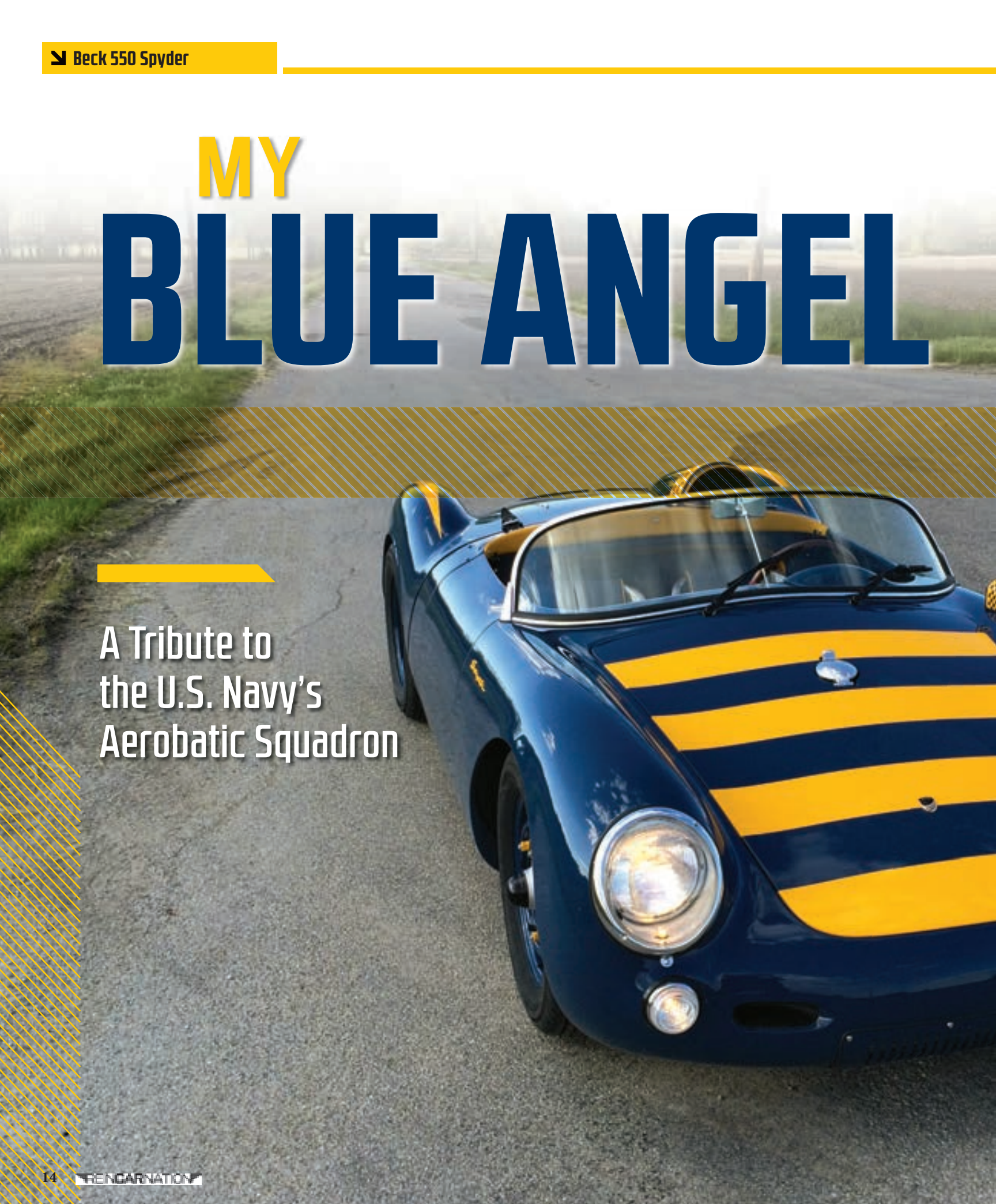
▲ Rather than round-tube frame rails, a portion of the box-tubing is visible under the hood, along with MGB rack and coil-over front suspension



▲ This closeup of the Jaguar IRS shows how Unique reinforces the mounting, both with trailing arms and center braces which stabilize the pinion angle for a better tire hookup.

MY BLUE ANGEL

A Tribute to the U.S. Navy's Aerobatic Squadron





By Steve Temple Photos by Carey Hines and Steve Temple



The bomber-style seats are made of bare aluminum, hand-hammered and polished on the bolsters, with leather inserts.

How do you say thanks for getting the most rigorous training in the world as a naval aviator, allowing you to apply that experience all around the world in a career as both a military and commercial pilot? Well, you put your flight colors on your favorite car, give it some aviation flair, then take off!

That's exactly what Ron Mullis did on his Beck Spyder. Before working 21 years as a pilot for Delta Air Lines as captain of an MD-88 jetliner, he served 13 years in U.S. Navy as a naval aviator, flying multiple combat deployments in the North Atlantic, Mediterranean, Middle East, and Southeast and Southwest Asia.

Grateful to get home safely after his military service, he says that he's inspired, as all naval aviators are, by the Blue Angels. "They embody all the skills that fleet aviators demonstrate daily around the world," Ron relates. "I wanted the car to make a statement. I owe my career as a Delta pilot to the U.S. Navy. I want my car to say, 'Thank you, U.S. Navy!'"

What's Ron's automotive passion? Although he also owns a Beck 356 Speedster, "I've always loved the 550 Spyder and have followed Chuck Beck and the Beck Spyder since 1986," he explains. "I moved a lot in the Navy, then had kids – always a reason not to punch the ticket." Finally the stars aligned, though, and he visited with Carey Hines at Special





The frame rails visible in the footwells are painted to match the Blue Angel blue-and-yellow color scheme of the exterior.

> "I want my car to say, 'Thank you, U.S. Navy!'"
>
> Ron Mullis

Edition. He liked both the Speedster and Spyder, but bought the Speedster the very same day as a car best suited for leisurely weekend driving with his wife in north Georgia.

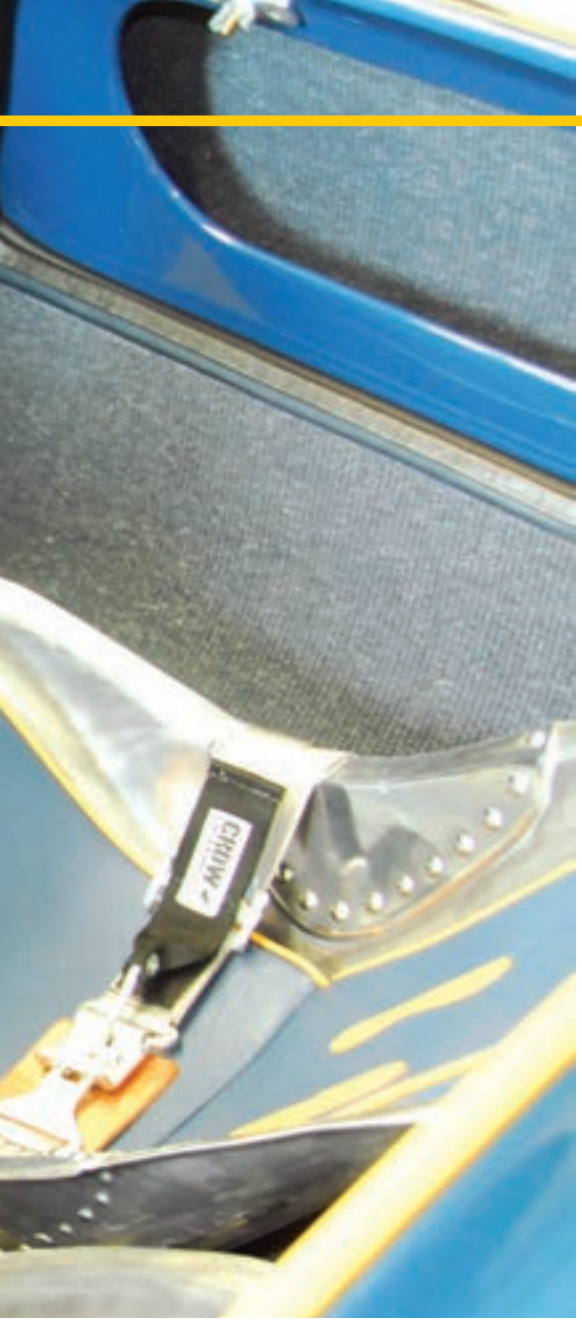
That was just the beginning, though, as he knew his Spyder itch still needed to be scratched with a totally unique treatment. There was no silver for this Spyder, as the color had to be Blue Angel blue and yellow, with an aviation feel throughout, plus Subaru power. The design concept evolved with many ideas coming both ways, and Carey providing some clever treatments along the way.

"Some of the visuals came from studying Blue Angel jet photos," Carey says. But some of it, like the aluminum seats, were something that he had in mind for years but never had the right platform to try. The seats are hand-hammered aluminum by Chris Runge of Rünge Karosserie, then Carey polished the bolsters and left them raw aluminum with leather inserts.

Was it difficult to get the right hues for Ron's personal Blue Angel?

"We actually found the government codes listed online for both paint and powder coat," Carey adds. "I contacted a Navy/Blue Angels staff member in Pensacola and he verified that info, so we gave those codes to our local paint rep and they converted them into DuPont formulas."

Carey tried to acquire an old switch or decommissioned Blue Angels aircraft part to incorporate into the build, but the Navy apparently has very strict policies regarding that, and told him that those items are destroyed and never sold as







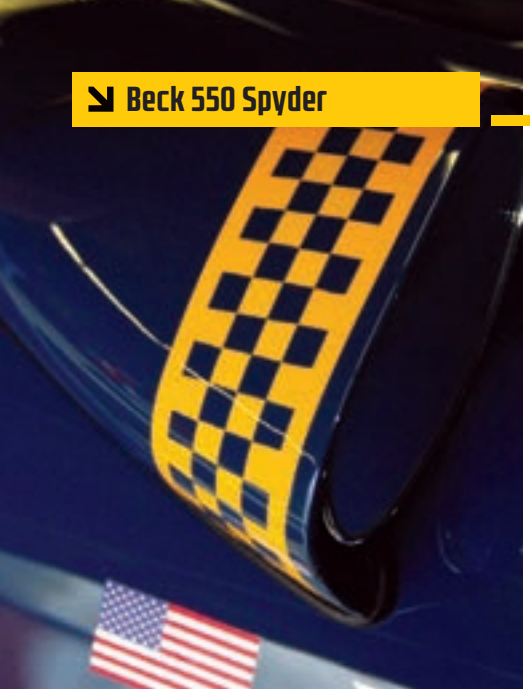


"surplus" like other military branches.

So Carey came up with some clever graphics instead, such as gold-leaf Naval Aviator wings on the radiator shroud, and a "Fly Navy" logo on back. The striped hood is modeled after Albert Westerman's State of Art original 550 Spyder, chassis number 550-0045. The chassis and suspension components were powder-coated Blue Angels yellow as well.

Other details include hand-painted checkerboard on the GT mirror and helmet fairing, and gauges with custom aircraft-style bezels. The dash switches were all converted to Honeywell lockout toggle switches (actual aircraft parts). All the leather is custom from Spinneybeck and made to match the government-issued Blue Angels colors.

As for the engine specified by Ron, it's a 2007 Subaru Impreza EJ25 (EJ253) producing about 200 hp, providing plenty of thrust for such a lightweight



flyer (about 1,500 pounds total). The engine was rebuilt from a brand-new OEM Subaru short block with new bottom-end parts. The wiring and top-end parts are from the donor car, and custom headwork was done by Jake Raby. Engine parts and transaxle were powder-coated Blue Angels blue and yellow. The way Special Edition uses its donor Subaru engines retains the OBD-II diagnostics plug, electronic throttle, and all the stock Subaru engine control information.

"It makes for a very nice driver," Carey notes, even though he has a personal preference for the air-cooled VW Type 1 that's more often seen in Spyder replicas. Why are about half of Special Edition's Beck Spyders built with the slightly heavier, but more powerful, water-cooled Subbie?

"For many clients, having the ability to just jump in and bump the key, without having to worry about carburetor adjustments and valve adjustments, is key," he explains. "Keep in mind that many of these cars sit over a winter, or get left in the garage of someone's winter home in a warmer climate. All they have to do is pull it off the battery tender and enjoy—unlike a carbureted car that may require a fair bit of tinkering to dial in each season." He also points out that 175 hp is bone stock for an EJ253, while that kind of power in a VW Type 1 requires a well-built and customized motor.

In addition, the Rancho Performance transaxle is built to a "Beck Subaru Specification" – in short, a pro-drag level gearbox with custom Weddle gearing





Rather than using the more typical air-cooled VW Type 1, Ron went with a water-cooled Subaru engine. Upgraded to deliver 200 horses, it's mated to a Rancho Performance transaxle with custom gearing.

to match the Subaru 1 to 4 gears. Scrubbing off speed is a set of four-wheel disc brakes, the chassis is damped with classic KONI shocks (color matched to the car), and wide five wheels (powder-coated blue with powder-coated yellow lug nuts).

What's involved in using a water-cooled engine instead? "We've been doing Subaru builds since about 2008 and have refined our cooling system over the years," Carey says. "What we have now has proven itself not only in the hottest places in the U.S., but also in places like Dubai and Kuwait! The only added parts from the stock Subaru components, and our own custom-spec, 3-inch core radiator, is a Davies Craig EWP150 electric water pump with optional controller."

There's one unusual footnote on Ron's aviator-themed Spyder after its debut. Just as the Navy does a "drop test" to evaluate the landing gear of aircraft, he experienced something similar when he was T-boned in an intersection. But this "hard landing" was not serious, as both driver and passenger were unscathed. The body took the brunt of the impact, and Carey was able to graft on a new front clip.

So even though flight attendants always say flying is the safest part of any journey, obviously somebody in heaven was watching over Ron's Angel.

VENDORS

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Miata MUSCLE

Pulling More Performance Out of a Popular Donor Car

By Iain Ayre

Mazda's Miata is emerging as an ideal base for various replicas and other types of re-bodies with exotic, high-performance looks. But given the comparatively modest output of its four-banger engine, who wants a sheep in wolf's clothing? Fortunately, we have a range of cures for that.

Turbocharging existing Miata engines remains a good idea, with tens of thousands of people enjoying the process of continuously improving their turbo setups. The basic idea is to put more air and fuel into making your car go faster, either by fitting a bigger engine with more capacity or by stuffing more in with a turbocharger or a supercharger.

Turbocharging is bigger than supercharging in the Miata community, although there are blower options made by Track Dog, Kraftwerks, Good-Win and Rotrex, among others. With smaller engines, the need to drive the supercharger with a belt on a small engine is less popular than the free exhaust-pressure power used to drive turbochargers. There's also pretty insane power available from turbochargers as you progress. I've watched a Supra Turbo engine progressively rising from 300 to 1,000 bhp as the turbo system was developed. The Miata turbo forum is Turbocharging 101.

One turbo bonus is fuel economy. A 1,600 cc Miata (the preferred size among the boost bunnies for its fast responsiveness) driven mostly off-boost gets 30 mpg. A V8 likely won't.

Speaking for the V8 option, putting an engine in a Miata that's three times the size of the original is nowhere near as dangerous as you might expect, and is actually a fine idea. Replacing a 1,600 cc lump with a 6.0-liter engine in other small sports cars would be suicidal, but the structure and design of the Miata make it not just possible, but borderline reasonable.

Speaking firsthand about what happens when you stuff a V8 into a Miata, I've road tested one of Monster Miata's cars. After cruising away from an urban area until there was nothing on the shoulder to hit but tumbleweed, I let 'er rip. Rather than just leaving squiggly black lines leading to a

Photo courtesy of:
KMIATA

crash site, the V8 Miata hooked up better than expected. Being rude with the throttle in a grossly overpowered Miata can certainly achieve instant donuts, but rolling it out quite hard just delivered massive thrust and a blurry horizon, a very quick slipstream rush and a delicious V8 baritone howl from the exhausts. Relatively massive V8 torque also makes shifting optional: Second and top gears are plenty. The main reason for additional gear changes is the soundtrack.

One unexpected clue to the success of big-power Miata conversions is that the torsional stiffness of even an early Miata monocoque is as high as some Lotus Seven-style space-frames. Another is that the kits usually add even more bracing, and often a Thunderbird or other independent rear end that will take the torque but will still behave like a Miata suspension.

A useful tip for those on real-world budgets is that an NA 1,600 cc Miata's differential is good for up to 2 liters but definitely not 6. On the other hand, the bigger differential that comes with the 1,800 cc cars will handle even V8 power,


KMIATA

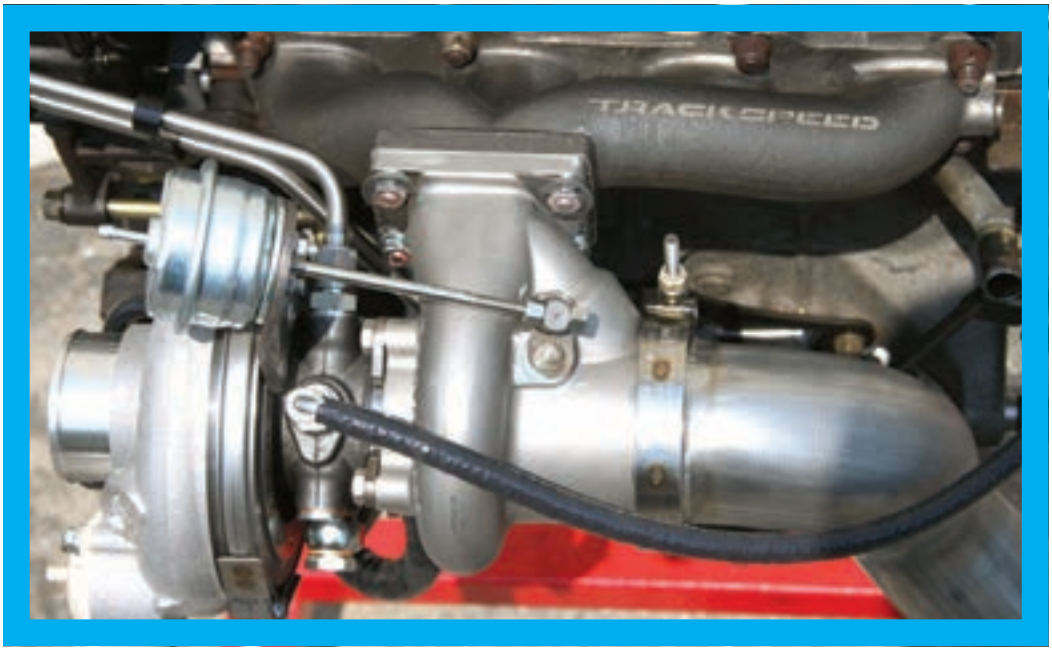


TRACKSPEED

at least for a while. So if you don't want to cough up for a T-bird's big Ford differential right now, you could stay with the NB differential until it blows up, and use the Miata differential's life span to let your wallet recover from the V8 conversion. Just don't dump the clutch at 5,000 rpm.

There is talk about using Mazda rotary engines in Miatas, but there's no conversion kit, just talk. Mazda rotary engines would give you smooth high revs, dubious fuel economy, 180 bhp of turbocharge, and strange, exotic noises. The only sensible approach would be to buy a complete rotary Mazda, fillet it and stuff the entire engine bay contents into a Miata.

Of course, the internet offers a free share in everyone else's experience, and if you're wary, the Miata forums offer useful advice (but also drivel from fantasists who don't even own a car). As an example, using the Cadillac CTX differential can be a good idea, but only if you use post-2006 donors to avoid the earlier models' whining and grenading. Forewarned is forearmed. Do your homework. What follows is a guide to several companies known for muscling up Miatas.



▲ Trackspeed fastens its custom stainless steel manifold to a Borg-Warner turbo with hardware made of Inconel alloy.

MEGASQUIRT

Megasquirt started off as open-source software, and you can still get as hands-on as you'd like without actually writing computer code. You can buy the bare board and electronic components and solder up your own motherboard. Alternatively, at the other end you can buy a complete plug-and-play system from Megasquirt's resellers for road or race, which you can program to do everything you could want. **www.msextra.com.**

FLYIN' MIATA

FM got into turbos early on, and have assembled a range of packages that can be bought complete or pick, mixed and developed according to budgets and the need for speed. Using your own Megasquirt to control fuel and spark and then adding assorted bits of FM's turbo kit would be a fine idea, but the company prefers the Hydra Nemesis or the upcoming FM221 ECU, which comes with its kits. The company's complete FMII turbo system at $5,300 doubles the power output of a 1,600 cc Miata, and contains every nut and bolt, air filter and intercooler, and even the hose and pipe clamps and the ECU. Most important are the included larger injectors. After a certain point you need more fuel to match the extra air, or you risk leaning out the mix and melting pistons. You don't get a laptop or cappuccino machine with it, though. **www.flyinmiata.com.**

BEGI

Bell Engineering offers a less complete package with different flavors. Its Alpha/Omega system retails at $4,300, but is missing FM's bigger injectors and the ECU. Bell recommends and sells Megasquirt, along with four different engine management options to suit individual needs. It has the only CARB-legal kits for '90 to '99 model years. It also offers the only 225 whp unit, and OBDII-legal kits for the '96 to '05 Miatas. Although this firm mostly uses Garrett turbochargers, it offers the option of starting off with some cheaper components and uprating them later. As it takes awhile to plan your path with turbo systems, this flexibility for a truly custom Miata turbo kit could be useful, and a typical tradition of the turbo community is selling your outgrown parts further down the food chain through the forums. **www.bellengineering.net.**

TRACKSPEED

Trackspeed takes a different approach, moving to Borg-Warner turbochargers and the company's own cast stainless steel manifolds. The fasteners that connect the turbo to the exhaust have also received some attention, and are made of Inconel alloy. Having spent some time dealing with extreme-heat-stictioned and rusty turbo nuts and studs, the opportunity to undo them without blood loss is appealing. A sum $3,100 gets you Trackspeed's EFR system turbo, manifold, studs, downpipe and water and oil lines. **www.trackspeedengineering.com**.

ECOTECMIATA

This is an interesting and sensible starting point for alternative engines. The idea is to replace the Miata engine with a bigger and stronger GM Ecotec engine, which gives you the same power as a low-end turbo installation, but cheaper and with a lot less complication concerning heat, control and so on. Displacements go from 2.0L to 2.4L and availability is excellent. Dyno testing on converted cars shows torque of 200 to 220 lb/ft and 200 to 210 bhp. Stock 1,600 cc Miata power is 116 bhp, and the 1,800 cc engine gets 131 bhp, so going above 200 bhp is a welcome bump, and you're still using an unstressed stock engine. Of course when you get bored with being sensible, you can turbocharge or supercharge the Ecotec. The complete kit price using the Miata transmission is $1,899 (U.S. dollars). The downside is it still sounds like a four cylinder, and any timing-chain rattle needs to be sorted quickly. The engine is aluminum but bigger than the Miata motors, so it weighs about the same. **www.ecotecmiata.ca.**

KMIATA

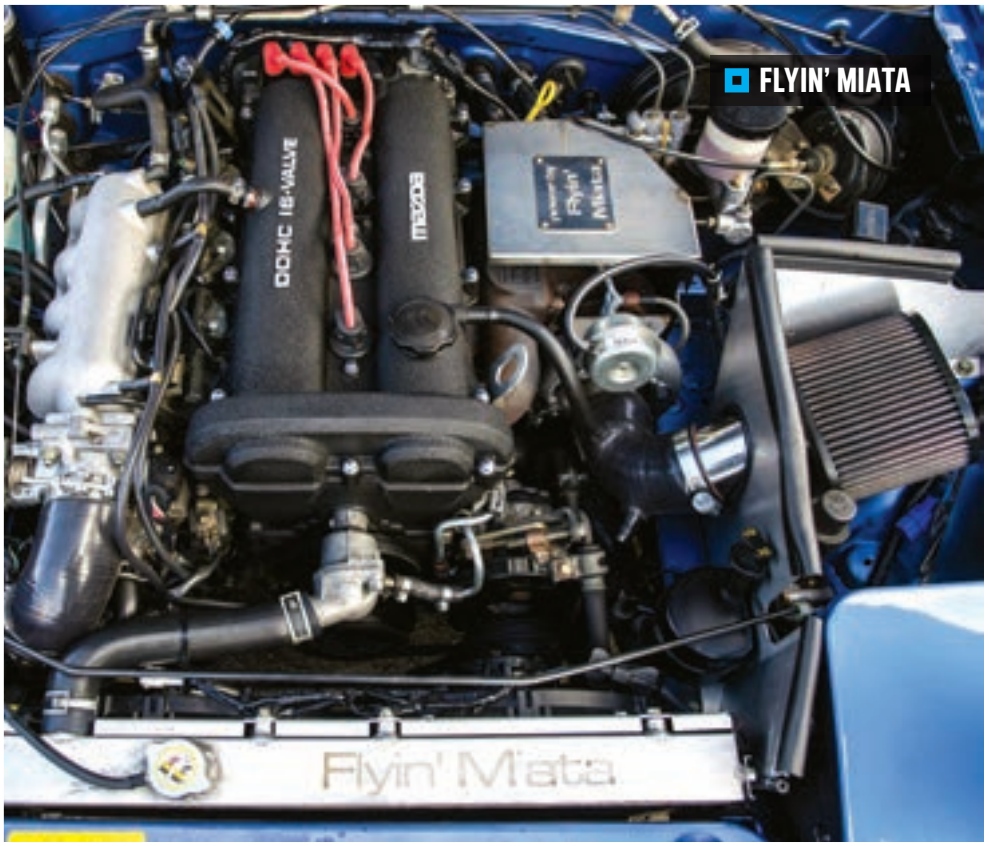
Honda's K Series engine has a lot going for it. It's 2.4 liters, so you're going up 25 percent in sheer capacity over the 1.8-liter Miata engine, but the VTEC cams are variable, meaning they go from mild when shopping at 1,500 rpm to seriously nasty at an angry rpm. Combined with the extra grunt from capacity-related torque, this has to be worth thinking about if you just want the car to stay similar in character but go faster. The Miata drivetrain is also retained, and the aluminum Honda engines actually remove weight rather than adding it. The recommended ideal K engine is the K24A2 from a 2006 to 2008 Acura TSX, which has the strongest guts and biggest valves, and gets you 220 hp and 185 lb/ft at the wheels. That translates to 250 hp at the crank, at 8,000 rpm, with a stock tune. The kit at $3,750 contains all of your basics, including a crossmember, oil pan, mounts, wiring harness, oil pump conversion and the other mechanical requirements. KMiata then offers other upgrades such as headers, intake manifolds, and engine management to help complete your build. It also comes with a T-shirt – OK, sold! **www.kmiata.com.**

SUPERFASTMIATAS/MINITEC

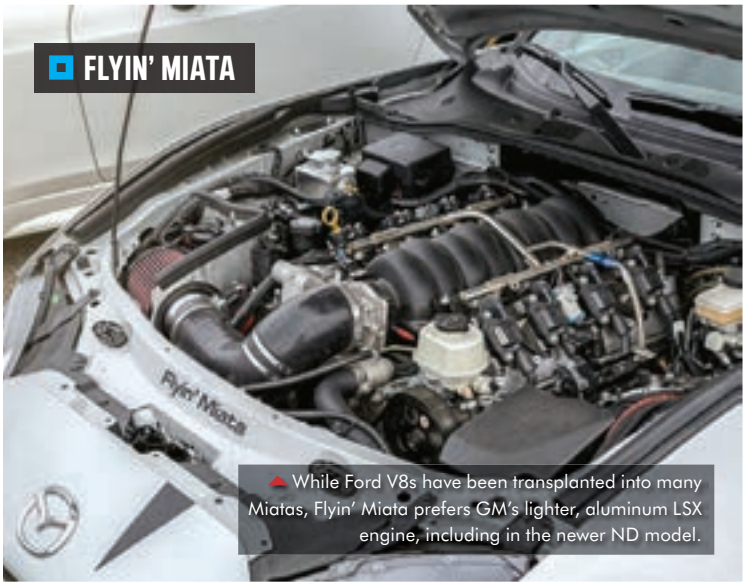
MiniTec has been brewing up viciously fast classic Minis for years, and I've visited this company's rural Georgia factory where one of its Honda-powered Minis scared the life out of me – excellent fun! The company has now expanded to putting big Honda engines in Miatas, using its long experience of making transplanted Honda engines



▲ Bell Engineering says it offers the only CARB-legal turbos for 1990 to '99 Miatas, plus OBDII-legal kits for the '96 to '05 Miatas.



▲ Flyin' Miata's FMII turbo system doubles the power output of a 1,600 cc Miata.



While Ford V8s have been transplanted into many Miatas, Flyin' Miata prefers GM's lighter, aluminum LSX engine, including in the newer ND model.

work well and maintaining a formula of keeping it simple and prices reasonable. The $3,250 kit is fairly comprehensive, requiring just a J V6 engine and a computer. The kit contains the new subframe, transmission and flywheel adaptors, oil pan, poly engine mounts, oil pickup and thermostat housing. The stock Honda computer can be used, but it limits performance. Again, your own control system and laptop is an excellent place to start. Honda's light aluminum engine blocks again prove to be a smart choice. Changing a small iron engine to a big aluminum one results in a weight gain of only 9 pounds. The original gearbox and differential can be retained, with the bigger post-1994 Mazda differential recommended. The factory radiator can even be used, which might reflect the better heat dispersion characteristics of aluminum engines. Minor mods are required to either the intake or your hood before you can shut it on the engine, but everything can he handled on exchange, or the company can convert your Miata for you. The result is up to around 300 bhp and 275 lb/ft of torque without turbos or superchargers, as the engines are Vtec and quite advanced, as well as just big at 3.2 or 3.5 liters. This gives you as much grunt and howl as the standard Miata drivetrain will handle, and crucially gets you the Vee soundtrack. Any Vee-engine sounds better than any non-Vee engine. That's just the truth. **www.superfastmiatas.com.**

FLYIN' MIATA/V8 ROADSTERS LSX V8

In general, GM's aluminum LSX V8s are lighter, more powerful and more expensive than Ford V8s. Flyin' Miata has teamed up with V8 Roadsters to offer a conversion to the LSX. Available parts include the mounting frame, (which is also a chassis brace), a set of beefed-up Getrag driveshafts, a clutch to suit a T56 transmission, an oil filter conversion, a set of headers, frame-rail reinforcements, an adaptor block to mate the air-conditioning to the new engine, and a new cooling system. FM is also working on a V8 conversion for the latest ND Miatas, so keep your mouse clicked on that now and again. **www.flyinmiata.com.**

BOSS FROG LSX V8

Boss Frog fit GM's aluminum V8 with a series of kits rather than a package. The main engine-mounting subframe is $1,200, the T56 gearbox mount usefully includes frame stiffening rails as part of its structure, and the differential mounting frame stays with the traditional 8.8-inch Ford out of a Thunderbird. As the company points out, this independent rear-end setup and conversion kit can be used for any big-horsepower turbo Miatas. While upgrading is more or less compulsory for a V8, it could be useful for other extreme Miatas as well. Axles are referred to Driveshaftshop.com although driveshafts are supplied. Boss Frog uses shorty headers, as there's minimal room after you've fitted a 6.0-liter engine in place of a 1.6-liter unit. Finally, the power steering conversion kit retains an easy life when parking. Total kit costs would be in the $5,000 ballpark, plus of course a cooling system, engine, transmission and differential. **www.bossfrog.biz.**

MONSTER MIATA

As noted at the outset, I road tested a Ford-powered Monster Miata 10 years ago, somewhere in the middle of the production run of 700 kits. It was very impressive, switching instantly between smooth cruising and blattering rage, according to right-foot pressure and timing. The preferred drivetrain is Ford Mustang GT 5.0 manual, which is California-legal, simple and cheap. The conversion kit is also cheap at $3,995, missing just the driveshaft, nut-and-bolt pack and power steering option. The $70 instruction manual is refundable if you buy a kit. One reason for the low price is that Monster recycles and returns many of your Ford parts, rather than making new ones, such as the subframe and oil pan. The weight gain is about 250 pounds, with an iron engine and heads, although weight distribution remains good at almost 50/50 front-to-back. You can of course use aluminium heads to save 50 pounds or so, but the combo of cheap V8 donors and a well-priced kit gets you a lot of bang for your buck. The T5 is the recommended tranny upgrade, but only because first gear is a bit low in the stock Mustang gearbox, and it runs out before the tires have even lit up. Power from a standard 1995 Mustang GT was 215 bhp – not stunning, but the 285 lb/ft of torque from the 302 is what makes a Miata squat and hurl itself forwards. Of course those numbers are stock secondhand Mustang, and you can do what you like with the 302, including going back to the top of the page and turbocharging it. **www.monstermiata.webs.com.**

VENDORS

BEGi (Bell Engineering Group, Inc.)
830/438-2890
www.bellengineering.net

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www.bossfrog.biz

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MIRROR, MIRROR

Reflections of the Legendary '63 Corvette Grand Sport in Superformance's Refined Reproduction

Story and photos by Steve Temple



On the shortlist of the most valuable and significant Corvettes ever built is undoubtedly the '63 Grand Sport.

Called "The Lightweight," it is substantially lighter than a factory Corvette, with an ultrathin body and modified chassis. After being fitted with a hot, Weber-carbureted mill, the Grand Sport became virtually unbeatable on the track. For a brief, shining moment at Nassau Speed Week 1963, it proved to be superior to both Shelby's vaunted Cobra and other GT-class cars and racing prototypes.

Curiously, reproductions of Zora Arkus-Duntov's remarkable design are not as common as Cobra replicas, even though the Grand Sport was one of the few race cars to ever best Shelby on the track. Superformance is one of the few firms carrying the torch onward, producing a replica that improves on the original, refining a raw-boned racer for the street.

Even though the Superformance Grand Sport has the original's hard-edged body shape, along with a nearly identical suspension setup, the car is far more substantial and controllable. That's partly due to the increased weight, estimated at 2,900 pounds when equipped with air conditioning and power-assisted accessories. There's an increased set on the tires and suspension. Also, the doors don't feel flimsy, but shut with a firm, solid thunk.

The original Grand Sport's 377-cubic-inch engine's output reportedly ranged from 485 to 550 horses (or more, depending on the historical source), but taking things to a higher level is noted engine builder Lingenfelter Performance Engineering, which installed one of its 427-cubic-inch LS7 mills, boasting 592 dyno-proven horses, and offsetting the extra heft of the Superformance.

Drawing on decades of development, the LS7 boasts CNC-ported LS3 cylinder heads, topped by a Holley Dual Quad converted to EFI. Actuating the valve train is a Lingenfelter GT19 bumpstick (227/239 duration at .050 lift - .678/.688 lift). GM rockers, running at 1.8 ratio, are braced with a Comp Cams trunion upgrade. The JE forged-aluminum pistons and Oliver rods sling a Callies DragonSlayer forged-steel crank with a 4-inch stroke and a 11.5 CR.

> "I'm a Corvette guy – I love 'em all. But my Grand Sport is one of the highlights of our collection."
>
> **Ken Lingenfelter**





The '63 Grand Sport was well ahead of its time, employing ducts in the rear quarters for cooling the rearend, which are used on this Superformance as well. The latest C7 Stingray has this same type of feature.



Transferring the output aft is the Tremec 6060 Magnum, a 6-speed manual fitted with Centerforce's flexplate and DYAD Dual Disc clutch. The take-up requires a muscular leg, but those two extra gears (compared with the 4-speed M-22 Rock Crusher on the original) significantly enhance both performance and driveability.

Superformance's Lance Stander notes that the frame and suspension are about 95 percent identical to original (with the addition of Bilstein coil-over shocks and power steering). Another modern upgrade is the rear end from a C3 Corvette, running a ratio of 3.73:1.

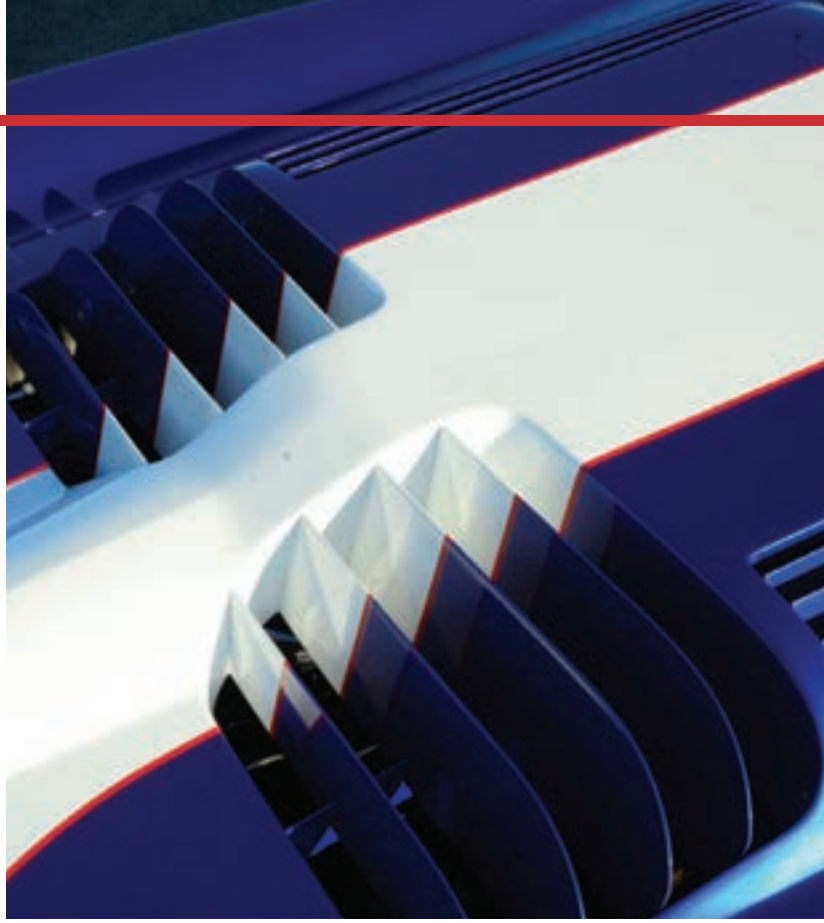
On the track, the '63 Grand Sport was a handful, which was hardly unusual back in the day before advanced racing technology. However, in dramatic contrast to the original's antisocial manners, Superformance's Corvette Grand Sport is positively plush. For instance, rather than thin racing shells, the seats are thickly cushioned. The Wilwood brakes are power-assisted, with four-piston calipers and vented discs at all four corners, so there's no bump steer when braking into corner.

How does the car's owner, Ken Lingenfelter, feel about his replica? He speaks from experience as a seasoned Corvette collector with more than 80 in his personal stash of 250 cars, most of them rare and historically



Exterior details on the Superformance Grand Sport closely follow the original's numerous vents and grilles.









Rather than a thin, raw-boned racing shell, the driver's seat is thickly cushioned for regular street duty.

significant vehicles. "I'm a Corvette guy – I love 'em all," he says. "But my Grand Sport is one of the highlights of our collection."

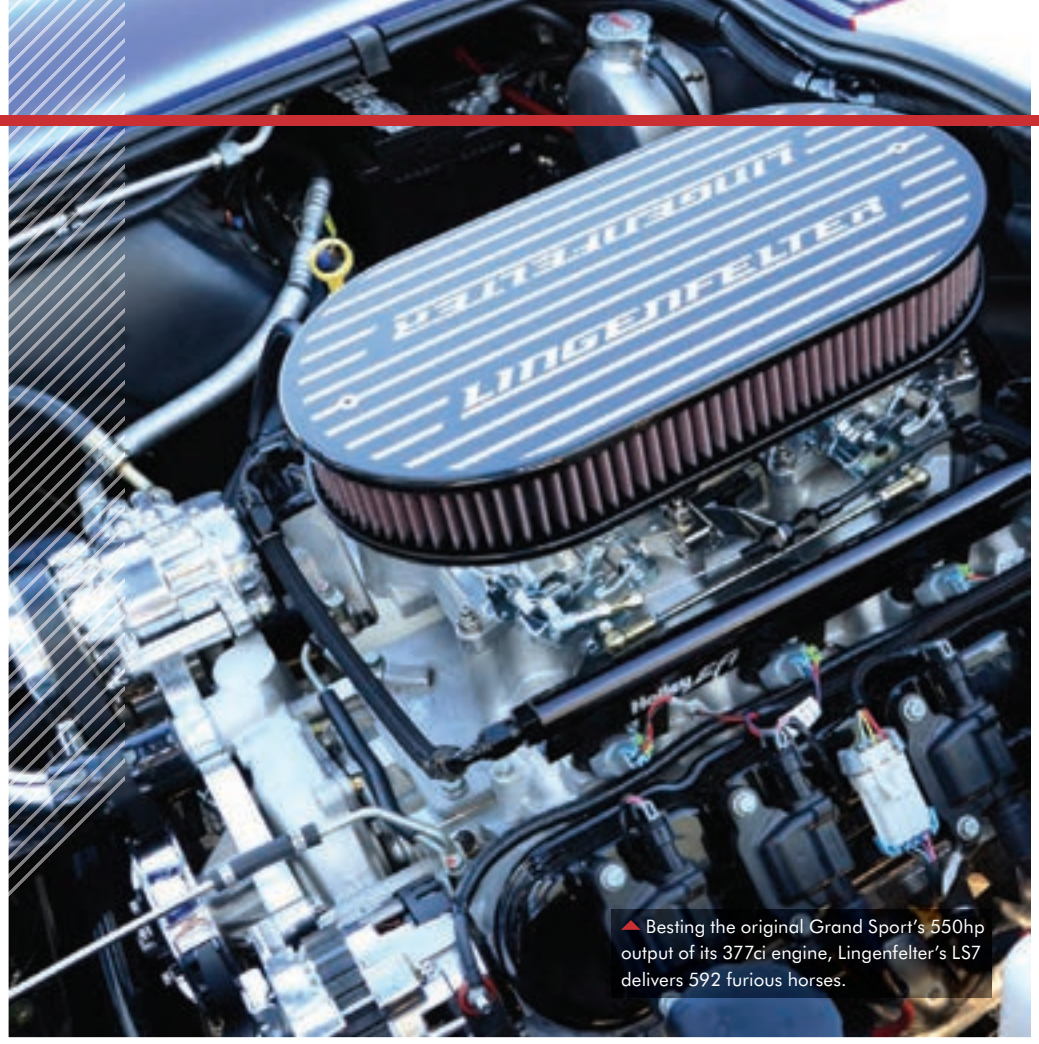
Ken points out that a Superformance can be loaded with creature comforts, making it a regular driver. While acknowledging the priceless heritage of an original Grand Sport, he points out that a replica version is better than original, because it lets you relive the glory days without risking a piece of history. He feels the Superformance platform is versatile enough for use on the street, as a show car, or at track events. But given the type of high-performance engines he offers, it's no surprise that track duty is in his plan. "We need to really punish it," he says.

For those who aren't inclined to do a lot of buildup work on a replica, Superformance typically sells it as a turnkey-minus, complete except for the drivetrain. A customer then can either drop that in, or have a shop handle the mechanicals.

To make things even easier, there's a new provision for low-volume replica manufacturers allowing these companies to produce as many 350 turnkey cars per year, just so long as they meet current emissions standards.

Currently GM's E-Rod crate engine qualifies, and Lingenfelter is working on an engine package that would qualify as well, along with a special-edition version of the car. This means builders can crank out a smog-legal street machine, or a custom-built beauty with a period-correct racing mill. Either way, it's a winner, just as Zora originally intended.





Besting the original Grand Sport's 550hp output of its 377ci engine, Lingenfelter's LS7 delivers 592 furious horses.

> "We need to really punish it."
>
> **Ken Lingenfelter**



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Tremec
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www.tremec.com

Wilwood Engineering
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www.wilwood.com



Rod City

Rolling Into Louisville for the Street Rod Nationals

By Steve Temple Photos by Steve Temple, Jeff Bruss and Dean Larson



Some might call it a moveable feast. Famed author Ernest Hemingway once used that term to describe his adventurous time in Paris as a young man. But for street rodders, the feast is in Louisville, Kentucky. And the time is now, as in the dog days of summer.

Despite sweltering weather, some 30,000 enthusiasts came out to the Kentucky Expo Center to check out 11,000 cars of every make, model and hue, customized and personalized to the nth degree. Named one of the top 10 car shows in the U.S., it's been compared to a huge family reunion of cars, with gazillions of car guys and gals.

Who is eligible to enter? The NSRA (National Street Rod Association) now uses a 30-year sliding scale, instituted back in 2010, allowing any vehicles that are pre-1978. But the core is still from the pre-'48 era. Of course, many of those early cars are either fiberglass or steel reproductions. (Recall the old joke that out of the 12,000 or so '32 Ford roadsters ever made, more than 100,000 of them are still on the road!)

Also making the scene is an array of muscle cars, high-powered machines from the '60s, along with the classics and Kustoms of the '50s. This event is truly a unique mix of old and new together – a national gathering of fine vintage automobiles of every conceivable type.

Whatever the marque and model, most are far better quality mechanically than they ever were back in the day, with updated and upgraded engines, trannies, and chassis designs. After all, why would anyone prefer age-old drum brakes over modern vented discs? Not to mention added conveniences such as air conditioning, tilt wheel steering, overdrive, supercharging and so forth. Given this preference for restomod rods, putting modern parts on a classic vehicle, we spent a good amount of our time inside the convention building, checking out the latest and greatest components available for various project vehicles, whatever the year or type.

So take a close look at all the photos of cool cars and parts. You just might find some inspiration and the parts you need for your next build!



Got Hemi? This '31 Ford roadster from Charly's Garage in Mesa, Arizona, sure does. And a stylin' cockpit too.












LAKE CITY











Richard Broyles' 1941 Ford Truck "Mirage" was lavished with Axalta's Sunset Mirage.











▲ American Speed Company's Speed33 boasts an 18-gauge steel body with full cabin water sealing and functioning side glass.









Art Morrison's frame upgrades are available in either individual sections or as a complete chassis for a wide variety of cars, including early Corvettes and unibody cars.







"Root Beer Float" is one sweet and foamy '55 Chevy Nomad from Time Machines of Mooresville, North Carolina.

















Brookville's '32 Ford Lakester has all-steel panel both inside and out. It runs on a So-Cal suspension and with a 3-deuce Edelbrock intake and carbs.

GRAY PHANTOM

Creating a Ghostly Cobra That Might Have Been

By Steve Temple Photos by Juan Lopez-Bonilla



Baseball Hall of Famer Yogi Berra is famous for a number confusing quips, such as "When you come to a fork in the road, take it."

While Berra was giving directions to his house at the time (either route would work, since it had a circular driveway), this strange piece of advice also applies to Carroll Shelby's engine choice for the Cobra. Shelby originally wanted to stuff a small-block Chevy in the A.C. Ace, rather than a Ford. If it weren't for some corporate pushback from GM, he might have taken that fork.

Approaching Ford proved to be a much more receptive route, though, since in the early '60s the company was about to debut a new V8 engine, and was looking for promotion. The Blue Oval had no sports car at the time, and the company's new division head Lee Iacocca felt racing was an effective way to market the compact, lightweight power train. Thus the 260-cubic-inch V8-powered Cobra was born.

Ironically enough, years later Cobras raced in Europe with Chevy engines. And more famously, some Cobras were fitted with superchargers as well, such as the twin-Paxton model that sold at Barrett-Jackson several years ago for more than $5 million.



The color scheme of the leather interior echoes the exterior treatment, right down to the silver suede stripes on the seats.

> "I try to tell guys about the Chevy history when they give me grief."
>
> Todd Krupinski

All of which brings us to Todd Krupinski's Shell Valley Cobra replica. It's powered by a late-model Chevy LS3 engine, and fitted with a Magnuson blower. So while some Cobra purists might feel that's a bit sacrilegious, there's a historical precedent. As for the unusual, plain-vanilla color scheme, well, that's why they make different flavors of ice cream, right? It's actually a light shade of gray, with silver stripes, but the lighting gives it a different hue.

Cobra Experience

Another reason for his alternative reality: This isn't Todd's first time to the replica rodeo, nor project cars in general. He's been doing auto-body work and painting since the tender age of 14.

Previously Todd came across a Cobra replica that had sat unfinished in a garage for nearly a decade, needing a pair of capable hands to complete it. After tearing it apart, he dropped in a 410 stroker with a Ford-based Dart block, World



The bezels for the side-pipe exhausts were fabricated from polished stainless steel and secured with round-head screws to create a more custom look.

Products aluminum heads and full roller cam. That project, painted white with orange stripes and matching orange interior, is now his wife's car.

For his next project, Todd ordered a new Shell Valley package, providing a blank slate to design his own color scheme, hood scoop, pipes and interior. The body and chassis (with Mustang II fronts and Ford 9-inch rear end) arrived in November 2014 and was completed in June 2016.

In revising some historical aspects of the original Cobra, Todd's goal was to build a car with subtle modifications that catch your eye without taking away its traditional look. He drew on years of bodywork experience to tighten body gaps and create a cleaner appearance.

Tips of the Trade

Todd first recommends leaving the fiberglass body out in the sun for some post-curing. While fiberglass continues to "flow" even after setting up in a mold, some extra sunbathing can minimize this trait for a more rigid and stable body shape. Todd left his project in gray gelcoat for the summer.

Once tanning season was over, Todd spent some 500 hours on prep work, a seemingly endless process of sand, block, repeat. He prefers 3M's lightweight body filler to take out any waves, along with Clausen's Rust Defender, a high-build primer that won't shrink. He's a fanatic about ensuring precise, even gaps around the hood, doors, and trunk. Rather than using the old, somewhat crude "paint stick" method, he inserts sheet wax, about 4 mm thick, then flush-fits the panels together by mudding to the edges with the 3M filler. He also makes sure the panels have smooth height contours.

Unlike other Cobra replicas, Todd feels that the Shell Valley Cobra can withstand tighter panel gaps because of the solid, modular setup of the body mounting, which uses an integral tub for the cockpit. He prefers the extra thickness of the fiberglass, along with Kevlar in the layup. While that material adds some puncture strength to laminate, he went the extra mile to add liners and undercoating to the wheel wells to prevent road rash. "Gravel can push a star out in the fender," he explains.

Inside the Build

With all prep work completed, Todd applied a custom, light-gray base coat, accented by silver stripes. Those are repeated in suede on the leather seat upholstery for a distinctive finish.

In addition to thorough prep work and unique paint treatment, his new Cobra also had to be a beast in the horsepower department. He chose the





Note how the shaker-style scoop is attached so it's removable.



The Magnuson supercharger for the Chevy LS3 engine supplies 7.5 pounds of boost, a combination that Todd has used on previous project cars.

Rather than a molded-in hood scoop, Todd modified it by hand to replicate a shaker-style setup.



The stripe on the exterior carries through on the upholstery lining the trunk as well.



6.2L LS3 and added a blower with 7.5 pounds of boost to achieve that, having found it to be an ideal combo in a couple of Camaros he's owned. The 6-speed out of a 2012 Camaro donor car was also used to give it great cruising manners. Fortunately Shell Valley offers an option for Chevy engine mounts, and the cockpit tunnel is wide enough for the larger transmission.

For the exhaust side-pipe bezels, Todd hand-crafted polished stainless pieces that add a completed look. He wanted side pipes with a removable muffler (for easy replacement if damaged) and adjustable tips, so he called the guys at GT Headers to explain the idea, and soon sent them the old pipes to use as a model. "This is probably my favorite part on the car," Todd says. "They did an awesome job on the fit and craftsmanship."

The hood scoop, also hand-modified by Todd, was made to replicate a shaker-style hood, and had to be removable while maintaining a factory look. It was a long process to make it look like it belonged, but in the end it was definitely worth it.

In the cabin Todd squared off the coamings with a right angle (rather than a rounded lip) to give the car a nice flow around the back and doors to the upper dash. It's not noticeable unless sitting next to a stock Shell Valley. He also appreciates the extra legroom of the cockpit's drop floors.

For the interior Harvey West from A-1 Upholstery provided leather to keep the clean look. Todd added Oracle Halo headlights, for safety and aesthetic purposes.

And how do onlookers feel about his forward-looking Cobra treatment? "I try to tell guys about the Chevy history when they give me grief," says Todd. Ultimately, the result wins them over, whatever fork you take.





VENDORS

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www.magnusonproducts.com

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www.oraclelights.com

Shell Valley Classic Wheels, Inc.
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www.shellvalley.com

The Clausen Company
800/223-0893
www.clausenautobody.com





Behind the Wheel

▲ This eight-position, multi-angle tilt column on a '40 Ford allows the steering wheel to arc through 35 degrees—15 degrees of movement above center and 20 degrees below.

Tech Tips for Steering in the Right Direction

By Ben Mozart

If you aspire to own or build a great rod or replica, don't take the positioning or the proportions of the steering column assembly for granted. A number of variables are involved in creating a comfortable setup, including the cockpit shape and seat location, particularly seatback tilt and cushion height, as well as steering wheel design. The rim's diameter, and whether in dished or flat form, along with human proportions, all come into play.

Whether installing a steering unit in a new-car build or replacing an old or obsolete unit with a new column, the formula remains the same. And it's no surprise that well-used steering columns from a previous era are being replaced every day. Wear, however, is rarely apparent in the steering column's capacity to turn the wheels. Rather, it's evident by looseness in up-and-down and back-and-forth movement within the column. Worn bearings are usually the culprit. Also, original tilt mechanisms located at the top of the column can wear out.

No matter how alluring a sporty street machine might appear, it is almost impossible to discover if it qualifies on all these counts unless you test it yourself. Exact steering column location and bespoke proportions – those made to the driver's personal specifications – are indispensable. Without them, the ergonomics (the relationship between the human form and the car) can become just an ill-fitting, uncomfortable situation.

As an example of what can happen, Matthew Jones, Art Morrison's lead engineer, shares a personal experience: "I wanted to retain the original 16-inch steering wheel and column of my 1967 Chevelle," he notes. "Originally it had no tilt mechanism, but when I had my seat re-foamed, my legs were almost trapped under the wheel and getting in and out was difficult."

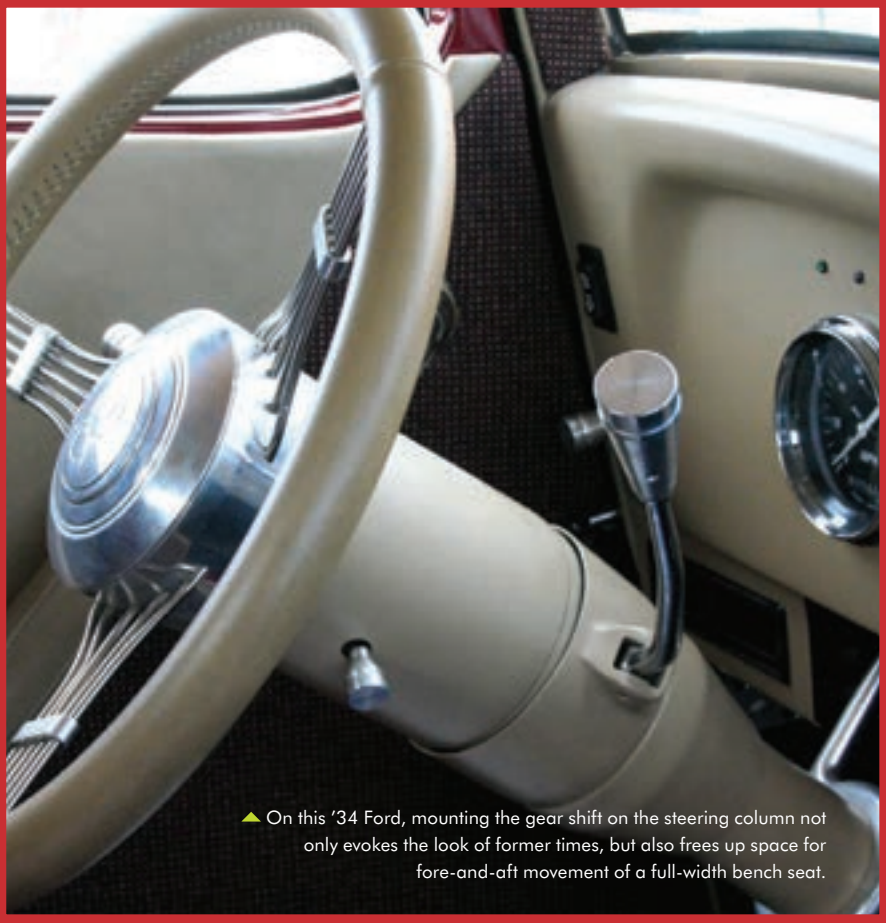
Human proportions are critical, too. For instance, are

VENDORS

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Ad on page 59

you shorter than average, or perhaps well over 6 feet tall? Do you have short or long arms? How much reach do you prefer? All of these dictate whether you use either a flat or a dished steering wheel. Logically, you'll need to avoid having a wheel that is placed too close or one that is too far away.

Beyond cockpit space and ergonomics, evaluate gear shifting as well: The choice is between floor or column shift. In which cases would you consider column shift? Column shifters are ideal for rods and replicas with a full-width bench seat, as they provide unfettered space for the seat's fore-and-aft travel. And some enthusiasts prefer having all the mechanicals on the column. Other items to consider are self-canceling turn signals and four-way emergency flashers, along with the related wiring harness.



▲ On this '34 Ford, mounting the gear shift on the steering column not only evokes the look of former times, but also frees up space for fore-and-aft movement of a full-width bench seat.

▼ For those who prefer a floor-mounted shift, ididit can accommodate that request as well.





Today, replacement steering columns for popular makes and models are available off-the-shelf in multiple lengths. But the crown jewel for many rodders is a prized one-off assembly.

Last but far from the least important is the option of a tilt mechanism for the steering column. Mechanisms have been available for decades, and though slim, clean-looking replacement columns are available without tilt, most rod shops find their clients request it. A desirable, modern convenience found in everyday cars, it's one that most rodders and replica owners don't wish to surrender.

> "Finding an original tilt wasn't easy. When I eventually uncovered one, the price tag was $2,000, which wasn't a viable proposition."
>
> Matthew Jones

The problem with an original tilting unit is twofold, though. "Finding an original tilt wasn't easy," Matthew observes. "When I eventually uncovered one, the price tag was $2,000, which wasn't a viable proposition. So, I was happy to settle for an ididit unit for under $500, which came with wiring that connected to my original harness."

Five-angle tilt mechanisms have enjoyed popularity for some time, but now ididit has upgraded its systems to achieve eight positions. These units exhibit steering-wheel travel of 35 degrees – arcing through 15 degrees of movement above center, and 20 degrees below.

A further point to review when calculating the dimensions of a replacement tilt column involves the steering wheel. If you convert to a nine-bolt steering wheel, you will probably need an adapter. ididit's polished boss of billet aluminum can add 2 inches or more to the column's overall length if the wheel profile is altered from flat to dished.

Once the appropriate distance between the column and the dash has been established, a drop link secures it. A vast range of varying lengths of drop links is available from steering specialists.

How about an off-the-shelf versus a custom unit? Though replacement steering columns for popular makes and models are available off the shelf in multiple lengths, the crown jewel for many car builders is having access to a prized one-off assembly. Sometimes the one-off is requested in order to have all the bells and whistles, particularly a collapsible feature where the column has axial adjustment. On the other hand, access to a one-off assembly is crucial where the vehicle is rare or spawned from now obsolete low-volume production.

To address these à la carte requirements, ididit has a detailed process: First, the company requests photographs of the original steering column arrangement as installed, particularly how the entire mechanism attaches to the dash, along with its proximity to the pedals. Also requested are as many relevant measurements as possible and, importantly, access to the original column. Like the old carpen-

ter's advice: measure twice, cut once. Detailed photographs from a variety of angles, plus accurate measurements ensure a precise fit. ididit's one-off custom units typically take about a month to produce.

Most shafts are constructed from 1-inch thick-wall DOM 1010 tubing, and terminate in either a splined end or the more prevalent formed-end known as a "Double D." Naturally, these ends connect the column to a steering box or rack and pinion. (Note that this final connection might require some fabrication or modification, especially if a larger engine is used.) The most popular splined lower end is 1-inch, with 48 splines, although a 3/4-inch size is a further option. Similarly, the Double D ends are also available in 3/4 or 1 inch.

The turn signals and their canceling mechanism are usually of earlier GM passenger-car origins. The reasoning is simple, since steering columns from 1969 through '94 models are known for their superior design. According to ididit, they are versatile, reliable and all new components are readily available. For those owners of Fords who object to using GM parts, Blue Oval components are also available.

All told, for both rodders and replica owners, a well-proportioned steering column assembly with comfortable ergonomics and a fine finish is a prized piece. It connects you with your ride in a very personal way, providing pride of ownership and a warm sense of well-being from behind the wheel.





▲ This compression spring locks the tilt mechanism in one of eight positions, increasing or decreasing the space between the driver and the steering wheel.



▲ Inside the aluminum castings that form the tilt mechanism are two shafts, an upper and a lower, terminating with forked ends that form part of an articulating sphere. The ends that embrace the sphere are positioned 90 degrees apart and at the center of this spherical assembly is a grooved metal ball that is manufactured in two halves.

◀ The turn signals are canceled by one of two cam lobes (not shown), which are positioned about a 1/2 inch apart. They make contact with the coiled, canceling springs—which act as the turn-signal switch—and as a lobe rolls past a spring, the turn signal function is canceled.



▲ For an updated look, this silver column replaces a red aluminum, original shaft from 1986.



JESTERZ JUGGLING

How a Multitalented Mechanic Keeps All His Bikes

Story and photos by Steve Temple

When you work on massive earth movers for your day job, what do you do for fun? Well, just ask Greg Grant of Jesterz Enterprises.

"The way we make our money is on mining equipment," he notes. "And the way we lose it is on street rods."

It wasn't always that way, however. Greg started out fixing up motorcycles at the age of 13, and built his first custom bike at 18. He went on to learn bodywork and paint in his early 20s. By the age of 30 he was employed by a heavy equipment OEM.

In his spare time, Greg restored and modified a string of muscle cars, mostly Mopars, but also a Camaro that his wife Lisa still drives. But he grew tired of fixing up older cars, and wanted all-new parts on his next project. At a SEMA trade show, he spotted a '33 Ford from Factory Five Racing.

"That little deuce coupe is the coolest body shape ever," he says. "Nothing against Cobras, but they don't do it for me." Greg's mechanical side also appreciated the car's well-braced spaceframe design and sophisticated suspension setup. "I've seen a big engine in a square-tube frame," he points





ACT

and Rods in the Air

out. "It's really unruly; you can't keep it between two lanes."

In contrast, "When I saw the Factory Five, I noticed the chassis and suspension right off," he says. "That's what really sold me. It's a good design and there's good tech support too."

He went on to build one with a naturally aspirated 383 stroker, but there was something missing, an item that he's always wanted: a bodacious blower. In particular, he wanted a Weiand 6-71. Eager to avoid cutting up the hood of the car, and ready to tackle another project, he sold his first





Riveted metal sheeting surrounds the zoomies exiting from the body.

rod and bought another package from Factory Five.

While neither project was an extreme challenge, thanks to his mechanical expertise, this one went a bit slower, even though he went with the same 383 stroker as before, using a long block with aluminum heads from Blueprint Engines, along with a pair of 600 cfm Holleys. What impeded his progress?

"It was partly self-induced," he admits. "I had to scoot the engine back 2 1/2 inches so the crank pulley for the blower would clear the rack-and-pinion steering gear. This required modification of the motor mounts, trans mounts, drive shaft, and firewall." He also hand-built the drive accessories and the zoomie exhaust pipes.

It was all pretty easy-peasy for Greg, since he had a willing helper in his wife Lisa. "She's a real hard worker," he says. "She was right there with me through the whole build. We assembled the car 100 percent in-house."

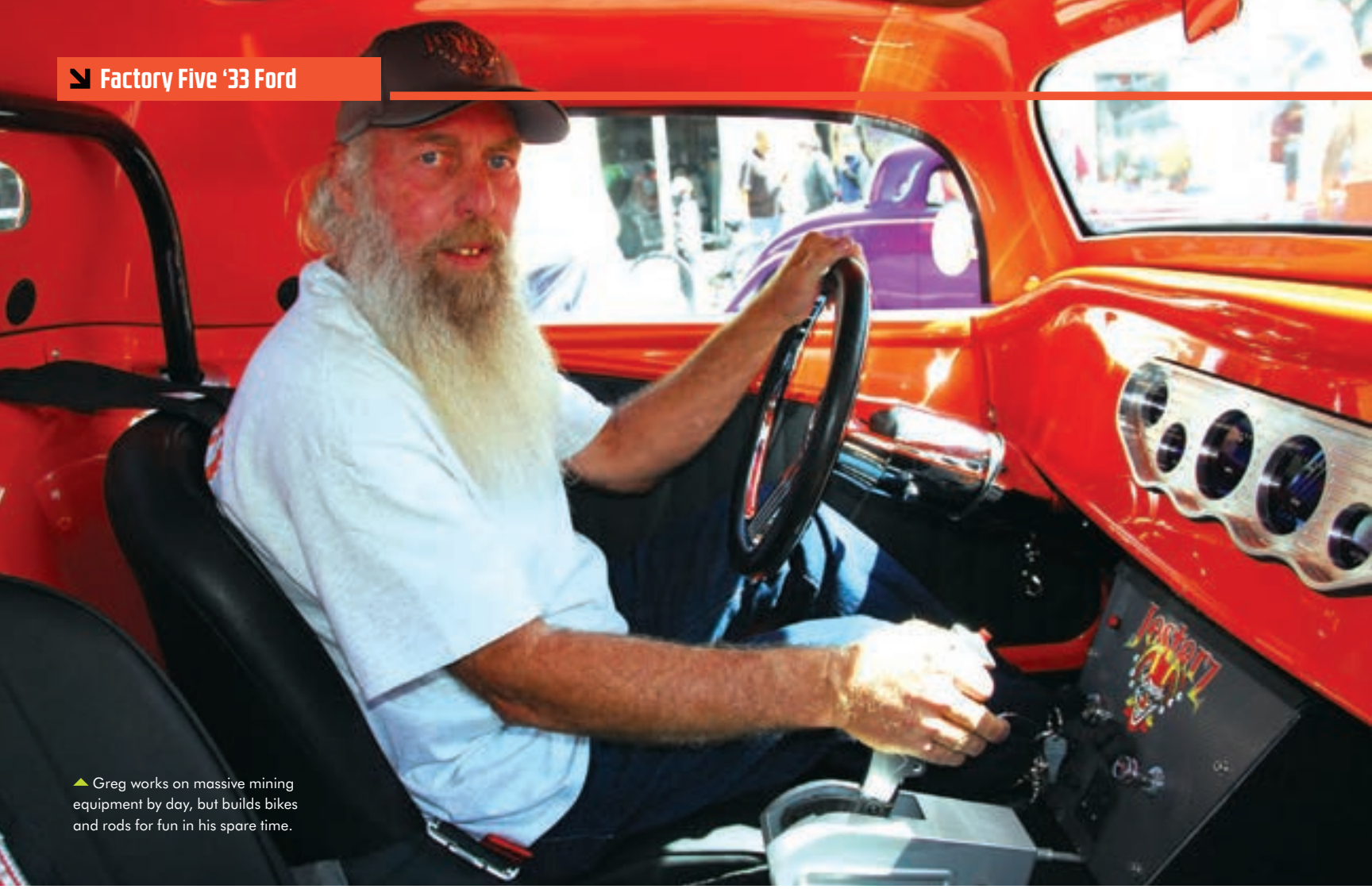
That included the engine, spec'd out for a low, 8:1 compression ratio to compensate for the 6 pounds of boost from the blower. It dyno'd at 500 horses naturally aspirated, and Greg estimates another 40 percent or more horses with the forced induction.



Greg Grant and wife Lisa worked together as a team in building their '33 Ford street rod, earning an Editor's Choice "Best of Show" trophy at Factory Five's Huntington Beach Cruise-In.



▲ The joker logos on the flapper valves for the Weiand 6-71 blower are a reference to Greg and Lisa's company name, Jesterz Enterprises.



Greg works on massive mining equipment by day, but builds bikes and rods for fun in his spare time.



Dakota Digital gauges give the dash a nontraditional treatment.

This hot mill is mated to a TCI Turbo 350 with a Hurst Quarter Stick shifter, and a TCI 3000 rpm stall converter. Given the stoutness of the Factory Five frame, Greg felt the stock 8.8-inch Ford four-link rear end and M&H drag radials could handle the extra power loads. Guiding the Billet Specialties rims, wrapped with BFG T/As up front, is a Unisteer Rack and Pinion with electric assist.

Prepping fiberglass for paint is usually one of the most time-consuming aspects of a project car, and this one was no different, taking more than a year, on and off. Speaking from experience, "It's all about bleeding and sweatin'," says Greg. Since this was his second rod, "We knew where to look and what to watch for." His products of choice? BASF's R-M undercoat, and House of Kolor's Pearl Tangelo, plus Orion Silver and Galaxy Gray.

What about those jester logos? Back in 2006, Greg and Lisa established Jesterz Enterprises to service the mining equipment industry. As a play on the company name, he added joker-style graphics on the console and flapper valves for the blower. Dakota Digital gauges grace the dash.

The mining execs Greg works for flip out over his rod – a stark contrast from their front loaders and dump trucks with 15-foot tires! And he admits that people act like he's a rock star or celebrity when he cruises around town. But when all is said and done, Greg feels that he's really more of a jester, juggling his rods and bikes.



A Hurst Quarter Stick shifter actuates the TCI Turbo 350.



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Special Edition Beck GTS



At the Pittsburgh Vintage Gran Prix, the Beck GTS, a Porsche 904 replica from Special Edition, garnered a first-place finish in the Historic Big Bore class. Manning the wheel was Randy Beck, son of the car's developer, Chuck Beck. Randy is a full-time employee of Special Edition and a longtime driver in POC, VRG, SCCA, HSR events. What made this achievement all the more unusual was the engine choice. "We normally run our big 3.8L RSR motor in this car," explains Special Edition's Carey Hines. "But we blew it up at the 24-Hour Daytona Classic last year, so we ran a bone-stock 3.6L from a '91 911 (964) rated at 252 hp at the crank." (That engine is down more than 100 hp from the RSR motor!) Even though the car is still blistering fast with that power, it's not what the Special Edition crew is used to. "So Randy had to drive his ass off to stay ahead of the GT40s," Carey notes. "They would pull away from him pretty hard in the straights, but he could go deeper into the corners and the GTS handling is far superior in the curves, so we drove around them every time." As rolling proof, Randy's average lap was just under four seconds quicker than the closest GT40, Carey says.

866/396-2325 | www.beckspeedster.com

Bad Ass Replicas Grand Sport



Formerly with another firm that makes Corvette Grand Sport replicas, Greg Stelma is now on his own, founding Bad Ass Replicas. He's gone to great lengths to offer a well-built replica with Corvette C4 suspension. After years around the component car industry seeing the difficulty of building component vehicles, "I knew there had to be a better way," Greg notes. He feels most never get built because the assembly is overwhelming – looking for donor parts, gluing panels together, drilling holes, riveting, and painstaking hours of bodywork. So on his Bad Ass repro, all that work has already been done. "Everything that we manufacture for these cars comes assembled as pictured, leaving no guesswork," he notes. "This kit was made consumer-friendly, even for the novice." For instance, the hand-laid bodies are assembled on jig fixtures for proper alignment, and hardware such as hinges, pedal assemblies, and inner doors are all custom-made to fit. The foundation has a 4-inch, round-tube chassis that accepts C-4 Corvette suspension (not included). Fabtron USA handled all the fabrication of all the inner workings of the body. He adds that the gelcoat finish on these cars leaves very little bodywork. It's available as either a partially assembled (starting at less than $50K) or turnkey (call for quote). For the latter, he considered installing the latest LT1 engine from the C7 Corvette, but that proved to be a hassle for a variety of reasons, so the car shown here has a 454-cubic-inch big-block V8, and he says that just about any other GM V8 drivetrain should fit.

330/635-5570 | www.badassreplicas.com

C2R Design Stallion



Jim Crabtree of C2R Design (Concept to Reality) has moved on from his previous project of a Bentley-style rebody for the Chrysler Sebring, and is now using the S197 Mustang as a donor for new design in the works, called the Stallion. "The car is my interpretation of what a Shelby Cobra would look like if it were just being introduced to the world," he says. "This concept borrows styling from the new Ford grilles, like on the Fusion, and it uses Ford Fusion OEM headlights." The fiberglass panels attach to the S197 Mustang (2005 through 2014) with bonding strips, and the trunk and hood use the stock Mustang hinges. All of the Ford-engineered safety and comfort features are retained, and it can be serviced at any Ford shop and most

repair shops with OBDIII diagnostic machines. Originally intended to use a custom chassis, the Stallion design is a close match with the Mustang's wheelbase, and the windshield angle is correct as well, Crabtree says, so he's currently modifying the body panels to fit a 2006 Mustang.

704/652-1827 | www.c2rdesigns.com

Jakabi Design Abster • Anudimension GTB



Keep an eye out for a couple cool new Brit body conversions to be featured in an upcoming issue. Our car guy in the U.K., Steve Hole, who publishes *TKC Magazine*, sent us some photos of two rebodies that have unusual donor cars. The Abster from Jakabi Design uses an MGF, a mid-engine car produced by MG Rover from 1996 to 2002. The body kit reduces the already light weight of the car, and it's powered by a K-Series, 1.8-liter, inline four-cylinder engine that can be pushed to 200 horses if desired, Steve says. An interesting feature of the MGF is its Hydragas suspension, a system employing interconnected fluid and gas displacers, which provide a surprisingly compliant ride but can be tuned to provide excellent handling characteristics. The other Brit kit, the Anudimension GTB, gives a '96 to 2004 Porsche Boxster the look of high-performance Porsche, the 911 GT3. A 2004 and later 987 Boxster can also be used as well, but requires custom fitting by the Anudimension. On a related note, we've come across LS engine swaps for the Boxster, in case you want to enhance more than just the exterior of the car and give it some American V8 horsepower. Both companies do not have U.S. reps as of this writing, but no doubt these rebodies could be exported stateside as auto parts.

www.facebook.com/Jakabi-design-1818299631729797 | www.anudimension.com

Hurst Special-Edition Models



Adding to the Hurst lineup of modified Mopars are two new models for the Mustang and Camaro. For Ponycar enthusiasts with a penchant for high performance, the new 2017 Kenne Bell R-Code Mustang is infused with a serious dose of supercharged power. With 750 horses on tap, it's a stallion on steroids, and still street legal. Enhanced both inside and out, the body mods begin with signature Hurst Stunner 20-inch wheels, matched by custom-painted graphics and functional aero components. The cockpit features custom-embroidered Recaro seats with Katzkin-embroidered leather, accented with carbon fiber wings, plus a Hurst Comp Plus shifter and limited-edition logos. For Bowtie fans, there's the RPO Series L/78 Camaro. Created specifically for GM enthusiasts, it's a spiritual successor to the Olds 442, the first "Gentleman's Hot Rod." Powered by a 455 hp LT1, and available as a limited-edition (only 50 will be made), the L/78 comes in one of two custom-painted color schemes: either black over silver, or silver over black, both accented with a custom red stripe and Hurst logo emblems. These logos are also embroidered into the Katzkin leather interior. Hurst Stunner 20-inch rims and other trim items are included as well.

760/630-0547 | www.hurst-shifters.com

Easy-Run Custom Series Run Stand



Easy-Run now offers a low-cost version Custom Series Run Stand for starting-up and testing an engine before it's installed in a vehicle. This device enables the user to solve problems, make final adjustments, and perform any needed repairs while the engine is still easily accessible. Imagine being able to avoid the frustration of having to remove, repair, and reinstall an engine, possibly multiple times, if problems crop up. Fully adjustable, the stand is engineered for universal applications, and easily accommodates many domestic and foreign engines. An optional automatic transmission kit enables mounting of automatic transmissions and most standard transmissions.

800/780-0634 | www.easy-run.net

Dicus Designs Thunderbolt



The Shelby Cobra wasn't the only car blessed with Ford's legendary FE 427 V8. Back in 1964, the Fairlane Thunderbolt was a limited-production, drag-race-only vehicle that was fitted with a 427 mill. Only 100 units were ever made, but the car secured the NHRA Super Stock title for Ford that same year, and none were produced after that. Dicus Designs is bringing back the Thunderbolt in repro form. It features a Heidts front end and a Strange 9-inch, 35-spline rear end with Cal Trac suspension and SSBC four-wheel disc brakes. Rather than a 427 block, though, it runs a Boss 544-cubic-inch Shotgun Hemi built by Chris Holbrook Race Engines.

573/701-4338

Quad Dynamics Quadmat

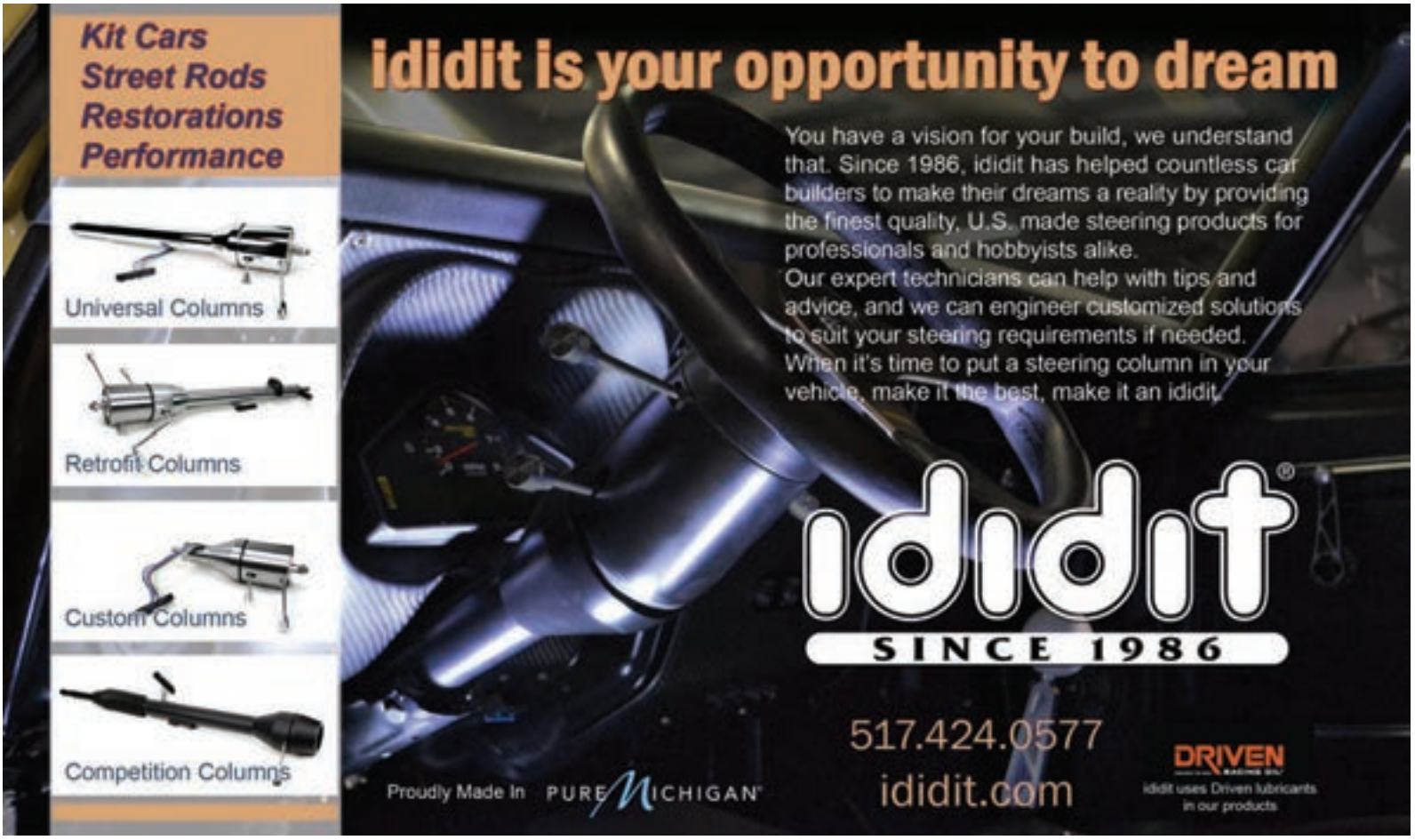


Production vehicle manufacturers devote countless hours to minimize NVH (Noise, Vibration and Harshness) to produce a quiet and comfortable ride. Project cars don't always have that, however, and also suffer from excess heat at times. The sources of NVH are numerous, and lining the cockpit with quality insulation can make a big difference in your comfort level. As implied by its name, Quadmat from Quad Dynamics provides both acoustic damping and thermal protection by using four layers of material – two layers of butyl mastic sandwiched around a layer of 4-mil aluminum, plus a top layer of closed-cell nitrile foam. Quadmat can be cut to fit with either scissors or a utility knife, and conforms to complex shapes in a single application. It's also self-sticking, so no messy spray adhesive is needed.

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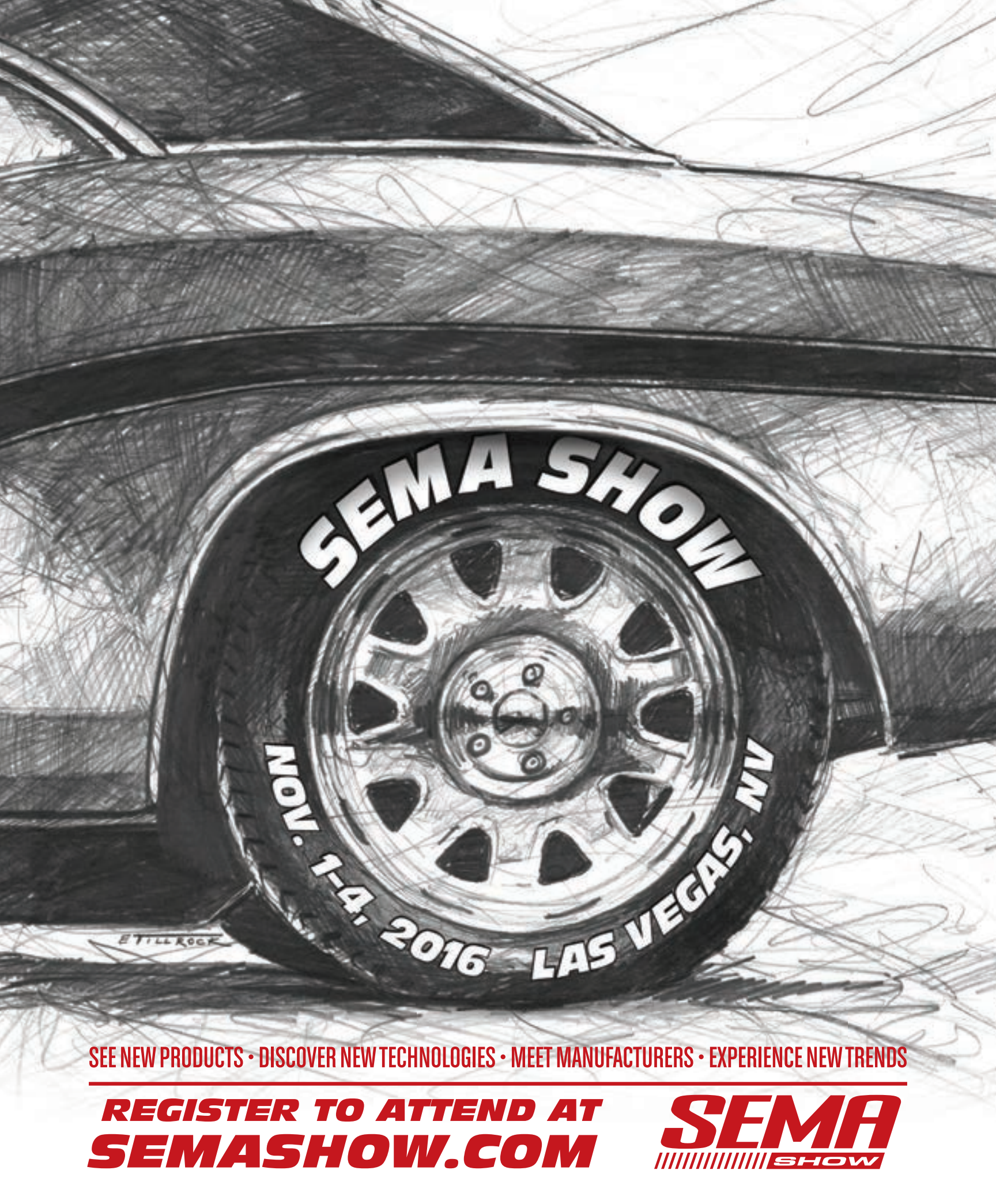







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