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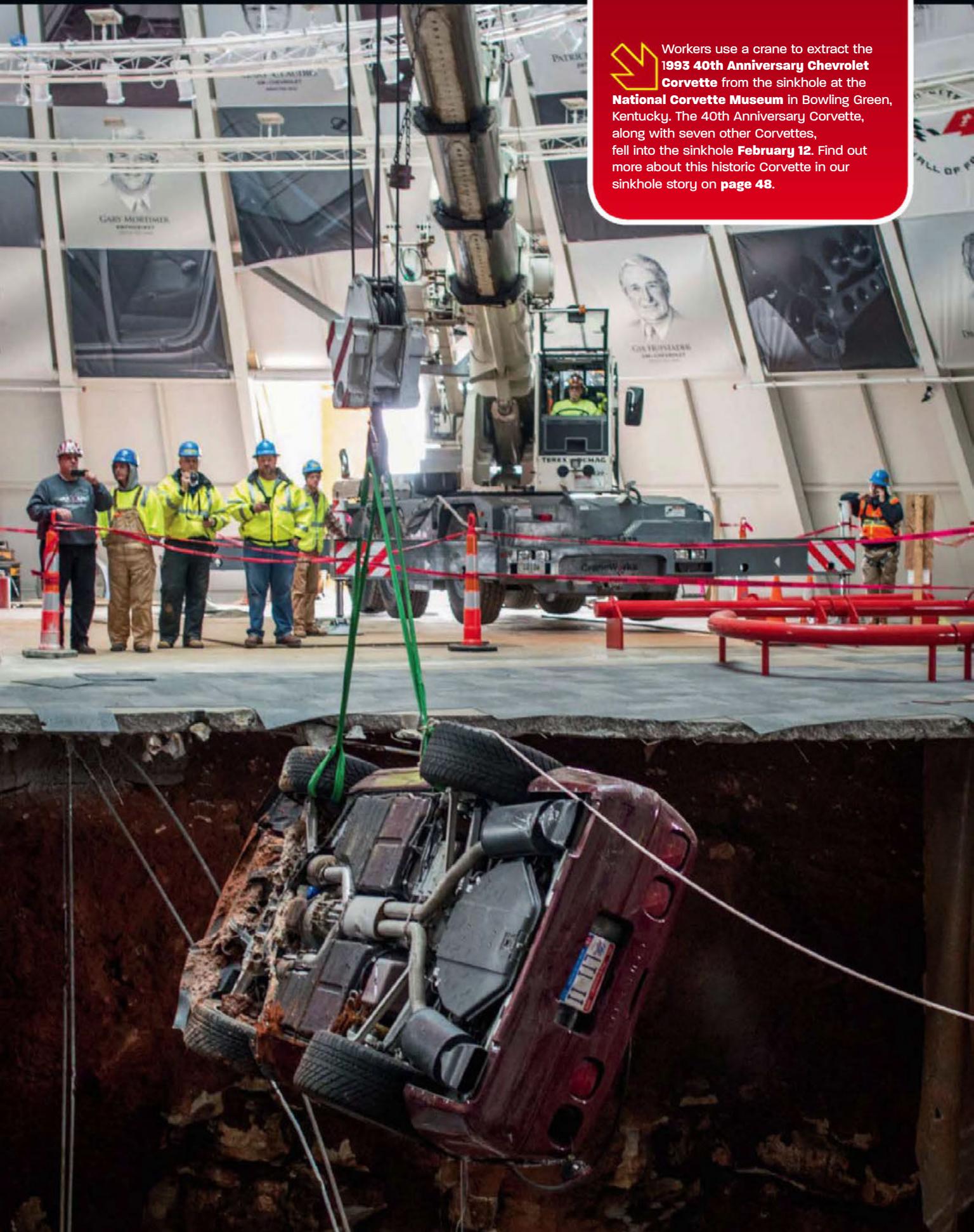
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Workers use a crane to extract the 1993 40th Anniversary Chevrolet Corvette from the sinkhole at the **National Corvette Museum** in Bowling Green, Kentucky. The 40th Anniversary Corvette, along with seven other Corvettes, fell into the sinkhole **February 12**. Find out more about this historic Corvette in our sinkhole story on **page 48**.



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IDLE CHATTER

STEVEN RUPP EDITOR

CHANGE UP

 Remember a couple of months ago when I talked about embracing change? Well, it's time to hug it out once again. Yep, we're doing a little shuffle at VETTE again and this will be my last issue helming this fine publication. Starting next month my good friend Nick Licata will be penning this column and sitting in the big chair. I, in turn, will be going back to doing what I love, being a technical editor for VETTE, as well as several of our sister publications. Given that, you'll still see my name in these pages and I will be working with Nick to make sure we get you the best tech and lifestyle stories as possible. As for Nick, he shares my love of driving and of Chevrolet performance, so you'll be in good hands.

My October editorial about change did generate a few letters. They were mostly positive, with a couple of emails questioning the need for more tech stories. The common theme seemed to be that Corvette owners can't (or won't) wrench on their cars. Well, I'm calling BS on that whole concept. I think the vast majority of Vette owners are more than willing to tinker with the cars to varying levels, based on their skill set. A tech story has two goals. The first one is to give you the 411 on how to pull off an upgrade or repair on your Vette. The second, and to me more important, goal is to educate. You may not ever build an engine, repair some fiberglass, or swap out the brakes on your Corvette, but you should know what's involved in getting it done. With this knowledge you can talk to the other gearheads at the local cruise spot without embarrassing yourself and, if you want to have any of this work done, you can talk intelligently with a shop and make sure they aren't taking you for a monetary joyride. When you read a theoretical story on camber or caster, it isn't so you can go home and do an alignment in your driveway, it's so you can better understand a few of the concepts that make your Corvette what it is.

In addition to tech, we have continued to inject a steady stream of, for lack of a better term, lifestyle stories. I personally find the rich history of Corvettes fascinating and my bet is that you do as well. The eight Vettes that fell into the abyss continue to be a hot topic and I tasked Walt Thurn with telling us the importance of each one in his Sinkhole series. We're also on part two of our multi-part series looking back at some the prototype, concept, and one-off Corvettes that have been churned out by Chevrolet for the last 50-plus years.



PHOTO COURTESY OF NCM

“SO IN CLOSING, THANKS FOR LETTING MAKE MY SMALL MARK IN THE HISTORY OF VETTE MAGAZINE. I'M LOOKING FORWARD TO WHAT'S TO COME.”

On a personal note, I have my '99 FRC Vette in the driveway and you'll start to see upgrade stories very soon. I must say, it's a pretty fun ride stock and my biggest problem is my two kids fighting over who gets to ride shotgun down to the store.

So in closing, thanks for letting make my small mark in the history of VETTE magazine. I'm looking forward to what's to come. **VETTE**

CURRENTS

TEAM VETTE WORDS



STOLEN CORVETTE FINDS ITS WAY HOME

▼ It was 1981, over 30 years ago, when George Talley's prized '79 Vette was stolen near Detroit, Michigan. Talley, now 71 years old, recently received a call from AAA that his long lost Corvette had been located in Hattiesburg, Mississippi. "It was a lucky day to hear that my car had been found," said Talley. "They told me it was running, had 47,000 miles on it, and was ready for pick up!" Talley has always been a Corvette fan and the '79 was his favorite, so this was unexpected good news. His streak of luck continued when Mark Reuss, executive vice president for GM Product Development, heard the story on the news. "George's story brought a smile to my face," said Reuss. "As a longtime Corvette owner myself, I know the passion the car inspires. I also knew that car belonged home in Detroit, with its rightful owner, and we could make that happen." Given that, GM arranged to have the car brought home to Talley and the presentation, at GM, took place just three miles from where the car was stolen over three decades ago.



C7 CORVETTE BLOWING AWAY THE COMPETITION



▼ So far for 2014, the new Stingray's sales numbers have outpaced the Dodge Viper, Porsche 911, and even the Nissan 370Z. Yeah, but by how much you may be asking. Well, it beat the Viper by a mile since, due to low demand, only 354 were churned out. But, it bested the 911 by 12,576 vehicles and the Z by an even bigger margin. Up through June 2014, 17,744 Corvettes have been sold. June numbers were down a bit with just 2,723 units sold, but that's still a 219 percent increase compared to the same time period last year. It looks like GM is on track to easily reach their goal of 35,000 C7s sold by year's end. **VETTE**

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PRODUCT PREVIEW



COOLER RUNNINGS

We all know Corvettes are cool cars, but Autorad Radiators has found a way to make them even cooler with their '63-'67 Corvette performance radiator and core assembly. Although it is a bolt-for-bolt replacement, it offers much more than the stock radiator it replaces, such as 460 square inches of surface area for ideal cooling after spirited driving or cruising on hot summer days. To ensure keeping those temperatures cool, the Autorad C2 Corvette radiator assembly also includes dual fans rated at a massive 3,700-cfm. Each assembly includes a brand-new designed core support, radiator, and dual fans with shroud, and is available for big-blocks, small-blocks, and LS engines. Autorad radiators are always designed with both efficient cooling and attractive looks in mind.

Their all-aluminum radiators are handcrafted using only TIG welding both inside and out. All edges are buffed for a smooth, flawless finish to match the beauty of your Sting Ray Corvette. Each radiator is then vacuum brazed to ensure a strong, reliable seal. Stainless hardware is used throughout to further enhance the appearance. For further information please visit www.autoradradiators.com, email jim@autoradradiators.com, or call 770-983-1345.

PULLEY POWER

KRC Power has introduced a new and distinctly different six-rib serpentine pulley kit for LS engines. It includes a race-bred, tunable, competition hydraulic power steering pump originally proven on 24-hour Le Mans sports racing cars.

KRC offers two different diameter pulleys: 6.0-inch and 6.5-inch. Determined by the size of the GM harmonic balancer, they offer the ability to spin the power steering pump at its optimum speed, which is 2,500 to 4,500 rpm. In this rev band the pump has minimum horsepower consumption and develops maximum output.

The kits are offered in three pulley offsets; Y-body, F-body, and a truck version. To accommodate the Y- and F-body positions KRC provides the appropriate spacers. Though the F- and Y-body kits don't include an A/C compressor they do accommodate one if desired. To find out more visit www.krcpower.com or call them at 770-422-5135.



GAUGING INTEREST

If you're lucky enough to have an LS engine bolted under the hood of a classic vehicle, chances are you're looking for a convenient way to connect a set of aftermarket gauges to monitor the new driveline's parameters. Painless Performance now offers the solution with the Perfect LS Gauge Controller.

This compact LS Gauge Controller simply plugs into the OEM OBD-II connector and is supplied with another matching connector. This means there's still access to the OBD-II port for other connections, or troubleshooting without disconnecting your gauges.

Once connected, the Gauge Controller receives information from the factory engine sensors and converts the data into five different output signals for your aftermarket gauges including vehicle speed, rpm, coolant temperature, oil pressure, and fuel level (when used with a factory sending unit). This eases the installation of aftermarket gauges and it saves you time and extra wiring involved with installing duplicate sensors. To find all the details click over to www.painlessperformance.com or give them a call at 800-423-9696.





DUAL DISC

 The Dual Friction series by Centerforce are high-performance, long lasting, street friendly clutches. This series (PN DF161911) includes pressure plate, 10.075-inch diameter disc, and alignment tool) is available for '84-'88 Chevrolet Corvettes with 5.7L, 350-inch small-blocks and is a direct bolt-on replacement but with a higher holding capacity over stock. The Dual Friction Disc has been through constant testing of different friction materials to provide the optimal combination of holding force and street manners. Today's technology has allowed for engine torque to reach unprecedented levels and still be daily drivers. This

disc is perfect for drivers in need of a clutch that can offer positive engagement, quiet operation, light pedal effort, and high-end holding capacity. For more information on these and other Corvette applications, please visit www.centerforce.com or ring them up at 928-771-8422.

CLEARLY COOL.

 Anyone who has had to troubleshoot an engine problem can attest that the job would be much easier if you could see into the engine without taking it apart. Classic Industries is making that a reality by adding transparent thermostats and valve covers to its selection of engine products.

"Transparent engine parts were popular in the '60s and '70s, but the plastics of the day had severe limitations. They were prone to cracking and often became cloudy," said Ray Yager, Classic Industries Merchandising Director. "Recent advances in materials, especially polycarbonates, have virtually eliminated those concerns."

The valve covers are manufactured from a polycarbonate blend that will not warp, haze, or become yellow over time due to heat, while causing oil to sheet after about 30 seconds, even after running at high rpm.

"These are more than novelty items," added Yager. "With a window into the beating heart of the vehicle, it's easy to find and correct minor problems in valvetrain, cooling, and oiling systems before they become major problems." To get more info visit www.classicindustries.com or call 855-357-2787.



GETTING THE BOOT

 When it comes to shift boots, sometimes a bit bigger is better. This innovative design from Finch Performance is designed to accommodate numerous transmission swaps, including automatics. It's oversized to cover most trans tunnel hack jobs on the shifter opening and it also allows enough room to remove top-mounted shifters (like found on common Tremec six-speeds) to be removed inside the car, which makes pulling and installing the transmission way easier.

The steel ring is designed to be welded or tacked to the tunnel, and comes pre-drilled with holes tapped for the provided machine screws. The trim ring is recessed slightly to aid in a tighter carpet fit and finish. Trim ring dimensions are 6.25x9 inches. The kit is available in black anodized, clear anodized, or textured powdercoat (shown). They also have tall and short boot options as well as custom finishes. To find out more visit www.finchperformance.com or email Brian Finch at brian@finchperformance.com.



FROM THE ARCHIVES

DREW HARDIN WORDS
SOURCE INTERLINK
MEDIA ARCHIVES PHOTOS

SMOOTH AND **POWERFUL**



The effect is called affine shear, the forward leaning of a vehicle photographed in motion. It was used to dramatically represent the power and speed of a fuel-injected '57 Corvette that *Motor Trend* Editor Walt Woron tested at the GM Proving Grounds in the fall of 1956.

"From a standstill to 60 mph, using first and second gears of the manual three-speed box, took a mere 7.2 seconds!" he wrote in his Dec. '56 "Driving Around" column. "To 80 mph, still in second gear, took only 11.4 seconds. Not having a quarter-mile marker, we had to estimate and time between the .2 and .3-mile marks; our estimate is around 16 seconds."

Those runs were made in a Vette with the

250hp version of the engine, which was "fairly new," Woron wrote, "so I kept it to a maximum rev limit of 4,500."

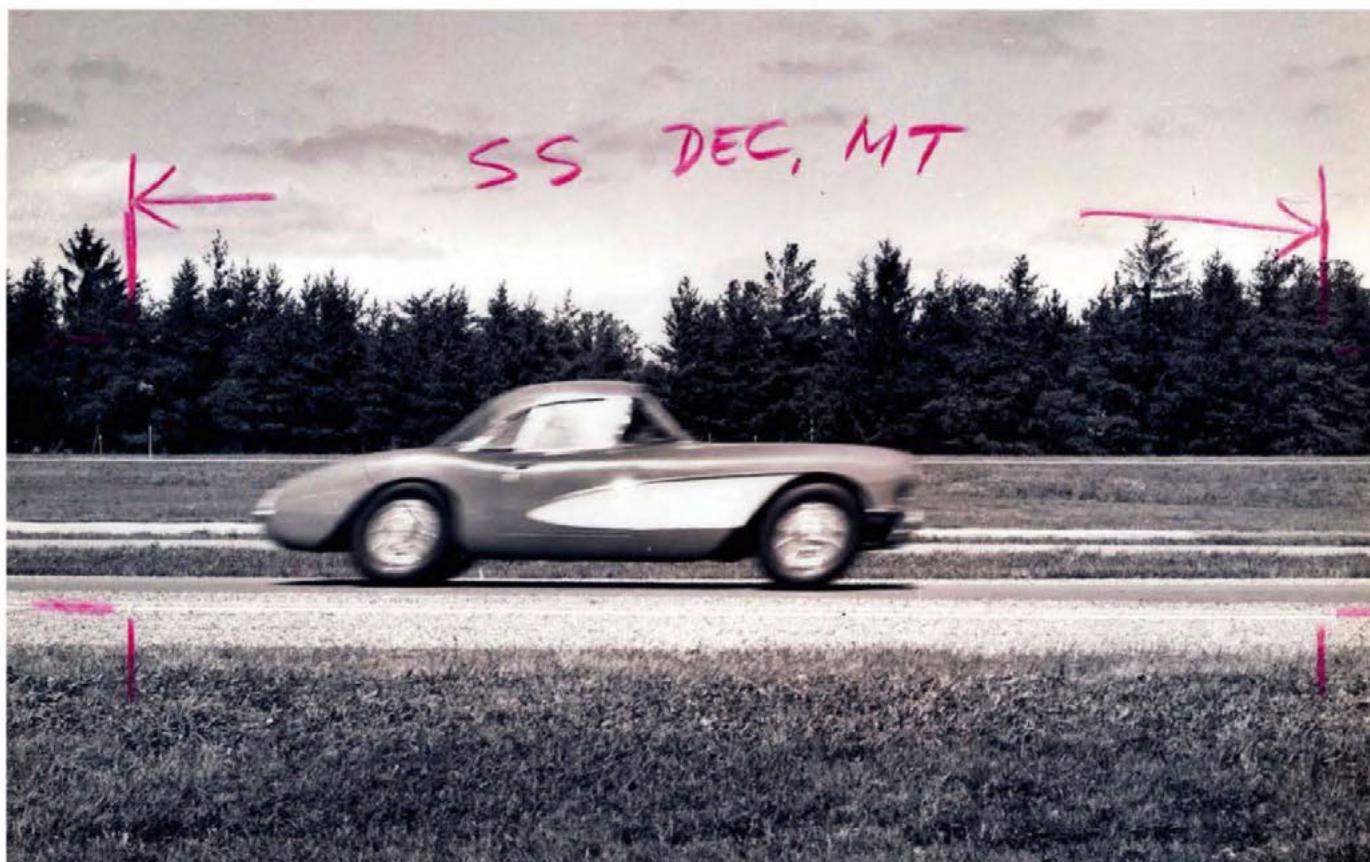
He liked the way the fuel injection worked. "Starts were quick. Pumping the throttle doesn't pump raw gas to the cylinders, so you can't flood it. Throttle response is instantaneous. No maneuver could flood or starve the engine (and I tried with violent cornering and braking). Smoothness is a high point. I took it down to 200 rpm in high gear, then floored the throttle. Outside of a horrible pinging (it didn't yet have the vacuum advance which later models will have), the take-off was as smooth as if it were in low gear, or in high gear at a much higher speed."

After sampling the 250-horse fuelie, a development engineer brought out a 283hp car, "with 10.5 to 1 heads, dual exhausts, and the

special Duntov cam with solid lifters. This one had just been put together the night previous, but since the engineer hadn't had a chance to unwind it, he said, 'Let's go!'

And go they did. The Proving Grounds' long straightaway gave them room to really uncork the Vette, hitting speeds of 132 mph (at around 5,500 rpm) in one direction and 134 going the other way.

"And I'm convinced it wasn't extended," Woron wrote. "With a few suspension modifications and more rugged brakes, the '57 Corvette bodes ill will for the foreign jobs in its road racing class. When their road racing performance is coupled with this new-found performance, it's easy to scotch the rumor that Chevy is about to back out of racing. You'll see factory teams at Nassau, Sebring, and maybe LeMans." **VETTE**



How to Outsmart a Millionaire

Only the "Robin Hood of Watchmakers" can steal the spotlight from a luxury legend for under \$200!

I wasn't looking for trouble. I sat in a café, sipping my espresso and enjoying the quiet. Then it got noisy. Mr. Bigshot rolled up in a roaring high-performance Italian sports car, dropping attitude like his \$14,000 watch made it okay for him to be rude. That's when I decided to roll up my sleeves and teach him a lesson.

"Nice watch," I said, pointing to his and holding up mine. He nodded like we belonged to the same club. We did, but he literally paid 100 times more for his membership. Bigshot bragged about his five-figure purchase, a luxury heavyweight from the titan of high-priced timepieces. I told him that mine was the **Stauer Corso, a 27-jewel automatic classic now available for only \$179**. And just like that, the man was at a loss for words.

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Q: I am a car salesman at a car broker dealership in Nashville. I was reading the question and answer section in *VETTE* magazine a few days ago. I was hoping you could help me with a problem I have had with the last two 2014 Corvettes we have sold.

On the middle message screen it says "Transport Mode is On" and I cannot change it or make the screen go to anything else like tire pressure, etc. Also, the battery light on the instrument panel keeps flashing. The guys in the shop checked the battery and the charging system and it seems to be working fine.

I even had OnStar do a check and they said there were no problems. We unhooked the battery for five minutes as well, with no change. I called my customers to see if they had the problem resolved at the dealer and he said the light went out on its own.

I am not sure what the transportation mode is for but I would like to have

an answer to this problem before we sell another vehicle with this issue. Any help? Thank you.

Mike

A: Mike, the transportation mode feature allows for a reduction of load on the battery by disabling systems that can cause a parasitic battery draw during vehicle shipment or long-term storage. This mode will disable the radio and clock and exit lighting for example, which will extend the battery life.

Transport mode is intended for use on vehicles that are being shipped over long distances. This includes vehicles shipped into and outside of the United States. Most new vehicles will be shipped from the assembly plant with the Transportation Mode on. On General Motors products to alert the operator that the mode is on, the red battery telltale will be flashing and if equipped with a Drivers Information Center (DIC) it will display a Transport Mode On message.

It is safe to drive the vehicle when the vehicle is in transportation mode. The only

difference in operation will be the DIC message and battery telltale will be illuminated and some accessory systems may not function.

When Transport Mode is on and the vehicle is not running, the Remote Keyless Entry (RKE) transmitter (key fob) is disabled and the theft deterrent and exit lighting timers are reduced.

The method to turn Transportation Mode off is the same as it is to turn it on.

2011-2015 TRANSPORTATION MODE RESET PROCEDURE FOR ALL 2014 CHEVROLET PRODUCTS

1. To turn the Transportation Mode on or off, it will be necessary to have all the doors closed.

2. Start the vehicle.

3. Activate the hazard flashers.

4. Press the brake pedal (automatic transmission) or clutch pedal (manual transmission).

5. Press and hold the Start/Stop button or turn the ignition key to the crank position for 10 to 15 seconds. The battery light will flash and the engine will start, but continue to hold the start button/key for approximately 10 to 15 seconds.

6. You will notice the radio will illuminate and the "Transportation Mode" message will disappear allowing you to be able to read the mileage.

7. The same steps are used to turn the Transport Mode feature on or off.

On vehicles that are shipped from the assembly plant with the Transportation Mode on, turning the feature off is included in the normal Pre-Delivery Inspection (PDI) that should be performed before the vehicle is given to the customer.

Mike, when you called your customers to see if they had the problem resolved at the dealer and one informed you the light went out on its own, this is because the Transportation Mode is programmed to turn off on its own after the vehicle is driven 50 to 150 miles. Good luck and I hope this helps.

→ QUESTIONS?

Got a question for our Tech Corner expert? Just jot it down on a paper towel or a lightly soiled shop rag and send it to us at *VETTE* Magazine, Attn: Technically Speaking, 1733 Alton Parkway, Suite 100, Irvine, CA 92606. Alternatively, you can submit your question via the Web, by emailing it to us at vette@sorc.com. Be sure to put "Technically Speaking" in the subject line.

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2014 CORVETTE **STINGRAY** **Z51** BRAKE COOLING RINGS

Q: Hello James, I am a lifelong Corvette enthusiast and owner and had the pleasure of taking a workshop with you and Gordon Killebrew years ago at the Bloomington Gold Corvette show. Well, like the last time I had the opportunity to speak with you, I have a question.

I recently took delivery of my '14 Corvette Stingray, I ordered the vehicle with the Z51 Brake Rotor Cooling Rings and to my surprise there was a plastic bag in the vehicle with the cooling rings enclosed. Did the dealer not complete the Pre-Delivery Inspection correctly? Did the assembly plant not install the option completely? Thanks for any information on this subject.

Jim

A: Jim, I remember having you in the workshop and I am glad you are still a Corvette fanatic. It's good to know some things never change. According to General Motors, the cooling rings are for customer use if they elect to use the vehicle in a competitive driving event.

The rotor cooling rings are provided at the time of vehicle delivery in a clear plastic bag and are recommended for track use only. Also not included but required for installation are T304 stainless steel safety wires. These cooling rings are intended to help with brake pedal fade during performance driving events.

If the cooling rings remained installed during normal driving conditions it could tend to cool the brake rotors too much with highway use under limited braking conditions. As you know, cold brakes don't stop well so it is not recommended to use the cooling rings for street use. Also, long-term installation may cause corrosion to occur.

The engineers at Chevrolet state; "The Corvette Stingray Z51 will arrive at the dealership with a package of aluminum rings and wire. These are called out as brake rotor cooling rings. These rings are to be provided to the customer and are not to be installed during the PDI process. The cooling rings are for

customer use if they elect to use the vehicle in a competitive driving event. The directions are outlined in the 2014 Owners Manual under "Competitive Driving." A bulletin is being prepared to explain this to the dealerships and it is also being noted in the Pre-Delivery Inspection worksheet. The rotor rings are for off road use only and must be installed to prevent brake fade in competitive events.

Caution: Do not leave the rotor cooling rings installed after a track event as this can cause corrosion with long-term use. Rotor cooling rings are for racetrack use only. Racetrack driving without the rotor cooling rings may result in brake pedal fade.

INSTALLATION OF COOLING RINGS PROCEDURE

1. Remove the front wheels.
2. Cut three 150mm (6-inch) lengths of safety wire specified to T304 stainless steel, 0.041 in nominal diameter.
3. Form each into a U shape with a 20mm (0.75-inch) flat area in the center of the wire.
4. Place the rotor ring in the gap between the rotor brake plate and rotor hat, with the holes on each side of the rotor spoke on the outboard side of the rotor.
5. Place the U-shaped wire through the holes in the rotor cooling ring.
6. Bring the ends of the wire tight around the corresponding rotor spoke.
7. Twist the safety wire into six to eight twists per inch.
8. Bend the twisted wire so it is flush with the inside of the rotor ring to prevent contact with the caliper or brake hoses.
9. Verify that the rotor rings and safety wire do not contact any other components.
10. Reinstall the wheel using the specific lug nut torque. See Capacities and Specifications in SI.

If additional brake cooling is required, the grille mesh in the lower corners of the front grille in front of the brake duct can be removed. This is not reversible and a replacement grille will not be covered by the warranty. If this is done, it is recommended that the gap

2014 CORVETTE STINGRAY TRACK PREPARATION																															
The 2014 Corvette Stingray is the ultimate performance machine for driving and adapting to track racing. It's a track-ready vehicle, but before you can compete, you must learn how to use all of the vehicle's controls and understand how to maintain your vehicle's performance in track racing. For full details and information, see the vehicle's Owner's Manual. Note: The Corvette Stingray is not a street-legal vehicle. It is designed for use on a closed course or track only.																															
1. ATTAIN THE RIGID MILEAGE																															
NEW VEHICLE BREAK-IN (STINGRAY, M-412)																															
With the new vehicle, follow these 2 simple steps to break-in the engine and transmission. To do this, follow the 2014 Corvette Stingray Owner's Manual.																															
<table border="1"> <thead> <tr> <th>PART NUMBER / DESIGNATOR</th> <th>TIME PERIOD</th> <th>RECOMMENDED ACTION</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>First 100 miles (160 km)</td> <td>Do not accelerate sharply and avoid hard braking.</td> </tr> <tr> <td>Brake fluid</td> <td>First 100 miles (160 km)</td> <td>Avoid hard stops. Reduce deceleration every time you stop.</td> </tr> <tr> <td>Full-throttle starts and straight stops</td> <td>First 100 miles (160 km)</td> <td>Do not accelerate above 30 mph (48 km/h) and stop.</td> </tr> <tr> <td>Passing, 4000 rpm</td> <td>First 100 miles (160 km)</td> <td>Avoid accelerating to 4000 rpm or above.</td> </tr> <tr> <td>Accelerate at 1000 rpm</td> <td>First 100 miles (160 km)</td> <td>Avoid accelerating to 1000 rpm or above.</td> </tr> <tr> <td>Letting the engine idling or stopping the engine</td> <td>First 100 miles (160 km)</td> <td>Find the best mode about 2000 rpm.</td> </tr> <tr> <td>Highway driving</td> <td>First 100 miles (160 km)</td> <td>Drive at 65 mph (105 km/h) for 100 miles (160 km). If the engine temperature is above 160°F (71°C), drive at 65 mph (105 km/h) for 100 miles (160 km). If the engine temperature is below 160°F (71°C), drive at 65 mph (105 km/h) for 100 miles (160 km).</td> </tr> <tr> <td>Hard or competitive driving</td> <td>First 100 miles (160 km)</td> <td>Do not participate in high-speed, sport, drag racing, or similar racing.</td> </tr> <tr> <td>Engines off</td> <td>First 100 miles (160 km)</td> <td>Do not turn off the engine during stops if cold. If necessary, do not turn off the engine when the engine is cold.</td> </tr> </tbody> </table>		PART NUMBER / DESIGNATOR	TIME PERIOD	RECOMMENDED ACTION	None	First 100 miles (160 km)	Do not accelerate sharply and avoid hard braking.	Brake fluid	First 100 miles (160 km)	Avoid hard stops. Reduce deceleration every time you stop.	Full-throttle starts and straight stops	First 100 miles (160 km)	Do not accelerate above 30 mph (48 km/h) and stop.	Passing, 4000 rpm	First 100 miles (160 km)	Avoid accelerating to 4000 rpm or above.	Accelerate at 1000 rpm	First 100 miles (160 km)	Avoid accelerating to 1000 rpm or above.	Letting the engine idling or stopping the engine	First 100 miles (160 km)	Find the best mode about 2000 rpm.	Highway driving	First 100 miles (160 km)	Drive at 65 mph (105 km/h) for 100 miles (160 km). If the engine temperature is above 160°F (71°C), drive at 65 mph (105 km/h) for 100 miles (160 km). If the engine temperature is below 160°F (71°C), drive at 65 mph (105 km/h) for 100 miles (160 km).	Hard or competitive driving	First 100 miles (160 km)	Do not participate in high-speed, sport, drag racing, or similar racing.	Engines off	First 100 miles (160 km)	Do not turn off the engine during stops if cold. If necessary, do not turn off the engine when the engine is cold.
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2. SEARCH THE BRAKES																															
BRAKE BURNISH PROACTIVE STINGRAY'S MANUAL: B-4																															
After the new vehicle is in person, Corvette Stingray's Proactive Maintenance Package takes some extra time to follow the following steps:																															
1. Moderate Brake Application	1. Moderate Brake Application																														
	Study the Brake Application chart. This chart provides the recommended brake application for the vehicle's weight at 100 mph (160 km/h). The chart also provides the recommended brake application for the vehicle's weight at 40 mph (64 km/h). The chart also provides the recommended brake application for the vehicle's weight at 20 mph (32 km/h). The chart also provides the recommended brake application for the vehicle's weight at 10 mph (16 km/h).																														
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4. Short Brake Service	4. Short Brake Service																														
	Service the vehicle at 1000 miles (1600 km). If the vehicle has been driven in a high-temperature environment, service the vehicle at 500 miles (800 km).																														
5. Long Brake Service	5. Long Brake Service																														
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Note: These Proactive Maintenance steps are not intended to replace the vehicle's Owner's Manual. The vehicle's Owner's Manual contains the vehicle's maintenance schedule and provides the vehicle's maintenance requirements.																															
When braking on a road at the end of a straight distance, it is often a good idea to recommend for drivers to follow without the road's edge so as to reduce force of the road. Do not have been taught to follow without the road's edge so as to bring along with them any available information you included with this guide and can be found in section 6 of the Owner's Manual.																															

between the fascia and the cooling duct be taped over.

Recently, Corvette Product Manager Harlan Charles wrote the *Corvette Stingray Track Preparation Guide*. This guide will help you prepare your vehicle for a track day while keeping your warranty intact.

In the owner's manual on some previous generations of Corvettes, as well as the 2014, there is a section that has recommendations for "Competitive Driving." However, for the 2014 Corvette, Chevrolet has provided a separate guide for owners who would like to take their Corvette out for a track day. This guide is intended only for Corvettes equipped with the Z51 performance package.

The guide is broken down into six different sections, including one dedicated to returning your Corvette back to original factory settings and fluid replacement recommendations. These sections are broken down in the following manner.

1. Attain the Right Mileage (Break-in Period).
2. Season the Brakes.
3. Adjust the Four Corners.
4. Check the Fluid Levels.
5. Turn Up the Precision.
6. After the Track.

After the track. Chevrolet suggests you accumulate at least 1,500 miles before doing any competitive driving. I know that is going to be hard for you! So enjoy your new Corvette and have fun at the track. I know you will. **VERTE**

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STEPCHILD'S REVENGE

ANYONE DUMB ENOUGH TO SNICKER AT THIS '64 CORVETTE WILL BE CHOKING ON AN LS7-POWERED DUST CLOUD IN NO TIME FLAT

STEPHEN KIM WORDS | PHOTOS

For some reason, C2 elitists treat the '64 Corvette as the redheaded stepchild of the mid-year lineage. It seems strange, but it's presumably a coping mechanism for spending a fortune on a big-block-powered mid-year that's too rare and precious to drive. That would seriously suck. Whatever the real reason may be, the lower demand for '64s means that they're often the most affordable C2s on the market. Paul Wolf bought his for \$1,400. With the least popular C2 model year also comes less pressure to keep things all-original. These factors laid out the perfect scenario for Paul to transform his '64 Corvette into an LS7-powered Pro Touring monster poised to beat up on its more favored siblings.

Let's get one thing straight: Any mid-year Vette is one gorgeous piece of machinery. Why the '64s get a bum reputation is a bit of a mystery. Sure, you can't get them as split-windows, but at least they don't have the lame hood grilles found on the '63s. Yes, '65

and later cars got big-blocks, but some feel that their vertical fender coves weren't nearly as attractive as the '64s horizontal slats. And almost 50 years later, the egg-crate grilles of the '66 and '67 models still look like something that GM stylists should have forgotten about after the '55 Chevy. Granted, such minutia is prime fodder for Corvette guys to squabble over, but when Paul bought his car in 1971, none of that mattered. "Back then, it was just a used, 7-year-old Chevy. I bought it in St. Louis when I was 17, just 15 miles down the road from where it was built," he explains. "I've always liked '57 Chevys and GTOs, but when it comes down to spending my money, I spend it on Corvettes. Maybe there's some kind of St. Louis connection, because I'm not nearly as interested in the Corvettes that have come out of the Bowling Green plant."

Powered by a solid lifter 327 small-block, Paul drove the Corvette daily through high school and college. After throwing a connecting rod through the side of the block,





[FEATURE] STEPCHILD'S REVENGE

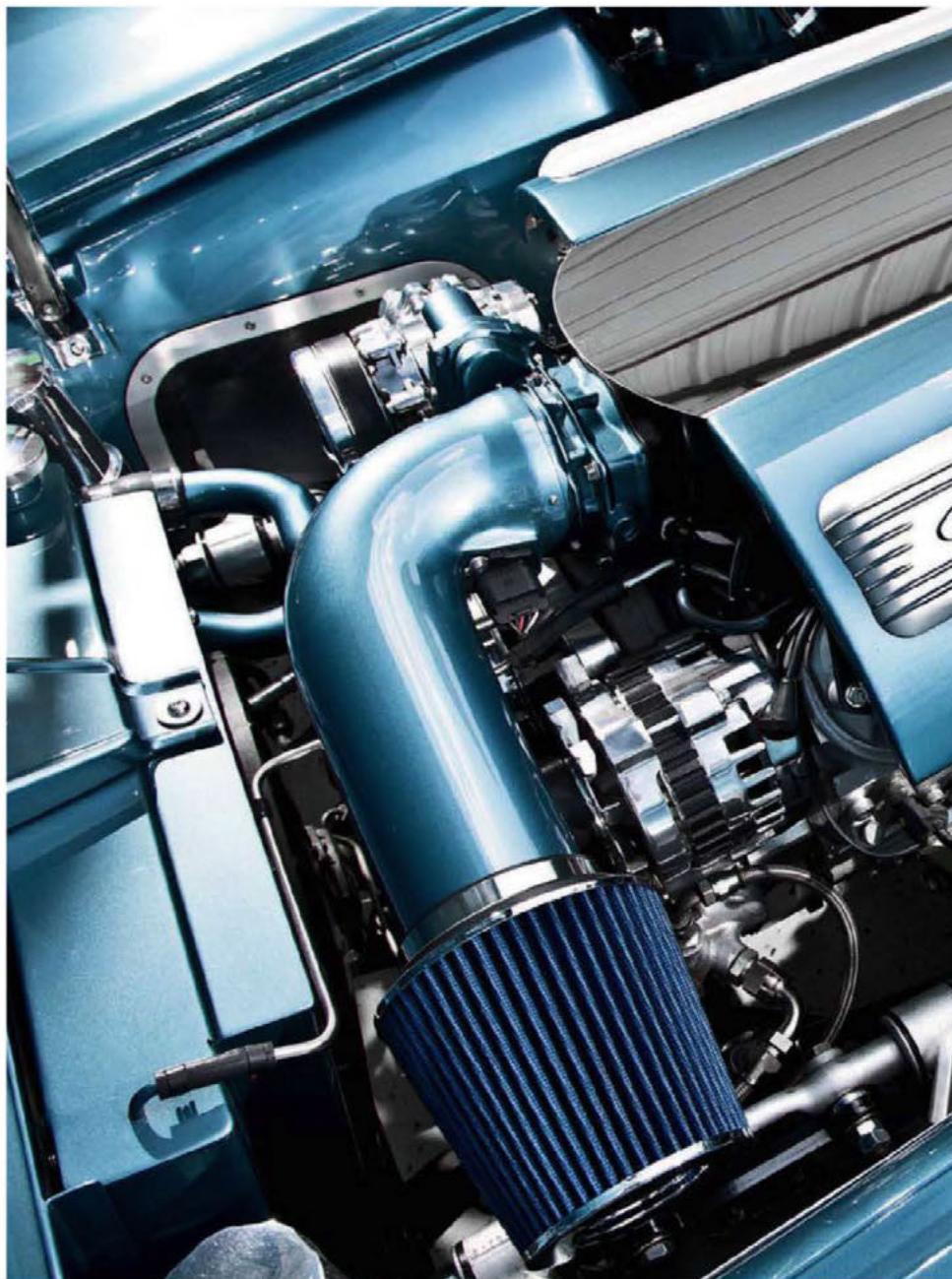
he swapped in a 350. By 1981, Paul relocated to Texas, and left the car at his parents' house. "I got a call from my mom one day, and she said she was going to sell that old Chevy of mine because winter was coming up and my dad wanted to park in the garage again. I drove out there as fast as I could and trailered the car back to my house," he recalls. Shortly thereafter, Paul restored the interior, fired the beast back up, and enjoyed the car whenever he could. Unfortunately, the Vette didn't have air conditioning, which made driving it between June and October highly unpleasant. Likewise, with the demands of a growing family and business occupying most of his time, the Vette sat dormant for the next 20 years.

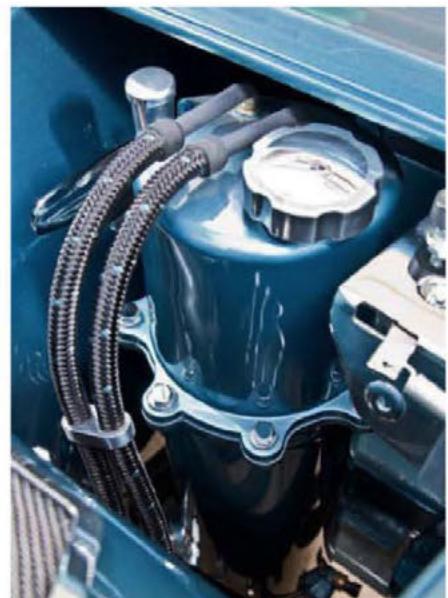
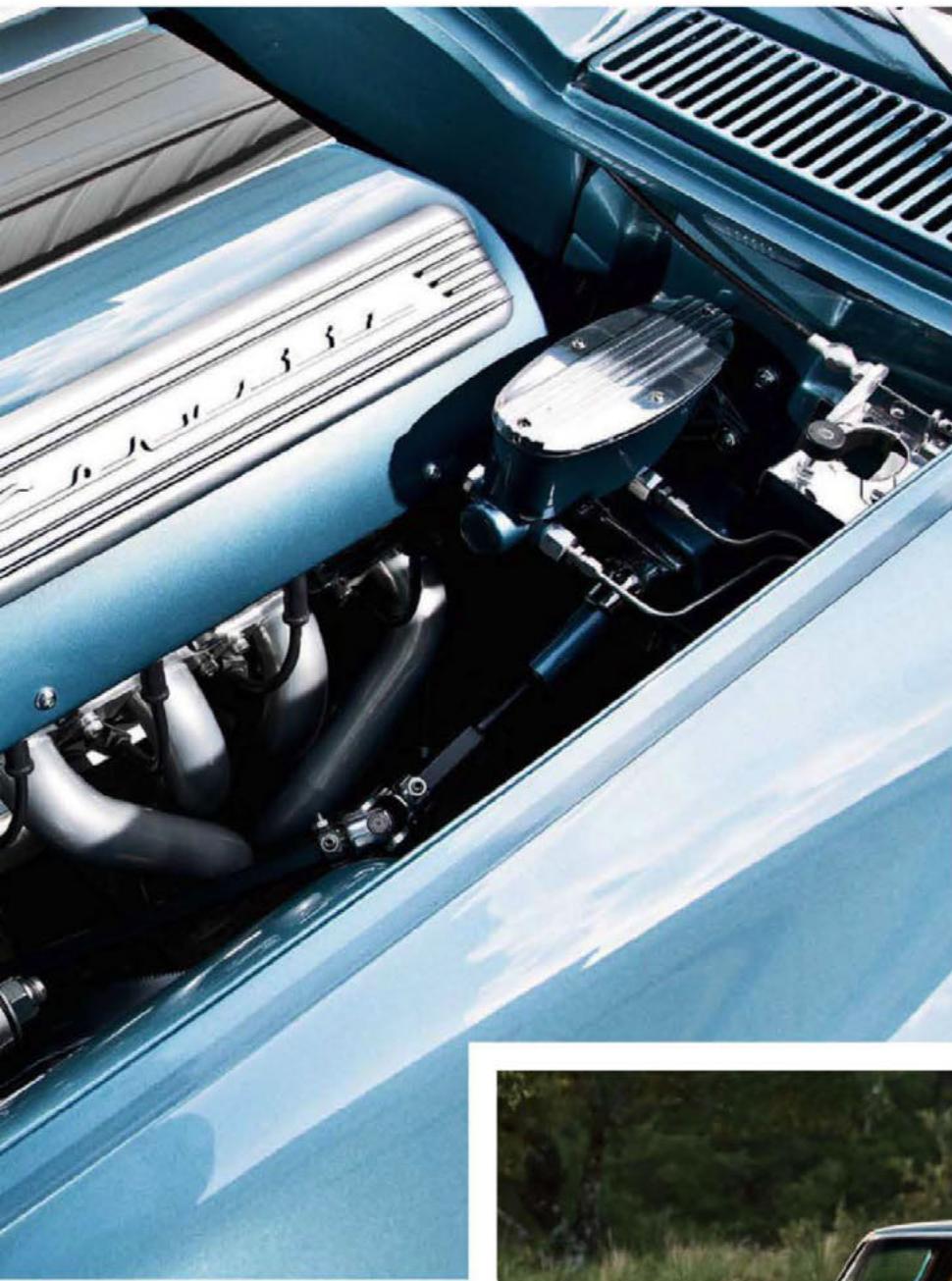
By the time 2006 rolled around, the kids were all grown up and Paul was determined to get back in the game. At that point, the Vette's gas tank was leaking and the brakes had locked up. By chance, he ran into some Vintage Air employees at a sandwich shop one

Roger learned his craft from guys like Boyd Coddington, and when I went to visit him at the shop, I was blown away by the caliber of his work.

day that set his restoration plans in motion. "I noticed a couple of guys sitting across the room that had Vintage Air shirts on. I asked them if they knew any shops that did nice restoration work, and they recommended Roger Lynskey of RPL Customs (Royse City, Texas)," he recollects. "Roger learned his craft from guys like Boyd Coddington, and when I went to visit him at the shop, I was blown away by the caliber of his work. I always wanted a car with air conditioning, and since the original motor was long gone, there was no point in trying to do an original restoration. That led me down the restomod path, and with all the new technology out there these days, it just made sense to integrate that technology into the build."

Fortunately, all the years the Vette spent in storage had preserved the original fiberglass, and none of it needed replacement. Instead, RPL made some custom tweaks to enhance the car's functionality. "Since I'm 6'2" and weigh 240 pounds, I can barely fit inside old Corvettes. Roger extended the driver-side floorboard 4 inches into the engine compartment to increase legroom," Paul explains. "He also recessed the inner wheelwell 1.5 inches to make room for bigger tires, shaved the antennae, and added a third brake light. The paint is





SPEC SHEET

1964 CHEVROLET CORVETTE

OWNER	Paul Wolf, San Antonio, TX
ENGINE	GM LS7 small-block
DISPLACEMENT	427 cubic inches (7 liters)
HEADS	Factory 260cc aluminum castings, 70cc combustion chambers
VALVES	Titanium 2.20-inch intake, stainless steel 1.61-inch exhaust
CAMSHAFT	Stock 211/230-at-0.050 hydraulic roller, 122-degree LSA
INDUCTION	Factory LS7 intake manifold and throttle body
EFI	Stock GM ECU, Rock Valley fuel tank and pump
IGNITION	Stock GM coil packs and plugs; Taylor wires
EXHAUST	Rewardear 1.75-inch headers, dual 2.5-inch MagnaFlow mufflers
TRANSMISSION	Tremec TKO 600 five-speed manual, McLeod clutch
FRAME	Custom Street Shop chassis
SUSPENSION	C4 Corvette aluminum spindles and control arms; Street Shop sway bars, QA1 coilovers
BRAKES	Wilwood 13-inch discs with six-piston calipers, front; 12-inch discs and single-piston calipers, rear
WHEELS	Schott I-Force 18x8, front; 20x10, rear
TIRES	Nitto NT555 235/40R-18, front; 275/35R-20, rear
MILEAGE	5,000

a slightly modified version of the factory Lyndale Blue, which was sprayed by Vastine's Paint Garage. Roger designed an all-new interior as well, complete with custom seats, Vintage Air air conditioning, custom door panels, a custom gauge cluster, power accessories, and an Alpine stereo."

Since slick bodywork and a comfy interior are just half of the Pro Touring battle, the Vette needed a serious infusion of horsepower and grip. Seeking big-time grunt in a small, lightweight package, dropping an LS7 small-block under the clamshell hood was the perfect solution. It's backed up by a Tremec TKO 600 five-speed manual trans. Barking through Rewarder headers and dual MagnaFlow 2.5-inch pipes, the combo lays down 463 rear-wheel horsepower on the chassis dyno. Harnessing all that power on the straights and through the corners is a Street Shop aftermarket frame that utilizes C4 Corvette aluminum control arms, custom sway bars, and QA1 coilovers. Wilwood six-piston brakes scrub off the velocity, while Schott wheels wrapped in

Nitto rubber stick it all to the pavement.

Granted that Paul's Vette packs plenty of high-tech goodies and stunning good looks, what really sets it apart is that he built it for himself. He didn't lament the fact that it isn't a split-window coupe. He didn't feel the need to trade it in for a more in-demand mid-year. He didn't give a rat's behind that it has a 427ci small-block instead of a 427ci big-block. Instead, he took a redheaded stepchild and gave it the beans to stick it to its more privileged siblings. **VETTE**



THE ART OF SOUND

CORSA PERFORMANCE'S NEW EXHAUST ADDS AURAL EXCITEMENT TO THE C7 STINGRAY

BARRY KLUCZYK WORDS | PHOTOS ADDITIONAL PHOTOS BY THE MANUFACTURER

Let's be honest: The aesthetics of the Corvette experience is just as important as the performance it delivers—from the right wheels and underhood accessories to the bark of its historic small-block engine. In fact, the aural signature of Chevy's supercar is as important as the chrome accessories on a Harley, the wood finish on a Chris Craft, or the feel of a Callaway Big Bertha.

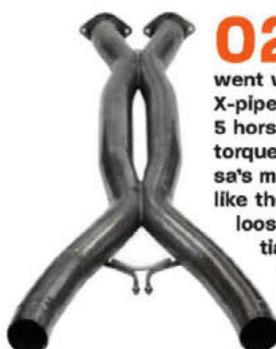
Considering they were designing an exhaust system for the Goldilocks of customers—not too quiet, but not too loud—the C7 Stingray comes from Bowling Green with a pleasing sound quality. Its bark increases noticeably with the optional NPP-code exhaust (standard with the Z51 package), which not only raises the decibel level, but takes the LT1 engine's output from 455 horsepower to an even 460. It also enlarges the exhaust outlet diameters from 3 inches to 4 inches.

Despite the factory's admirable effort, some owners are statistically going to be up in the 80th and 90th percentiles of those who want a more aggressive sound emanating from their Vette's pipes. That's where the aftermarket comes in—specifically, Ohio-based Corsa Performance, who began working on the C7's signature sound since the first production model saw the light of day last year.

But it's not as easy as you think. Anyone can craft a louder exhaust, but the nuance of enhancing sound without an annoying highway drone takes considerably more research and development. The C7's Active Fuel Management (cylinder deactivation) adds another wrinkle, because when the cylinders shut down on the highway, the LT1 effectively becomes a four-cylinder engine, completely altering the exhaust signature.



01 Corsa Performance's C7 cat-back exhaust system is offered in Sport or Xtreme sound levels, each including 4.5-inch exhaust tips with either polished or black tips. The black tips have a trapezoidal shape. We went with the classic polished round tips for our project. It's good to know the 304L stainless steel system is 50-state legal, is manufactured in the good ol' US of A, and comes with a limited lifetime warranty. It will replace the standard C7 exhaust or the NPP performance exhaust.



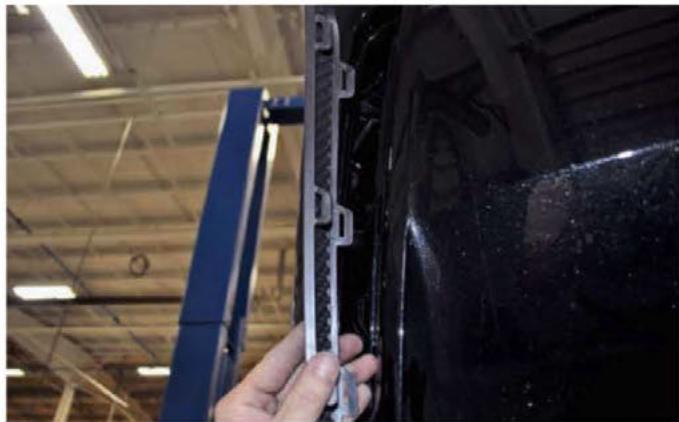
02 To maximize performance, we also went with the Double Helix X-pipe, which can add around 5 horsepower and 5 lb-ft of torque when used with Corsa's muffler system. It's not like the old days of letting loose the corked-up potential trapped by restrictive mufflers, but the exhaust swap definitely adds bark to the Corvette's bite.



03 There aren't any exotic tools required for the installation, but it's more involved than previous-generation Corvettes because it involves the removal of the lower rear fascia, starting with a pair of 10mm bolts above the factory exhaust tips. A deep-well socket and extension are required to reach them.



04 Ten 7mm fasteners hold on the bottom corners of the lower fascia and they're removed next.



05 These plastic fascia inserts come out after that. They're simply clipped in place and can be removed by pushing the mounting tabs outward from the inside of the fascia.

"The seventh-generation Corvette is a technical marvel—and an engineering challenge when it comes to the exhaust system," said Craig R. Kohrs, TMG Performance Products vice president and general manager. "Corsa engineers spent more than seven months and well over 1,000 hours testing a wide range of possible exhaust solutions to deliver the ultimate Corvette exhaust system. The resulting Corsa exhaust system integrates perfectly with the advanced technologies already available on the vehicle and works in conjunction with the C7 stock upstream valves, creating a free-flowing, high-performance exhaust system with an aggressive exhaust note and no drone, regardless of driving mode or speed."

Corsa's C7 system is based on their patented "reflective sound cancellation" technology that was introduced for the C5 Corvette. Chambers in the muffler turn drone-enabling low-frequency sound waves around 180 degrees. By reversing, or reflecting, the sound waves back on one another, they essentially cancel out each other. It's pretty much the same idea used with noise-cancelling headphones. And don't forget: It had to be done for the four- and eight-cylinder modes of the LT1.

The system had to be tuned, too, to deliver a pleasing, appropriately performance sound at wide-open throttle. In fact, Corsa developed two sound levels: Sport (loud) and Xtreme (louder).

You've probably noticed that we haven't said a word yet in this story about the power advantage that comes with an aftermarket exhaust system. That's because, truthfully, there's not really much to tell. Starting with the C6, the Corvette's factory exhaust systems left little on the table when it came to restriction, and the C7's left even less. Corsa says its system is worth about 5 horsepower when used with an optional 3-inch-diameter Double Helix X-pipe. That's a wash in our book, but as we said from the beginning, adding an exhaust system to a new Corvette these days is more about making an aural statement than uncorking a vast reserve of horsepower.



06 Next, the lower fascia is unsnapped at each corner by pushing the mounting tabs inward while simultaneously the fascia up and backward. This view from the underside of the fascia shows the tab at the lower left and the slot it connects to at the right (arrows).



07 There are also 10mm fascia fasteners at the top edge that must be removed. They're hiding behind reflectors and were only snapped into place at the factory, so care must be taken not to damage the mounting tabs when removing them.



08 A couple more of the upper fascia fasteners are located behind the license plate, so it has to be removed, too.

We should add that Corsa's X-pipe is an "off road use only" part, so keep that in mind before adding it to your new Corvette before its next smog test.

We also discovered there's more to swapping the exhaust system on a C7 than Corvettes of years past, including removing the lower part of the rear fascia. It's a more involved process that may take it out of the realm of garage bolt-on for many enthusiasts. The guys at Smokey's Dyno and Performance, in Akron, Ohio, tackled the job on our subject C7. We also ran the car on the dyno for good measure, confirming our expectation of comparable power output to the factory system.

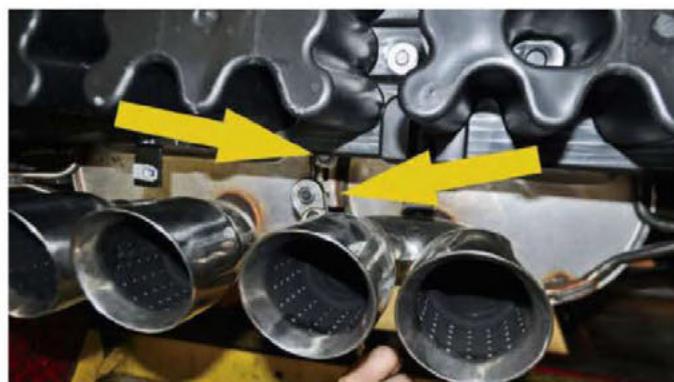
On the plus side, the Corsa muffler assembly is four pounds lighter than the stock system and the Double Helix X-pipe sheds another two pounds. There's nothing wrong with shaving a few pounds off the curb weight.

And what does it all cost? Well, the average retail price for the muffler/exhaust tips kit is right around \$1,700 and the X-pipe is around \$600, judging by what we've seen online, putting on the parts cost around \$2,300 as depicted in our story.

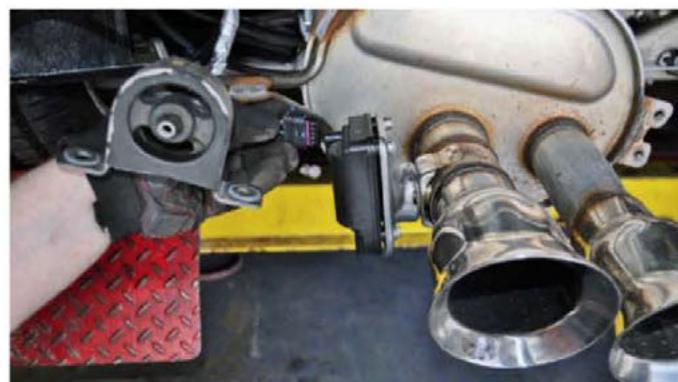
Check out the accompanying photos to see what it takes to change the voice of a C7 Stingray. **VETTE**



09 Finally, the lower fascia is removed, providing full access to the exhaust system.



10 Next, it's time to disconnect the mufflers, which includes removing a couple of 10mm bolts that lock the mufflers together (arrows), as well as hangers on the outer sides of each muffler.



11 There are also electrical connections to disconnect for the internal valves in the exhaust system. With the NPP exhaust, there's a connection at the rear of each muffler; and all models have a connection at the front of each muffler for the Active Fuel Management system. On automatic-equipped cars, the transmission must be put in Neutral to provide enough clearance with the shift linkage on the driver-side.



12 To allow the stock system to droop, 15mm bolts for each axle pipe must be removed. In fact, this will help provide access to the front valve connections.



13 With the valves disconnected, the exhaust system should wiggle free of the factory crossover pipe, one side at a time.



14 Next, it's on to the replacement of the factory crossover, which is accessed when the factory underbody shield's 24 fasteners are removed. They include 22 13mm bolts and a pair of large 18mm bolts.



15 There are some hangers and other fasteners to contend with, but the X-pipe replacement is a simple "remove and replace" procedure. And yes, those two chambers at the right side of the factory crossover shown here are catalytic converters, which aren't part of Corsa's Double Helix X-pipe. They're unmonitored converters, so their removal won't throw a code but their elimination officially makes the Corsa X-pipe an "off road only" part.



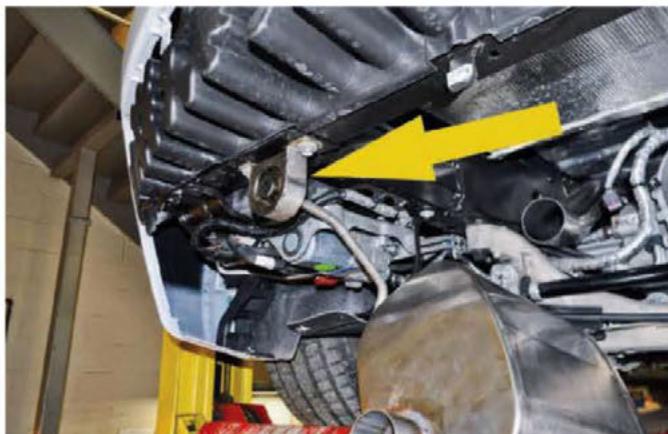
17 Next, the valve sections are joined to new axle pipes via clamps. Corsa did a great job in identifying the corresponding pipes, marking them with a D for driver's side and P for passenger. They also included arrows on the pipes (arrow) that line up with the center of each valve, ensuring the pipes are correctly "clocked."



16 With the X-pipe swapped, it's on to the axle-back portion of the exhaust system. We started with lopping off the Active Fuel Management valves from the stock pipes to reuse with the new system. Corsa includes templates to lay on the pipes for the proper cutting location.



18 The pipes are slipped over the axle and connected to the X-pipe. The wires for the Active Fuel Management valves are also reconnected after the pipes are installed. The other valve for the NPP exhaust (if originally equipped) is eliminated, so the wiring for it can be tucked up into the chassis.



19 After reinstalling the hangers (arrow), the driver-side muffler must go in first because its mounting tab for the connection that holds the mufflers together sits farther back.



20 Looking from the backside of the system, the overlap of the mufflers' connecting tabs is visible. The supplied fasteners are inserted to hold them together, but shouldn't be completely tightened until the exhaust tips are properly located.



21 With the mufflers in place, but not tightly torqued, the lower rear fascia is reinstalled and the exhaust tips are attached.



22 When the exhaust tips are centered and level within the fascia opening, the system can finally be completely tightened, wrapping up the installation.



23 On Smokey's chassis dyno, our C7 project car made 397 rear-wheel horsepower and 384 rear-wheel torque. Output climbed to 407 rwhp and 388 rwtq with the new exhaust system. No, it didn't add a ton of power, but oh what a difference in the sound! This new Vette sounds ready for the autobahn or even Le Mans. Bring them on!

Sources

CORSA PERFORMANCE
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After the Corvette passes its paint inspection it is then driven to a test booth where all of the car's mechanical components are tested. Jeff continues to inspect the fit and finish of the Z51 while it is still under the high intensity lighting.



MEET JEFF LAMARCHE!

CORVETTE'S NEW PLANT MANAGER IS QUALITY MINDED

WALT THURN WORDS | **WALT THURN & NCM** PHOTOS

On March 1, 2014, Jeff Lamarche was named the Bowling Green Corvette Assembly Plant's manager. Jeff replaces Dave Tatman who retired on the same day after 34 years of service. A California native, Lamarche joined General Motors in 1981. He is the son of a UAW autoworker. He holds a bachelor's degree in Electrical Engineering and a Masters in Business Administration. Jeff's previous manufacturing assignments have been in Los Angeles, Van Nuys, Marion (Indiana), GM De Mexico, Linden (N.J.), Fairfax (Kansas), Global Quality Staff, San Luis Potosi (Mexico), and Brownstown (Michigan). He is committed to improving quality while implementing lean manufacturing principles. His goal is to inspire employees to be the best. Team VETTE met with Jeff at the assembly plant for our interview. Then Jeff and Andrea Hales (Corvette Plant Communications Manager) escorted us to the assembly line to watch Jeff inspect C7s during the build process. Here is what we learned about him during our interview.

Vette: We noticed you haven't spent a lot of time with Corvettes?

JL: That is correct, I have been a manufacturing guy for most of my career. This is the first time I have crossed paths with Corvette manufacturing.

Vette: Is the C7 manufacturing process different than previous models you worked with?

JL: Absolutely. Having a panel off process is unique within GM. Instead of body on frame or body integrated into the frame, the Corvette assembly method is very different. This car has a rolling chassis with composite tubs with panels that require assembly. This car also requires extensive use of adhesives during production. This build method is unique.

Vette: Does the C7 have any new technology that was not used before?

JL: Yes. Corvette uses new methods to join aluminum together. GM developed a spot-welding process to join aluminum instead of pop rivets. In the past, pop rivets were the attachment method of choice when joining aluminum. We also use screws that tap their own holes and make their own threads. We use these to secure panels together while the adhesives are setting.

Vette: Every new model has production issues. Do any

come to mind during the launch of the C7?

JL: We have had a few. We review the warranty claims and like any new launch we have to make assembly adjustments and design tweaks. One issue that comes to mind is our customers thought the lighting level in the IP (Instrument Panel) was too dim. So we had to make software changes to brighten it up. Since we made the change the warranty claims on that issue have disappeared.

Vette: What version (base, Z51, or convertible) has the highest production?

JL: Coupe to convertibles are 2 to 1. As of April 3, we have built 10,168 coupes equipped with the Z51 performance package, which represents 42 percent of our total production. We also have built 3,129 convertibles (13 percent) with Z51. So our total Z51 production is 55 percent. The standard Stingray coupe is next with 7,920 sold, or

32 percent of our total production. The Z51 option is hot and it is difficult to keep up with demand.

Vette: How many manuals vs. automatics have been produced?

JL: Manual transmissions account for 35 percent of our production. We are curious what impact the new eight-speed automatic will have on this number in 2015. It really looks like a strong package.

Vette: How many are built per day and on how many shifts?

JL: We are building 165 cars per day on one shift with overtime. As of April 3, we have built 24,497 C7 Corvettes. On a straight time basis without overtime we can build 137 units per day.

Vette: Do you foresee two shifts?

JL: No. Not at this time.

Vette: Why?



Jeff Lamarche was named Bowling Green Corvette Assembly Plant Manager on March 1, 2014. His previous assignment was at the Chevrolet Volt battery assembly plant in Brownstown, Michigan.



This Crystal Red Metallic C7 coupe is one of 167 Corvettes that are being built per day at the Corvette Assembly Plant. This car is having its body components installed before it meets with the engine and drive-line later on down the assembly line.

[LIFESTYLE] MEET JEFF LAMARCHE!

JL: The line speed of the C7 is much higher than where we ended with the C6. Right now we are building 17 plus per hour and the C6 was 8 per hour.

Vette: Does the convertible create any new issues during the build process?

JL: Some. For example, water leaks require more time to assure they are leak free. We also spend more line time on the fit of the convertible cover. Electrically, the convertible is well integrated into the overall systems. Convertible production has come a long way since the chop shop production methods used in the past. Now it's seamless.

Vette: Will there be a price increase for the 2015 models?

JL: We really do not know. The plant doesn't get involved with pricing.

Vette: Your plant will build many versions of the 2015 C7. What challenges does that present for your part supply, delivery, and plant staffing?

JL: There will be a small addition to staffing. The biggest complexity will be the increase in part numbers that will be going into the different versions. We will have an entire new front end, for example, that will have to be assembled. We also have to add new components that will slightly increase the build complexity.

Vette: Your plant is offering tours. What are the tour hours, and is there a charge?

JL: We are offering three tours per day (8:30 a.m., 11:30 a.m., and 1 p.m.). Each costs \$7 per person and closed-toe shoes are required for safety. The museum also offers a wide variety of private tours, and the most popular are the buyer's tours. This is where a buyer spends two days with us while their car is being assembled. It is separate from the museum delivery. For me it's pretty cool, because new owners have huge smiles on their faces watching their baby being born.

Vette: Your previous manufacturing experience has been with trucks and passenger cars. I am sure those customers were not as passionate over watching their trucks or sedans being built. This has to be a little different for you?

JL: It is a lot different and is requiring a lot of adjustment for me. In the short time I have been in this position I have done more interviews than I have during my entire 32-year career. It is very different but exciting to have direct contact with the Corvette customer. I get letters every day, some good and some not so good. Anyone that has

the museum logo on their letterhead is a passionate customer! I do have a personal experience about my new job. My son goes to a university in Kansas City and we were talking about the recent Bash on the phone and he said "Dad, can you send me some of your business cards?" He never asked me that question before!

Vette: Have you ever owned a Corvette?

JL: Sort of. When I left Mexico in 2012 to manage the Volt battery plant in Michigan I had my first Corvette experience. The person I replaced had just ordered a yellow Grand Sport convertible company car. She was depressed that she would not get that car. I needed a company car so I asked if I could have her order and was told yes. It became our spring/summer car and my wife and I were hooked. That car hooked me when other Corvette people actually waved! That stopped when I got my next company car. I really miss the wave! Now my wife and I are deciding if we want a '59 straight axle or a new C7.

Vette: You began working at GM in 1981 as a Co-Op. What was your first assignment and what were your duties?

JL: Early on I did maintenance and engineering. That was followed up with jobs in quality. I have been involved in quality a lot. I have had quality assignments in car plants, stamping plants, transmission plants, and batteries.

Vette: What challenges are you presently facing in your new assignment?

JL: Besides keeping up with the volume, it's driving home the importance of quality.

Vette: Is quality not where it needs to be?

JL: It's good, but from my experience there are ways to make it better, and that is my mission.

Vette: The National Corvette Museum plays a large role in promoting the Corvette brand. Will you make any changes to how the plant supports the museum?

JL: No. I respect the relationship the plant and the museum have and definitely will continue to support that effort. The museum delivery is a very innovative program and is popular with customers and the corporation. Recently, Honda visited us to study the museum delivery process. They are introducing their new NSX sports car and want to duplicate our delivery method for their new car.

Vette: Jeff, thanks for taking time to speak with us and we wish you the best of luck in your new assignment.

JL: Thanks, and I am sure we will speak again. **VETTE**



This Laguna Blue Z51 coupe is nearing completion and Jeff is inspecting the fit of the headlight assembly and how well the front bumper is fitted onto the car. The final fit of the bumpers on the front and back of the car play a big role on how well the car appears to the customer. This is also a good time for Jeff to inspect the color match between the fenders and bumpers.



Jeff's practiced eye looks for gaps in the body seams, paint flaws, and other items that will need to be corrected before the car is ready for delivery.

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THE ORANGE

RACED, PRESERVED, THEN RESTORED

SCOTT ROSS WORDS BILL ERDMAN PHOTOS

At first glance, you might think that this Corvette Stingray convertible is just another one of the 16,633 drop-top Sharks built during the 1969 model run. But then you notice that hood, with the dome that's bigger than the ones on the 427ci-powered '69s you've seen. That's the visual clue that there's more than an L36 or L72 big-block under it. In fact, there's a lot more under it that can be summed up by the engine's regular production option (RPO) code: ZL1, the aluminum version of the monstrous L88 big-block.

In 1969, when Chevrolet's ad slogan was, "Putting You First, Keeps Us First," they didn't want just any retail customer to have the ability to get their hands on one of these engines. They were flat-out race powerplants that required 103-octane gas. They even had a sticker on the console warning of engine damage if a lesser fuel was ever used. And their streetability was limited, at best. That's why both engines' factory horsepower ratings were five horsepower lower than that of the tri-carbed iron-block L72. It's also why those options' sticker prices were so much higher

than the L72, with the L88's tariff at \$1,032.15 and the ZL1's at a stunning \$4,718.35, not counting the \$770 worth of mandatory options like K66 Transistorized Ignition, G81 Positraction, J56 Special Heavy Duty Brakes, and F41 Special Front and Rear Suspension. (For obvious reasons, options like air conditioning or a radio were not available.)

As a result, there were only two '69 Corvettes built at St. Louis with the ZL1 option that were sold to retail customers.

But there was one Corvette buyer then who had no problem with the ZL1-powered



ONE



[FEATURE] THE ORANGE ONE



Corvette's \$9,900-plus sticker price: John Maher, a western Pennsylvania drag racer who was a personal friend of Don Yenko. Says Kevin Mackay of Corvette Repair in Valley Stream, New York, who restored this ZL1, "He had an International Blue '68 L88 originally, and when he found out that they were making another car that was lighter, and with the aluminum block, he decided to order that, and he got it through Gulf Oil and he drag raced the car."

The question then became one of "as-is" preservation versus restoration. "It was a judgment call whether it needed to be restored," says Bruce, who remembered seeing it race when he was a kid. "I ended up sending the car to Kevin Mackay, and we decided to take the car back to its original specs for Bloomington Gold purposes."

Unlike more than a few Vette restoration projects, this one didn't have any problems with missing parts or a less-than-intact body.

the only ZL1 to have closed-chamber cylinder heads."

Though there was no need for any worldwide parts searches, the restoration process was a long and painstaking one. "It was at Kevin's for the better part of two years," says Bruce. Kevin adds, "We wanted to bring it back to the way John Maher got it right out of the showroom. We put it back to Monaco Orange, which it was all its life, but without the graphics on it. We put back the stock

“OVER THE YEARS, IT HAD GONE THROUGH A FEW PAINT SCHEMES, BUT I BOUGHT IT FROM THE ORIGINAL OWNER WHO'D RACED THE CAR FROM DAY ONE.”

John raced the Monaco Orange ZL1 "Winning Automatically," with its heavy-duty Turbo 400 for a number of years, while adding different stripes, colors, and decals during the years he campaigned it.

Eventually, it was parked and stored where it avoided the ravages of time and weather. There it stayed until he sold it to Bruce Perrone, its current owner. "I bought the car in 2007," he says. "It was largely unrestored. It had just under 3,000 miles on it. Over the years, it had gone through a few paint schemes, but I bought it from the original owner who'd raced the car from day one." Bruce adds.

"All the original components were there," says Bruce. "The original fiberglass had never been touched. The body itself is pristine."

There was more under that original 'glass, notes Kevin. "The car has the nicest frame that I've ever seen, because it only has 3,000 original miles on it," says Kevin. "It was like brand new." Adds Bruce, "All the correct crayon markings were on the car when we did the restoration work."

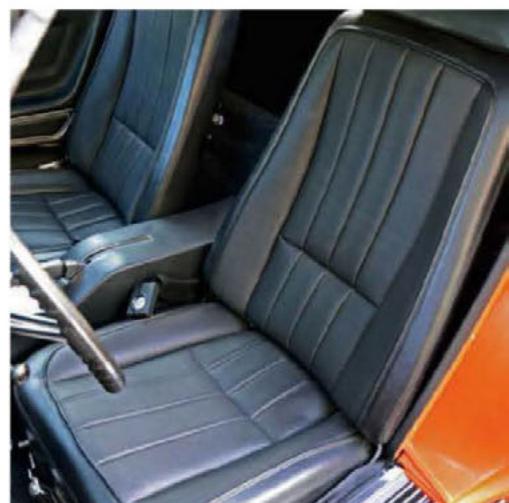
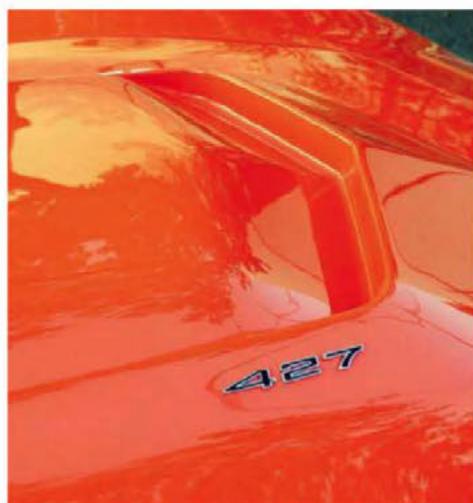
And there was a surprise atop that Stingray's original aluminum engine: its cylinder heads. "I believe it's the very first ZL1 built," says Kevin. "Because it's probably

wheels, took the body off the chassis, and rebuilt everything."

When done, it was time for the judging of a car that already had a reputation in the world of Vettes as being a genuine ZL1. "It's accepted in the hobby as a ZL1," notes Kevin, "because if it wasn't, they never would have put it on the Bloomington Gold certification field to have it reviewed."

That detailed review, almost as painstaking as the restoration itself, resulted in Gold certification at this past June's Bloomington Gold meet in Champaign, Illinois.

Though it has complete factory



documentation, and an ownership history verifiable through its original and present owners, Bruce is taking another big step in that direction. "I've been working with David Burroughs," he says of his work with the founder of Bloomington Gold. "His company is called Prove-It, and he is completing authentication of the car now."

David explains further. "The issue is to determine if we can provide the degree of probability that the car is a no-doubt-about-it authentic ZL1. When you get into cars of this type, what the owner wants to do is have more than just his word, if he can have it proven conclusively."

(As of this writing, the work of David and Prove-It's team of experts was still in progress.)

So, what's it like to drive? "Right now, it's relatively tame," says Bruce. "Before we put the car back to original specs, it was a real beast. When John, the previous owner, had the engine rebuilt back to its original specs, my recollection is that it dynoed at around 600 horsepower.

"The car is an automatic, so the M40 (Turbo 400) is L88-spec, and it has a rather high stall speed.

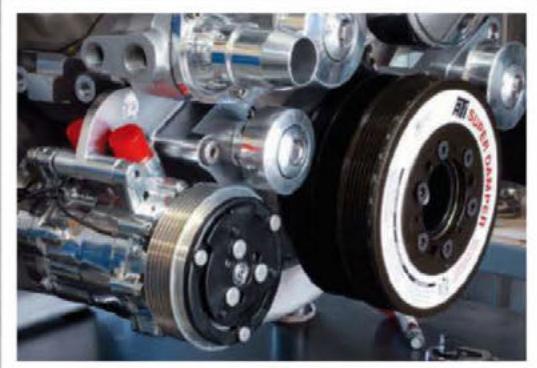
"It's a brutal car. It's very fast."

And it's not your typical "OK Used Car" of that era, either! **VERTE**

NO SWEAT

INSTALLING THE UNDERHOOD COMPONENTS OF VINTAGE AIR'S GEN 4 SYSTEM

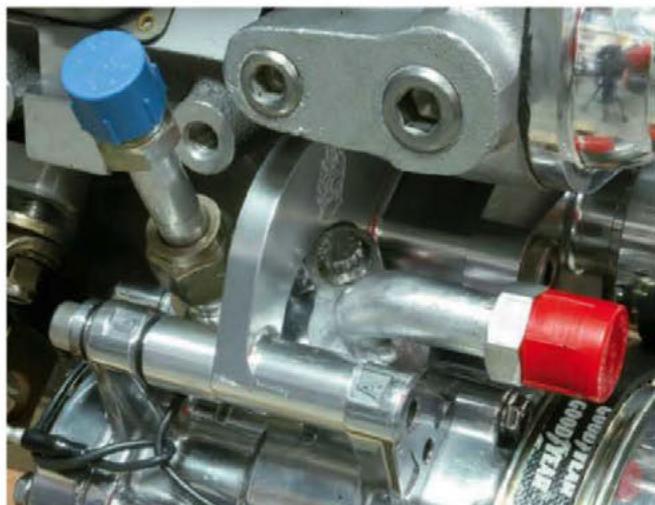
JEREMY D. CLOUGH WORDS | PHOTOS



01 We started the Vintage Air installation by bolting the polished compressor into place on the front of our LS3 416. While there are other serpentine systems available that put the compressor in a higher, and frankly easier to deal with, location we used a Street Shop accessory drive that mounted it low in a factory type position. This system also utilized a dedicated drive belt.

Those who have been following Scarlett, our '72 coupe project car, may recall the ill-starred road trip we took in her to the Georgia coast in search of barbecue. After driving several hundred miles on backroads, at the very height of a brutal southern summer, we told the story as The Pig Tour (Dec. '12), which should have amply conveyed the misery resulting from the car's lack of functional air conditioning. In the end, we found our barbecue, and it was us. After that experience there was no question Scarlett would get new air conditioning, and there was similarly little question that we would use Vintage Air for our retrofit.

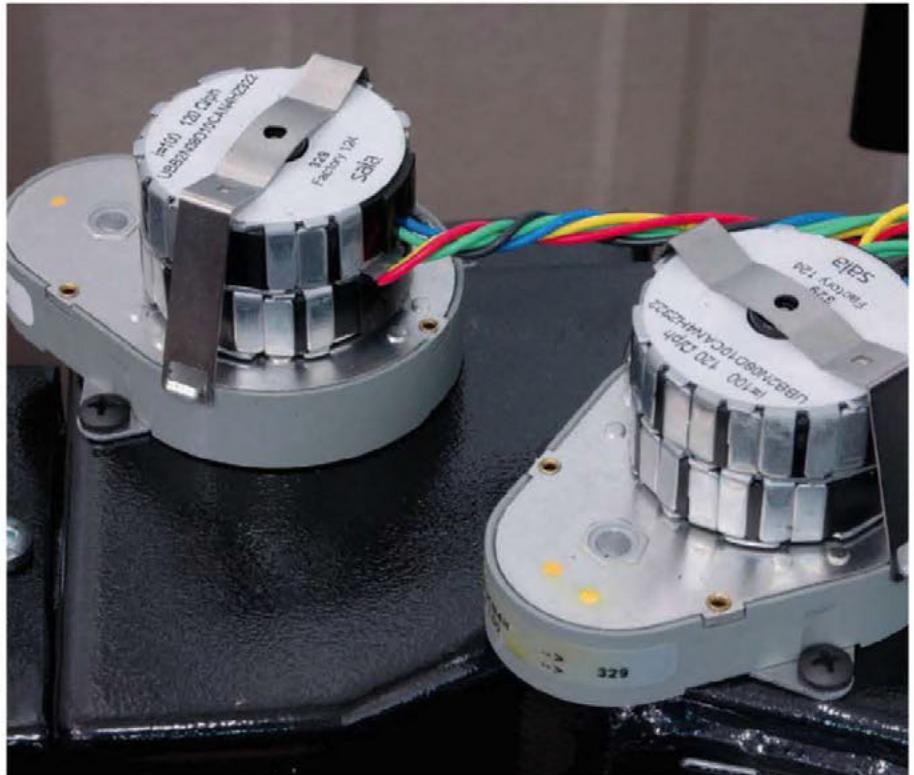
Well-known for their high-performance air-conditioning systems, Vintage Air offers everything from their universal-fit Gen II system, which can be installed in virtually any



02 Part of what we had to do to make the compressor fit, without interference, was to modify the compressor fittings so the hoses could be routed around the front suspension components. While we simply used an extension at the rear, we welded up a tight 90-degree elbow for the front fitting.



03 Here's the evaporator unit from Vintage Air. When installed, what you see is the top. No doubt, it looks pretty daunting, but a mix of mocking things up with both the dash and engine out of the car, and careful attention to the instructions, made it relatively easy to get it in the car.



04 One of the advances of the Gen IV Vintage Air system is the upgraded electronics that are used to control the system, including these stepper motors. The factory box used a vacuum system for these controls, with all of those attendant difficulties.

car with room for a condenser, adequate air-flow, and an engine that can drive a compressor, up to their sophisticated Gen IV system, which is what we installed. Available in either an evaporator kit, or the complete kit we ordered, the SureFit Gen IV system completely eliminates the problematic cable-and-vacuum operating system of the factory air conditioning, replacing it with a fully electronic control system. For those who, like me, want to keep factory-appearing controls, the system still uses the factory control panel, with only fairly simple internal modifications.

There are two important stages in installing the kit: the physical components that have to be installed to actually create the cold air, most of which go under the hood, and the parts that go under the dash (including the

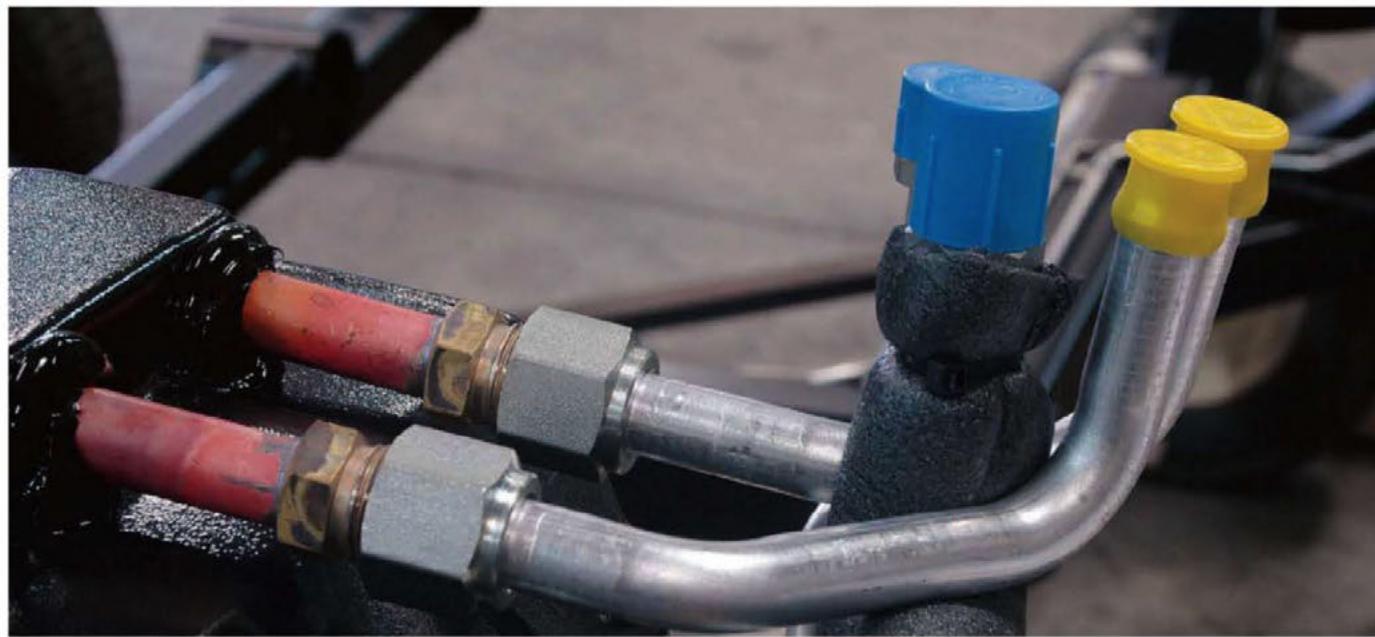
wiring, controls, and vents) and get the cold air into the passenger compartment. We'll start with the underhood parts in this installment, and follow up with the dash side of things next month.

The installation actually begins during assembly of the front accessory drive on the engine, when the compressor is installed. This was a task we chose to do while the engine was still outside of the car. Since we located the compressor low on the passenger side, in the standard location for an LS-powered Corvette, we had some interference issues with the frame and suspension components, and had to modify them to clear the compressor, as well as weld up custom fittings for the hoses that would bolt to the compressor. For those interested in a slightly less-involved installation, Vintage Air's FrontRunner pulley system will mount the compressor higher, about where we put the alternator.

That'll make the hot air cool. Next month we'll get the cool air into the interior and tell it where to go. **VETTE**



05 Because Scarlett was a factory air car, we didn't have to cut the oval holes near the top of the radiator core support part of the fenderwell that the hard lines pass through as they go to and from the front-mounted condenser, which are shown here in the upper right part of the photo, and with the core support removed. Non-air cars will need to use the included template to do a little sawzall surgery here.



06 Before the evaporator can be installed, it first has to be assembled, starting with the hard lines that will go from the box through the firewall, and which require O-rings that should be lubricated prior to assembly. Once bolted securely in place, the larger suction line will need to be insulated: the yellow-capped lines are the heater lines.



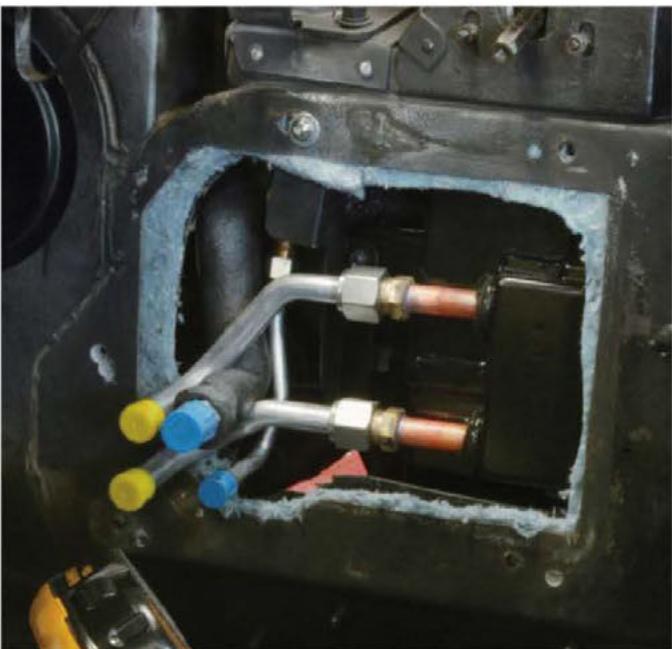
07 The mounting brackets also have to be bolted into place on the evaporator. There's one on the back of the box that mounts to the firewall and one that goes on the front and screws into the birdcage. I found the instructions a little vague on this part, and installed them incorrectly the first time, but fixed the problem when the box wouldn't mount properly.



08 You'll need to drill additional holes around the firewall opening prior to mounting the box. While we had the luxury of drilling these from the engine compartment, since the engine was out when we did it, the template is oriented for use from beneath the dash.



09 The evaporator in place and screwed to the birdcage with a pair of sheetmetal screws. There's a piece of clear plastic included with the kit that's supposed to be attached to the top of the box: we used a few dabs of black RTV to hold it in place. The ducting will later attach to the plenum on the left side of the box, and the controller will plug in through the rectangular cutout in the mounting bracket. You'll also need to drill a drain hole in the floorboard/firewall area and connect it to the box.



10 With the box installed under the dash, the four hardlines protrude through the firewall into the engine compartment. Sealing that up is the next priority. The heater hoses are capped in yellow, and use the familiar nipple and hose clamp arrangement, while the blue-capped hard lines are AN.



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11 The fresh-air vent inside the car will need to be sealed in two places: on the firewall and the inside vent near the kick panel. We used the supplied block off cap, and sealed it up with black RTV. It helps to be able to reach this from the rear, so it's wise to install this before the box, and before the interior block off.



12 To cap off the inside part of the fresh-air vent, you'll first remove the vacuum-controlled door assembly (and in our case finding a long-lost wrench inside and getting a spider bite) and then install the foam-sealed plastic cap that comes with the kit. Secure it in place with a pair of sheetmetal screws, which is a little bit of a trick in the confined space you'll be working in.



13 Before we installed the firewall cover, we insulated it with a combination heat/sound deadener, which was carefully cut to shape. With the stout LS3 and sidepipes, the car is going to be somewhat unavoidably loud, so there's no sense in not doing what we can to make it manageable.



14 The firewall with both the cap and firewall cover installed. As with the fresh-air cap, we sealed the firewall cover in place with black RTV. There's another firewall cap yet to come that will go around the hard lines, sealing them with rubber grommets.

15 We ran the heater hoses, which attach with a hose clamp, when we assembled the engine cooling system. Once all the A/C components are in place, however, you'll need to assemble the AN-style coolant lines that go between the evaporator, compressor, and condenser. Once we measured the lines and cut them to length, Seth Wood, of Lucky's Restorations, used a vice-mounted crimper to crimp the hose ends.

16 And here are the complete hoses. When you're crimping the hose ends, be aware of which way the ends are oriented. Those with fittings that have a bend at either end will need to be lined up correctly relative to each other before crimping, or it will be difficult or impossible to install the hoses properly on their fittings.



17 The hoses installed at the firewall, with the heater hoses on the left, and the coolant hoses on the right. Note the port on the upper suction line, you'll want to orient that fitting where you can get to it, otherwise servicing the system is going to be a real pain.



18 The radiator-like condenser attaches to the front of the radiator core support using the same bolts that hold the upper radiator clamps in place. We installed the condenser at the same time we installed our DeWitts radiator.



19 The condenser bolted into place on the core support. Note the upper hard line, which will pass through the oval cuts adjacent to the core support. The lower hard line, which is not visible here, goes to the drier.



20 The drier mounts just in front and to the passenger's side of the condenser using a simple clamp that's attached to a stud. While it comes with a binary switch, we replaced that with the optional trinary switch that will let us add an auxiliary set of fans to make sure we get the maximum cooling possible.

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CORVETTE

TOM MCCLEARY'S 550-RWHP RESTO-MODDED C3

SCOTT ROSS WORDS JOHN MACHAQUEIRO PHOTOS



How do you define "Corvette-ability"? Is it the combination of styling, handling, and power that makes it America's Only True Sports Car?

Tom McCleary's '77 is not only a rolling example of it, but it's one that's turned mid-12s in the quarter-mile with more than twice the factory horsepower on tap. It wasn't the beauty seen here when Tom got it. "It was all original, but it needed a lot of work," he remembers.

The engine in Tom's C3 was a non-original, none-of-the-above 350 that had seen better

days and was the first thing to go. Rich Powell built a new small-block based on a 0.060-over four-bolt main block filled with a Callies stroker kit with I-beam rods and 10.5:1 pistons that bumped it up to 392 cubic inches. Also going in and on: a Howards Cams solid roller camshaft, a pair of Dart Sportsman heads, an Edelbrock Victor Jr. intake, a 750-cfm Demon double-pumper, an MSD ignition system, plus Hooker shorty headers feeding a 2 1/2-inch Pypes exhaust system.

When the old 350 came out, so did the four-speed behind it, replaced with a 700-R4 overdrive automatic with a Perfect shift kit

2,600-stall converter and a B&M Mega shifter. Out back, the original Posi rearend was rebuilt by Ernie's Transmission in Jefferson Township, Pennsylvania. They also swapped in a 4.11:1 gearset.

Tom updated the '77s chassis with VBP monoleaf springs, which he got in a kit from Eckler's. "The suspension in the car now is completely adjustable," says Tom, noting the big weight savings over the OEM steel springs. He also added Monroe shocks, plus he replaced bushings and other age-worn chassis parts while rebuilding the factory four-wheel disc brakes. Outboard of them, chrome factory

-ABILITY



RPO YJ8 wheels wore 255/60R14 BFGs when these photos were shot.

When he got it, the '77's body needed help, which he entrusted to David Kiser Autobody in his hometown of Lake Ariel, Pennsylvania. "It's got new door skins on it," says Tom, who adds that the rear quarters were also replaced. A pre-'73 removable rear window and a three-piece "ducktail" rear spoiler also went on before the two-stage Deltron Burnt Orange paint.

Inside, Tom replaced the worn OEM soft trim with repro Buckskin leather seat, door, and other pieces, while adding a

Pioneer-based sound system. He kept the new-for-'77 steering column, which put the steering wheel closer to the dash for easier entry and exit and a more "hands-out" driving position.

Since these photos were taken, Tom's continued revising and upgrading his Shark. "It's got a new hood on it now," says Tom. "And there's now a 1,000hp aluminum BeCool radiator under it to better cool down that stroker small-block, which puts out 550 hp to the tires."

That power—enhanced by a 150-shot of nitrous from an NOS cheater system—led

to more upgrades. "I just put new Mickey Thompson Drag Radials on the back," says Tom. "I had problems hooking the car up because it was so light in the back. Now, with the new tires on I'm hoping for high 11s."

One thing that will help Tom get there: Higher-octane gasoline than pump premium. "When I went to the track last year, I put in CAM2 (racing gasoline), and the car ran totally different," he recalls.

Also going on is a new set of exhaust cutouts. "I didn't really like the look of the ones you see sticking out the side of the car," Tom says. "I've actually tucked all of that

[FEATURE] CORVETTE-ABILITY



underneath the car. I also lowered the car, so it's right to the ground now."

What's it like to drive? "It ran a 12.53 e.t. at 113 mph the first pass down the track," says Tom. "I now fuel it with Avgas, which really helps its street driveability. Prior to that, it would idle very rough while sitting at a stop-light. I would have to keep my feet on the brake and gas pedal to keep it running. Now, it's like a regular everyday car again. The ethanol in the gas was just killing that car."

All the while, Tom's '77's been a consistent show-winner. "I've got a pretty good collection of trophies, plaques, and stuff like that," he says. "I was at a show recently and got First place with it. I also took it to a Long Island Corvette show and the car took First place in its division there, too."

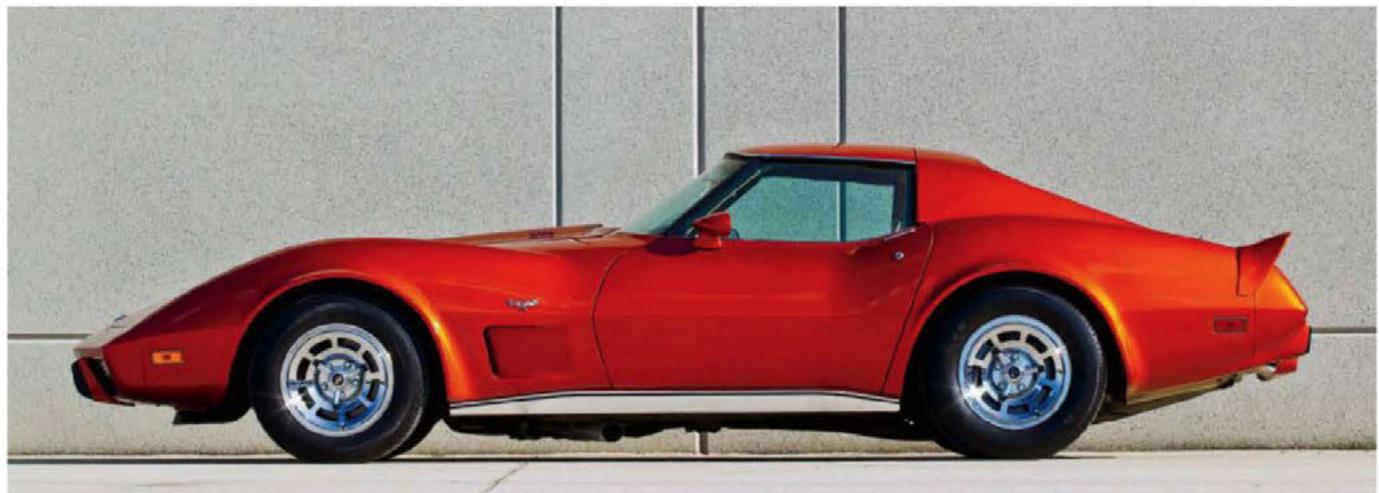
The late-'70s Vettes were maligned by Corvette purists for their lack of factory horsepower and their perceived lack of "Corvette-ability," but that didn't stop 49,213 people from buying one. A new Corvette production record, only topped by the '79's 53,000-plus. Nowadays, their "grand touring" nature is enhanced by builders like Tom, who has this advice for anyone thinking of similar project: "If you're getting ready to do it, be ready to bust your knuckles, because they're one of the tightest cars that I've ever worked on."

He adds, with a huge laugh, "Give me a call—I have a lot of extra parts!" **VETTE**





“I HAD PROBLEMS HOOKING THE CAR UP BECAUSE IT WAS SO LIGHT IN THE BACK. NOW, WITH THE NEW TIRES ON I’M HOPING FOR HIGH 11S.”





LEFT: During the second lift from the bottom of the sinkhole, Scott, Murphy and Daniel Construction attached straps to two wheels. The Corvette suspension took the strain and the car was successfully recovered. **RIGHT:** The most visible damage to the 1 millionth is the flattened windshield frame. Fortunately this car is repairable.

SINKHOLE CORVETTES—PART 2



The white/red convertible was always displayed in a place of honor inside the museum. Here it sits inside the Skydome, surrounded by other significant Corvettes.
Photo by Miranda East

EXPLORING THE HISTORY OF THE '92 CONVERTIBLE AND '93 COUPE SINKHOLE CORVETTES

WALT THURN WORDS
WALT THURN & COURTESY OF
NCM PHOTOS

The National Corvette Museum experienced a dramatic sinkhole event on February 12, 2014, that swallowed eight significant Corvettes. Each has been recovered and the damage ranges from slight to severe. In Part 1 ("Sinkhole Corvettes," Nov. '14), we provided you with information about the ZR1 and '62 convertible. Now here is the status of the next two Corvettes that were retrieved. They are the '92 one-millionth convertible and the '93 40th Anniversary Ruby Red coupe. Both represent major milestones in Corvette history and they are now on display in the museum's exhibit hall.

1992 1,000,000th Corvette

On May 15, 1992, Chevrolet General Manager Jim Perkins (now retired) announced an exciting Corvette milestone. He said that the 1,000,000th Corvette would be built on Thursday, July 2, 1992, at the Bowling Green Assembly Plant. A large crowd of Chevrolet executives, plant employees, and media were present to watch it roll off the assembly line at 2 p.m. It was adorned with a 1 millionth banner across its windshield. The white with red interior convertible matched the first handbuilt Corvettes that were produced in Flint, Michigan, in 1953. Perkins said that Chevrolet was donating this Corvette to the National Corvette Museum that was under construction at the time. The museum



In 1992, the 1 millionth Corvette sits next to the museum's 1953 Corvette near the Bowling Green Assembly plant sign. This 1992 Corvette was donated to the museum before it opened in 1994.



opened two years later and this Corvette has held a place of honor since the opening. The Corvette (VIN 1DYY33PXN5119134) is powered by a 300hp LT1 engine coupled to a four-speed automatic transmission. After it dropped into the sinkhole, the convertible could barely be seen, but it did appear to be sitting upright at the very bottom of the sinkhole. On Wednesday, March 5, Scott, Murphy and Daniel Construction saw it teetering on a rock. Concerned that it might fall into a cave below they decided to recover it. A rope was gingerly attached to its left rear wheel and it was slowly raised and placed upside down on

the sinkhole floor. Another rope was secured to the right front wheel and the Corvette was removed from the sinkhole. While the convertible received extensive damage to its windshield frame and body panels, it appears to be repairable. The good news is that the undercarriage and frame are undamaged.

1993 40th Anniversary Coupe

Karen Clark saved her money for a number of years in order to surprise her husband, Hill, with this brand-new 40th Anniversary coupe (VIN #14768) on his 50th

TOP: Karen and Hill Clark stand between Ruby and their Corvette Grand Sport. The couple donated their 40th Anniversary when they took delivery of their new Corvette.

ABOVE: Before the sinkhole, Ruby was displayed on this Stinger lift above the black '62 Corvette. When the floor gave away, Ruby rolled backward off the lift and fell on its roof. Considering the distance that it fell, the roof structure shows very little damage.

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[LIFESTYLE] SINKHOLE CORVETTES—PART 2



birthday. Since then, other Corvettes have passed through their life, but the couple could never sell their prized "Ruby." On August 3, 2011, the Clarks donated Ruby to the National Corvette Museum. At the donation ceremony Hill said "To have our 'Ruby' on display for others to enjoy and learn of our unique story is totally fitting. We could never sell her and with this donation we will be able to visit her whenever we so choose." Fast forward to 2014, Ruby was a victim of the NCM sinkhole event. It was on display in the Skydome sitting on a Stinger lift above a black '62 convertible when the floor opened up. Ruby rolled off the lift backwards and flipped upside down, shattering its rear window and damaging most of its body panels. It came to rest next to the "Blue Devil" ZR1 Corvette. Because of its location, it was the second sinkhole car to be retrieved by Scott, Murphy and Daniel Construction. It was raised by attaching straps to all four wheels and lifting it out of the hole on March 3. According to Bob Hellmann, Facilities and Displays Manager at the museum, "Ruby's undercarriage and frame appear to be undamaged and everything else looks to be in good condition and repairable." The Clarks were very happy to hear that their pride and joy is in the NCM display area so visitors can view this unique Corvette. **VETTE**



ABOVE: Ruby's painted roof panel fell out of its rear trunk storage location and landed on the concrete slab when the Corvette came to a rest upside down. It was logical to remove this car right after the ZR1 was lifted out. **TOP:** The right front side of the hood shows the worst damage and will need to be replaced. The interior is completely undamaged except for a large amount of dirt that accumulated after the fall. Most of the body panels only received minor damage.

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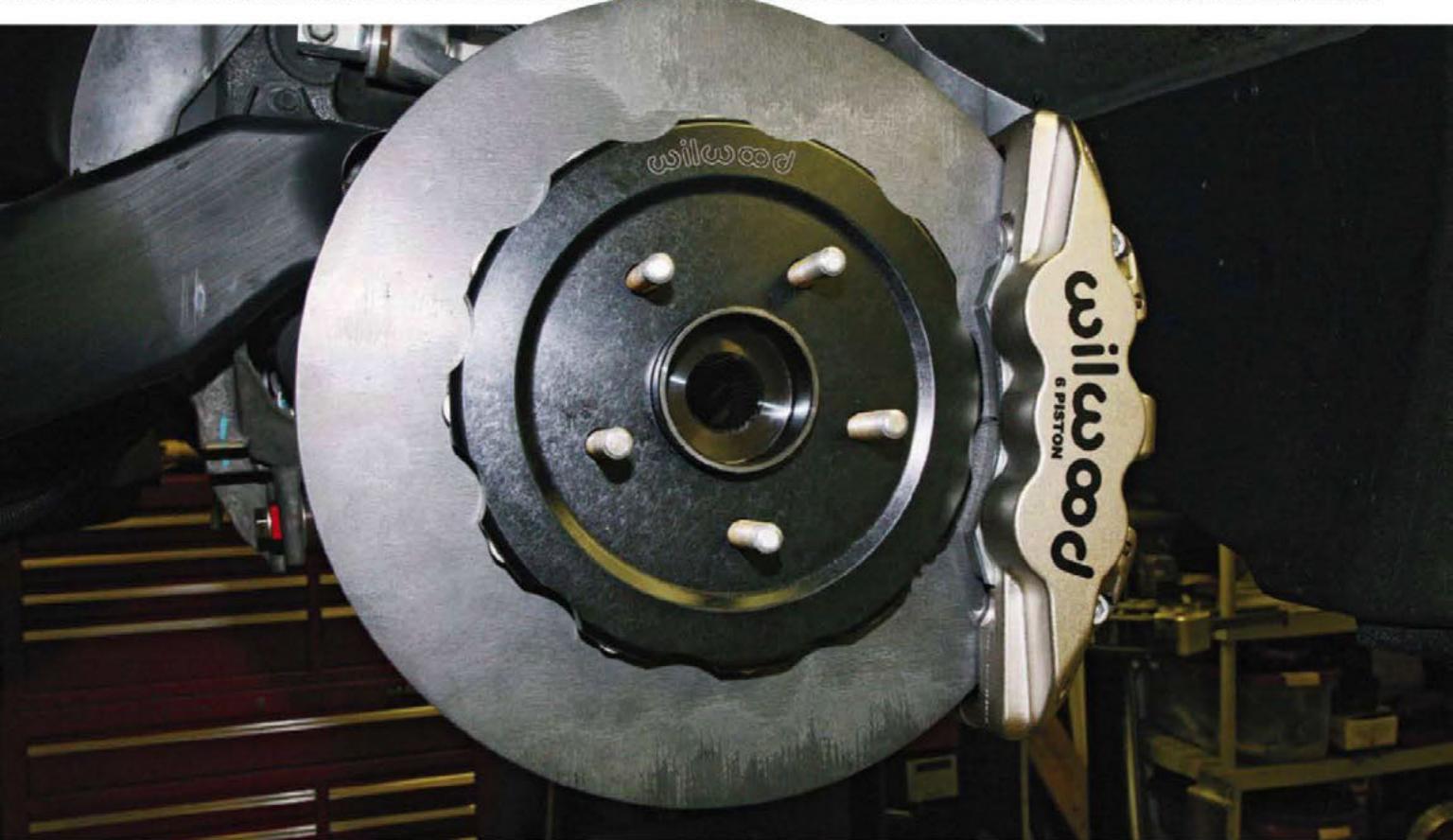
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CARBON FOOTPRINT

WILWOOD'S NEW CARBON-CERAMIC BRAKES WILL GET YOUR C6 STOPPING LIKE BIG BOYS.

PATRICK HILL WORDS | PHOTOS



Upgrading your brakes can provide more than just increased and more reliable stopping power in extreme conditions. In the case of installing a carbon-ceramic system, it means a reduction in reciprocating mass and sprung weight, faster steering response, quicker acceleration, quicker deceleration, and improved handling response. And, let's be honest, they just look cool!

To test out the benefits of Wilwood's carbon-ceramic brake system, we hooked up with Ultimate Street Car Association (USCA)

track day enthusiast and '07 Z06 owner John Parsons, who happens to be an engineer and serious car guy. John was preparing for a full weekend of track time on the road course at Daytona International Speedway, and was looking to find an increase in performance for his Z06.

It's a misconception that switching to carbon-ceramic brakes gives you stopping improvement because of their resistance to heat and its negative effects on braking performance. While carbon-ceramics do dissipate heat faster than cast-iron or other alloy brake systems, their main benefit is a massive

reduction in weight versus metal. In the case of our Z06, the Wilwood C/SiC carbon-ceramic rotors weighed half that of the cast-iron rotors we removed. Lower mass coupled with better resistance to heat-induced fade, means you can drive deeper into corners before braking and that equates to faster lap times.

This reduction in weight at the wheels provided numerous benefits, while still being fully functional and capable for use on the street. For anyone competing in USCA events, the entry vehicle must be legitimately street legal. While hard-core road racing brakes would provide enormous stopping power on



01-02 With the spindles removed for our brake upgrade, it provided the perfect opportunity to perform some other upgrades. The factory uses an eccentric on the lower control arm for adjusting camber. On the street or autocross this is fine, but on road courses with rumble strips, throwing a car hard onto the rumble strip can lead to the eccentric moving and throwing camber out of adjustment. The Vansteel lower camber plate kit (PN VS-97459-1) eliminates this problem. The blocks are CNC'd aerospace aluminum, and the bolts are zinc Class 10 fasteners. This moves the camber adjustment to the upper control arm with the use of shims, which makes adjustments easier when at a track or autocross event, with no need to get under the car.



03 Another upgrade was switching out the stock hubs (left) for Vansteel's heavy-duty racing hub assembly (right), (PN FBRB-9708SKFHD). It features higher load, larger diameter bearings, and higher temperature seals. The stock Z06 bearing

usually only lasts one to three races when running full road courses constantly, whereas the Vansteel unit can typically survive a whole year's worth of racing. These hubs fit C5 and C6 models (except C6 ZR1 and '09-'13 Z06), which are interchangeable between front and rear, and can maintain a sustained preload of 1.2 g's. The bearing hubs also feature the correct ABS sensors, so it's a plug-and-play unit. It's also what you find under a ZR1 Vette.



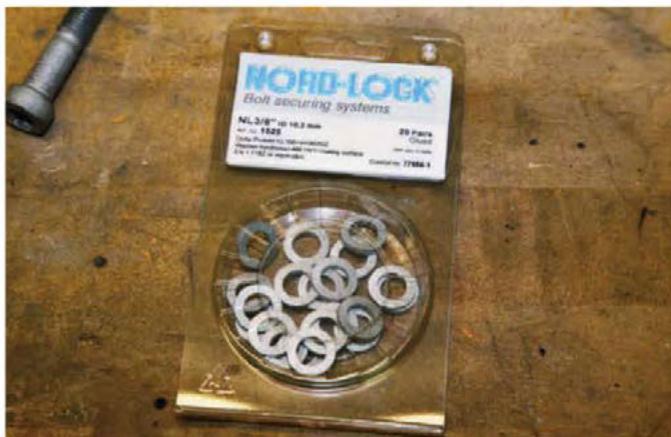
04 The lug studs on the Vansteel hub are heavy-duty ARP units, with extra length to accommodate different wheels and eliminate the effects of heat growth studs experience from heavy braking.



a road course, they would also be unmanageable for street driving. Wilwood's carbon-ceramic system gives increased performance on the track, while still being honestly viable and safe for the street. The one downside, aside from cost, is that your driving style will have to be adjusted because of the much more rapid heat dissipation of the ceramic system, and its need for a minimum amount of heat to function optimally. But those are easily overcome to gain the benefits of new technology.



05 At the start, our subject Z06 was equipped with aftermarket drilled steel rotors, that weighed in at nearly 20 pounds apiece. The problem with drilled rotors, in extreme applications like this, is they can develop fractures on the face of the rotor after numerous heat cycles. Another thing is that for every hole drilled in the face of the rotor, that's less surface area for the pads to grip for stopping.



06-07 For securing the ARP bolts holding the hub assembly to the spindle, Vansteel recommends these Nord-Lock washers. Unlike a normal lock washer, the Nord-Lock pieces use two flat washers with teeth that go underneath the bolt head. These provide a positive lock against the bolt, and hold tight even under extreme heat.



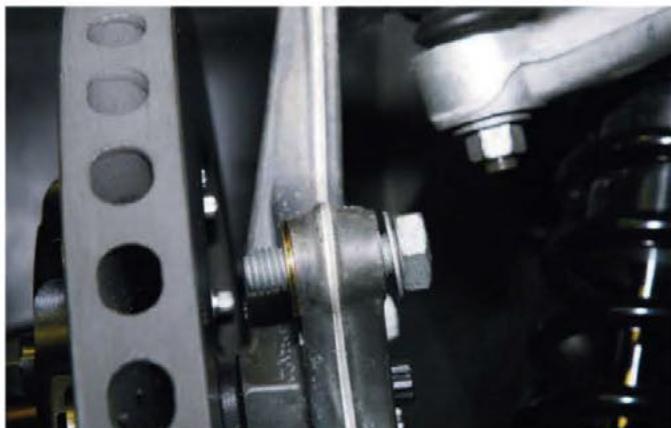
08 Once the bolts are torqued down, the ABS plug from the new hubs is secure to the factory tab on the spindle.



09 Here's how our revamped spindle looks now. At first glance, you wouldn't think there's anything different from stock. But internally, this assembly can take way more use and abuse than the stock setup.



10 Wilwood's C/SiC rotors are made from a proprietary carbon-ceramic material developed from Wilwood's extreme-duty military-spec rotors that have superior heat capacity versus conventional iron or titanium rotors, higher thermal conductivity (they can dissipate heat faster than conventional rotors), and offer tremendous weight savings as well. The Wilwood C/SiC rotors weighed in at 9.1 pounds apiece, less than half the weight of the ones we took off (18.3 pounds). That lighter weight means less reciprocating mass and parasitic loss on the car's drivetrain. The C/SiC rotors use Wilwood's exclusive Bobbin Mounting System that prevents rotor rattle.



11 The Wilwood caliper mounting bracket provides for adjustment to center the calipers on the rotor using the included washers. Because of the various manufacturing tolerances that have to be dealt with between the aftermarket and OE manufacturers, Wilwood provides for this to make installation easier on the customer.



12 The clamping force on our new rotors is provided by Wilwood's six-piston AERO6 calipers up front and AERO4 four-piston calipers in the rear, both finished with Wilwood's Quick-Silver proprietary nickel coating. The AERO6 bolts to factory spindles and work with the factory master cylinder. The caliper body is forged aluminum, and its closed bridge design gives the AERO6 more integrity with less flex under heavy braking. The Quick-Silver finish coats the exterior and interior of the caliper, reducing wear in the piston bores. The AERO4 rear calipers offer superior clamping force over factory calipers and integrates with the factory internal shoe parking brake system.



13 For installation, the calipers have to be centered on the rotors as precisely as possible, so a dial indicator or digital measuring caliper will be necessary. You should have the same amount of space between the caliper and the rotor on each side. As we said in caption 11, the washers need to adjust the caliper's mounting position, so it can be centered on the rotor.

[TECH] CARBON FOOTPRINT



14 With the calipers centered, it was time to install the pads. The closed bridge design of the AERO6 and AERO4 calipers means the caliper must be dismounted from the spindle before pad installation. To install the pads, you first remove the retainer snap ring, then the retaining pin can be tapped out.



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15 The pads in the AERO6 and AERO4 brake kits are specially formulated for carbon-ceramic rotors. Conventional pads cannot be used with carbon-ceramic rotors; they'll destroy the face of the rotor. The special Wilwood pads are designed to provide the most consistent stopping performance possible both at operating temperature and while cold. Like old-school organic brake pads, carbon-ceramic brakes operate best when they've got heat in them.



16 Included with the kit are new brake hoses and fittings to plumb the calipers into the factory hard line on the frame.



17 On the rear brakes, Sometimes the rotor can make contact with the backing plate in this area. Before installing the rear brakes, it's best to use a grinder and add some clearance so you don't risk the backing plate cutting into the rotor's rear face.



the benefits of lightening the rotating mass at the wheels translated into quicker lap times, more responsive steering, quicker braking allowing for faster entry speeds into turns, and more handling agility because of the decrease in sprung weight. This all while accelerating and decelerating between 150 mph and 70 mph. **VETTE**

18 You'd think a 14-inch diameter rotor this thick would be a heavy proposition. But the main benefit of switching to carbon-ceramic brakes is much lighter weight. A similar cast-iron rotor of the same thickness and diameter weighs in at over 18 pounds, while our new Wilwood C/SiC rotors tip the scales at a featherweight 9 pounds. On the road course at Daytona, the lighter reciprocating weight at all four corners translated into quicker steering, quicker acceleration, and lighter weight on the suspension, which had a positive effect on handling.



19 The last step was bleeding the brakes after we filled up the system with Wilwood's EXP 600 Plus high-temp brake fluid. Fully synthetic, it features a wet boiling point of 417 degrees Fahrenheit, and has been tested up to 626 degrees. Its formulation resists aeration and compressibility after it has been heated and pressure cycled a few hundred times, and also low moisture affinity to slow the absorption rate of water vapor.



20 All wrapped up, here's how the new brakes look behind our Forgeline GA3R wheels. After a full weekend of track time at Daytona, we were amazed that the rotors still looked like new and showed no signs of wear. And

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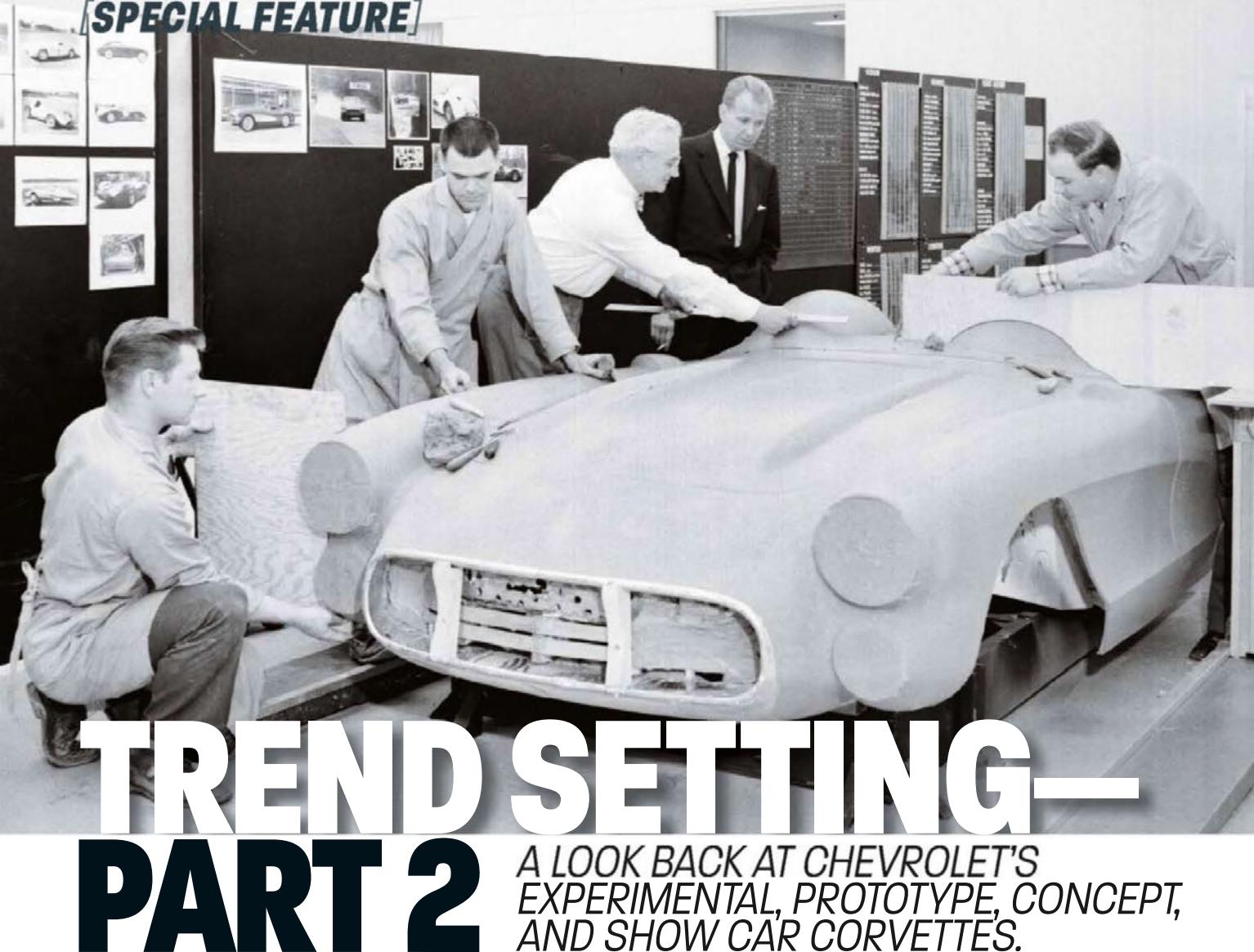
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TREND SETTING— PART 2

A LOOK BACK AT CHEVROLET'S
EXPERIMENTAL, PROTOTYPE, CONCEPT,
AND SHOW CAR CORVETTES.

SCOTT TEETERS WORDS | ILLUSTRATIONS **GENERAL MOTORS** PHOTOS

General Motors makes hundreds of kinds of cars and trucks. Some sell hundreds of thousands of units a year, which makes Chevrolet's Corvette a complete enigma. Given the small number of Corvettes sold every year, it is a modern American manufacturing miracle that the car survived for 61 years.

The Corvette was "officially" born on January 17, 1953 at the GM Motorama Show at the Waldorf Astoria Hotel in New York. To understand the impact of Harley Earl's two-seater sports car concept car, you have to look at typical cars of 1953. The car was low and sleek, and wasn't over festooned with styling gimmicks. Based on the response from attendees, Chevrolet rushed the car into production, and the rest is history.

Today, the Corvette is GM's flagship car. When Chevrolet unleashes a new Corvette, the automotive world stops to take notice. But things were not always this way. Up to the C4, there were many inside GM that wanted to see

the Corvette go away. For the first 20-some years, the car suffered from an identity crisis. Inside GM there were always those that wanted the Corvette to be something different; a lightweight sports car, a mid-engine car, a rear-engine car, a four-seater personal luxury car, powered by a boxer-type flat-six, Wankel rotary-powered, turbocharged small-displacement hemi-headed double-overhead cam powered, and even an all-aluminum car. Chevrolet kept the loyal faithful stoked with two or three experimental, prototype, show car Corvettes per year. From an enthusiast's perspective, this was endlessly fascinating.

This is the part two of a chronological look back at Chevrolet's high-profile experimental, prototype, concept car, and show car



Corvettes. Some of the cars had exotic names such as, "Astro-I," "Astrovette" and "Geneve." Others had experimental prototype numbers, such as "XP-700" and "XP-882." And some had sexy names, such as, "Nomad," "Mulsanne," "Snake Skinner," "Mako Shark," and "Tiger Shark." In retrospect, a few of the cars were the shape of things to come, but most were simply, "Here's an idea of something we're working on." Either way, it was all a ton of fun!



1956 SR-2 CORVETTE

The '56 Corvette was so well received that GM executives decided to indulge themselves with special racer versions of the Corvette. Harley Earl's son Jerry wanted to race a Ferrari, but Harley said, "No way!" So he offered to have a hot Corvette built for his son, and by June, Jerry had his Corvette racer.

Ultimately, three SR-2 Corvettes were built. The nose of Jerry's SR-2 was extended and the car had scoops on the doors, twin cut-down windscreens, and a short fin mounted in the center of the trunk lid. The interior had extra instruments, power windows, stock seats, a fire extinguisher, a wood-trimmed steering wheel, and a radio. Power came from a stock 265, dual-quad engine with exhausts exiting just in front of the rear wheels.

Bill Mitchell, upon learning of Jerry's car, wanted his own SR-2 – only better. From the outside, the most obvious difference was the much taller fin mounted behind the driver. Also, Bill's SR-2 was 3 inches wider and the body was hand-laid, lightweight fiberglass, and

had a 45-gallon gas tank. The doors were gutted and the handles were replaced with pull-cords. The interior had full carpeting, and a steering column-mounted tachometer.

A third SR-2 was a custom cruiser built for GM's president, Harlow Curtice. It had the low center fin, extended nose, and a louvered hood, similar to the Sebring racing Corvettes. Other special touches included blue leather seats, whitewall tires on Dayton wire wheels, and a special stainless steel removable top. Curtice's SR-2 cost \$50,000 to build in 1956. A year later, he sold the car to a neighbor.

The entire SR-2 adventure only lasted a year and a half. During that time all three SR-2s were retrofitted with 283 fuelie engines and four-speed transmissions. Jerry Earl's SR-2 was way too heavy and was treated with some serious weight reduction. Mitchell and Earl's SR-2s both saw real racing action. All three SR-2 Corvettes were bought and sold many times, and are still around.



1957 CORVETTE SS

The D-Type Jaguar was *the* car to beat in 1956. Harley Earl dropped a bomb by bringing a D-Type into the design studio, suggesting they install a Chevy engine, and restyle the car as a Corvette. Zora Arkus-Duntov was outraged and launched his own Le Mans racer.

Duntov got a quick approval for his Corvette SS racer. With Sebring only nine months away, Zora bought a Mercedes 300SL tube frame to use as a model for the chassis and his hand-picked crew worked day and night. Duntov had approval to build one car, but ordered enough parts to simultaneously build a mule car. When the Corvette SS and mule arrived at Sebring in March 1957, the racer was still being worked on in the transporter.

The steel blue SS looked exotic. Although most of the parts were off the shelf or bought, the entire car was handmade with aluminum castings wherever possible. Power came from a 283 fuelie with aluminum heads, 9:1 compression, and tube headers. The Corvette SS

weighed in at 1,850 pounds, 100 less than the Jag, although the magnesium body caused a serious heat problem. But things went badly on the track.

The untested SS ran 23 laps before it retired due to a failed rear suspension rubber bushing. Driver John Fitch felt cheated, lamenting that they didn't have more development time. Duntov was planning three more SS racers for a Le Mans assault, but in May 1957, GM ordered Chevrolet's racing department (read: Duntov) to stop all work. The Corvette SS would become a show car, as GM was abiding by the AMA ban on

factory-supported racing. The same month, Duntov is promoted to director of high-performance Chevrolet vehicles. In December 1958, Zora drove the show car Corvette SS on the GM Phoenix test track to 183 mph. The same month, Bill Mitchell bought the SS mule chassis and started work on his Stingray Racer. Today, both the Corvette SS and the Stingray Racer are alive and well.



1957 CORVETTE SS

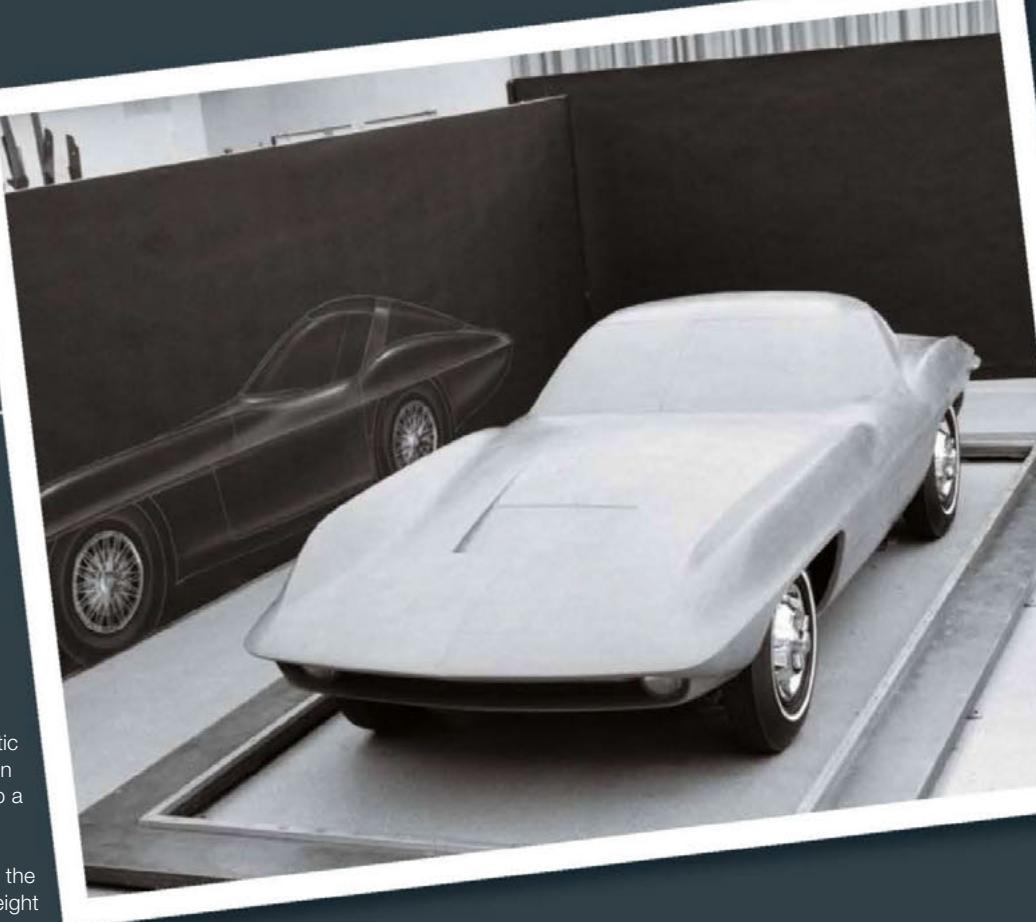


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1957 Q-CORVETTE

The 1957 Q-Corvette is the most profound, yet forgotten, Corvette concept ever. You're looking at the shape of what would become the C2 Sting Ray and the drivetrain layout and engine for the C5. In 1957, Ed Cole, Chevrolet's new general manager, launched his Q-Chevrolet project. Cole wanted all 1960 Chevys to have rear-mounted transaxles for improved weight distribution and enlarged interiors. This was the beginning of the Corvair. Corvette designers saw that the then-exotic transaxle and independent rear suspension from the Corvair could be used to develop a revolutionary Corvette.

The rear-mounted transaxle helped balance the weight of the Corvette. Even the starter motor was on the transaxle for weight balancing. Drum brakes were mounted inboard to reduce unsprung weight. The aluminum transaxle case could be either a four-speed manual or automatic. Up front, an all-aluminum, fuel-injected 283 engine with a dry-sump oil system was proposed. There were to be no steel valveguides, valve seats, or piston sleeves. This was to help achieve the target weight of 2,225 pounds. The proposed structure of the Q-Corvette was a steel platform similar to the 356 Porsche. Because of the transmission location, the



interior would have been larger, even though the length and height were smaller than the production '57 Corvette.

Bill Mitchell suggested to stylists Bob Verryer and Pete Brock that the styling should come from the slimness of the Pininfarina/Abarth cars with a strong horizontal line and bulges over the wheels in the upper surfaces. The fastback roof had a permanent arch behind the cockpit and removable roof panels. At the leading edge of the windshield, there

were no A-pillars. The pointed nose had driving lights in the grille and manually operated pop-up headlights. Mitchell's Stingray Racer used most of the same styling ideas.

By the late '50s the economy was in bad shape, so GM killed the overall Chevrolet line concept, but kept the Corvair. So the Q-Corvette was an on-paper and full-size clay model only, with some great ideas that took 40 years to produce. **VETTE**

1957 Q-CORVETTE



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INNOCENT WHEN





DRESSED IN ARCTIC WHITE, THIS C6 IS AN UNSUSPECTING 8-SECOND RIDE

SCOTT PARKER WORDS GARY CRIGLER PHOTOS

In color psychology, white is the color of innocence. This very same adjective could be used to describe the '08 Corvette Chris Wargacki found for sale in Oregon four years ago, equipped with a docile six-speed automatic. It could also be used to describe the attitude the 20-something Chicago native had about the 11,000-mile stocker. "I purchased the Corvette with the intention of minor mods and keeping it a nice weekend car." Soon, however, the Arctic White C6 looked more like an empty canvas than a symbol of purity.

"The following season the car went 11.0 NA and 10.2 in the quarter-mile on a 150-shot of nitrous," reports Chris. Of course, he didn't make the low 10-second pass unscathed. With the #7 cylinder burnt to a crisp, he turned to HKE to build an LS3 stroker. A familiar formula of Wiseco forged pistons and a Callies rotating assembly enlarged the bullet to 416 ci, while bumping up the compression to a street-friendly 11.25:1. Advanced Induction CNC-ported stock heads and a Patrick G-spec'd cam were selected to feed and purge the beast. The tame but healthy 230/234-duration bumpstick was cut with a 117 LSA.

Being a PDR (paintless dent repair) technician and owner of Dent Solutions Plus, Chris was also concerned with the

exterior of his Corvette. It would need more sultry body lines representative of his business. Luckily he had a body man in the family. His brother Michael, from whom he acquired his affinity for fast cars, took on the job of a widebody conversion using genuine Z06 parts. Once the new front bumper, fenders, and quarter-panels were color-matched it was time to turn his attention to the rest of the car.

Knowing he'd be spending a lot of time behind the wheel, Chris had Atrendz Auto install the touchscreen Pioneer DVD head unit and helped in the initial modifications while he was employed there. Other interior upgrades include an AEM boost and wideband O2 gauge.

With newly minted GM specialist Larry Hamilton on board at AMS Performance, Chris took the '08 Corvette across town to dial in the naturally aspirated setup. After some consideration, the nitrous system was traded for an East Coast Supercharging kit with a Paxton Novi 2200 blower, capable of over 1,200 horsepower. To match the compressed and cooled air, Larry also ordered up some high impedance 90 lb/hr injectors, Z06 in-tank fuel pump, and a Bosch pump to be used externally along with a methanol injection kit. All together the package supplied plenty of fuel for 930 rear-wheel

WHEELSTANDER



[FEATURE] INNOCENT WHEELSTANDER

horsepower, while still being quiet and reliable to literally drive this car everywhere. In fact, Chris doesn't even own a truck and trailer.

Speaking of driving, the entire drivetrain was entrusted to RPM Transmissions, who outfitted the C6 with a Stage 7 4L65E transmission conversion and Quaife differential with 3.42 gears. An FTI triple-disc 3,600-stall converter and more hard parts from The Driveshaft Shop completed the transaction. But to really lay the power down, AMS had to squeeze on a set of 15-inch Weld Racing wheels and sticky Mickey Thompson 275 Pro radials. It took some careful grinding and a set of LG Motorsports spindles to make it happen. QA1 adjustable shocks and a Pfadt rear sway bar (the stock front bar has been removed) were the last pieces needed to make that incredible wheelie shot seen 'round the world.

The Corvette's first pass ever with the new supercharged setup was a 9.60 despite

95-degree weather and the preceding 60-mile drive. However, by the end of the night Chris dropped a few tenths [for a 9.36]. AMS adjusted the shift points before the next outing, which helped the C6 run a new best of 9.15 at 146 mph. But its final outing was one for the books. Running so close to the 8s, Chris had AMS set the C6 to kill. No more 100-octane, 14 psi of boost ... hello, 116 and 16 psi. The result was an 8.92 at 151 mph with a 1.22 60-foot time that yanked the front end sky high on its first and only pass.

If Chris Wargacki's '08 Corvette was a blank canvas, then he painted a masterpiece of raw power and streetability. "I don't need a trailer to take it to the track and can drive it like a regular street car and not a race car. We have over 20 passes in the 9's and it never skipped a beat." Considering how high he hangs the front tires, that's saying something. **VETTE**



SPEC SHEET

2008 CHEVROLET CORVETTE



OWNER	Chris Wargacki: Chicago, IL
ROCKER ARMS	Stock LS3, 1.7:1 ratio
PISTONS	Wiseco, forged
RODS	Callies, forged
BLOCK	GM LS3
DISPLACEMENT	416 ci
HEADS	Advanced Induction CNC-ported LS3
VALVES	Stock 2.165-inch intake, 1.59-inch exhaust
CRANKSHAFT	Callies, forged
COMPRESSION RATIO	11.25:1
CAMSHAFT	COMP Cams hydraulic roller, Pat G custom grind
IGNITION	Stock LS3 coils
INTAKE MANIFOLD	Stock LS3
POWER-ADDER	ECS/Paxton 2200SL supercharger, 16 psi
FUEL SYSTEM	Fuel Injector Clinic 90 lb/hr injectors, Z06 in-tank fuel pump with a Bosch external in-line pump
EXHAUST SYSTEM	Kooks 1 7/8-inch long- tube headers, X-pipe, stock GM exhaust
TRANSMISSION	RPM Transmissions Stage 7 4L65, FTI 3,600-stall converter
DRIVESHAFT	The Driveshaft Shop aluminum
SUSPENSION	Stock C6, QA1 shocks, lowered on stock bolts, LG Motorsports rear spindles, Pfadt rear sway bar
REAREND	RPM Transmissions 3.42:1, Quaife differen- tial, stock axles
BRAKES	Stock GM
WHEELS	Weld Racing RT-S 17x4.5 (front), 15x10 (rear)
FRONT TIRES	Hoosier Street Front Runner
REAR TIRES	Mickey Thompson Radial Pro 275/60-R15



'TIRE TALK

WHAT'S THE RIGHT CHOICE FOR YOUR EARLY CORVETTE?

TOMMY LEE BYRD WORDS COKER TIRE PHOTOS



If a modern Corvette needs a new set of tires, it may be as simple as calling your local tire store and ordering the OE size. Your only big decisions consist of the tire brand, and a possible sizing increase.

For vintage Corvettes, the decision can be a little more complicated, even if you're going back to a stock appearance. You have the choice of bias ply or radial, and then you have the very important choice of whitewall, redline, gold line, raised white letter, or blackwall. With all of these options, where should you begin?

The first thing to take into consideration is the style of your build. There are so many ways to get creative with a vintage Corvette and you can really change the personality of the car with a different set of tires and wheels. If you're going the modified route with your early Corvette, there are plenty of options for tire sizing, such as if you want to go bigger or



01 When it's time to put new tires on a vintage Corvette, there are lots of choices. Bias ply tires are the authentic choice but they do not handle as nicely as a radial. This C1 survivor is getting a new set of BFGoodrich 6.70-15 whitewall bias ply tires.



02 This cutaway illustration shows the ply cord configuration inside a bias ply tire. Notice the 45 degree angle and the crisscross pattern for each layer of cord. Most bias ply tires for early Corvettes feature a four-ply construction with polyester cord.



03 Throughout the '50s and '60s, whitewalls continually got narrower. The example shown here is a 6.70-15, which is authentic for a '63 or '64 Corvette. This particular tire features a one-inch whitewall, which is appropriate for the era.



04 Redline sidewall treatments came along in 1965 and featured a 3/8-inch red stripe that offered a very sporty accent. Redline tires are available in bias ply and radial constructions—this example is a Firestone 7.75-15, mounted to a '65-'66 knock-off wheel.



05 In 1968, the Corvette underwent major changes, including tire size. With a shorter sidewall and wider footprint, the new F70-15 tires were a welcomed addition to the C3. Coker Tire offers authentic Firestone Wide Oval tires in raised white letter, pinstripe whitewall, and redline.

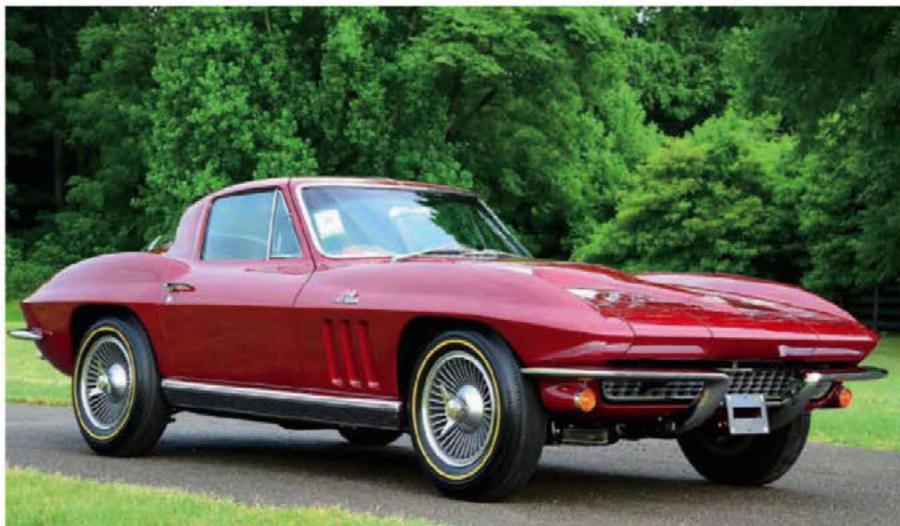
stagger the front and rear sizes for an aggressive look.

The bias ply versus radial debate is always at the forefront when you're dealing with cars built prior to 1973. Authentic tires for a '53-'72 Corvette restoration would feature bias ply construction, but swapping to radial tires is a popular upgrade for improved ride quality and handling. There are pros and cons to both types of tire construction, but it's important to know the differences to help make your decision.

BIAS PLY

The term bias ply refers to the internal construction of the tire. In a bias ply tire, the cords (plies) run at a 45 degree angle from bead to bead. This diagonal pattern is crisscrossed with each layer of ply cord, and creates a very rigid structure. In the vintage car market, bias ply tires feature a narrow tread profile with a sharp shoulder that usually has a piecrust appearance. The narrow tread pattern and the fact that most bias ply tires mount to narrow wheels makes for a sidewall bulge that is easily identifiable and adds to the authentic appearance of most early Corvettes. Some of the early C3 cars (1968-1972) had bias ply tires, but they had a 70-series aspect ratio, which gave them a wider tread pattern and a shorter sidewall than the tall and skinny bias ply tires from year's prior.

Bias ply tires are strong, but the rigidity offers some interesting handling characteristics if you're accustomed to driving on radial tires. The rigid construction means that bias



06 A perfect example of a classic Corvette with authentic tires is this '66 coupe, which rolls on knock-off wheels and BFGoodrich 7.75-15 gold line tires. This sidewall treatment was nearly exclusive to the Corvette, specifically '65 and '66 models.



07 A cutaway illustration of a radial tire provides a clear view of the radial orientation of the cords. The cord runs 90 degrees from the tire's bead, and offers a flexible, yet strong design. Radial tires also feature steel belting that resides beneath the tread surface to provide added stability.

[TECH] TIRE TALK

ply tires do not conform to the road surface as efficiently as a radial tire. This creates a “wandering” sensation as the tires tend to follow the ruts and breaks in the pavement. This wandering is not necessarily dangerous, but it definitely requires the driver to pay more attention, especially at highway speeds.

The major advantage to a bias ply tire that completely overrides the finicky handling is the authenticity. For instance, a '57 Corvette came from the factory with 6.70-15 tires, so the fact that you can get a brand-new set of 6.70-15 tires with appropriately sized whitewalls is

a huge win for the restoration crowd. The same can be said for the popular 7.75-15 sizing that ran from 1965 to 1967 and the F70-15 sizing that ran from 1968 to 1972. Authentic brands, such as BFGoodrich and Firestone are available, and authentic sidewall Corvette-specific sidewall treatments are also on-the-shelf items at companies like Coker Tire.

The folks at Coker Tire gave us plenty of information about tires (and wheels) when we approached them about tire availability for classic Corvettes. One of the coolest details that we gleaned from the information we got from Coker

Tire is that their bias ply tires are made from original molds. Of course, they refurbish the mold and update it if necessary, before it goes back into the production line, but the fact that these molds are the same ones that made the original Corvette tires is pretty cool. The level of authenticity goes way up when you consider that detail. All of the products from Coker Tire (even the radial tires) are built from day one to feature a custom sidewall treatment so the white, red, or gold rubber is added to the tire carcass in the early stages of the manufacturing process. Then, reveals in the mold provide a crisp breaking point between the black rubber and the special color.

Say hello to Justin Abbott, the “brain” of Zip-brand R&D. His office door says VP, but you’re more likely to find him underhood or under the lift – improving a Corvette. In short, Justin lives performance. So much so, we’re pretty sure high-test runs through his veins.

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08 Popular for C2 builds, the BFGoodrich Silvertown radial is a nice upgrade from the original bias ply design. These radials are available in many sizes, but the equivalent size for most Corvettes is 205/75R15. Radials have a wider footprint than bias ply tires and offer increased handling in dry and wet conditions.



09 Raised white letter tires have been on the scene for a long time, and the BFGoodrich Radial T/A is the undisputed most popular example. With 20 sizes in the roster, the Radial T/A offers lots of fitment options, and they are especially popular on '68-'82 Corvettes.



RADIAL

Radial tires are a popular upgrade for vintage Corvettes, as the more modern construction offers great improvements, including ride quality, wet weather traction, and tread life. The advantages are created by the tire's construction, which consists of ply cords that run 90 degrees in relation to the bead. This radial orientation of the cords allow for a more flexible design, which conforms to the road surface, and allows the tires to skim across the ruts and breaks in the surface. This makes for a pleasant ride quality, even on

rough roads, which would cause the wandering sensation with bias ply tires.

In most cases, a radial tire will have a wider footprint, even if it is the equivalent size to a bias ply tire. For instance, a 6.70-15 tire (OE size for 1953-1964 Corvettes) has the P-metric radial sizing equivalent to a 205/75R15 tire. However, the radial equivalent features a wider tread surface by more than one inch. This increased contact patch offers more traction and more stability, while the rounded shoulder provides additional traction in hard cornering situations. Radial tires also feature tread

10 Coker Tire recently debuted a brand-new design and it's a great option for C1 builds. It has the appearance of a bias ply tire, with the internal construction of a modern radial. The new American Classic bias-look radial is available in 6.70-15, in wide whitewall and blackwall forms.



11 Mounting and balancing is a very important aspect of getting new tires for a vintage Corvette. Coker Tire suggests "lug centric" balancing, which involves an attachment that mounts the wheel to the balancer with the lug holes, instead of the center hub.



12 Cleaning whitewall tires can be an arduous task, but it's worth it. All whitewall tires feature a blue coating from the factory, and this coating protects the whitewall during transit. Keep the blue coating on the tires until they are mounted, balanced, and installed—the coating washes off with soap and water.

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siping, which helps evacuate water from the tread surface, and thus, increases wet weather traction. The drawback to the wider footprint is the lack of an authentic shape and profile. However, you can get any of the sidewall treatments that were original for Corvettes in a modern radial equivalent. On top of that, Coker just introduced a new American Classic bias-look radial tire, available in 6.70R15 sizing. The new tire is available in wide whitewall and blackwall, and it's a very nice piece that keeps the authentic appearance, but provides the driving characteristics of a modern radial.

TIRE CARE

So, you've decided on a set of tires, and possibly a set of wheels for your classic Corvette. What's the next step to ensure you can get out and enjoy your car? The mounting and balancing process is crucial for any old car, so it's important that you pay close attention when your tire shop is doing the work. When we spoke to Coker Tire about this matter, it was mentioned that any customer who buys tire and wheels together gets free mounting and balancing. Coker's specialty is vintage style tires and wheels, so you can expect to see great results from taking advantage of its tire and wheel combo deals. However, if you choose to keep your original wheels, and have the tires mounted and balanced at the local tire shop, always request lug-centric balancing, as opposed to hub-centric balancing. The lug-centric attachment provides the most accurate balancing, as it doesn't rely on the center hole of the wheel, which isn't always perfectly true with the outside diameter of the wheel.

If the tires cannot be installed on the car immediately, always be sure to place a piece of cardboard between the tires (this applies only to whitewalls, white letter, redline, and gold line) as the black rubber can leave stains on the white, red, or gold rubber. If the tires came with plastic wrapping, keep the wrapping on the tires, until they are ready for installation. For whitewall and white letter tires, you can usually expect to see a blue coating on the white rubber, which protects it during transit. The blue coating washes off with soap and water, and the white rubber can be cleaned as often as you see fit. Coker Tire suggests a citrus-based cleaner, such as "Wide White," as opposed to bleach-based cleaners, which are too harsh in most cases.

For cars that don't see many miles on the road, you'll likely develop flat spots on the tires if the car sits on a concrete floor for long periods of time. Bias ply and radial tires are susceptible to this condition, but flat spots in a radial tire are usually a bit more permanent because of the steel belting that rides beneath the tread surface. The only way to prevent flat spots is to lift the tires off the concrete by storing the car on jack stands, but our favorite preventative measure is to get out and drive it as often as possible! It's much better to replace your tires because of worn out tread instead of flat spots or dry rot. No matter what tire and wheel combination makes the cut for your classic Corvette, put them to use every chance you get! **VETTE**



13 When it comes to tire care, always use a reputable shop to mount and balance your tires. Also, it is especially important to have your suspension aligned, so your new tires wear evenly. This is very important for cars with independent rear suspension, as the slightest misalignment can cause uneven treadwear.



14 The best way to take care of your tires is to drive your car. Sitting on a concrete floor in your garage is the worst possible situation for your tires, especially radials that feature steel belting. Proper inflation, periodic rotation, and accurate suspension alignment will make for long tire life.

Sources

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Editor's Pick



▲ Scott Parker. Apr 11, 2014

First Look: 2015 Corvette Z06 Convertible

Chevrolet has announced that it will be making the first convertible Corvette Z06 since 1963 (when they made exactly one). The 2015 Chevrolet Corvette Z06 ...

Editor's Pick



The Custom Shop's 1965 Chevy El Camino - Way Low Elky

Editor's Pick



1966 Chevy El Camino - Agile Elky

Editor's Pick



1965 El Camino - Born With It.

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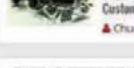
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01 → Into the light of day, the L82/automatic Indy Pace Car was covered with decades of dust.

1978 INDY PACE CAR WITH 13.6 MILES



"When I opened the storage door and saw this Vette, I couldn't believe my eyes." Bud Schoenleden thought he was making the trip from his Chevy dealership in St. Marys, Ohio, to Detroit "as a courtesy for this guy I used to know. I had no idea what I was about to find." At first glance, Schoenleden thought the '78 Indy Pace Car was "an absolute mess." A thick layer of dust covered the paint. There was no car cover, just boxes and odds and ends on top and to the sides of the T-top Vette. All four tires were flat. But, when Bud popped the latch to the driver-side door he noticed plastic on seats and steering wheel. Same as how the car came delivered from

the factory. The mileage was nowhere what he thought, either. When his friend said low miles Bud Schoenleden figured there would be maybe 5 or 10,000 miles on the odometer, but he was in for a shock. Peeking beneath the steering wheel, Bud eyeballed zeroes on the far left followed by 13.6. About that time, he got a big whiff of a fragrance all too dear to a Chevrolet dealer—that new-car smell. Bud said, "The car hadn't seen the light of day for 16 years."

His friend bought the car brand new as an investment. He stored the car in a building in Detroit in 1995. That's when he sold his house and moved into an apartment. "He never drove it, just kept it, put it away, and

thought it would be worth a lot of money someday." Schoenleden could identify with the reasons why. His mind drifted back to 1977 when Chevrolet introduced the Indy Pace Car. Suddenly, the Corvette moved into the collector car ranks. The Wall Street Journal and other trade magazines wrote articles on the Corvette. The 1978 pace car, with a base sticker price of \$13,653.21 jumped to \$25,000 and even higher on the open market, often selling for double sticker plus. Bud's friend wasn't the only one who purchased a new Indy Pace Car to set aside. Bud did as well. "Back in 1978 I worked at a factory and I fell in love with this car the moment it came out. I had to have it. I

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02 ➔ Who knows what storage buildings hide? Here we see the Corvette in the light of day for the first time in 16 years, but the car was stored in another location from Day One. **03** ➔ The interior still smelled new. Note the plastic on the seats and steering wheel. **04** ➔ Here's the view Bud saw from inside the storage building.

bought one and I paid double window sticker for the car." Bud thought he was going to make a ton of money on his purchase. But, he was wrong. He held the '78 for a year, paying high interest rates because he borrowed the money, and sold the Vette at a \$10,000 loss.

In 1983, Bud left his factory job to go to work as a salesman for a Chevrolet dealer. He bought and sold Indy Pace Cars on his own until he got back his 10 grand. Over the years Bud says he's had about 60 of these cars. "That's how I started. I'd buy a car and sell it, buy a car and sell it, buy a car and sell it, until I got my money back. One thing led to another and the next thing I became

a Chevrolet dealer. We started doing a lot of Corvette business."

For the record, the '78 model has the high-performance L82, par for a collector purchase when new. Bud also noted automatic transmission and cloth inserts in the leather seats, whereas most Pace Car seats were simply leather.

Despite the low miles, Schoenleden wondered if the engine would turn over. He didn't want to start the car in the storage building, figuring the gas must be bad, and the OEM battery of over 30 years certainly would not hold a charge. He merely attached his charger to the battery and was surprised the lights inside the cab snapped on. He turned the key

on for a second and the engine rotated.

Back at Bud's Chevy Buick & Corvette Center in St. Marys, Ohio, the service department got the car running and all the systems seemed to be fine. True to form, Schoenleden put this '78 up for sale on his showroom floor. Like a true collector, he did not clean the car. He left the dust intact. The '78 Pace Car was a "barn find" and put a smile on the faces of the curious. The local newspaper even came out to do a story.

However, we know a deeper story. Bob Schoenleden made an investment in a 1978 Corvette Pace Car and as a result became one of the premier Corvette dealers in the country. **VETTE**



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READERS' RIDES

BEACH VETTE

WHO: Bud Hill

WHERE: Osage Beach, MO

WHAT: '04 Corvette convertible

→ Here's my Millennium Yellow convertible—one of 1,094 convertibles painted in that second-rarest '04 Corvette color at Bowling Green (along with 918 coupes and 629 Z06s). One of the final-year C5s, it came loaded with a leather interior, active handling system, dual-zone electronic air conditioning, and the 350hp LS1 under the hood.

It now has 40,000 miles on it thanks to the long-distance trips that we've made in it to the National Corvette Museum and the Bowling Green Assembly Plant, as well as to places like Eureka Springs, Arkansas.

We've made these, and other, trips along with our fellow members of the Lake of the Ozarks Corvette Club (LOCC). We have fun in the sun!



DELAWARE DESTROYER

WHO: Mike Boehme

WHERE: Rehoboth Beach, DE

WHAT: '05 Corvette coupe

→ It took me more than 50 years to join the ranks of Corvette owners, and when I finally went hunting I knew it had to be a black six-speed C5. When I found my "Delaware Destroyer," a lifelong dream was realized.

She's taken us to Carlisle a few times, and we always come back with something new—a Mid America cold-air kit and Quadrapower exhaust one year, long-tube American Racing headers another year, interior goodies yet another.

She recently had a top-end makeover, including a cylinder head package (heads decked, ported, and polished; 219cc chambers; dual platinum valvesprings; Trick Flow hardened pushrods; and LS7 lifters), a COMP Cams 232/234 114 LSA cam, FAST LSXR 102mm intake, and OEM fuel rails, Nick Williams 102mm throttle body, 42-pound LS1 fuel injectors, and a Melling high-volume oil pump.

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An MGW short-throw shifter takes her through the gears while a Kenwood DX9990 touchscreen receiver/navi belts out blues rock (or The Grateful Dead when Wendy is with me). Lloyd mats and Cover King dive suit seat covers keep the OEM carpet and leather protected.

→ **SHOW US YOUR VETTE!** Just send a photo (or photos) of the car, a brief description, and whatever else you'd like to Vette Magazine, c/o Readers' Rides, 1733 Alton Parkway, Suite 100, Irvine, CA 92606. You can also email the information to vette@sorc.com with "Rides" in the subject line. So what are you waiting for?

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LOW-MILEAGE **FIRST VETTE**

WHO: Kenneth Dammann

WHERE: Eatontown, New Jersey

WHAT: '93 Corvette coupe

►This is my first Corvette, which I purchased last fall from Conte's Corvettes. It has 29,000 original miles on it, and is probably as close as you can get to a new '93 Corvette.

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It's well-equipped, and has the fairly rare optional smoked roof panel. I also have the original window sticker. The distributor is being replaced with an upgraded ventilated unit that was introduced in the '95 C4.

My plan is to keep it well-maintained and as original as possible.

I love going to car shows, and now have a car that I can enter.



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WINTERSTEEN 427 L88 GRAND SPORT **ROADSTER**

The Grand Sport is well storied, so here's the short version. Zora Arkus-Duntov was a racer/engineer first and foremost. Racing and race cars was always first in his thinking, with production cars a distant second. He essentially used General Motors as his race car shop.

When Duntov learned that Carroll Shelby was building Cobras he tried outflanking Shelby with his own lightweight. Five prototype tube-framed coupes were based on the '63 Sting Ray wearing Halibrand wheels and side-mounted exhausts. Though Duntov had the backing of Chevrolet general manager Semon "Bunkie" Knudsen and Ed Cole, on January 5, 1963, GM's hammer came down and the Grand Sport was officially dead.

But not so's you notice on the racetrack. Privateers raced Grand Sports, but without support from Chevrolet the cars had a rough time. Duntov wanted to stick it to Ford, just once. Three of the five cars received upgrades, including fat racing wheels shod with the biggest tires of the day, aggressive fender flares, hood scoops, additional vents between the taillights, and some experimental engines. The Nassau Invasion in November 1963 was sweet revenge. While Shelby's Cobra's got a serious thrashing, Knudsen got a thorough dressing-down from his upper management bosses. It's amazing that GM didn't demand the cars be put into the crusher! Perhaps they secretly admired the Grand Sport?

In 1964, Duntov took #001 and #002 and converted them to roadsters to reduce the frontal area. A year later, the never raced #002, equipped with an all-aluminum 377-cid engine with four Weber carbs made an appearance as a Chevrolet show car at Notre Dame University. In 1966, #001 was sold to Roger Penske and was fitted with a big-block 427 at Penske's shop. Roger raced #001 and his prototype '66 L88, but by 1966, the GS was obsolete. Penske enlisted driving help from George Wintersteen and after Sebring told his friend that there was another roadster that "might be available." With inside connections, Penske bought #002 and then sold it to Wintersteen. #002 was taken to Penske's shop and fitted with a new, blueprinted 427 engine, had the headrest fairing removed, the knockoffs replaced with American Racing mags, and painted white with a blue stripe — as the car looks



today. Wintersteen said, "I knew it was obsolete in the pro ranks when I bought it. But for that year, it was an economical way to go racing."

Wintersteen reported "It was quick on the straights, but its aerodynamics were terrible. At Watkins Glen and some of the quick tracks, the front end was getting right up there. It would go down the straights looking like a speedboat. It had good brakes and a locked rearend - we just welded the spiders together. Although it had a lot of power, it was light in the rear end. You would adjust steering with the throttle." Wintersteen last raced his Grand Sport in June 1966 at Mosport, finishing in Ninth — not bad for a fast old dinosaur. Soon after he sold the car to John Thorne for \$6,700. Years later he said, "I wish to hell I still had the Grand Sport."

Thorne raced the tired old race car a little before selling it to Ed Mueller, who sold the car to Jim Jaeger in 1990. Jaeger's intention was to restore the car to its 1965 Notre Dame configuration and then run the car in vintage car races. The original body was too fragile and valuable, so a complete replica body was built while the car underwent a total restoration. The car was never raced but was shown at events as a "vintage Corvette race car." Eventually, Jaeger decided it was time to sell #002. At the RM Automobiles of Arizona Auction on January 16, 2009, expectations were high, with bidding topping out just under \$5 million. But it was a "no sale" because the reserve wasn't met.



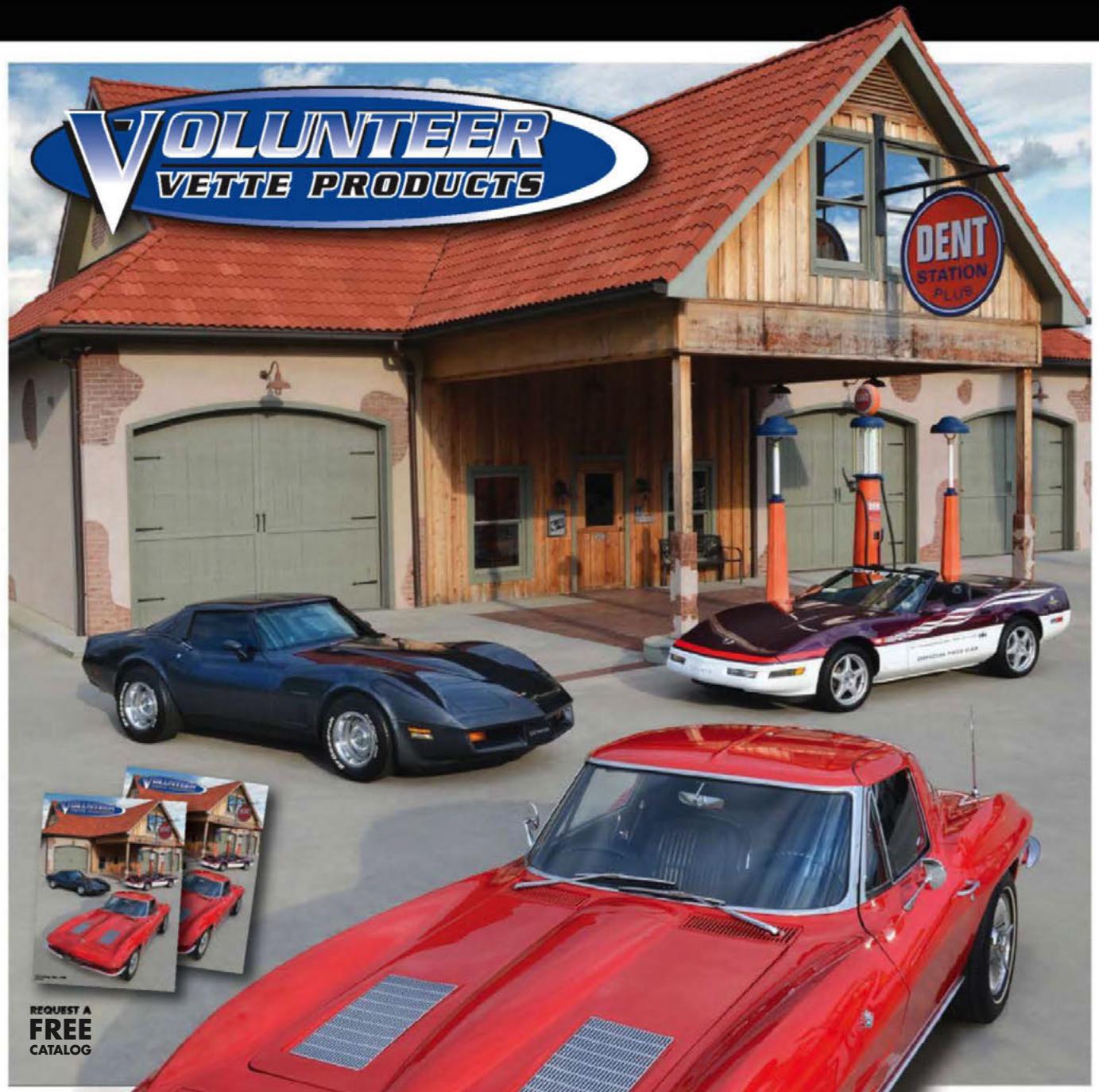
Instead of going through another auction, Dr. Frederick Simeone and Jim Jaeger arranged a private sale by "a favorable combination of

trades and cash." The deal included the fully functional #002, the replica body, the all-aluminum 377 engine and side exhausts, the Halibrand wheels and tires, interior, and other assorted parts.

The running car and replica now reside at The Simeone Automobile Museum in Philadelphia. The functional #002 regularly participates in Simeone's monthly Demonstration Days. Yes, you can actually see, hear, and smell the Wintersteen 427 L88 Grand Sport Roadster. It's the loudest car in the Simeone collection and is a sight to behold. **VETTE**

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