

CORVETTES
RULE
DAYTONA
PG. 48

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LS7-POWERED
SPLIT WINDOW



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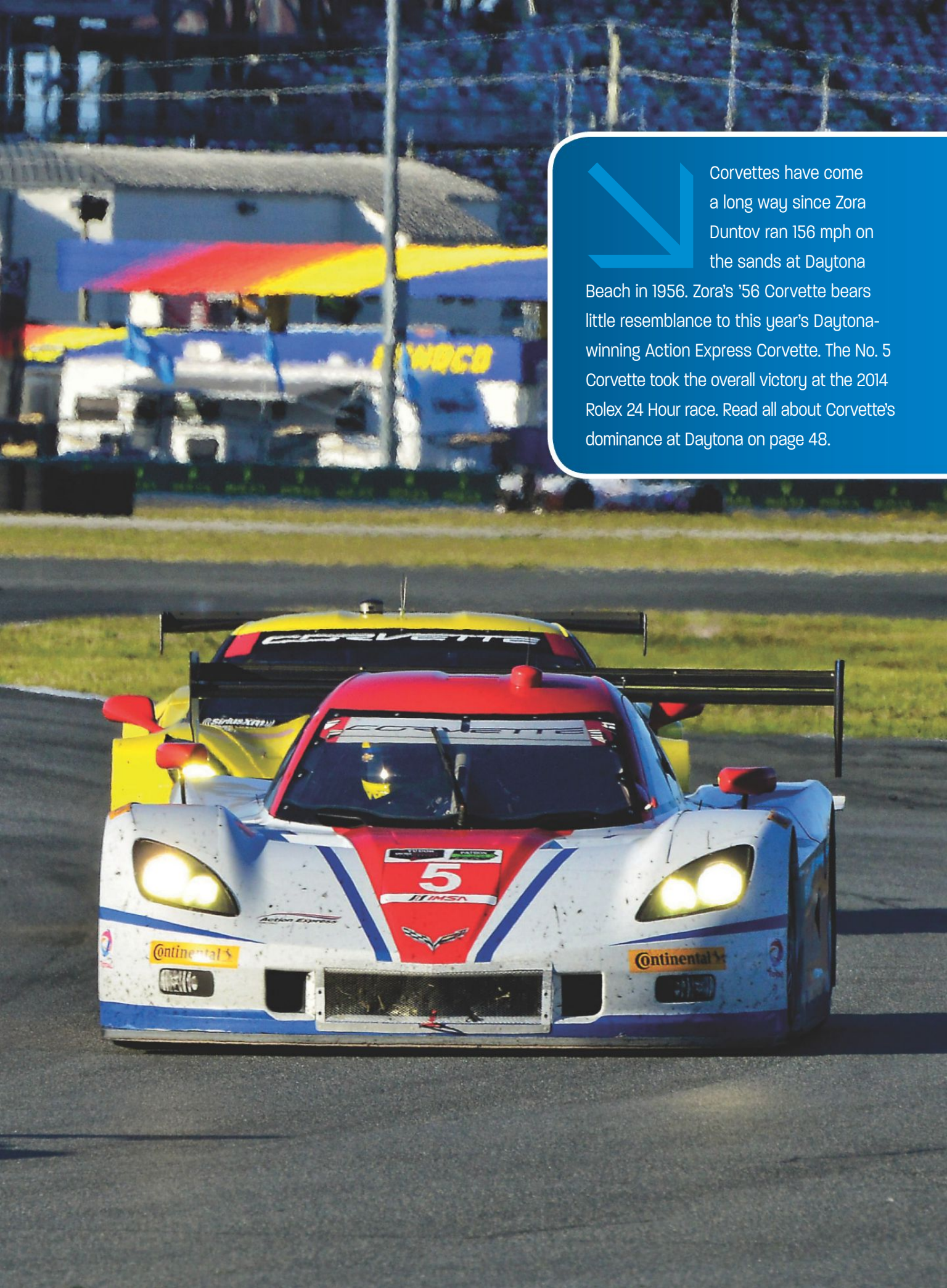
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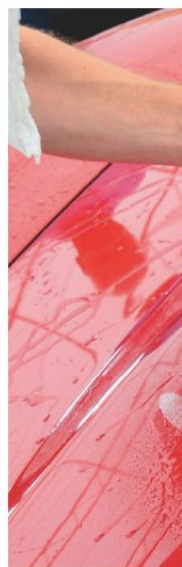


Corvettes have come a long way since Zora Duntov ran 156 mph on the sands at Daytona

Beach in 1956. Zora's '56 Corvette bears little resemblance to this year's Daytona-winning Action Express Corvette. The No. 5 Corvette took the overall victory at the 2014 Rolex 24 Hour race. Read all about Corvette's dominance at Daytona on page 48.

Vette contents

JULY 2014 ➔ VOLUME 38 ➔ NUMBER 07



ON THE COVER

This month's cover car combines classic C2 styling repurposed with an overabundance of LS7 power and tasty Restomod upgrades. Mash the go pedal and turn to page 20 for the whole story. ➔ PHOTO BY JOHN MACHAQUEIRO



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IDLE CHATTER

STEVEN RUPP EDITOR

GREETINGS FROM **THE NEW GUY**



Corvette owners getting ready to enjoy their cars at the Silver State Classic open road race in Ely, Nevada. A great example of doing it the right way.

driving it then you're just cheatin' yourself.

As to Corvettes, I've always been impressed with how it gets better when it seems to already be at its high point. I can remember when the C5 Z06 came out and we were blown away with the 385hp (and later 405 hp) LS6 engine and lightweight components. It seemed to be the pinnacle, at least until the C6 came out and we were impressed yet again. That lasted until the C6 Z06 hit the roads shortly followed by the "ultimate" Corvette, the ZR1.

There was some chatter that the ZR1 would be it and future Vettes would have their soul ripped away by increasingly stringent government regs. Well guess what? The "best" got even better with the new C7 and the bar will be pushed even higher when the new Z06 version is unleashed. So, we're left calling each generation the "golden age" of Corvettes. Will the C8 surpass the C7 someday? Personally, I'm not going to worry about it, because for now we have the C7 and six previous generations of Corvettes to drive, which is an impressive legacy when you stop and think about it.

As to the direction of the magazine, and web, some things will change while others won't. You'll still have a bevy of car features to drool over and draw inspiration from, but the events will focus a bit more on Corvettes in motion. Given I've been a technical editor for the last 9 years, you can bet there will be more stories on how to wring more performance out of your Vette. And, of course, we will continue to cover the history and heritage of America's favorite sports car, because, well, it's cool. We also want to make sure to dish out stories for all the various generations, from the restoration guy to the hard-core track guy and everyone in between. I'm always open to suggestions on what you want to see in your magazine, so feel free to drop me a note. And remember, if it's not fun, you're just not doing it right. **VETTE**



First off, let me introduce myself. My name is Steven Rupp and I'm the new captain of this ship. And while I might be new to the masthead of this magazine,

I'm certainly not new to the automotive hobby. Without boring you to tears with my life story I'll just say my first car at 16 was a '65 Mustang. A couple of years later I bought a '67 Camaro and I've been Chevrolet ever since.

In my 40 years of driving I've owned a ton of American performance cars; everything from the previously mentioned Camaro to Vettes and most GM things in between. I miss them all, but hey, that just means they were all fun in their own way. Which brings me to

my philosophy on our hobby (or lifestyle if you want to use the hipper terminology): It's about having fun and driving. This will be a common theme I'll be weaving throughout the magazine in issues to come. And while I personally love a good track day, I really don't care if you drag race it, autocross it, track it, or just flip it through your favorite curvy mountain road. In my book, if you're behind the wheel wearing a smile, then you're doing it right. When it comes to driving, no car is more deserving of seat time than the Corvette. It's a car built to run and is, by far, the best performance bang-for-the-buck-ride out there. A corvette locked away in a climate controlled garage, unless it's some historical piece, is just sad. It deserves the open road and if you're not

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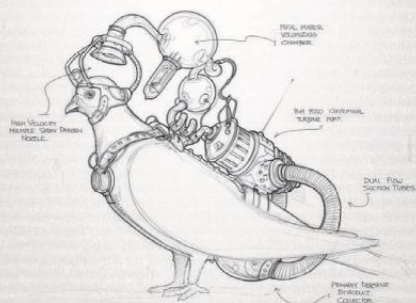
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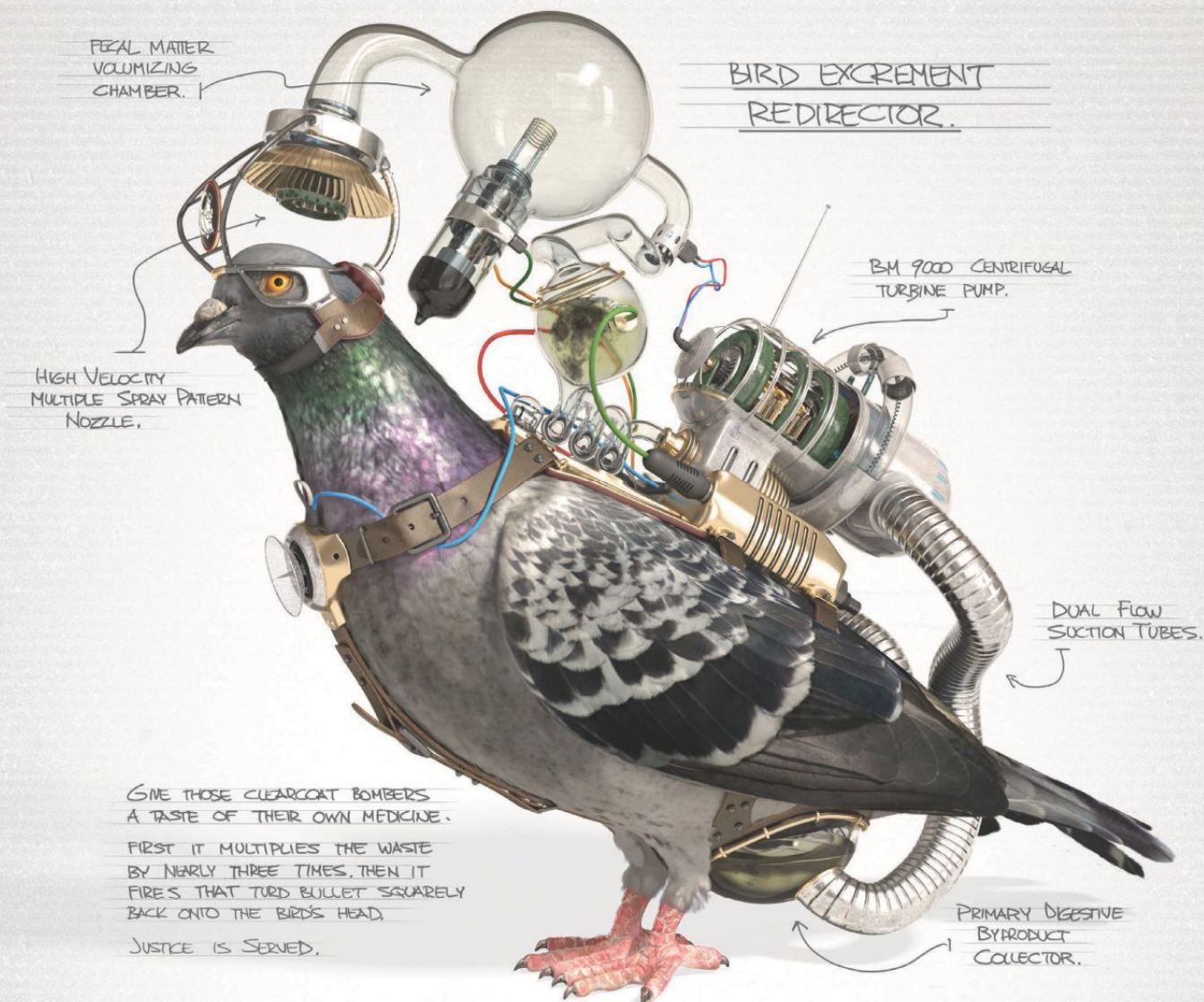
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TEAM VETTE WORDS



SINKHOLE SWALLOWS NATIONAL CORVETTE MUSEUM CORVETTES

A massive sinkhole 40-feet across and 25- to 30-feet deep severely damaged eight valuable and historically significant Corvettes at The National Corvette

Museum's Skydome in Bowling Green, Kentucky, in the early morning hours of February 12, 2014.

The damaged Corvettes were:

- » 1962 Black Corvette
- » 1984 PPG Pace Car
- » 1992 White One-Millionth Corvette
- » 1993 Ruby Red 40th Anniversary Corvette
- » 1993 ZR-1 Spyder (on loan from General Motors)
- » 2001 Mallett Hammer Z06 Corvette

» 2009 ZR1 Blue Devil (on loan from General Motors)

» 2009 White 1.5 Millionth Corvette

The Skydome exhibit area is a separate structure connected to the main Museum.

To help the Museum recover from the sinkhole, Chevrolet will oversee restoration of the Corvettes damaged. The process will be managed by General Motors Design in Warren, Michigan.

"The vehicles at the National Corvette Museum are some of the most significant in automotive history," said Mark Reuss, executive vice president of General Motors Global Product Development. "There can only be one one-millionth Corvette ever built. We want to ensure as many of the damaged cars are as restored as possible so fans from around the world can enjoy them when the Museum reopens."

The restoration will be overseen by Ed Welburn, vice president of GM Global Design.

When the cars are recovered, they will be shipped to the Mechanical Assembly facility, a small specialty shop within GM Design, where the best restoration approach will be determined. Mechanical Assembly has been part of GM Design since the 1930s, and today maintains and restores many of the vehicles in the GM Heritage Collection and GM's historic concept cars.

The National Corvette Museum is independently owned, and supported solely by charitable donations from enthusiasts. It is currently accepting donations on its website to assist in refurbishing the facility. Donations are tax-deductible. For more information, visit www.corvettemuseum.com. **VETTE**



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PRODUCT PREVIEW



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They're all made of hand-laid fiberglass that's finished in American Hydrocarbon's exclusive "black carbon" finish (or in your choice of colors) topped with PPG's UV automotive clear, for a look that's durable and temperature-resistant.

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They're made in the USA of 6061-T6 billet aluminum that's machined into your choice of 8-inch or 10-inch lengths—both with a 30-degree rearward cant—and it comes in anodized black (seen here) or natural aluminum finishes. The 1/2"-16 threaded stud with included lock nut allows you to easily install Ringbrothers' billet shifter knob (sold separately), or other aftermarket shift knobs compatible with that thread pattern.

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Eagle One's A2Z can also be used as a pre-wash on your Vette's lower body panels and wheel wells, to break the bond of tough deposits that soaps can leave behind. A2Z also works well as an engine degreaser, making it one of the most versatile products you can have in your garage.

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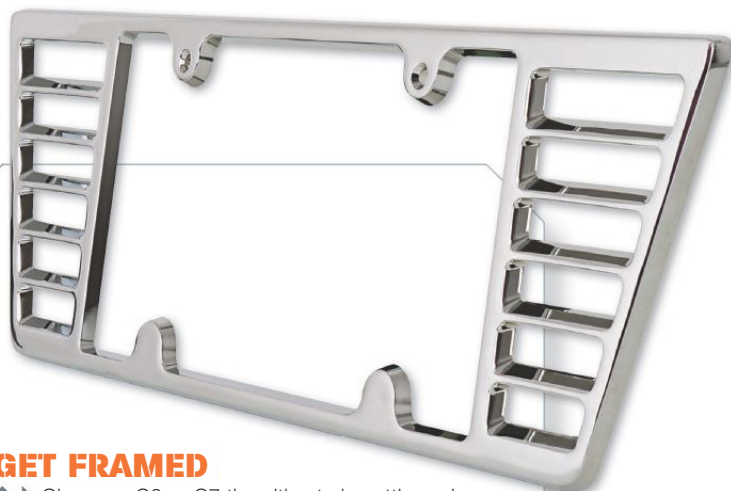
Here's your chance to become one of them, once you install Corvette America's new coilover conversion kits in your '63-'82 Corvette.

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Corvette America's coilover conversion kits are available with options for small-block or big-block applications.

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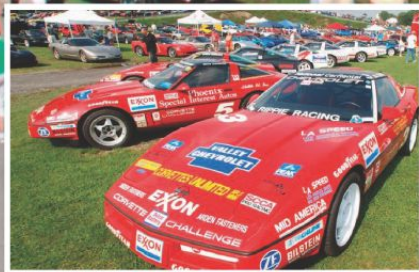
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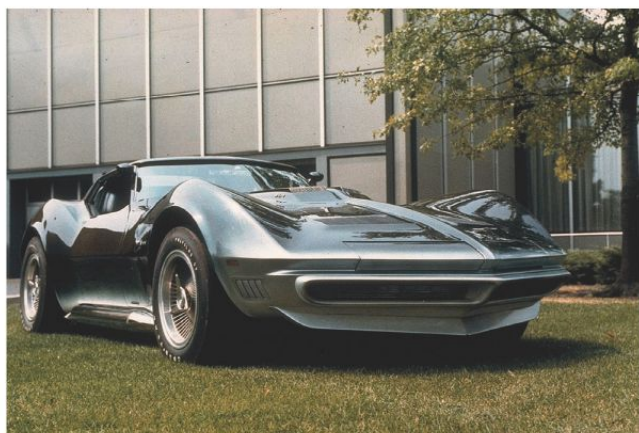
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DREW HARDIN WORDS
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MAKO **BECOMES MANTA**



The '65 Mako Shark II, foreground, seen with the original Mako Shark.





The fate of an auto-show car is never certain. Some spend a year or two on the circuit and are then destroyed. Others—the lucky ones—are saved from

the crusher and housed for posterity, ideally in a museum. A few (very few) wind up in the hands of private collectors.

And then there are the recycled show cars, those that are reshaped and repurposed before heading out for another tour of duty. The Manta Ray is one such car, built in 1969 from the Mako Shark II.

Mako II was a stunner. Introduced in 1965, it previewed many of the styling elements that would appear on the third-generation Corvette for 1968. Two Mako Shark II Vettes were built—a non-functioning mockup for photography, and a runner powered by a 427-inch Mk IV big-block. Once off the show circuit, the Mako Shark II was used by design chief Bill Mitchell as a driver. And then it went back into GM's styling studios to be reborn.

The Manta Ray is handsome, sure, but nowhere near as ground-breaking as the car that was sacrificed to build it. The biggest design change was to the car's rear, with buttress-like pillars aft of the back window and a stretched and tapered tail that ended in a sharp-creased Endura bumper. In front, a chin spoiler was added under the cooling ducts, and side pipes were fitted between the wheelwells, an element that was on the Mako II mockup but disappeared on the runner. The shark-like coloration of the Mako II was gone, too, though the car's paint still had something of a fishy fade from dark on top to light at the rockers.

Where the Manta Ray did seriously push the envelope was underhood. By 1969 the Mk IV big-block was old news; this showpiece needed something truly special. And it got it: the all-aluminum ZL1, essentially a solid-lifter, 12:1-compression racing engine that Chevrolet made available for a select few production cars. The factory rated it at 430 hp; 500 to 600 was more realistic. And it was pricey, adding nearly \$5,000 to the cost of the Corvette or Camaro it went into. As such it's a rarity among Corvettes. Reportedly just three ZL1 engines were put in Vettes by the factory, two in production cars and the third in the Manta Ray.

Unlike so many styling exercises, the Manta Ray did not disappear into the jaws of a crusher or someone's private collection after it served its tour as a showpiece. It lives a pampered life at the GM Heritage Center. **VETTE**



Some things are meant to be yellow.

Your headlights aren't one of them.

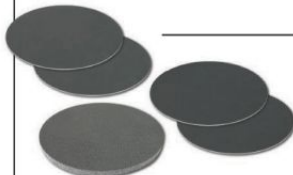
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TECHNICALLY SPEAKING

JAMES BERRY CORVETTE TECH GURU

SERIAL-NUMBER PLATE ATTACHED POINTS AND VINS DECODED

Q: I need a bit of advice. I purchased a '62 Corvette several years ago that needed some work. I did not register the car immediately because it was not road worthy. I have done some research on the '62 models and noticed that the VIN location changed from the driver's door to the steering column by this time. My VIN is screwed on the driver-side door post. I have a clear title that reflects the VIN in the door. The first digit in my VIN starts with a 2, but I thought all first-generation Corvette VINs started with a 1. Now I am scared this may not be a '62 Corvette VIN. Is there any way to tell? Do you think this will be a big deal when I go to register the car? Could this be a stolen vehicle? Thanks.

Greg

A: Greg, you are correct. The Vehicle Identification Number (VIN) is not screwed into the door jamb on a '62 Corvette. It is typically spot welded to the top of the steering-column-mast cover. There is the possibility that the vehicle in question may have been stolen, but I have seen some VINs moved during restoration and for various other reasons.

You can check the frame to see if the VIN on the vehicle's frame matches your VIN plate. Starting in '60 to present day, the VIN should be stamped on the front passenger side of the engine block if the vehicle retains its original engine. Also inspect to see if there are any traces of spot welds on the steering-column cover where the VIN could have been originally attached. The VIN for your vehicle should have rounded corners. Some reproductions have square corners.

CORVETTE VEHICLE IDENTIFICATION NUMBER

1953-55: The early-'53 serial-number plate also known as the VIN plate is composed of magnetic stainless steel with rounded corners and the attaching holes were drilled by hand. The later-'53 serial-number plates were made out of aluminum with machine-stamped attachment holes. On '53 Corvettes, the VIN plates and screw heads were coated with a

plastic resin to discourage tampering.

1956 through Early-1960: In '56, the VIN plate remained on the driver-side door-hinge pillar, but moved just below the upper hinge. These serial-number plates were made out of aluminum. They feature machine-stamped attachment holes and rounded corners. They are attached with Phillips head screws.

Early-1960 through 1962: The VIN plate remained on the front of the left door post until approximately November 24, 1959, when the serial-number plate was moved to the steering-column-mast jacket, where it was spot welded approximately 13 inches rearward of the steering-gear housing and resided there through the end of '62 production year. These serial number-plates were made out of stainless-steel.

1963-1964: The VIN plate was moved to the body-hinge-pillar brace below the right-hand-side glovebox compartment where it was spot welded. This was a new design plate with rounded corners and entered production approximately June 15, 1963. These plates included letters "DD," indicating the Delivery Date with a blank space provided for the dealer to stamp the delivery date of the vehicle. It is not uncommon for these VINs to not contain the delivery-date stamping.

1965-67: The VIN plates remained mounted to the body hinge pillar brace below the right-hand side glove box compartment but were riveted in place instead of spot-welded. The change was implemented since some VIN-plate welds were broken by dealers when stamping the delivery date into the plate. Early-'65 VIN plates are attached with normal circular-head rivets, and later in the run the rivet heads were rosette shaped. In '65 a new plate with square corners was put into service.

1968-82: The VIN plates were attached with rosette-head rivets to the inner vertical surface of the left-hand windshield pillar. A Federal law stated VINs must be visible from outside the vehicle to benefit the police. In '81 a 17-digit VIN was made standard.

Greg, I hope this helps and good luck with getting you vehicle registered so you can enjoy driving it after owning it for so long.

CORVETTE VIN DECODED

1953 TO 1959 10-DIGIT VIN

POSITION	CODE	
1	Series	E or J = Chevrolet Corvette
2 & 3	Model Year	53 = 1953, 54 = 1954, 55 = 1955, 56 = 1956, 57 = 1957, 58 = 1958, 59 = 1959
4	Assembly plant	S = St. Louis F = Flint
5 to 10	Production sequence number	000000

1960 TO 1964 12-DIGIT VIN

POSITION	CODE	
1	Model Year	0 = 1960, 1 = 1961, 2 = 1962, 3 = 1963, 4 = 1964
2 to 5	Series	0867 = Chevrolet Corvette
6	Assembly plant	S = St. Louis
7 to 12	Production sequence number	000000

1965 TO 1971 13-DIGIT VIN

POSITION	CODE	
1	GM division	1 = Chevrolet
2	Car line or series	9 = Corvette
3	Engine type	4 = V-8
4 & 5	Body style	37 = two door coupe, 67 = two door convertible
6	Model year	5 = 1965, 6 = 1966, 7 = 1967, 8 = 1968, 9 = 1969, 0 = 1970, 1 = 1971
7	Assembly plant	S = St. Louis
8 to 13	Production sequence number	000000

1972 TO 1980 13-DIGIT VIN

POSITION	CODE	
1	GM division	1 = Chevrolet
2	Car line or series	Z = Corvette
3 & 4	Body style	37 = two-door coupe, 87 = two-door coupe ('78 to '80), 67 = two-door convertible
5	Engine type	1972 -> K = base, L = LT1, W = LS5 1973 -> J = L48, T = L82, Z = LS4 1974 -> J = L48, T = L82, Z = LS4 1975 -> J = L48, T = L82 1976 -> L = L48, X = L82 1977 -> L = L48, X = L82 1978 -> L = L48, 4 = L82 1979 -> 8 = L48, 4 = L82 1980 -> H = LG4, 8 = L48, 6 = L82
6	Model year	2 = 1972, 3 = 1973, 4 = 1974, 5 = 1975, 6 = 1976, 7 = 1977, 8 = 1978, 9 = 1979, A = 1980
7	Assembly plant	S = St. Louis
8 to 13	Production sequence number	000000

1981 TO PRESENT STANDARDIZED 17-DIGIT VIN

POSITION	CODE	
1	Country the vehicle was manufactured in	1 = USA
2	Corporation that built the car	G = GM
3	Make of the car	1 = Chevrolet
4	Car line or series	Y = Y-body series
5	Additional information	Usually a Y but a Z = ZR1
6	Body style	1 = two door coupe, 3 = convertible

7	Restraint system	3 = late-model seat belts warning and air bags
8	Engine type	8 = L98, P = LT1, J = ZR1, 5 = LT4
9	Randomly generated digit	0 - 9
10	Model year	B = 1981, C = 1982, D = 1983, E = 1984, F = 1985, G = 1986, H = 1987, J = 1988, K = 1989, L = 1990, M = 1991, N = 1992, P = 1993, R = 1994, S = 1995, T = 1996, V = 1997, W = 1998, X = 1999, Y = 2000, 1 = 2001, 2 = 2002, 3 = 2003, 4 = 2004, 5 = 2005, 6 = 2006, 7 = 2007, 8 = 2008, 9 = 2009, A = 2010, B = 2011
11	Assembly plant	5 = Bowling Green
12 to 17	Production sequence number	Example: 000000

C4 FUEL SENDING UNIT REPAIR

Q: My '90 Corvette fuel gauge will display a full tank of gas until the tank is a little less than half empty. Then the gauge appears to read correctly until it is time to fill the tank again. I'm concerned that the gauge may stop reading properly at all and I don't want to run the vehicle out of fuel. I only drive it on nice weekends and sometimes I don't remember exactly how much fuel was left in the car from week to week. Do you think this is a gauge or wiring problem? Thanks.

Mike P. via question at a Corvette seminar

A: Mike, as we discussed at the seminar, the most common cause for this problem on older vehicles is the fuel-tank

sending unit has an internal fault. This is generally caused by certain types of gasoline that can cause deposits to build up on the fuel-sending-unit potentiometer (variably resistor). This can cause the fuel gauge to be erratic or even non-functional. Remember fuels have changed tremendously over the last few years and some components on older vehicles were not designed with today's blends of fuels in mind.

To repair this problem, the fuel-sending unit will need to be removed from the fuel tank. After removal, the resistor and wiper can be accessed by bending back three small metal tabs and removing the cover.

Upon visual inspection you will notice that the small metal wiper slides up and down across a resistor. If you observe wear marks or a buildup of gray residue on the resistor, take some fine Scotch-Brite (or its equivalent) and gently clean the face of the resistor assembly and the face of the wiper contact. Take care not to damage any of the components during cleaning.

Also inspect for broken wires on the resistor, weak resistor-spring tension, or a fuel float that has become heavy due to fuel saturation.

After performing the repair you can check your work with a Digital Volt Ohm Meter (DVOM). With the float resting at the bottom of its travel, you should get a low resistance. Slowly raise the float toward the top of its travel. You should get a steady increase in resistance with no flat spots. Flat spots are locations where the resistance drops to zero momentarily. Once the reading is steady with no flat spots, the repair is complete.

Mike, sometimes these fuel-sending units cannot be repaired and will need to be replaced. Some of them, such as the one in my C4 ZR-1, can be very expensive, so if you can repair it and save a little bit of money, I am all for it. Good luck. **VETTE**

➔ 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, 9036 Brittany Way, Tampa, FL 33619. 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.



MIDYEAR MAKEOVER

A COMPLETE BODY AND PREBUILT CHASSIS YIELD SMOOTH SAILING ON THIS '63 VETTEROD PROJECT

SCOTT ROSS WORDS **JOHN MACHAQUEIRO** PHOTOS

Turning a Corvette into a Vetterod doesn't always require that you have a complete car to start with. But in the case of Don Kalina's '63, he did, in fact, begin with an intact C2.

But he didn't use—or need—all of it. Kalina has always loved the second-generation Vettes. "Since I was a teenager, I've always wanted a '63 split-window," he recalls. "I finally found one, and the rest is history." He adds, "The '63 was always my 'heartbeat.'"

His years-long search began to pay off

when he got a tip about a potential project car while at an out-of-town event. "I was at a car show in Columbus, Ohio, and someone said they knew of a '63 in Pittsburgh," says Kalina. He then got the owner's phone number and contacted him to find out more about the car.

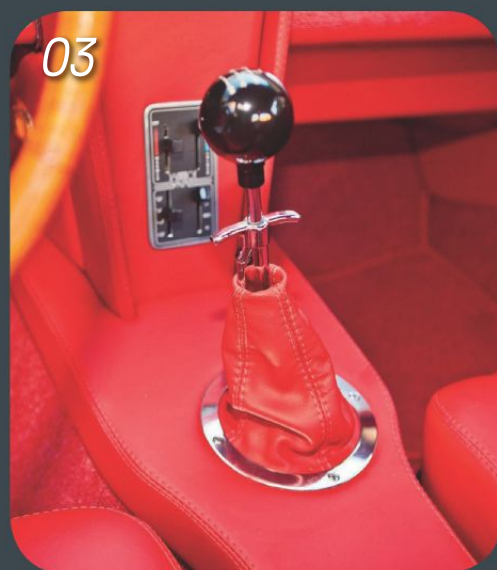
It had been off the road since 1979, according to its then-owner, the car's second. There was no unusual history behind this Corvette, and no rare options on or in it. It wasn't a numbers-matching car either, but it was definitely "project ready."

Before long the deal was made. "At

Don Kalina only needed the body from a "project ready" '63 coupe to build this Vetterod.

[COVER STORY] MIDYEAR MAKEOVER

"SINCE I WAS A TEENAGER, I'VE ALWAYS WANTED A '63 SPLIT-WINDOW CORVETTE. THE '63 WAS ALWAYS MY 'HEARTBEAT.'"—DON KALINA





01 ➔ From this angle, it's possible to spot the C4 suspension components tucked neatly under the midyear's body.

02 ➔ Classic Instruments gauges, Vintage Air HVAC, an ididit tilt column, and a stock RPO N32 teak wheel are just some of the cabin's highlights. **03** ➔ Stock-style shifter swaps cogs on the six-speed manual trans, which previously resided in a fourth-generation Camaro. **04** ➔ Re-chromed '02 C5 rims add a custom look, while Baer front discs add stopping power to match the LS7. Side-mount exhaust is a repro of the classic '65-'67 RPO N14 setup. **05** ➔ MTX Audio subwoofer ensures that onboard entertainment won't be drowned out by the side-piped LS7.

the time, I'd just had my knee replaced, so I couldn't go get it," Kalina says. "I just bought it from the pictures. My two partners went out there and picked it up for me."

Once the car was hauled home, they began the project by taking the midyear apart. What wasn't going to be reused was put to one side of the garage, for sale to other C2 owners and restorers. "I sold the chassis, engine, transmission—everything that was under the car, I sold on eBay," says Kalina, who was then left with an original '63 coupe body that needed some help. "When we stripped all the paint off of it, we saw that one door needed a new skin, and we found that the right front needed some repair work," he says. "Those kinds of things you have to expect."

When it came to the chassis, Kalina chose a roller from Newman Car Creations, with a complete C4 suspension system—front and rear—already installed. "We rolled it off the trailer and put the body on it," Kalina says of the conversion.

He had plenty of help in building the rest of the split-window Vetterod: Chevy Performance Parts built the LS7 crate engine, while Distinctive Street Rods in Syracuse, New York, did the bodywork and paint. The latter job included widening the rear quarters, shaving off the emblems and trim, and adding a stainless steel grille. RP Interiors in Horseheads, New York, stitched up the cabin's seats and trim. The colors on and inside the body (including the two-stage Glasurit Black paint) were chosen by Kalina's wife, Lizz.

In all, it took about two years for Kalina's dream car to go from discovery to debut, with about a year's worth of shop work needed to put the Vetterod together. Unlike many other resto-rod projects, this one went smoothly from start to finish, especially when it came to the chassis. "Paul Newman helped direct us through what we had to do, and we really didn't have any difficulty," Kalina says of the assistance he got from the California-based chassis shop.

What's it like to drive this C2-on-a-C4? "People who drive it, or ride in it, just can't believe it," says Kalina. "It's a solid car," he

SPEC SHEET

'63 COUPE

OWNER	Don Kalina; North Abington Township, PA
BLOCK	Stock LS7 aluminum with six-bolt steel main-bearing caps
DISPLACEMENT	427 ci
HEADS	Stock LS7 aluminum
VALVES	Stock 2.20-in titanium (intake)/1.61-in sodium-filled (exhaust)
CAMSHAFT	Stock LS7 hydraulic roller
ROCKER ARMS	Stock 1.8-ratio with offset intake
PISTONS	Stock hypereutectic aluminum
COMPRESSION RATIO	11.0:1
CRANKSHAFT	Stock forged steel
RODS	Stock forged titanium
OIL SYSTEM	Stock dry sump
FUEL INJECTION	Stock
IGNITION	Stock electronic coil-on-plug
INTAKE MANIFOLD	Stock LS7 composite
EXHAUST	Street & Performance coated headers, reproduction RPO N14 side pipes
TRANSMISSION	T-56 six-speed manual
CLUTCH	Hydraulic
DRIVESHAFT	Custom carbon-fiber
REAREND	Newman Car Creations with 3.73 gears
SUSPENSION	C4 Corvette with transverse composite leaf springs and tubular shocks (front and rear)
BRAKES	Baer discs with drilled/slotted 13-in rotors (front); C4 Corvette discs (rear)
WHEELS	Re-chromed '02 Corvette; 17x8.5-in (front), 18x9.5-in (rear)
TIRES	Pirelli PZero Nero; 245/45ZR17 (front), 275/40ZR18 (rear)
MILEAGE	Approximately 800



[COVER STORY] MIDYEAR MAKEOVER



06 → The rear quarters were subtly stretched to fit the wide rims and rubber. **07** → A 505hp CPP LS7 replaced the non-matching small-block that was under the C2's hood. **08** → Distinctive Street Rods executed this stylish remake of the '63-'64-style hood "grilles." **09** → Kalina's wife, Lizz, selected the color scheme for the car, including the two-stage Glasurit Black paint applied to its freshly smoothed skin.

adds, while stating that the overall experience rivals that of a C6. "I have an '05 right now that I'll be trading in on a new '14. If you closed your eyes and drove either it or this Sting Ray, you wouldn't know the difference."

But the judges have seen the difference between Kalina's '63 and competing rides on the show field, honoring the midyear with class wins and other awards at Carlisle, the Syracuse Nationals (where it was a Top 12 winner), and at Goodguys' big show at Rhinebeck, New York.

Maybe you, too, have asked around at Corvette shows and other events over the years, in search of that ideal project car. "If you're going to do it, find a body that's half decent," advises Kalina. "Make sure that the body is as good as it looks. That's the key, [and] you can save yourself a lot of money."

With a decent body, a rolling chassis, a modern crate engine, and a little bit of luck, you're bound to make your own dream Vet-tered a reality. **VETTE**





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THE PRIDE 0



01



02



'69 L88 STINGRAY RESTORED TO ON-TRACK GLORY

SCOTT ROSS TEXT
JERRY HEASLEY PHOTOS

Back in the day, it was possible for a devoted Corvette enthusiast to order up not just a Vette for racing, but one that could take on the well-sponsored "big boys" who ruled the roost in SCCA A/Production racing back then—and win!

One of those was Milton "Babe" Headley of Paoli, Pennsylvania. In 1969, he ordered up a new Corvette Stingray coupe with the RPO L88 engine option, and then built it into a race car whose current owner calls a "giant killer."

"He won at Lime Rock and Watkins Glen with that car, and he beat the big guys," says Tom O'Brien.

Racing out of Babe's Garage of Paoli (located not far from the shop of Chevrolet drag racing legend Bill "Grumpy" Jenkins), it also competed at tracks such as Mosport and Bridgehampton before Babe sold it to another Delaware Valley-area Vette racer, Scott Perfetto, in 1974.

Its racing career continued—in SCCA's A/Production and GT-1 classes and in its Trans Am Series, as well as in IMSA's Camel GT Series through 1983. That year, Gary Griffith—longtime Corvette Club of Michigan President who'd purchased it from Scott—ran it twice

01 → Restored to race-ready condition is the ex-Milton "Babe" Headley L88-powered '69 Stingray. **02** → Whenever Tom shows this C3, he draws a crowd of Vette lovers who remember when it raced—and won.

F PAOLI

[SPEED READING] THE PRIDE OF PAOLI



before his untimely passing. Gary's wife later sold it to Corvette shop/salvage yard operator Bob Smith of Ypsilanti, Michigan, where it sat for years until its eventual rediscovery and restoration.

Tom says that when he found it about five years ago, it had been restored, but it wasn't quite track-ready. "We basically pulled everything, tightened everything, and re-assembled it," says Tom of the work that brought it back to 100 percent restored—to the condition Babe raced it. "This particular one was brought back to its racing heritage, not to factory stock," Tom adds. "The dashboard's different, and the electronics in it are different. But the chassis and everything else is 100 percent stock."

The owner of three other L88s, Tom was taken with this one's history. "This car intrigued me because Babe Headley was an independent racer," says Tom. "He had no sponsorship, and he did it out of his little garage. Lo and behold, it became one of the most successful road-racing Corvettes in history. It beat all the big guys!"

And, in the restored condition we saw it in at last year's Corvette Funfest, it looks ready to



03 ➔ If you wanted plushness in a '69 Chevy, you bought a Caprice. If you wanted the fastest production road-racer in the Bow Tie lineup, you ordered your new Stingray with the L88 option, then took the stock interior out and installed a race-ready one, like "Babe" Headley did. **04 ➔** Included with the documentation and memorabilia that came with this car is this original race-worn "Babe" Headley helmet. **05 ➔** Period-correct, but

beat them all again, with its "430 horsepower" L88. Tom, who says that peak power number is actually closer to 610, says it's a handful on the bias-ply tires it raced on back then, but Babe had a few tricks up his sleeve. "Applying that horsepower to those crummy tires they had back then the weight of that Corvette in the back was relatively light, and he did

overcome it with some suspension changes," notes Tom.

Babe may have had help getting the hardware he needed, as Roger Penske's original Chevrolet dealership in Wayne, Pennsylvania was just a few miles east of Babe's Garage, and whose parts department—and customer-service work—would have lived up

SPEC SHEET

'69 STINGRAY COUPE

OWNER	Tom O'Brien, Pittsburgh, Pennsylvania
ENGINE	Chevrolet Mark IV big block (RPO L88)
BLOCK	'74-vintage Chevrolet Service Parts L88, cast-iron with four-bolt mains
DISPLACEMENT	460 cubic inches (7.4 liters)
HEADS	'69-vintage L88, cast aluminum, ported and port-matched to intake manifold
VALVES	Chevrolet L88, stainless steel, 2.19-in intake, 1.88-in exhaust, with three-angle valve job
CAMSHAFT	Chevrolet L88, solid lifter, 0.600/0.600-in lift
PISTONS	J&E forged aluminum, 0.030-in over, with float- ing pins
CRANKSHAFT	Forged 4.00-inch stroke crankshaft, drilled and chamfered
OIL SYSTEM	Melling HV-77 mechanical oil pump, Milodon 8-quart road race oil pan, remote-mount oil filter and oil cooler
CARBURETION	OEM L88 850-cfm dual-feed Holley, modified by McLendon Racing
IGNITION	MSD 6AL electronic, with "Pro Billet" distributor and 8 mm spark plug wires
EXHAUST	Hooker headers and side-mounted exhausts, no mufflers
TRANSMISSION	Borg-Warner Super T-10 four-speed manual, with G&G roller bearing tail housing, heavy-duty drive yoke, 11-in Borg & Beck three-finger racing clutch with a Hayes clutch disc, Lakewood safety bell-housing, Hurst Competition Plus shifter and remote-mounted fluid cooler
FRAME	Restored race-prepared C3 Corvette
SUSPENSION	Restored race-prepared C3 Corvette (Front) Heavy-duty coil springs, Bilstein shocks, solid bushings (Rear) Transverse steel leaf spring bundle with Bilstein shocks, adjustable rear camber rods and offset trailing arms and raised solid rear crossmember mounts
BRAKES	Restored '69 Corvette L88 discs all around
WHEELS	American Racing Torq-Thrust, 15x11 inches front, 15x12 inches rear
TIRES	Goodyear "Blue Streak" Sports Car Special, 6.50-15 front, 8.50-15 rear, bias ply



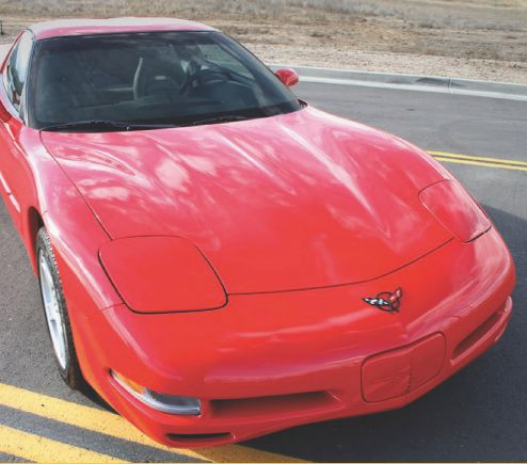
a real handful in the corners, despite the Goodyear racing rubber. **06** ➔ Call this a "Custom Interior"—race-customized by "Babe" Headley. **07** ➔ What you need to know, when you need to know it. **08** ➔ Tom O'Brien owns three other L88s, but this one's "giant killer" racing history got his attention.

to Chevrolet's 1969 sales slogan ("Putting You First Keeps Us First!") in a big way.

As we mentioned above, this L88 is the fourth one that Tom's owned, and he says this one is definitely no street cruiser. "You're in another world," he says when asked what it's like to drive. "It's not for the weak of heart. It's probably the fastest thing I've ever driven on a

straightaway. Cornering-wise, it's a real handful, but it's got the power when you need it. It certainly has the power, believe me!" He adds, "You have to be a driver to get it around the track."

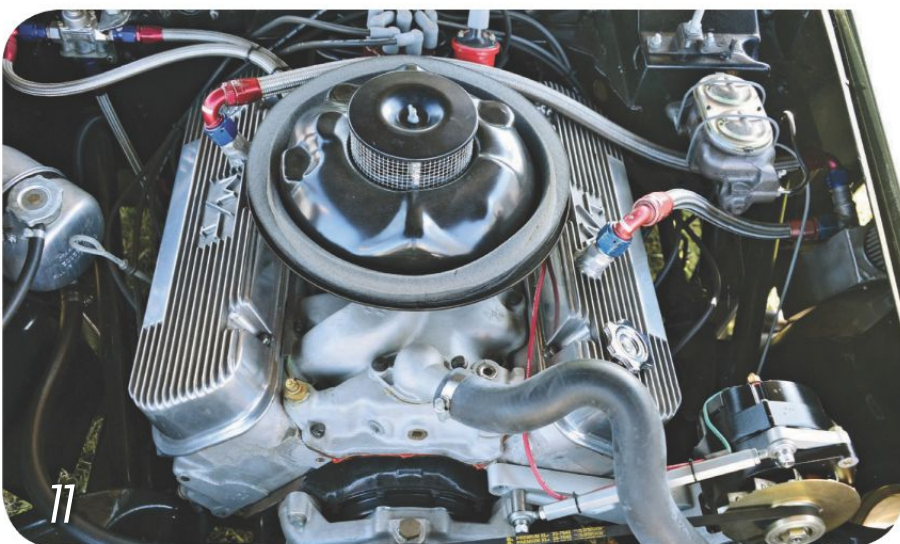
Tom says that he takes it out for some serious track time at least once a year. "We go out at least once a year," he says. "There's a



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[SPEED READING] THE PRIDE OF PAOLI



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MAKE SPEC THE OBVIOUS CHOICE
WHEN IT COMES TO RACING
CLUTCHES AND FLYWHEELS.
SPEC YOUR CAR TODAY.

SPEC
CLUTCHES & FLYWHEELS
SHIFT TO A HIGHER STANDARD.

09 → Just like it was raced, with the headlights fixed in place (and covered), and with uprights holding the front spoiler in place. **10** → In back, you see the dry break that sits atop the fuel cell, and the lack of rear bumpers. **11** → The heart of the beast—restored L88 cranks out over 600 hp. **12** → No power steering, no power brakes...just power! **13** → The L88 breathes out through Hooker headers/sidemount exhausts. Body markings are re-creations of those the car wore during its SCCA and IMSA racing days.



track up by us called Beaver Run, and we take it out there to display it and take some people around the track, and then do about three laps of serious stuff." He adds that he'd like to take it to Like Rock and Watkins Glen—two tracks where it won in the past—and that it brings back a lot of memories for Corvette lovers who saw it in action. "People are contacting me all the time, when they get wind of it," he says of their stories that begin with "I remember this car when it raced at..."

If you're thinking of adding an L88 to your Corvette collection, Tom has this advice: "To find a real L88 is just a treasure, but you've obviously got to be careful." He adds, "If you can find a real one—for a collector, that's the cornerstone of any collection."

Just 116 '69 Stingrays were built with Chevy's top race engine in 1969, following 80 '68 Corvettes built at St. Louis with it the year before, and just 20 production L88-powered '67 Sting Rays.

Speaking of being careful, that's what Chevrolet tried to be when the L88 was on Corvette's option list, making sure that the customers who sought them out were those who'd actually race them, instead of driving them on the street and trying to qualify for a Darwin Award in the process.

That may have been why the L88's factory horsepower rating was five horsepower less than that of the triple-carbed RPO L71 427, which stickered at \$437.10 as opposed to the L88's \$1,032.15 tariff. (L88 buyers also had to spring for \$549.40 worth of mandatory options including the K66 transistorized ignition, J56 heavy-duty brakes, F41 special suspension and G81 Positraction.) These prices were on top of the sticker prices for the '69 Stingrays, which started at \$4,438 for the droptop and \$4,781 for the coupe. The special aluminum block option for the L88—RPO ZL1—added another \$4,718.35 on top of all that.

But Tom has one more piece of advice. "If you find any original ones, please call me—I'm interested all the time!" **VETTE**



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[SPEED READING]

There's something to be said about a guy's first car, especially when it reveals an early interest in the go-fast lifestyle. In the case of teenager Camren Massengale, he grew up in a Corvette household, thanks to his dad Rodney, who owns and operates RPM Transmissions in Anderson, Indiana. Incredibly, Camren was a mere 15 years old at the time of our photo shoot, but he had managed to slip under the radar at many dragstrips across the country in the preceding months. How cool would it be to run 10s in a killer Corvette at the age of 15? Let's find out.

When Rodney found the '03 Z06 on a Corvette online forum, it had been abused to such an extent that the powertrain was no longer usable. This proved to be a perfect situation, as Rodney had a fresh LS3 sitting at the shop, and, thanks to his performance-driveline expertise, he could whip up a stout transmission and rearend setup in no time. The car proved to be a great father-and-son project, and it put Camren in the driver's seat at a very early age.

Although it looks stock on the outside, the car has a number of modifications that help it survive the abuse of drag racing. And though it was intended to be an entry-level performer, it goes 10.80s on pump gas with no power adders. The rear suspension is essentially untouched, aside from the original shocks having been swapped out for C6 Z06 units. The rearend, however, is an RPM Stage 3 piece, fitted with Driveshaft Shop axles and a 3.42 micropolished gearset. In addition to the differential upgrades, the undercarriage of Camren's Corvette now features C6 Z06 brakes on all four corners, as well as a C6 Z06 rear sway

bar. The front bar was removed to reduce weight and allow for better weight transfer.

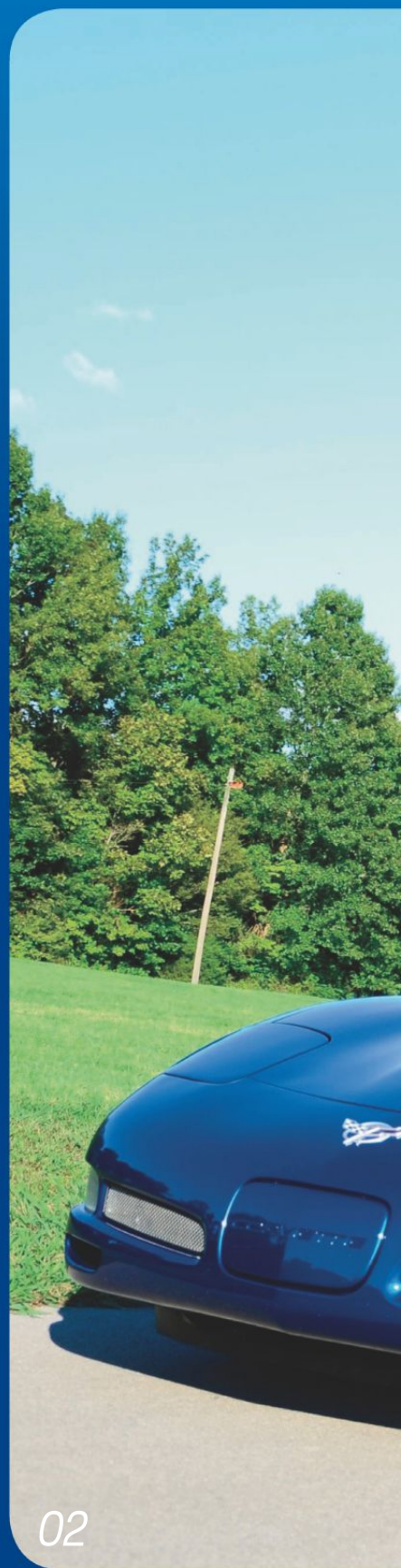
The Corvette rolls on a set of Fikse FM10 wheels, which measure 18x9.5 inches up front and 18x12 inches out back. Mickey Thompson 345/35R18 drag radials fit the car nicely, thanks to a Lingenfelter mini-tub kit that was installed at RPM. Rodney's shop also handled the installation of the Race Specialty Designs five-point rollbar.

Camren's right foot controls the healthy LS3, which is slightly larger in displacement than the Corvette's original LS6. The 6.2-liter engine makes great power in stock form, but this one features a few precise modifications that dramatically increased output without the need for racing fuel or any type of power adder. Starting with a stock short-block, the guys at RPM slipped in a Lingenfelter Performance Engineering GT11 camshaft and topped the package with a set of LPE-ported LS3 heads. The latter feature CNC work and all sorts of valve-train goodies, including stainless-steel valves, Patriot valvesprings, Comp Cams pushrods, and stock rocker arms that were upgraded with a Comp Retro-Fit Trunnion kit.

Fuel delivery is handled by a Walbro 255-lph pump, while LS7 coil packs light the fire. Exhaust gasses flow through a set of Dynatech long-tube headers that attach to the stock 2.5-inch exhaust tubing and original titanium mufflers. Phil Hoefer tuned the combo to run on 93-octane pump gas using HP Tuners software.

Although Camren didn't give us any horsepower numbers, his dragstrip times put the mildly tweaked LS3 solidly in the 500-horsepower range. Backing all that power is an RPM Level 7 4L60E automatic transmission

01 ➔ LPE mini-tubs provide clearance for the 345mm rear tires. Dynatech headers feed the factory titanium pipes and mufflers. **02 ➔** Factory Electron Blue paint still looks great after more than a decade of service. Look closely, and you can just make out the C6 Z06 brake-conversion hardware.



FAST STARTER

CAMREN MASSENGALE'S '03 Z06 JUST
MAY BE THE ULTIMATE "FIRST CAR"

TOMMY LEE BYRD WORDS | PHOTOS



[SPEED READING] FAST STARTER

03 ➔ Camren Massengale may be young, but he gets lots of respect, thanks to his 10-second Z06. This father-son project put him in the driver seat well before his 16th birthday.

04 ➔ Aside from a Race Specialty Designs chromemoly rollbar, the “mod red” interior remains bone stock. **05** ➔ RPM Transmissions built the LS3 engine, which is loaded with Lingenfelter parts and makes around 500 hp. **06** ➔ Although it runs 10.80s at more than 125 mph, the car is 100 percent street legal. We photographed it in Bowling Green, Kentucky, during last year’s Holley LS Fest. **07** ➔ Massive Mickey Thompson drag radials mounted on Fikse wheels offer plenty of traction and an aggressive stance. Rubber splatter on the quarter panel adds character.

that’s packed with heavy-duty parts designed to withstand more than 800 hp at the wheels. The indestructible trans also features a Precision torque converter that allows the car to leave the line at around 2,800 rpm.

Even though the car led a rough life until Rodney and Camren “rescued” up, the body and paint escaped without serious injury. The original Electron Blue finish has survived more than a decade and still looks great, especially when combined with the added shine of the polished-aluminum wheels.

One major advantage of the Z06’s fixed-roof body style is the weight savings it provides compared with its targa-top brethren. Camren’s Z06 tips the scales at just 3,150 pounds, around 100 pounds lighter than a typical ‘03 hatchback. Factor in the comfy, fully optioned interior, and you have a car that acquits itself as well as on the street as it does on the track. For proof, consider that Camren put 1,200 miles on the car in its first season, only some of which were accrued in quarter-mile increments.

At the time of our shoot, Camren was already working on making the car faster, even hinting at the idea of nitrous. Since then he’s tested out some other RPM-built cars as well, so to say this teenager is fully involved in drag racing would be a major understatement. Yes, this father-and-son project turned a slightly underage driver into an all-out car guy...and it only took 10.84 seconds. **VETTE**





SPEC SHEET

'03 Z06

OWNER	Camren Massengale; Middletown, IN
BLOCK	Stock LS3 aluminum with six-bolt mains
DISPLACEMENT	376 ci
COMPRESSION RATIO	11.5:1
HEADS	LS3 aluminum, ported by Lingenfelter Perfor- mance Engineering
VALVES	Stainless steel
CAMSHAFT	Lingenfelter GT11 hydraulic roller (215/231-deg duration, 0.631/0.644-in lift, 118- deg LSA)
ROCKER ARMS	Stock 1.7-ratio with Comp Cams Trunnion Kit
PISTONS	Stock hypereutectic alu- minum
CRANKSHAFT	Stock nodular iron
RODS	Stock powdered metal
INTAKE MANIFOLD	Stock LS3 composite
FUEL SYSTEM	Walbro 255-lph
IGNITION	LS7 coil-on-plug
EXHAUST SYSTEM	Dynatech long-tube headers, stock mufflers
TRANSMISSION	RPM Level 7 4L60E
TORQUE CONVERTER	Precision Industries with 2,800-rpm stall speed
DRIVESHAFT	Driveshaft Shop custom
FRONT SUSPENSION	C6 Z06 shocks, removed sway bar
REAR SUSPENSION	C6 Z06 shocks
REAREND	RPM Stage 3 with Drive- shaft Shop axles and 3.42 gears
BRAKES	C6 Z06 (front and rear)
WHEELS	Fikse FM10 forged; 18x9.5 in (front), 18x12 in (rear)
FRONT TIRES	BFGoodrich g-Force T/A KDW, 275/35ZR18
REAR TIRES	Mickey Thompson ET Street Radial, 345/35R18
FUEL OCTANE	93
WEIGHT	3,150



06



07



01



02



03

01 → The restored Rebel as displayed in the Salon section of the '14 Barrett-Jackson Scottsdale event. This area is reserved for the auction's rarest and most valuable vehicles. 02 → Or Costanzo was very active in the SCCA's Florida Region, entering his L88 Corvette in as

many races as his schedule would allow. This is how the Daytona Yellow convertible looked at an August 1969 event held at Daytona International Speedway. Costanzo took the overall victory. 03 → The car received this new "ketchup themed" paint scheme prior to the 1971



REBEL REBEL

THE LEGENDARY RACING CORVETTE NOTCHES ONE MORE RECORD, THIS TIME AT BARRETT-JACKSON

WALT THURN WORDS | PHOTOS

EDITOR'S NOTE: In our March issue, we told you about the legendary "Rebel" Corvette, an L88-powered '69 convertible that achieved unprecedented success on the road-racing circuit in the early 1970s ("Best of the Best"). Not long after our story hit, the car sold for \$2.86 million at the Barrett-Jackson Scottsdale auction, making it one of the most highly valued Corvettes of all time. Given that impressive showing, we've decided to revisit the story of this legendary racer, this time with a greater emphasis on period photography. We've also asked one of the car's original crewmembers, longtime VETTE contributor Walt Thurn, for his insider's perspective.

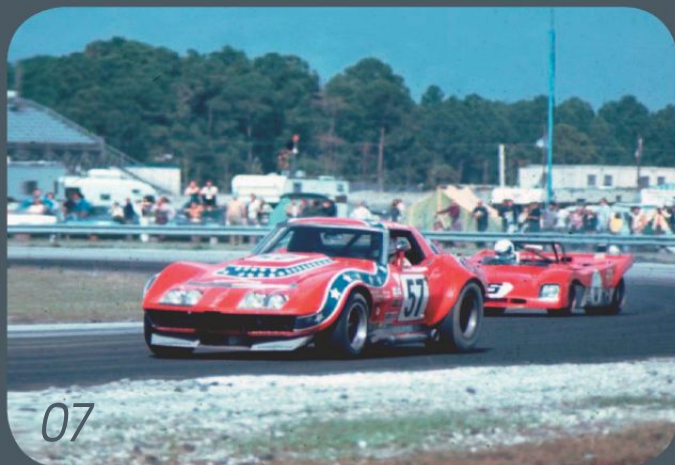
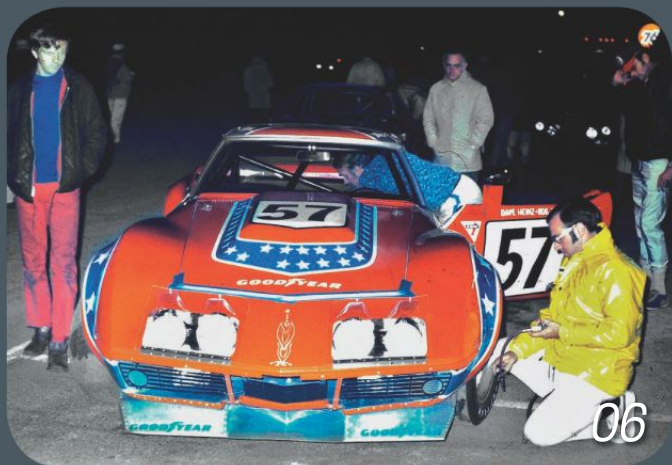


season. Driver Dave Heinz was trying to convince the H. J. Heinz Company to come onboard as a sponsor. While his efforts proved unsuccessful, the team finished Sixth overall and Second in GT at the '71 24 Hours of Daytona. **04** ➔ (From left) Co-driver "Marietta" Bob Johnson,



Costanzo, and Heinz stand by the car before the start of the '71 Sebring 12-hour. **05** ➔ Heinz and Don Yenko drove the freshly painted Rebel car to a win in the final IMSA race of 1971. The team won the "Over 2-Litre" class championship, while Heinz also took the Driver's title.

[LIFESTYLE] REBEL, REBEL



06 ➔ Heinz captured the pole position for a midnight race at Daytona in January 1972. The car was fitted with an all-aluminum ZL1 engine for this event. Kneeling at right is a Goodyear technician, checking pressures on the new racing radial tires. **07** ➔ The '72 Daytona 24-hour race was shortened to six hours due to the fuel crisis. While it was passed by the Ferrari here, the Rebel finished First in GT and Eighth overall. This win touched off the famed Goodyear/BFGoodrich "tire war" between the Rebel and John Greenwood's American-flag-themed Vettes. **08** ➔ In between major races, chief mechanic Dana English used the car to earn his competition driver's license. Though quick, English decided to focus on prepping the car rather than becoming one of its drivers. Here, he checks his rearview mirror for competitors. **09** ➔ At the '72 Sebring 12-hour, the Rebel qualified second in GT and 15th overall. Here, it sits on the grid with its lead crewmembers, (from left) Warren Clapp, Steve Leonard, and English. The Corvair "fans" were added to the front wheels to aid brake cooling. **10** ➔ A large crowd was on hand to watch the '72 Sebring race. Here, Johnson pushes through a long right-hand sweeper at 150 mph. **11** ➔ Zora Duntov took a personal interest in the Rebel team. Here, helps Clapp and Leonard sort out a braking problem with the car. The Rebel went on to finish First in class and Fourth overall.



Back in the early 1970s, this author was part of a privately funded Corvette racing team based in Tampa, Florida. Although each team member worked a full-time job outside of racing, and development and construction work took place on nights and weekends, the team regularly placed on the podium in the events it entered.

Many people contributed to this success, but Orlando "Or" Costanzo, Dana English, Warren Clapp, Kenny De Vane, Toye English, and Steve Leonard deserve most of the credit. They had but one race car, an '69 L88 Corvette that evolved into the famous No. 57 "Rebel" L88.

Following its successful three-year run in IMSA and SCCA competition, the car was

sold to Alex Davidson for \$7,400 at the end of 1972. Like many retired Corvette race cars of the era, it quickly dropped out of sight.

Years later, restorer extraordinaire Kevin Mackay and Corvette historian David Reisner launched a search for the Rebel, relying on a single clue they obtained from Davidson. The car's former owner told the pair he had sold it "to a dentist named Charles in the Carolinas."

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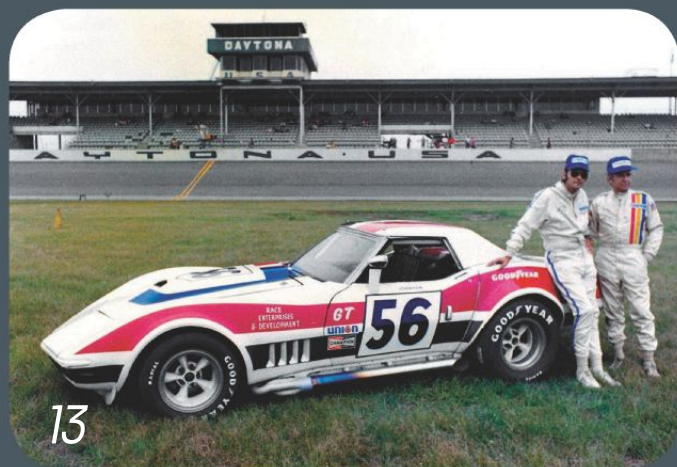


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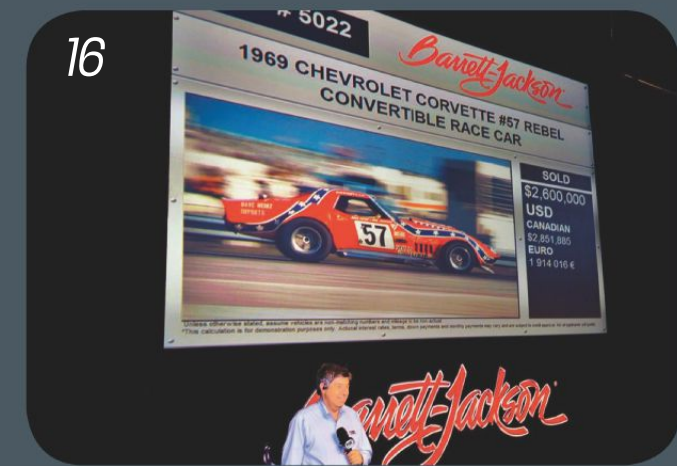


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[LIFESTYLE] REBEL, REBEL



12 ➔ The team decided to run two cars at the '72 Watkins Glen and Mid-Ohio races, refinishing both of them with this modified Rebel paint scheme. The original Rebel finished 18th at the Glen after a throttle cable broke, then took Ninth at the Six Hours of Mid-Ohio. This was the last time the team ran both cars, and the Rebel became a spare. **13** ➔ For the last race of the '72 season, at Daytona, the team unveiled yet another new look. It was shortly after this race that the Rebel was sold to Alex Davidson. It had this same paint design on it when Kevin Mackay found it stored in a South Carolina junkyard. **14** ➔ Many of the original crewmembers and drivers had previously autographed the underside of the Rebel's hood. **15** ➔ Mackay drove the Rebel onto the auction block, and the mighty roar of its L88 engine reverberated throughout the arena. When the bidding began, the price jumped quickly to one million dollars and kept climbing. **16** ➔ Fox Sports announcer Mike Joy beams as the Rebel's "sold" price of \$2.6 million flashes on the screen. The final price after fees was \$2.86 million.



After a lot of searching, Mackay and Reisner managed to track down the Rebel at a scrapyard in South Carolina.

This author provided Mackay with an assortment of contemporary photos to confirm that he had located the right car. Armed with this information, Mackay and his team at Corvette Repair Inc. in Valley Stream, New York, restored the Rebel to its 1972 Sebring-winning trim. The

finished car was unveiled a part of the 1994 Bloomington Special Collection, after which it appeared in the National Corvette Museum, the Bloomington Gold Special Collection, and the Corvettes at Carlisle show. It also received the NCRS American Heritage Award.

On January 18, 2014, the Rebel sold for nearly three million dollars at the Barrett-Jackson auction in Scottsdale, Arizona, setting a new

record for third-generation L88 Corvette race cars. Contributing to this impressive sum was an extensive collection of original paperwork and photography, along with the imprimatur of the original team members. With its unique options set and unmatched record of on-track success, the Rebel ranks among the most impressive racing Corvettes in existence today. **VETTE**

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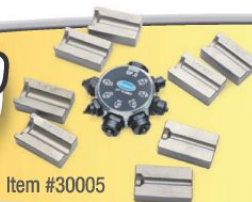


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Originally, Los Angeles was supposed to be in San Diego. But it didn't happen, and that's a good thing, because it preserved the pristine character of a spectacular SoCal destination for cruising around in a Corvette.

By way of explanation, San Diego was initially eyed for its potential to become the main commercial seaport for California, thanks to its large natural harbor. But Los Angeles won out, in part by building a two-mile-long breakwater back in the early 1900s. The twin ports of Los Angeles and Long Beach eventually passed San Francisco as the busiest port in the United States. But what was good for commerce was bad for tourism, turning those cities' waterfronts into an eyesore, with extensive arrays of dock cranes for unloading container ships.

In contrast, while San Diego is still a major port, it hasn't been sullied by excessive waterfront industrialization. Which makes it a much more pleasant place for touring in a Vette, with clearer skies and cleaner water, better beaches and far less traffic congestion.

San Diego also doesn't have the same urban sprawl. Instead, it features more tightly knit, defined neighborhoods, such as Little Italy, the Gaslamp Quarter, and Old Town. The latter is regarded as the birthplace of California, at least from the standpoint of the first European settlers in 1769. (The indigenous peoples likely had a different perspective.) Today, this historic site recreates the feel of California in the mid-1800s, with scores of restaurants, galleries, museums, artisans, and other attractions located in a tree-shaded area near the intersection of the 5 and 8 freeways, a couple miles north of the harbor.

Our tour, however, started well north of San Diego in the tony area of La Jolla (pronounced "la-hoya," possibly a mistranslation from Spanish for "the Jewel"). We then wound our way south to downtown in a trio of cool Corvettes, with George Marks, Robert White, and Robert's brother, Dave.

01 → Our San Diego tour guides George Marks, Dave White, and Robert White pose with their Corvettes at our initial rendezvous site near the Salk Institute.



SAILING THROUGH **SAN DIEGO**

HOW THE HARBOR'S LOSS BECAME A
BOON FOR CORVETTE TOURING

STEVE TEMPLE WORDS | PHOTOS



[LIFESTYLE] SAILING THROUGH SAN DIEGO



02



03



04



05



06

All three of these guys are San Diego residents, and they were quite accommodating for our drive.

Owned for 25 years and showing less than 60,000 on the odometer, Marks' '63 roadster is a numbers-matching San Diego car with classic black-and-yellow California plates. This long-time runner has a 300hp 327 with a four-speed, along with a Wonderbar radio and clock that both still work. Although not restored, the car was repainted five years ago with the original color, and the bumpers were just re-chromed as well.

As for the White brothers, the immaculate '65 red coupe was purchased by Robert and wife Kim for their 30th wedding anniversary. (To be precise, he bought it from a military officer deployed in the Middle East and kept it in storage for three months until their anniversary party).

After purchasing the coupe, Robert

02 → The area overlooking Black's Beach is a popular launch site for paragliders—thanks, perhaps, to the beach's clothing-optional policy. 03 → Scenic La Jolla Cove features pristine waters and a protected dive site. Seals may usually be found sunning there.

04 → The La Jolla Art Museum features a roof festooned with boat hulls, a nod to the community's traditional dependency on maritime trade and recreation. 05 → Spanish architecture may be found in abundance throughout San Diego, a reminder of the area's earliest European settlers. 06 → Ascending Mount Soledad, our Corvette trio pauses at a spectacular overlook facing the city to the north.

upgraded it quite a bit with Steroids power steering, a Tremec TKO-500 five-speed, Baer disc brakes with drilled rotors, Vintage Air HVAC, and an intake manifold, carb, valve covers, and shocks from Edelbrock. American Racing Wheels and a Custom Auto Sound stereo system provide the finishing touches. The non-original engine is a 350hp 350 SBC, while a "stinger" hood makes room for the tall Edelbrock manifold.

Robert and brother Dave (who joined us in

his C6 convertible) recently attended the Detroit International Auto Show to see the unveiling of the new Z06 and C7.R race car. At the time of our shoot, they also planned to head to Sebring for this year's TUDOR race, as well as to Bowling Green in mid-2015 to pick up C7s together.

"We still have the '78 coupe that was my father-in-law's [and which] has been passed on to my older son, Ryan," Robert adds. "My younger son, Matt, has an '03 Z06 that he and I track together with my '10 ZR1. As you can



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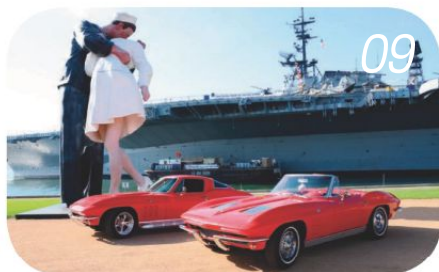
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[LIFESTYLE] SAILING THROUGH SAN DIEGO



07 → A little higher up is the Mount Soledad Veterans Memorial, which pays tribute to U.S. service members who fought in the Korean War. **08 →** Located near Sand Diego Harbor, the Corvette Diner is an ideal destination for a Corvette cruise. “There is no going to heaven in a sedan,” reads a sign hanging there. **09 →** The statue *Unconditional Surrender* still stands, but it was recently refashioned from bronze after being hit by a wayward car. In the background is the USS *Midway*, which also serves as a museum. **10 →** Numerous tightknit communities such as Little Italy make San Diego more appealingly diverse than its larger neighbor to the north, Los Angeles. **11 →** The San Diego Maritime Museum features several classic vessels, including the submarine the USS *Dolphin* (foreground) and the steamship *Berkeley*.

tell, there are loyal Corvette lovers throughout the family.”

After meeting up, our first stop was at Torrey Pines Bluffs, a popular paragliding area overlooking Black’s Beach, known for its nude sunbathers and surfers. While we didn’t spot any clothing-optional denizens, we were parked way high up on a cliff, and we didn’t have an extra-long telephoto lens with us, either.

From there, we rolled into downtown La Jolla, overlooking the famous La Jolla Cove. Unlike Black’s, the bare skin of sea lions sunning on the rocks was clearly visible. No shame there, plus nearby there’s a manmade tunnel dating back to the early 1900s at the Sunny Jim Cave Store, in case you want to explore the rocky shoreline from a different vantage point.

Cruising a little further south on La Jolla Boulevard, we turned right on Nautilus street to Wind ‘N’ Sea beach, a famous surf spot. On a personal note, your author missspent his youth on a longboard here for several years, dropping off the steep wave peaks of this primo shore

break. (He now gets his jollies by dropping the hammer in a primo Corvette.)

Heading inland on Nautilus, the road ascends in a winding fashion up to Mount Soledad, the site of a park dedicated to war veterans. This monument is now the nexus of some controversy, as the status of the large white cross there has been in litigation. So consider this feature as a visual documentation of a religious landmark that might disappear at some point.

After paying our respects to the images of fallen warriors at the monument, and taking in the expansive views of the seacoast to north, we headed south again, down the aptly named La Jolla Scenic Drive overlooking Pacific Beach. This part of town has more accessible beaches, such as at Tourmaline Canyon, plus lots of trendy hangouts and an amusement arcade in Belmont Park at the south end. Just east of this park is Mission Bay, a pleasant area for boating and water sports, and the site of Sea World.

Heading farther south you can take a leisurely drive past Shelter Island’s yacht and

charter-fishing marina to the tip of Point Loma, where there’s a commanding view of San Diego Harbor. The Old Point Loma Lighthouse is a reminder of simpler times, of sailing ships and oil lamps, and the men and women who day after day faithfully tended the coastal lights that guided mariners.

But we chose a more direct route toward the harbor, stopping along the way to get a bite at the Corvette Diner, located near the intersection of Rosecrans and Lytton, on Historic Decatur Road. This ‘50s diner has some good grub and libations, plus waitresses singing and dancing amid the nostalgic automotive decor.

Once refreshed, we made our way along Harbor Drive to take in the view of the Coronado Island Bridge, along with the Maritime Museum of San Diego. Berthed there are some world-class vessels, including the *Star of India* (an old square-rigger sailing ship) and an authentic Russian sub, among other intriguing historical attractions.

A little farther south is the USS *Midway* aircraft carrier and museum, outside of which stands a statue rendering of “The Kiss,” the famous *Life* magazine photo taken on V-J Day in Times Square. The urethane and foam-core statue pictured here has since been replaced with a bronze version, after a car jumped the curb and knocked a hole in the sailor’s foot (and no, we had nothing to do with that incident).

When it comes to dining, the nearby Seaport Village, along with as the aforementioned Little Italy and Gaslamp Quarter, are all great areas for fresh seafood and other exotic cuisine. And if you want an exotic destination as well, but don’t want to take your Corvette south of the border, you can take the Tijuana Trolley from downtown for a day trip to Mexico.

Overall, San Diego has more than enough to keep you occupied for several days of sightseeing, seaside strolling, or even beach bumming. And all because the city’s harbor lost out to Los Angeles—yet really won out in the end. **VETTE**

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WALT THURN WORDS | PHOTOS



A new era in American sports-car racing began with the opening round of the TUDOR United Sports Car Championship (USCC). The race took place at the 3,560-mile Daytona International Speedway. This is the first race since Grand Am and American Le Mans Series (ALMS) merged. Four classes and 67 cars started the 52nd Rolex 24 at Daytona. This included Prototype (P), Prototype Challenge (PC), Grand Touring Le Mans (GTLM), and Grand Touring Daytona (GTD). Two categories are of particular interest to Corvette enthusiasts, P and GTLM.

Six Corvette Daytona Prototypes (DP) were in the starting field. They moved from Grand Am and into the USCC series with minor changes. These included a dual-element rear wing, more

01 ➔ Four Corvette Daytona Prototypes sit on the pre-grid before the start of the Daytona 24 Hour. In the front right is the winning No. 5 sitting next to the No. 9 Action Express team car that finished Third. In the right rear is the pole-winning Gainsco Corvette that did not finish and the Spirit of Daytona that finished Fourth. **02 ➔** The Gainsco No. 99 Red Dragon captured the pole position with a time of 1:38.270/ 130.416 mph. **03 ➔** When the green flag fell, four Corvettes sprinted off into the lead. The red Gainsco Corvette did not finish, but the other three were Fourth (blue No. 90), First (white No. 5) and Third (silver No. 9) after battling for the lead throughout the 24-hour marathon.

power (60 hp), and more freedom with suspension and brake choices. These cars are not eligible to race at Le Mans. Their ALMS equivalent is the LMP2 open prototype entries. They are lightweight, have a lot of aero downforce, and are fitted with non-turbo 5-liter or 3.2-liter turbo engines. They are eligible to race at Le Mans.

Eighteen P cars qualified and Corvettes

were first through sixth, and 11th. The No. 99 Corvette driven by Alex Gurney, Dan Fogarty, Darren Law, and Memo Gidley was the fastest at 1:38.270/130.416 mph. The Visit Florida No. 90 entry driven by Richard Westbrook, Richard Valiante, and Mike Rockenfeller was a tick behind at 1:38.487/130.129 mph. The slowest of these Corvettes is a new entry



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[LIFESTYLE] DAYTONA DOMINATION

C7.R's DEBUT AT DAYTONA



THE NEW FACTORY CORVETTE RACER LOOKS COMPETITIVE



For the second time in January, Corvette Racing visited the legendary Daytona International Speedway circuit. This time the team debuted its new race car without the previous camouflage. It was removed for the unveiling of the '15 Z06 at the recent Detroit auto show. The C7.R utilizes many of the new Corvette Z06 supercar styling features. The race car is compact and Pratt & Miller was very creative in packaged the racing equipment into the Corvette's sleek body. The 5.5-liter V-8 now has direct fuel injection and seemed to have plenty of power on Daytona's high-banked oval. The new Vette had excellent braking and quick exit speed out of the corners. The chassis engineers have

done some quality design work on this new racer. It was no surprise that several top GM executives were present to watch the new Corvette race. This included Mark Reuss, Global Chief of Product Development; Jim Campbell U.S. Vice President, Performance Vehi-

cles & Motorsports; and Mark Kent, GM Racing Director.

Qualifying was very competitive and the top four cars in the GTLM class were separated by 0.261-second. This included Viper first, Porsche second, Viper third, and Corvette fourth (No. 4).

The second Corvette (No. 3) had an electrical issue and failed to qualify, causing it to start 62nd on the grid. When the green flag fell, the poor qualifying position did not seem to matter to it. By the end of the first hour it had moved up 43 positions and was closing on the GTLM leaders.

Both factory Corvette racers were able to spar with the top three cars in the GTLM class from hour 6 to hour 22. At the end, overheating and transmission problems kept both cars out of a podium position. Based on their Daytona performance Team Vette does not think it will be long until they win in GTLM.



from Whelen Motorsports, driven by Eric Currin, Boris Said, Bradley Smith, and Max Papis. Their time was 1:40.570/127.434 mph. "It's fantastic to have two Corvette Daytona Prototypes on the front row for the opening race of the Tudor United Sports Car Series," said Mark Kent, Chevrolet's director of racing. "This is a testament to the collective effort by Chevrolet

Racing, Earnhardt Childress Racing, GM Powertrain, and our Chevrolet teams." The quickest LMP2 qualified 13th at 1:41.777/125.922 mph. These cars are expected to be quicker on shorter flat racetracks like Sebring, so time will tell how they fare.

In the GTLM class, two Corvette C7.R's were among the 11 entries. GTLM is a carryover



A → The C7.R uses large fender extensions to properly fit the Michelin racing tires. The large, lower airfoil under the rear of the car helps manage airflow. Steel brakes are mandated and rear-brake cooling comes from the fender vents in front of the rear wheel. **B** → This 5.5-liter direct fuel injected engine sits pretty far back for better weight distribution. Two small aluminum tubes on both side of the airbox are the mandated inlet restrictors. They are used to balance the Corvette's performance against other competitors. **C** → Corvette No. 4 is seen passing two GTLM Ferraris on the outside of turn No. 3. A race car needs a lot of grip to pull off this pass successfully. **D** → One of the Corvette Racing team's strengths is its amazing pit work. New for ALMS competitors moving to the USSC series is that the race car can be serviced when fuel is being added during pitting. When Corvette returns to Le Mans, no one can work on the vehicle until refueling is completed. **E** → It was a sad time for Corvette enthusiasts when the No. 4 went to the garage at 21h 24m to replace its transmission. It took the tired crew only 30 minutes to complete the job, but too much time was lost for it to fight for the lead. It finished Fifth in GTLM.

from the ALMS series and these cars are eligible to race at Le Mans. Porsche, Viper, Ferrari, Aston Martin, and BMW all brought cars to compete in this category. The top qualifier was a SRT Viper GTS-R at 1:44.506/122.634 mph and 24th starting position. Behind the Viper was a factory Porsche 911, a Viper, and the No. 4 Corvette C7.R. The Corvette driven by Oliver



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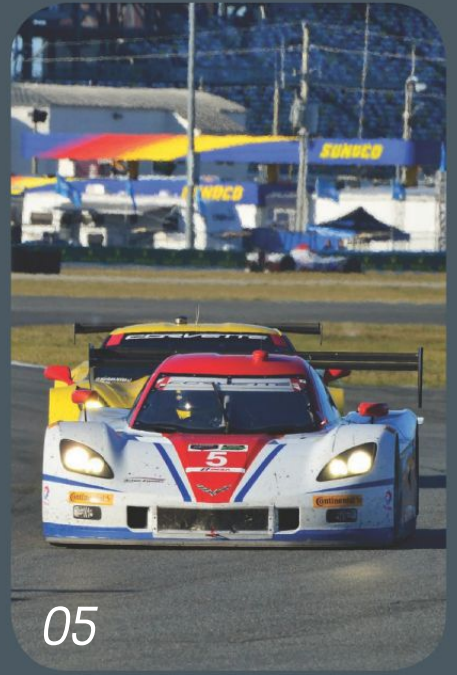
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LIFESTYLE DAYTONA DOMINATION



04 → The VisitFlorida.com No. 90 Corvette is in a tight battle with the No. 9 Action Express Corvette and the Target Ganassi Ford. All three are tightly bunched going around the infield Turn 3 at Daytona. The debris on the front of No. 90 is common around closed race courses. **05 →** The No. 4 Corvette C7.R is tucked closely behind the winning No. 5 Action Express Corvette as they enter Turn 5 on the infield part of Daytona's road course. The Corvette was 16th overall and Fifth in the GTLM category. **06 →** This No. 10 Velocity Corvette lost the overall victory by 1.461 in one of the closest finishes in the Rolex history. Here it is heading back onto the super speedway as it exits Turn 6. **07 →** For 2014, the Whelen team moved up from its GT Corvette to this Corvette Daytona Prototype. It brought its new entry home in 10th position in the Daytona Prototype category. **08 →** The

leading Action Express Corvette is beginning to show the grime after racing for 10 hours as it enters Turn 3. The infield was packed with spectators and a party atmosphere continued through the night. This colorful Ferris wheel was a big attraction. **09 →** This C7.R started 62nd after an electrical issue kept it from qualifying. Drivers Antonio Garcia, Jan Magnussen, and Ryan Briscoe took the GTLM lead at 8:47 p.m. (6h 35m). The ultra-fast Corvette stayed in the top three until its engine overheated at 1:34 a.m. The team stopped for repairs, but unfortunately No. 3 was out of the race. **10 →** By the next morning, the very dirty No. 9 Action Express Corvette was in a solid third-place position overall. Drivers Fabian Giroix, John Martin, and Burt and Brian Frisselle finished on winner's lap, and 19.489 seconds behind at the checkered flag.

Gavin, Tom Milner, and Robin Liddell qualified at 1:44.729/122.373.28 mph and started in 27th position. The top GTLM qualifiers set similar times and any one of them could win the class.

The green flag dropped at 2:10 pm on Saturday, January 24, 2014, under clear, dry conditions. Shortly after the start, the Visit Florida No. 90 Corvette pitted with a loss of engine power, but was able to quickly resume. At the end of the first hour the No. 5 Action Express was in the top five (first), but the top 23 race competitors were on the same lap, and it was very close racing. The No. 3 C7.R that started 62nd was now 21st and 7th in GTLM. The No. 4 Corvette was 19th overall and Fifth in class.

During the third hour the No. 99 Gainsco Corvette driver Memo Gidley had a serious incident. As he accelerated hard between Turns 3 and 4 around 145 mph the setting sun was probably blinding him. Matteo Malucelli was ahead struggling with his No. 62 Risi Competizione Ferrari 458 and creeping along at a reported 15 mph. Memo struck the Ferrari with an extremely heavy impact. The race was red flagged for one hour while crews extracted and attended to both drivers. Both survived, and Memo was gravely injured, but fortunately he is expected to recover. This was a very scary incident and it was very sobering for race fans and teams.

When the race resumed, the No. 5 Action

Express Corvette continued to find its way to the top of the field. Hour after hour, it was rarely out of the top-five positions. Likewise, the No. 10 Velocity Corvette continued to be shown in the top five throughout the night.

In GTLM the No. 3 Corvette worked its way up to 12th overall and third in GTLM. It was an amazing performance after starting down in 62nd position. Its sister car, No. 4, fell back to 20th position after driver Robin Liddell spun on the track and fell one lap behind the GTLM leader. At the end of the seventh hour the No. 3 Corvette took the GTLM lead and continued to battle until a water leak forced its retirement early in the morning. The second team Corvette



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11 → C7.R drivers Oliver Gavin, Tommy Milner, and Robin Liddell took up the chase for the GTLM victory after No. 3 retired. They started 28th and by the 14th hour they were battling for the GTLM class lead with this factory Porsche 911. Unfortunately, a transmission failure at 21h 24m dropped them from second in GTLM to Fifth at the finish. **12** → The Visit Florida team kept a torrid pace throughout the race in hopes of making it to victory circle. Mike Rockenfeller waits to take over from Richard Westbrook in another rapid, fault-free pit stop. The No. 90 came home in Fourth position overall. **13** → Victory is sweet. Action Express drivers Christian Fittipaldi (left), Joao Barbosa and Sebastien Bourdais celebrate their 1.461-second gap victory at Daytona. It was one of the closest winning margins in race history.

No. 4 quickly moved into one of the top three class positions to defend the brand's honor. It battled two Porsches until its gearbox failed at 21h 24m. The repair took only 30 minutes, but it was enough to push it down the order and it finished Fifth in GTLM and 16th overall. Meanwhile up front, two Corvettes were battling for the victory with 20 minutes left in the race. The No. 5 Action Express Corvette was battling with the No. 10 Velocity Corvette and eventually took the checkered flag a mere 1.461 seconds ahead of its fierce ally turned competitor. The No. 9 Action Express and the No. 90 Visit Florida Corvettes followed in Third and Fourth position. The No. 31 Whelen Corvette, finished 41st after experiencing electrical problems.

It was a great day for Corvette, and even though the C7.R's did not win GTLM class, it's clear that they will get to the top of the podium soon. This season will be exciting for sports-car enthusiasts. The United Sports Car Series looks like a winner. For more information check out www.imsa.com. **VETTE**

SPIRIT OF DAYTONA TEAM HONORS NAVY SEAL



Lt. Hector Delgado (left) stands with Spirit of Daytona (SOD) driver Richard Westbrook, Hector's nephew Alex Mero, and SOD driver Mike Rockenfeller at Daytona.

NAVY SEAL LT. HECTOR DELGADO IS TEAM'S GUEST OF HONOR

The National Navy UDT-SEAL Museum honors a group of dedicated soldiers who have risked their lives for our country. Specifically it preserves the history of the Navy Underwater Demolition Teams (UDT) and Sea, Air, [and] Land (SEAL) teams. It is located on North Hutchinson Island, St. Lucie County, Florida (www.navysealmuseum.com). Each November, the museum holds a muster fundraiser to fund museum maintenance and the Trident House. (The Trident House helps Navy Seals and their families when they are experiencing difficulties.)

Last November, the Spirit of Daytona team

brought its Corvette Daytona Prototype to the event. It wanted to help support the museum's muster ceremony, which raised more than \$350,000. The team offered a VIP viewing of the Rolex 24 in their hospitality suite and garage passes to the event. Tom Price (a museum member) bid \$7,000 for the package and won.

Tom passed on his winning bid to Navy Seal Lt. Hector Delgado and his family. Hector has been a Navy Seal since 1987, served in Iraq and Afghanistan, and is a member of the museum's board of directors. We caught up with him on the pre-grid before the race. He and his family were overwhelmed at being at the Rolex 24 Hour race. We, in turn, are overwhelmed for his service to our country. A big thank you goes to the Spirit of Daytona team for honoring Hector at Daytona!



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PROTECTING YOUR CORVETTE WITH XPEL PAINT PROTECTION FILM

STEVE TEMPLE WORDS | PHOTOS

It's a gritty, grimy, messy world out there. And every time you head out on the highway, your Corvette has to face up to it. A vinyl nose bra is one way to fend off the ravages of rock chips, but it can't cover your headlights, and who wants to obscure a Corvette's spectacular hues, such as Torch Red or Atomic Orange?

Which leads us to paint-protection film. Unlike a vinyl nose bra, it's nearly invisible, and

it can be applied not only to the front bumper and valance, but also to the headlights, side mirrors, and doors—actually, the entire car, if so desired. (Indeed, we've heard that a number of '14 Stingray buyers are virtually enveloping their new Corvettes to shelter their investment.)

Not all films are created equal, though. XPEL's founder, Tim Hartt, was originally a distributor and pattern maker for another

well-known film manufacturer, but he decided to improve on the product's clarity and longevity, among other features, and introduced his own line in 2006.

Today, the XPEL's most popular clear-film product is the Ultimate, consisting of a polyurethane film with an acrylic polymer adhesive on the underside, plus a clearcoat made of elastomeric polymers on top. Referring to this new, elastic topside coating, Hartt says, "That's where the magic happens." How so?

XPEL's Ultimate actually has the ability to "self-heal" micro scratches, he claims, since elastomeric polymer tends to flow somewhat, filling in lower spots, especially in the presence of heat. Primarily, though, the XPEL film is designed to prevent chipping from pebbles and other debris, as well as contamination



01 The XPEL film comes in pre-cut patterns mounted on white backing paper. Typically it's installed by a professional trim shop, as it requires a fair amount of expertise and fitting time. After peeling off an edge, the film is attached to the body, and the rest of the backing is separated as it's unrolled.



02 A liquid solution with a gel polymer (previously sprayed on the body) keeps things moist, allowing the film to be adjusted into exactly the right position. Any excess of wetting solution is then squeegeed off.



03 To eliminate trapped air, some sections might require lifting, re-spraying, and reapplication.



04 Some areas are more intricate than others, such as around the hood emblem. The XPEL film has the outline of the emblem area already cut into it, but this insert needs to be peeled off during installation.



05 The edges of the emblem cutout must be carefully aligned between the crossed flags and the air intake.



06 Some body areas, such as the lower valance, have multiple and reverse contours, requiring the use of a heat gun to stretch and mold the film for a proper fit.

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07 Since they protrude into the airstream, side mirrors attract bugs like flypaper, but XPEL's film can be stretched over the cone of the mirror to provide invisible protection from insect splatters.



08 Areas subject to road rash, such as adjacent to the wheelwells, can be protected as well.



09 Door edges and recesses are subject to wear and tear, along with dirt and oils from fingertips, so they, too, can benefit from the film. It can even be replaced easily, since any adhesive residue rubs off by hand.

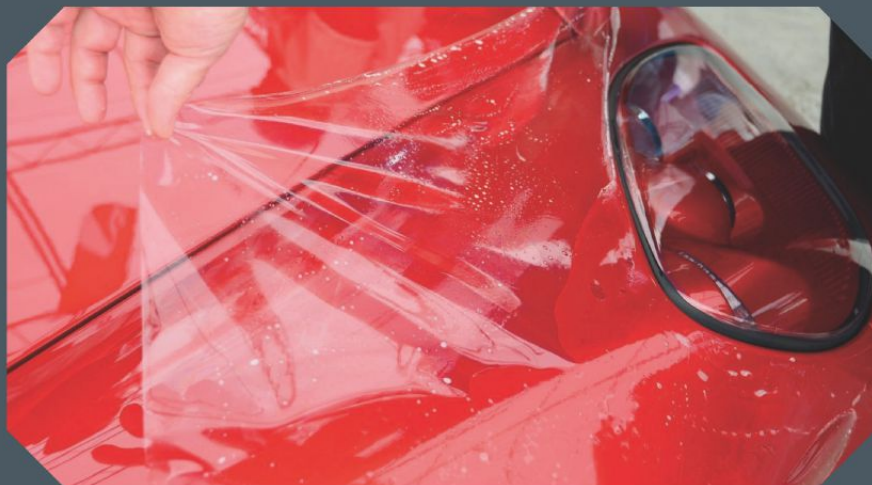


10 One clear advantage—literally—of XPEL film over a vinyl bra is that it can be applied to headlights.

from road oils that can collect in the pores of the paint and cause yellowing.

Hartt also points out that cars operated certain areas of the country need extra protection. In the Southeast, swarming love bugs can cake up on paint and eat into the finish.

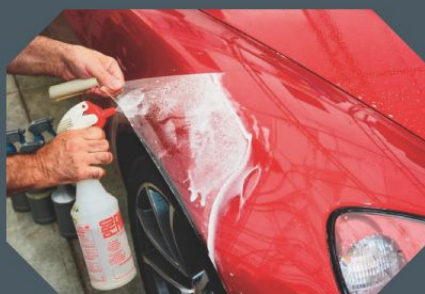
Road salt, meanwhile, poses an obvious problem in colder climates, while airborne pollutants are a constant hazard in some urban areas. With XPEL's film, these contaminants wash off easily with standard car soap, and the surface can be waxed or polished for



11 The fender area next to the headlight can be covered with film as well.



12 After a loose fitting, a squeegee removes trapped air and helps fit the pre-cut pattern into position next to the headlight rim.



13 Additional application of the polymer gel solution ensures tight adhesion on areas subject to high airflow.



14 Once installed and dry, the XPEL film is barely visible. Pricing depends on the extent of coverage but starts as low as \$500 for small sections. Covering larger areas, including the entire vehicle, runs anywhere from \$2,500 to \$4,000. That's still less than a new paint job, which would be subject to fresh damage as well.

extra protection along with a show-quality shine.

Whatever your location or climate, having an extra layer of protection makes good sense—not only to avoid the cost of a repaint, but to keep your Corvette's finish looking new. **VETTE**

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THE OTHER WAY **OF STOPPING**

PART 1: WILWOOD FRONT DISC BRAKES HELP TURN OUR FISHTAILING '58 INTO A DECELERATING DYNAMO

JAY HEATH WORDS | PHOTOS



The front half of our brake upgrade comprised a pair Forged Dynalite Pro rotors, along with four-piston calipers. (We'll install the master cylinder in Part 2.) Note that Wilwood's kits come complete with pads, hoses, and a full complement of installation hardware.



01 AntiVenom's Greg Lovell begins the job by securing the car on jackstands and removing the front wheels.



02 With the rims out of the way, we can observe the finest in midcentury braking technology up close. Yes, people really did race on these back in the day.

As recent auction results make clear, '53-'62 Corvettes continue to rank among the most desirable U.S.-built vehicles in the collector-car marketplace. Credit the car's historical significance and timeless good looks, traits blissfully undiminished by the inexorable forward marches of time and automotive technology.

If only the same could be said of the C1's driving dynamics, which not surprisingly mirror those of the '49 Chevy Special/Deluxe with which the car shares the bulk of its mechanicals. Factor in the cost of OEM replacement parts and a driving position seemingly

optimized for 13-year-old Romanian gymnasts, and it's easy to see why many of these classic roadsters were long ago consigned exclusively to show or parade duty.

Fortunately for that subset of C1 owners who want to use their cars as, well, cars, the aftermarket brims with products designed to bring the early Vette's driveability and functionality into concinnity with its iconic styling. When it comes to braking, perhaps the single most transformative upgrade one can make to a first-gen is to install a modern disc setup in place of the old-tech drums, a swap that vastly improves not only performance, but safety, ease of maintenance, and driver confidence as well.

In the case of our Signet Red '58 project, an unswerving focus on functional, affordable modifications meant locating high-performance discs that were compatible with the factory frame and suspension hardware (what was left of it, anyway). You'll recall that we paved the way for just such a conversion when we bolted up a quartet of 15-inch American Racing Torq-Thrust II wheels from Corvette Central a few months back ("Starring Roll," Nov. '13). The rims' five-spoke design and generous internal clearance made them ideal for not only housing a modern set of binders, but showing them off as well.

When it came time to select our kit, we

[TECH] THE OTHER WAY OF STOPPING



03 Popping off the dust cap with a screwdriver provides access to the nut that secures the hub.



04 Remove the nut, and you should be able to slide the hub right off.



05 Note that the factory hub is equipped with ball bearings. As we'll see shortly, the Wilwood kit features roller bearings for improved performance and durability.



06 All that remains of the stock braking hardware at this point is the backing plate. Note that in an apparent concession to modernity (and convenience), a previous owner added a self-adjusting spring mechanism at some point.

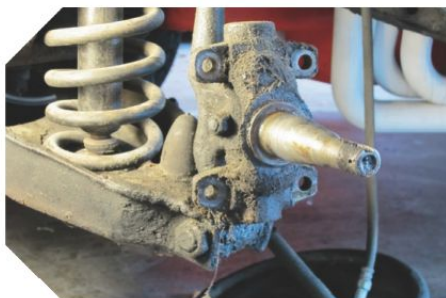


07 To liberate the plate assembly, you'll need to secure the nut on the interior surface with an open-ended wrench while removing the four bolts on the front.

turned to the experts at Wilwood for guidance. Established in 1977, the Camarillo, California-based company has established itself as one of the aftermarket's premier manufacturers of high-performance brake components for a wide variety of vehicles, including every generation of Corvette.

Taking into account that our '58 is a bit of a mongrel—those aftermarket wheels and a previously installed 9-inch rearend being the chief deviations from factory form—Wilwood's Dustin Burr assembled for us a custom setup comprising 11-inch drilled-and-slotted rotors and four-piston calipers for each corner, along with a master cylinder and proportioning valve. (Note that because every car represents something of a unique case, Wilwood *strongly* recommends that customers contact the company for a specific recommendation before placing an order.)

Sadly, certain factors prevented us from performing baseline brake testing with the stock hardware, not the least of which was



08 With the backing plate gone, we can get a good look at the grime-caked factory spindle. Note that the brake hose can also be disconnected at this point, allowing the old fluid to drain into a pan below.



the car's unnerving tendency to immediately lock up one or more wheels and initiate a lurid, tire-smoking slide at the slightest hint of pedal pressure. So unpredictable was the car's braking performance, in fact, that even normally unflappable test pilot/coconspirator Greg

Lovell was loath to complete the planned test session. Following the old maxim about discretion being the better part of valor—especially when dealing with someone else's classic Corvette—we elected to forgo the panic stops and skip ahead to the install.



09 This seemed like a good time to do a little underside detailing, so Lovell hit the area with a little Simple Green and a wire brush. More-drastic measures were ultimately deemed necessary, however, at which point a few shots of brake cleaner and lacquer thinner (shown) took care of the most obdurate crud.



10 Following a quick-mop-up with a shop towel, the spindle emerges in all its Eisenhower-era glory.

We'll be splitting the front- and rear-brake installations into two separate installments, the better to highlight the unique aspects of each. Let's take a look at the anterior end now, as we start to get our slip-sliding C1 on the road back to stopping salubrity.

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11 It's time to move over the workbench and start putting together the first hub-and-rotor assembly. Fortunately Wilwood provides step-by-step directions to walk you through the process.



12 Lovell begins by applying Lucas "Red 'n' Tacky #2" grease to the inner (shown) and outer wheel bearings. As we noted earlier, the Wilwood bearings use a modern roller configuration.



13 The bearings then go into the hub, as shown here. Note that in this photo, the seal has not yet been installed.



14 After tapping in the seal with a rubber mallet, Lovell applies blue Loctite to the hub studs before torquing them down.



15 The next step is to bolt the hub to the rotor adapter, again using Loctite on the threads.



16 Before affixing the rotor to the adapter (using more Loctite, natch), we snapped this photo of its internal vanes. The vanes greatly improve cooling as compared with the old solid-rotor configurations.



17 Here's the completed hub-and-rotor assembly, ready to bolt up to the car.



18 Since the original spindle wasn't designed to accommodate disc brakes, Wilwood helpfully includes this caliper-mounting bracket. You'll need to bolt it into place (yep, more Loctite) before installing the new brakes.



19 It's time to bolt on the hub and rotor, applying some extra grease to the spindle-nut area along the way.



20 While you can reuse your old spindle nut, you will need to install the new, thicker washer (right) that comes with the Wilwood kit.



21 Here's the finished assembly, complete with nut and washer. Give yourself bonus points if something looks a little "off" in this photo.

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22 That's right: We installed the left-side rotor on the right side of the car—this, despite the fact that Wilwood includes directional indicators on each one. Always remember to check your work as you go!



23 After straightening out our rotor snafu, it was time to bolt on the new natty, Wilwood four-piston calipers.



24 The caliper then bolts to the previously installed adapter...



25 ...and the first half of our front-brake upgrade is complete. Note that the protective black coating on the rotors will wear off with use, revealing a gleaming silver finish beneath.



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They come with matching high-performance pads, one of which Lovell is shown installing here.



26 With the wheel reinstalled, the transformative nature of our brake upgrade starts to become apparent.



27 Our kit offered a choice of black-anodized or red-powdercoated calipers. We chose the latter, both to match the Signet Red finish of the car and to draw attention to the upgrade itself. Snazzy, no? **VETTE**

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INSTALLING AN AMERICAN POWERTRAIN SIX-SPEED MANUAL IN OUR '72 PROJECT CAR

JEREMY D. CLOUGH WORDS | PHOTOS

At this writing, “Scarlett,” our ’72 coupe project car with pretensions to track-day glory, has been in a fragmented state at Tray Walden’s Alabama-based Street Shop, Inc. for about six months. During that time we’ve been working sporadically, mostly on weekends, to exchange her sweet docility for a Smaug-like ferocity. She was a nice, classy driver, great

for road trips and lots of fun during long runs through the mountains, but in the end, I just had to build a race car.

So far, we’ve stripped her to the firewall inside and out, shoehorned in a 600-plus-horse LS3 416, and bolted up a set of polished-stainless side-mount headers. Now it’s time to cover what connects the output shaft of that LS3 to our not-quite-wide-enough rear tires, which means installing the



01 Where we started, with the gearshift for the three-speed automatic and the center console in which it sat.

transmission and clutch. This job will be a little more involved than usual, not least because we’ve laid aside the Turbo-400 automatic in favor of a stick shift. And instead of the three- or four-speed manual you’d expect to find in a chrome-bumper shark, we’re upgrading to a fully modern six-speed.

Sourced from American Powertrain, the T56 Magnum is a heavy-duty variant of the T56 six-speed that appears in a number of American



While the automatic transmission has certainly come a long way, I still prefer a manual transmission in a sports car. For Scarlett, we selected the T56 Magnum, a double-overdrive six-speed that we sourced from American Powertrain.



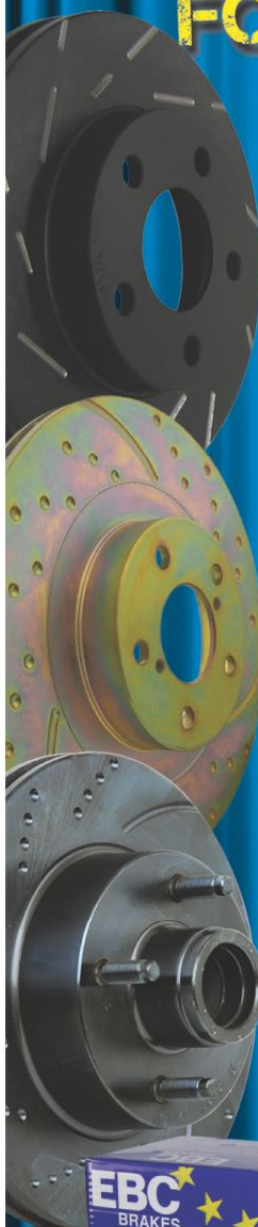
02 The old Turbo-400, post extraction. No doubt it served me well, but this is a car that always needed a manual transmission.

performance cars, including '97-'07 manual Corvettes. While the OEM transmissions have the shifter location set up for whatever car they'll be installed in at the factory, the Magnum is designed specifically for the aftermarket, with more variation in shifter location. It's also rated to handle 700 pound-feet of torque, which gives us a comfortable margin of safety over the 543 lb-ft our LS recorded on the engine dyno.

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03 Sourced from American Powertrain, the T56 Magnum is a heavy-duty variant of the Borg-Warner T56 six-speed used in Dodge Vipers, GM F-Bodies, and some C5/C6 Corvettes.



04 Installing the clutch disc using the alignment tool, which slips into place in the pilot bearing, basically lining up the clutch with the crankshaft.



05 Once the clutch disc has been properly installed against the flywheel and aligned with the crank, the clutch itself is bolted into place on the flywheel.

While there are several sources for the trans itself, American Powertrain offers a ProFit conversion package that includes the parts needed to install one in an older Corvette, including an automatic. In our case, to the basic conversion kit we added a massive, steel Quicktime bellhousing, a Science Friction Street Slayer clutch rated to 620 lb-ft, and a hydraulic throwout bearing, which eliminates the need to locate and install a mounting point for the factory-style clutch fork. While the Magnum comes in either close- or wide-ratio form, we ordered the close-ratio version, which features a double overdrive (both Fifth and Sixth gears are overdriven) with a 0.62 final gear.

Performing this conversion at Street Shop meant having ready access to both a wealth of specialized tools and a corps of skilled Corvette techs. While the job is covered in some detail in the accompanying photographs, this article is intended to serve as more of a thorough overview than a step-by-step instruction manual. With that in mind, we strongly recommend having the work done at a shop whose mechanics are experienced in custom drivetrain work, rather than attempting to do it yourself.

Once everything was bolted together, I set the Corbeau driver's seat back in the car to make sure I could reach the shifter comfortably. Andy Berryhill walked over to where I sat firmly strapped into the seat with the five-point harnesses, with my hand on the chrome ball shift knob and slowly working it through the gears.

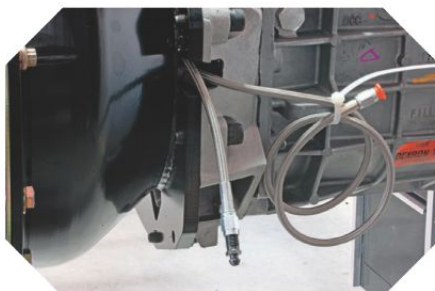
"You know you're supposed to make engine noises with your mouth, right?" he asked.



06 The heavy steel Quick Time bellhousing, whose 0.75-inch-thick steel gives an added measure of protection against anything that might break loose inside. While the bellhousing is usually bolted to the transmission and then to the block, it's wise to first install the housing on the motor to check for concentricity, preferably with a dial indicator.



07 Before the trans can be installed on the motor, the hydraulic throwout bearing has to be installed on the transmission input shaft and shimmed to the correct height. Since it's hydraulic, the throwout does away with the traditional clutch-fork arrangement, and with it the need to locate the mounting point for the fork.



08 Instead of a fork, the hydraulic throwout has two braided steel lines, both of which pass through an opening on the driver side of the bellhousing: One routes down from the master cylinder to the bearing, and the other is used to bleed the system.



09 Once the throwout was in place and shimmed properly, and the bellhousing had been bolted back on, Tray Walden bolted a small clamp to the body of the trans to hold the lower bleeder line firmly in place.



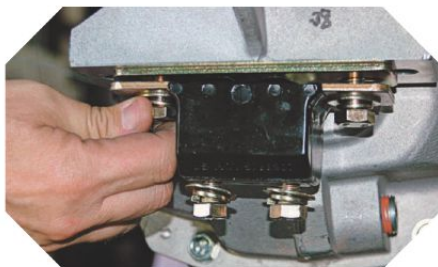
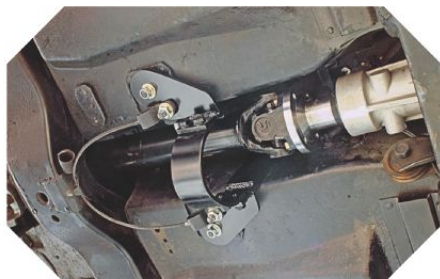
10 With the clutch and throwout installed, and the bellhousing firmly bolted back to the transmission, we used the crane to lift the trans and bolt it to the back of the motor prior to installing them both as a unit. They can go in separately, but I'd much rather have the additional working room provided by doing the job on a bench and putting them in together.



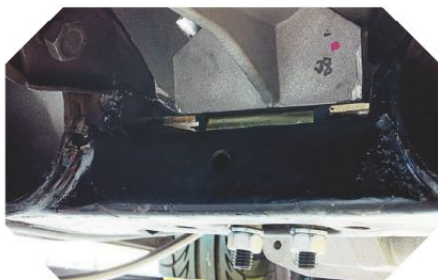
12 The trans crossmember, after being heavily modified to fit the T56 Magnum. Installing a new mounting surface, and then boxing it back in for strength, created a pocket for the trans mount to sit in. It also lowered the trans, obviating the need to remove fiberglass from the trans tunnel.



14 The driveshaft and flange-style yoke. Since the 'shaft came separately from the trans-installation kit, we needed to measure the length from the rear of the trans to the differential and send in that measurement. A driveshaft with the correct dimensions was then shipped out.



11 Bolting the transmission mount into place. This is where it started to get fun: Not only was the downward-facing mounting bracket on the trans too wide for the mating surface on the crossmember, but with the height of the standard mount, the trans was pushing up against the underside of the transmission tunnel.



13 The T56 as installed in the heavily modified factory crossmember. Note how deeply into the crossmember the trans actually sits.



15 Our Dragvette safety loop worked fine with the original trans but mounted too close to the new T56. As a result, we had to cut off the old mounting bracket and fabricate a new pair. Walden mocked these up in place and then welded them to the loop.

16 The driveshaft was installed next, and the LS3 was now officially connected to the rear wheels. Since the loop mounted to the bolts that originally held the safety cable for the seat belts, we welded on an extra set of mounts for the cable and bolted it into place on them.

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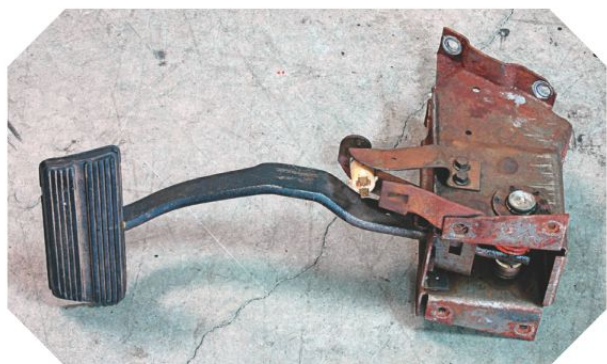
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17 The pedal housing has to be removed in order to add the clutch pedal. After dropping the steering column and surrounding parts, we undid the four external bolts that hold the housing in place and removed it. Once out and disassembled, we bead-blasted it and painted it with some dull-metallic-gray Cast Blast paint.



18 One advantage to having the housing out was the ability to weld back on this bracket for the brake-pedal return spring, which had broken off some time before. Without the spring, pressure from the brake system will keep the pedal up, though not enough to prevent the brake lights from burning all the time. Prior to this fix, I made do with a long coil spring zip-tied in place.



19 While the stock clutch pedal uses a stud on the side to operate the clutch, we needed a hole to mount the heim-jointed operating rod for our Wilwood master cylinder. I used a wheelie cutter to cut the welds holding the stud on the pedal, then dressed down the cut and painted it black to protect it from rust. Now, the new stud can be bolted into place once the pedal has been installed.



20 When reassembling the pedal housing, it's important to reinstall the rubber bumpers that cushion the pedals' impact with the housing when released. It's the same part for the clutch or brake.

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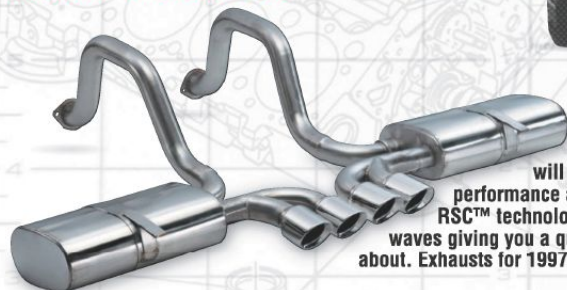
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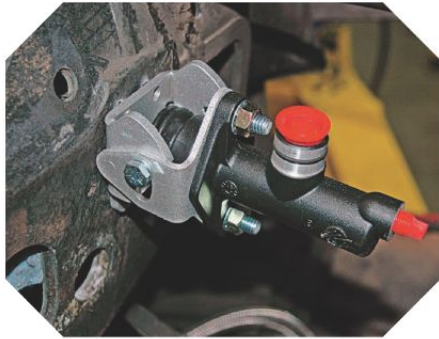
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21 The master-cylinder kit for the hydraulic clutch assembly includes a reservoir, the Wilwood master cylinder and its pivoting bracket, and all the required mounting hardware. Even so, we wound up having to do a little fabrication to place the reservoir where we wanted it.



22 After locating the holes on the firewall, we used a step drill to open them up so we could mount the master-cylinder bracket. We then used the four bolts to attach it to the firewall.





23 The threaded rod that connects the master cylinder to the clutch pedal can now be installed by adjusting the rod to the correct length, then installing the Heim-jointed stud through its hole in the side of the pedal and bolting it into place there.





24 Next, we fabricated a bracket to mount the reservoir to the side of our Hydratech Hydroboost brake booster. Part of the hood-latch assembly would ordinarily fit in here, but since we'll switching to a pinned hood, the linkage has been removed.


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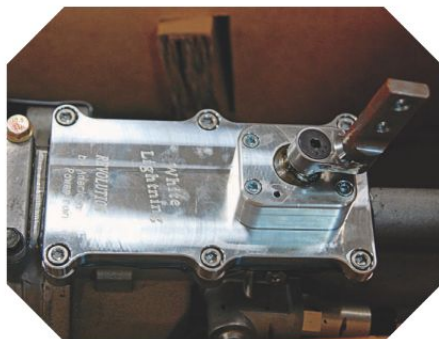
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25 Our trans came with American Powertrain's White Lightning shifter, which uses an offset arm to locate the shifter handle in the proper location in the console. In our case, we wound up having to use a longer offset than the one that came installed.



26 After removing the shifter before installing the trans, we taped over the mounting hole to keep out debris. As it turns out, simply peeling back the tape revealed enough of the mounting surface to bolt the shifter in place, without cutting any fiberglass. (We did later trim a strip of 'glass off the passenger side to ensure adequate clearance.)



27 While we had ordered a factory-style rubber shift boot (right) to help seal the shifter opening in the trans tunnel, it turned out to be far too small for our purposes. Help arrived in the form of a universal Mr. Gasket shift boot, which we bolted and bent into place.



28 Removing the rubber seal that the automatic shifter cable passed through left another hole in the trans tunnel. Using a bandsaw, drill, and press brake, we made a block-off plate and screwed it in place, sealing it up with a little black RTV for good measure.



29 Since the factory data plate was no longer accurate, we ordered a blank plate from Corvette America and had Street Shop's Ted Whitney engrave it with the correct information for our LS3.



30 We also ordered a new console plate from Paragon Corvette Reproductions, which came with a four-speed shift map that would have been correct for a stock manual '72. I carefully pried off that map, cleaned the double-sided tape off the plate, and reinstalled the custom-machined six-speed shift map that matches our T56.



31 The final piece required to finish off our new console plate was the leather shift boot, which we ordered from Corvette America. We needed to remove the chrome-ball shift knob and Reverse-lockout T-handle to slip the shifter through the boot when installing the console plate.



32 With the correct shift map and data plate in place on our Paragon console plate, we installed the latter item over the bare shift handle, then reinstalled the ball shift knob and T-handle. All that remains now is to get the motor plumbed, wired, and running again so we can start rowing through the gears. **VETTE**

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THE 'GLASS MENAGERIE



GETAWAY Z06

WHO: Scott and Tiffany

Foley WHERE: Joint Base Langley-Eustis, VA **WHAT:** '08 C6

Z06 → Here's our '08 Z06, which is loaded with all options plus a B&B Fusion "Mild to Wild" exhaust and a West Coast Corvettes cold-air kit.

This is definitely our getaway car. Tiff and I have driven it all along the East Coast, to visit family and friends in western Massachusetts, and to Williamsburg Winery (where this picture was taken). I even had it up to 160 mph on the Talladega Superspeedway during a "Vettes for Vets" event in 2011.

This is our very first Corvette, and it only took me 25 years of serving our great country to get it. It has been well worth the wait!

PAT & MIKE'S VETTE (VERSION 2.0)

WHO: Mike and Pat Hoffman

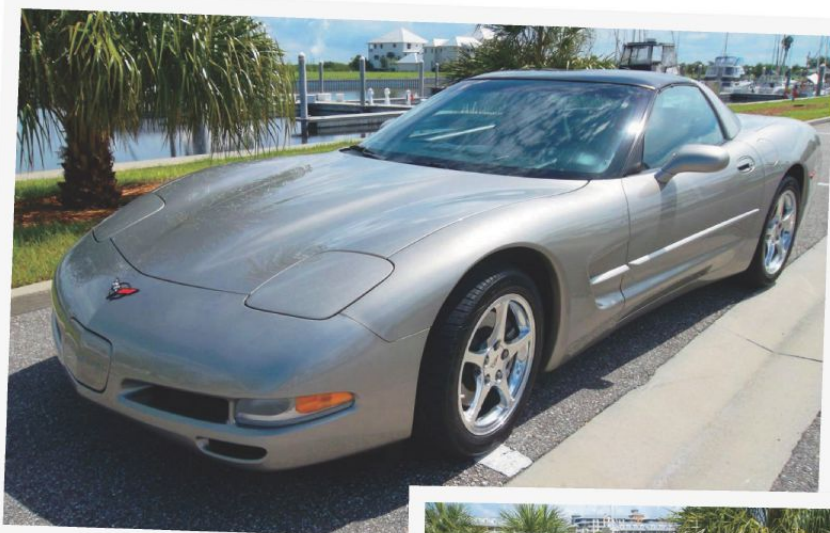
WHERE: Ruskin, FL **WHAT:** '02 Corvette

coupe → Behind every cool car is a cool girl—I was lucky on both parts. After being discharged from the service upon returning from Vietnam in 1969, with my saved combat pay, I purchased a used silver blue '64 Corvette Sting Ray convertible with a 300hp 327. I drove that car everywhere, including on a camping trip to Nova Scotia.

Then I met the girl of my dreams! We dated in the old Corvette every night, got married in 1972, and we even drove off in it afterwards in our tux and wedding dress. But, I needed to say goodbye to my trusty C2 to purchase our first house—it did its job!

After retiring to Florida years later and longing for another Corvette, my dreams came true in 2010. I purchased a clean, low-mileage Pewter '02 Z51 coupe. Now with only 35,000 miles on the clock, I spend my days keeping it in showroom condition inside and out.

I do long for my old '64 Vette, but after 43 years, my wife and I are driving the roads once now in our 2002—just like date night 1970, we're young again once again!





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HOLT'S HEARTTHROB

WHO: Jennifer and Daniel Holt **WHERE:** Big Spring, TX **WHAT:** '10 Corvette Grand Sport convertible →

This is our second Vette. Our first was an Atomic Orange '08 Z51 coupe. I always had driving a Vette on my bucket list, and my hubby finally broke down and bought the '08. He drove it a few times just because it was there. He's never been really big on muscle cars, but he's since grown to love the Corvette.

This 2010 is his baby. We have put on custom Grand Sport hood stripes, hood liner and center console, a Torch Red hose kit, Corvette windshield sticker, and we just put on a dual-mode Billy Boat Exhaust system.

This car has won an award at every show it has been entered, and has won a place in our hearts.

A69 427

WHO: Don and Kay Baer **WHERE:** Dayton, OH

WHAT: '69 Corvette Stingray coupe → I always wanted a Corvette, and worked with this C3's original owner, who also owned a 1967, before buying this '69. His reason for buying the big-block was the hood.

In June 1977, I was lucky to buy it, one month before my son was born. This was almost 37 years ago! It is LeMans Blue with a Bright Blue interior.

What makes this Stingray so special is that it still has the original U-joint and halfshafts in the rearend, with a 390hp 427, Turbo 400 automatic and 3.08 rear gears. Its license plate reads, "A69 427." I feel very fortunate to be its caretaker for so long.

I have subscribed to your magazine for many years, and look forward to every new issue.



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YARD FULL OF VETTES

WHO: Don and Fran Barabee **WHERE:** Chesapeake, VA

WHAT: (from left) '07 Corvette Z06, '93 Corvette 40th Anniversary convertible, '72 Corvette Stingray coupe, '64 Corvette Sting Ray convertible → I've always loved Corvettes, ever since watching *Route 66* as a young kid. My first car was a new Flame Orange '76 Corvette, purchased while at the United States Naval Academy. My wife, Fran, enjoys the cars with me.

Our current collection includes this Victory Red 2007 Z06, 1993 40th Anniversary convertible, '72 coupe and a resto-modded '64 convertible. Each car has its own personality, with the first three being mostly stock. However the '64 sports a '67 stinger hood atop a ZZ383 crate engine with an Arizona Speed Superjet "Rochester" Fuel Injection system, Doug's Headers, a Tremec TKO five-speed, Vintage Air HVAC, an ididit tilt steering column, upgraded suspension, 17-inch Foose wheels, power disc brakes and a nice modern, yet retro-looking, sound system. Each is a pleasure to drive, and each is guaranteed to put a smile on your face!

SECOND VETTE— LONGTIME LOVE

WHO: Paul Lee **WHERE:** Richmond, IL

WHAT: '01 Corvette coupe → I had wanted a Corvette ever since my 20s, but marriage, military service, raising a family, and more made it impractical to own a two-seat sports car. When I turned 65 last year, I was determined to finally own a Corvette.

Working with a modest budget, I found a white six-speed '94 with 80,000 miles on it. I finally had a Vette! I loved having the car, but soon found that the commute to work in a six-speed in Chicagoland was not the best driving experience.

So, I looked for a Vette with an automatic and found the pictured Torch Red C5 at a dealership two hours away. It was worth the drive—the car was in incredible shape. When I sat in it, an excited feeling came over me, and I knew this was the car for me. I drove it home that day.

I absolutely love driving this car—it's like we've been together for years! **VETTE**



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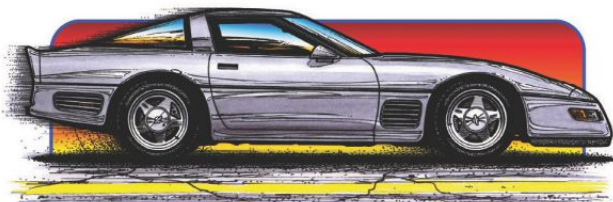
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1988 CALLAWAY SLEDGEHAMMER— “THE FASTEST PRODUCTION-BASED STREET CORVETTE EVER!”



It's hard to believe that over 25 years ago a heavily modified, streetable C4 Corvette set a speed record that was so high that no other street Corvette since has matched or exceeded that mind-numbing speed of 254.76 mph. While the 205-mph C6 ZR1 receiving well-deserved kudos, nearly 20 years before, Reeves Callaway and his team smashed the record books and exceeded the C6 ZR1's top speed by nearly 50 mph with a street-driven twin-turbo '88 Corvette called “The Sledgehammer.” It could be that, since 1988, no Corvette person has been crazy enough to even want to raise the Sledgehammer's speed bar.

The Sledgehammer was a radical version of a production '88 Vette. This was no hand-made exotic like the \$1.3 million Bugatti Veyron 16.4 Grand Sport that tops out at 267 mph—not much more than the 254.76-mph production-based Sledgehammer. To be fair, the Bugatti isn't just about its top speed. This is a machine that doesn't have a single part that's not exotic. Plus, the Veyron 16.4 Grand Sport looks like a vehicle that Captain Kirk would pilot. The Sledgehammer, on the other hand, looks like a C4 with a nice body kit—but it sure got the wind-slicing job done!

Plans for the Sledgehammer began after a

modified Callaway Twin-Turbo won the *Car & Driver* “Gathering of the Eagles” top-speed event in 1987. Reeves Callaway drove it to a top-speed of 231 mph. This Vette was fast, but it was rough, hot, smelly, and difficult to drive. Corvette Chief Engineer Dave McClellan joked

about Reeves 231mph Vette saying, “Des Is Der Sledgehammer!” The name stuck and Reeves got busy! Callaway wanted to build a streetable 250-mph GT. The modifications were relatively simple: a Lingenfelter engine to produce least 900 hp, suspension tweaks for high-speed stability, interior mods for safety, and a body kit to enhance aerodynamics. Deutschman Design created the body kit to be stable at 250 mph. Road racer Carroll Smith was contracted for the suspension work, and Callaway employees Tim Good, Elmer Coy, and Dave Hendricks were assigned to oversee the project.

The 349.8ci, four-bolt-main Chevy Bow Tie block used a cross-drilled Cosworth crankshaft, Crower rods, Jesel roller rockers and stud girdle, and Crane roller lifters. A mild Cam Techniques camshaft kept the engine streetable. The Brodix heads were O-ringed with copper gaskets, and studs were used instead of bolts. A Barnes 10-quart dry-sump oil system was used. Compression was just 7.5:1, and the twin Turbonetics T04B-Series turbos were set at 22 psi. The large intercoolers were mounted behind the front bumper, and the turbos were mounted behind the front grille. Callaway-made stainless-steel headers were connected to huge-diameter exhaust pipes and SuperTrapp mufflers. It all added up to 898 horsepower!

The suspension was lowered one inch, and adjustable Koni shocks controlled dampening. Special high-speed Good-year tires were mounted on

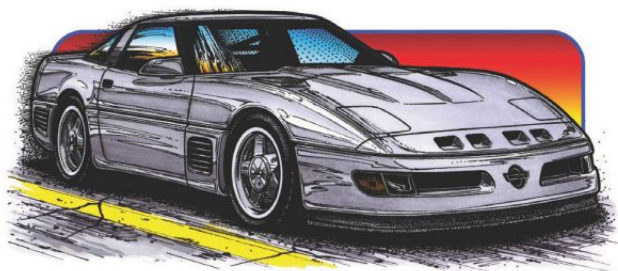
17x9.5-inch Dymag magnesium wheels at the front and back. A Doug Nash five-speed gearbox was equipped with a special overdrive unit for the top-speed push. The driveline was beefed up, and a special Spicer/Dana rear was installed. The interior was stock except for the leather-covered rollbar, a fire-suppression system, and additional monitoring equipment on the passenger side of the dash. A modified



laptop computer was used to gather and measure vital statistics.

On October 19, 1988, the team drove the car to the Transportation Research Center in Ohio. Once on the 7.5-mile track, a few bugs had to be worked out. On October 26, 1988, after some nasty weather cleared out, with John Lingenfelter driving, the Sledgehammer lived up to its name, blasting through the timers at 254.76 mph. After some celebration, the team packed up, and the Sledgehammer was driven home to Connecticut!

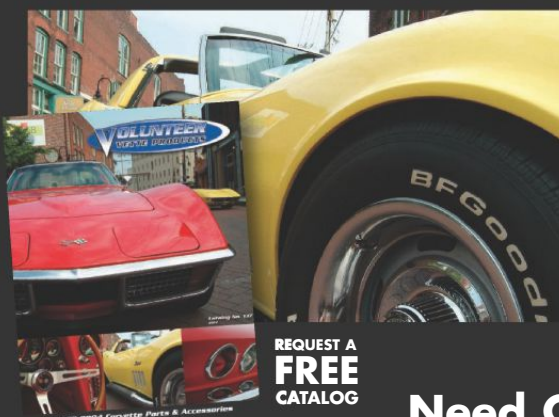
Callaway hoped to build many more of his highly tuned supercars. But priced at \$400,000 each in 1988, he had no takers. Still, Callaway had bested Europe's finest and earned another place in the Corvette and automotive history books. So in October 2013, when it was announced that the Sledgehammer was going up for auction at the Mecum Kissimmee auction in January 2014 as part of the Richard Berry Callaway Collection, it was expected that the car would bring between \$750,000 to \$1 million. But auctions can be unpredictable and this was no exception. Bidding stalled out at \$600,000—below the seller's reserve and was a No Sale. Assuredly, the fastest-ever production-based streetable Corvette will be back on the block again. **VETTE**



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