

**C1 LOCK**  
REPLACEMENT  
PG. 74

► **TRACK ATTACK:** VINTAGE RACERS ROAR AT THE SONOMA HISTORICS

# VECTER

# TAKEOFF!

NITROUS-INJECTED Z06  
SOARS TO NEW HEIGHTS



**CHANGING GEARS**  
INSIDE THE C7'S NEW  
TRANSMISSIONS

**MCLELLAN'S MASTERPIECE**  
A LOOK BACK AT THE C4 GENERATION

**CORVETTE  
VS. THE WORLD**  
BEHIND THE SCENES  
WITH A DAYTONA  
PROTOTYPE RACE TEAM



STINGRAY SHOW-OFF:  
**SENSATIONAL  
'72 VETTEROD**



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**Vette**

# contents

DECEMBER 2013 ➔ VOLUME 37 ➔ NUMBER 12



ON THE  
**COVER**

When it comes to ludicrously fast Corvettes, the expression "taking off" remains metaphorical only up to a point. With that in mind, this month's cover subject was photographed among some appropriately high-flying company—the jets of the Aero Toy Store in Fort Lauderdale, Florida. ➔ PHOTO BY KEVIN DIOSSI



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# IDLE CHATTER

JAY HEATH EDITOR



**A prototype ZR-1 convertible poses next to...another prototype ZR-1 convertible. Only at Carlisle.** PHOTO BY JAY HEATH

beyond the occasional back-road strafing run, the Holley LS Fest should rank high on your list of potential destinations. While the Fest does include a traditional car show and swap meet, the real draw here is the on-track competition, which includes drag racing, an autocross, a speed-stop challenge, and more. (Note that while participation in the competitive elements is restricted to LS-powered cars—including older vehicles with transplanted LS mills—anyone is welcome to attend.) It also bears mention that the town of Bowling Green is not without other inducements for Corvette aficionados, as we will see momentarily.

[www.holley.com/lifest](http://www.holley.com/lifest)

## TAKE IT OUT **AND DRIVE IT**



This issue finds us on the cusp of autumn, traditionally a time of year when many Corvette enthusiasts prepare to decommission their cars for a long winter of

maintenance chores and restorative tinkering. But before you unlimber the handtools and dive elbow-deep into that next DIY project, consider taking a few moments to plan out a road trip or two for next year's sunny season. For as much as we appreciate the practice of meticulous preservation, the only way to achieve a full and proper appreciation for one's Corvette is to point the car at the distant horizon and *drive*.

While the journey is ultimately more important than the destination here, that doesn't mean you have to settle for a humdrum Point B. With that in mind, I've put together a shortlist of Corvette events every marque enthusiast should experience at least once in a lifetime.

### **CORVETTES AT CARLISLE** (Carlisle, Pennsylvania)

The world's largest Corvette show may also be its most picturesque, held as it is among the undulating hills of Central Pennsylvania. Ironically, the sheer scope of C@C may also be its lone liability: There's so much to see and do, it's virtually impossible to take it all

in over the course of one long weekend. No matter. Once you've experienced Carlisle in all its many-splendored glory, chances are you'll make it a regular entry on your summertime itinerary.

[www.carlisleevents.com](http://www.carlisleevents.com)

### **MID AMERICA MOTOR- WORKS CORVETTE FUNFEST**

(Effingham, Illinois)

If MAM supremo Mike Yager truly is the company's "Chief Cheerleader," this annual gathering of Corvettes and marque luminaries amounts to his Super Bowl, NCAA Championship Game(s), and NBA Finals all rolled into one. Having celebrated its 20th anniversary this year, Funfest clearly has staying power, not surprising given the depth and breadth of the activities on offer. Indeed, this may be the only place on earth one might view a presentation by the Corvette engineering team, take part in a Vette-parts swap meet, and attend a concert by a top-tier musical act, all without leaving the sprawling MAM campus.

[www.corvettefunfest.com](http://www.corvettefunfest.com)

### **HOLLEY LS FEST**

(Bowling Green, Kentucky)

If your idea of performance driving extends

### **NATIONAL CORVETTE MUSEUM**

(Bowling Green, Kentucky)

The NCM isn't an event, obviously, but it does host a variety of Corvette functions throughout the year, from car shows and scenic drives to a recently launched high-performance driving program. Even if you manage to show up when nothing "special" is underway, you'll have no trouble spending the better part of a day perusing the many historically significant Corvettes and Corvette-themed exhibits on display. Even better, the Museum rotates its vehicle inventory on a regular basis, meaning you'll never see the same cars twice.

[www.corvettemuseum.com](http://www.corvettemuseum.com)

### **ALMS RACES**

(Various Locations)

Production-based racing provides marque devotees with a look at how their cars might perform in fully optimized trim, unencumbered by comfort options, emissions equipment, and other assembly-line impediments. Races are held throughout the country (there's even an event in Canada), so getting to at least one of them shouldn't be overly difficult. Our recommendation for a first-timer? The season kickoff event in Sebring, Florida, where the spectacular new Corvette C7.R is slated to make its competition debut.

[www.alms.com](http://www.alms.com)

# MASTHEAD

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# CURRENTS



## CHEVY ANNOUNCES **LIMITED-EDITION PREMIERE C7**

To commemorate the debut of the seventh-generation Corvette, Chevrolet recently announced the availability of the '14 Stingray Coupe Premiere Edition, a serialized run of 500 identically optioned vehicles.

Every Premiere Edition Stingray will include the following equipment:

- » 3LT Trim Package
- » Laguna Blue Tintcoat exterior and Brownstone suede interior
- » Suede-wrapped interior trim and carbon-fiber interior packages
- » Visible carbon-fiber roof
- » Variable-tuned performance exhaust system
- » Z51 Performance Package with Magnetic Selective Ride Control
- » Stinger hood stripe
- » Stingray-logo interior sill plates and wheel caps
- » Custom Corvette-branded luggage from Thule

- » Unique vehicle identification number, starting with 300001
- » Exclusive dash plaque commemorating the limited-edition model

"It makes sense for us to do a special number of cars for collectors, and this will appeal to the really dedicated Corvette enthusiasts," Chevrolet spokesperson Monte Doran said.

The '14 Corvette Stingray Coupe Premiere Edition is not orderable, but instead will be allocated to Corvette dealers. As of press time, Chevrolet had not announced the model's price.

**TEAM VETTE WORDS**



## **CORVETTE MUSEUM** INSURANCE AGENCY TURNS FOUR

 The NCM Insurance Agency (NCMIA), located inside the National Corvette Museum in Bowling Green, Kentucky, opened its doors for business in April 2009. Now on the flipside of its fourth anniversary, the Agency covers more than \$150 million in collector-car assets for enthusiasts across the country.

Name and location notwithstanding, the NCMIA covers the full spectrum of the hobby. "Although the Museum is the mecca of Corvette, the Agency insures all collector-car brands," says spokesman Adam Boca. "Whether you own Corvettes old or new, multiple collector cars, street rods, muscle cars, exotic cars, kit cars, or vintage motorcycles, the NCMIA can provide you with a competitive quote."

National Corvette Museum members receive up to a 10 percent discount on their NCMIA policies.

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machined w/black accent



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## STINGRAY GETS AN ADRENALINE RUSH

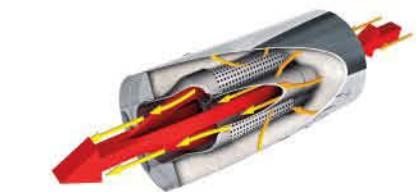
**Down** Pompano Beach, Florida-based performance specialist Redline Motorsports recently announced that it will offer a comprehensive tuner package, dubbed the Adrenaline Rush, for the new '14 Corvette Stingray.

The heart of the conversion is a custom twin-turbo system said to bump the output of the Stingray's LT1 small-block to 625 rwhp in street trim. (Even-higher-output engine packages will be offered optionally.) Additional upgrades include coilover Magnetic Ride shocks and a

motorsports-inspired wheel-and-tire package.

On the outside, every Adrenaline Rush C7 will be outfitted with a carbon-fiber aero package that includes a functional front splitter (with integral HID lights and intercooler air scoop), side skirts, an aggressive-looking rear fascia, and an exclusive rear spoiler. Other enhancements include embroidered interior accents, carbon cabin trim, and an advanced calibration for the car's engine computer. Production will be limited to 1,000 units.

For more information or to order, visit Redline Motorsports at [www.redline-motorsports.net](http://www.redline-motorsports.net).



## BORLA PERFORMANCE EARN'S EXHAUST PATENT

**Down** Borla Performance's Acoustically Tuned Applied Kinetics technology, or ATAK, has been awarded U.S. Patent No. 8439159 for a breakthrough muffler technology.

Borla engineers' new invention is said to custom-tune exhaust sound with the precision of a graphic equalizer. Inside ATAK mufflers are multiple tube-shaped cores with perforated walls. Using computer-controlled modeling, the perforation patterns of the core walls—along with their quantity, length, and diameter—are varied to produce just the right exhaust note.

"Borla's ATAK technology transforms the driving experience into a form of harmonic expression by providing the driver with command of their vehicle's sound signature," said David Borla, VP Sales and Marketing.

For more information on ATAK technology and other Borla products, visit [www.borla.com](http://www.borla.com).

## NCM BREAKS GROUND ON MOTOSPORTS PARK

**Down** It took more than five years of planning and fund raising, but construction has finally begun on the National Corvette Museum Motorsports Park.

On June 28 Kentucky's Commonwealth Secretary of Tourism, Arts and Heritage, Bob Stewart, and Corvette Racing Program Manager Doug Fehan joined forces with the NCM to break ground on the \$20 million facility.



## DEPARTMENT OF CORRECTIONS

**Down** In the September edition of our "Product Preview" section, we listed an incorrect website address for Bob's Auto Sports, manufacturer of the easy-to-install LSX Oil Separator shown here. The correct address is [www.bobsautosports.com](http://www.bobsautosports.com).

which is located directly across from the Museum in Bowling Green.

The track will be situated on 184 acres purchased and rezoned by the NCM. Two circuits, East and West, may be combined in multiple configurations ranging from a high-speed loop of 1.96 miles to an extended 3.15-mile technical course. The facility will also include an autocross/skidpad area, paddocks, control tower, and classrooms.

Corvette Racing advised NCM on the layout of the track, which will include features from the team's favorite—and most challenging—circuit: Le Mans. "Corvette Racing has long hoped for just such an outstanding track with exciting features," said Fehan. "Our drivers and many proud Corvette owners are looking forward to experiencing this premier motorsports facility. We enjoyed every minute of our participation in the design process."

The NCM Motorsports Park is scheduled to open on Labor Day weekend 2014. **VETTE**



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# PRODUCT PREVIEW



## JUST DROPPING IN

Jasper Engines & Transmissions manufactures its new Chevrolet 350/330hp long-block with performance and dependability in mind. Features include new Vortec-style head castings; three-angle valve and seat machining; precision crankshaft machining, oil chamfering, and polishing; torque-plate honing; a one-piece rear seal; and live run testing. Each long-block is backed by Jasper's three-year/100,000-mile nationwide parts-and-labor warranty, as well as a technical hotline with 24-hour emergency information.

**CHECK IT OUT!** [www.jasperengines.com](http://www.jasperengines.com)

## CRANK ON IT

Odyssey Extreme Series 12V automotive batteries promise enormous cranking power and intense, deep-cycle reserve power, too. Their secret is 99.99-percent-pure virgin-lead flat plates, which are thinner than conventional lead-alloy plates and allow for a denser matrix within the battery case. According to the manufacturer, Extreme Series batteries deliver up to 2,250 amps of cranking power for five seconds (850 cold cranking amps), last from 3-10 years, and can go a full two years between charges while in storage. Choose from all popular BCI group numbers.

**CHECK IT OUT!** [www.odysseybattery.com](http://www.odysseybattery.com)



## THE HEAT IS ON

Trick Flow's Track Heat and Track Heat Pro 750- and 850-cfm carburetors are designed with dedicated bracket racers in mind. Features include a billet-aluminum baseplate; a high-flow main body with downleg boosters and a blended venturi area; CNC-machined billet metering blocks with four-stage emulsion bleeds; and screw-in idle-air bleeds, high-speed air bleeds, and accelerator-pump discharge nozzles. Additional links to tune the secondary opening rate are also included.

**CHECK IT OUT!** [www.trickflow.com](http://www.trickflow.com)



## LET'S GO TO THE SWAP

BRP Hot Rods' LS swap kits include everything you need to drop an LS-series engine and late-model transmission into your '63-'82 Corvette. Each package includes powdercoated engine mounts, a transmission-crossmember bracket, polyurethane bushings, a transmission mount, and hardware. Headers and oil-pan swap kits are also available.

**CHECK IT OUT!** [www.musclerods.com](http://www.musclerods.com)

## YOU'RE OFF OF RESTRICTION

 Hedman Hedders' direct-replacement headers for C4 Corvettes maximize exhaust flow and maintain the factory catalytic-converter locations. Choose from Standard Duty or Ultra-Duty Elite Series, the latter featuring bulletproof  $\frac{3}{8}$ -inch flanges and thicker-walled 14-gauge primaries. Both versions come with  $1\frac{1}{8}$ -inch (diameter) mandrel-bent primaries and 3-inch ball-and-socket-style collectors. Weld-on header reducers, meanwhile, allow the collectors to easily bolt up to the factory exhaust and create a durable, gasket-free seal. Mounting hardware, instructions, and an E.O. sticker for your engine compartment are all included.

**CHECK IT OUT!** [www.hedman.com](http://www.hedman.com)



## GIVE ME FIVE

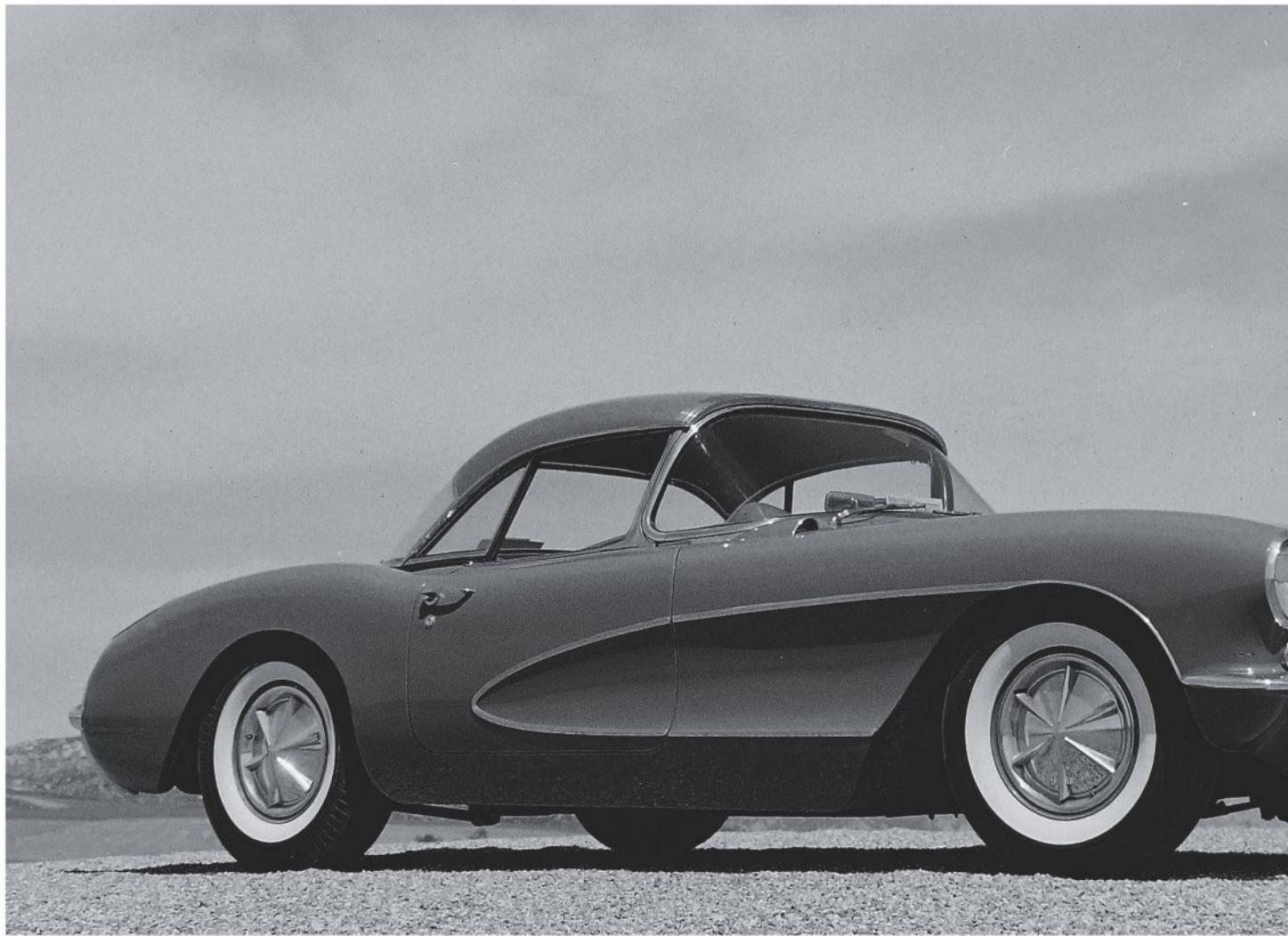
 Vision Wheel's stylish Legend 5-142 wheel features one-piece, cast-aluminum construction and a classic five-spoke design. Choose from gunmetal or chrome finishes (both have machined lip accents), 17- to 22-inch diameters, and popular offsets and backspacing.

**CHECK IT OUT!** [www.visionwheel.com](http://www.visionwheel.com)

**VETTE**

# FROM THE ARCHIVES

DREW HARDIN WORDS  
SOURCE INTERLINK  
MEDIA ARCHIVES PHOTOS



## IT SURE DOES **GO-O-O-O...**

**IT SURE DOES **GO-O-O-O...****

The exterior modifications to the two-year-old Corvette were subtle. So subtle, in fact, that *Motor Trend* technical editor Chuck Nerpel opened his June 1959 story noting that the "well-groomed '57 Corvette that owner Ernie Landel drove into the pit area of Riverside Raceway gave no indication" of the supercharged V-8 nestled beneath the car's flat hood. "The rumble of the dual exhaust might have given away the fact that it was idling a bit fast for a street machine, but the absence of stacks or bumps usually associated with highly modified engines in

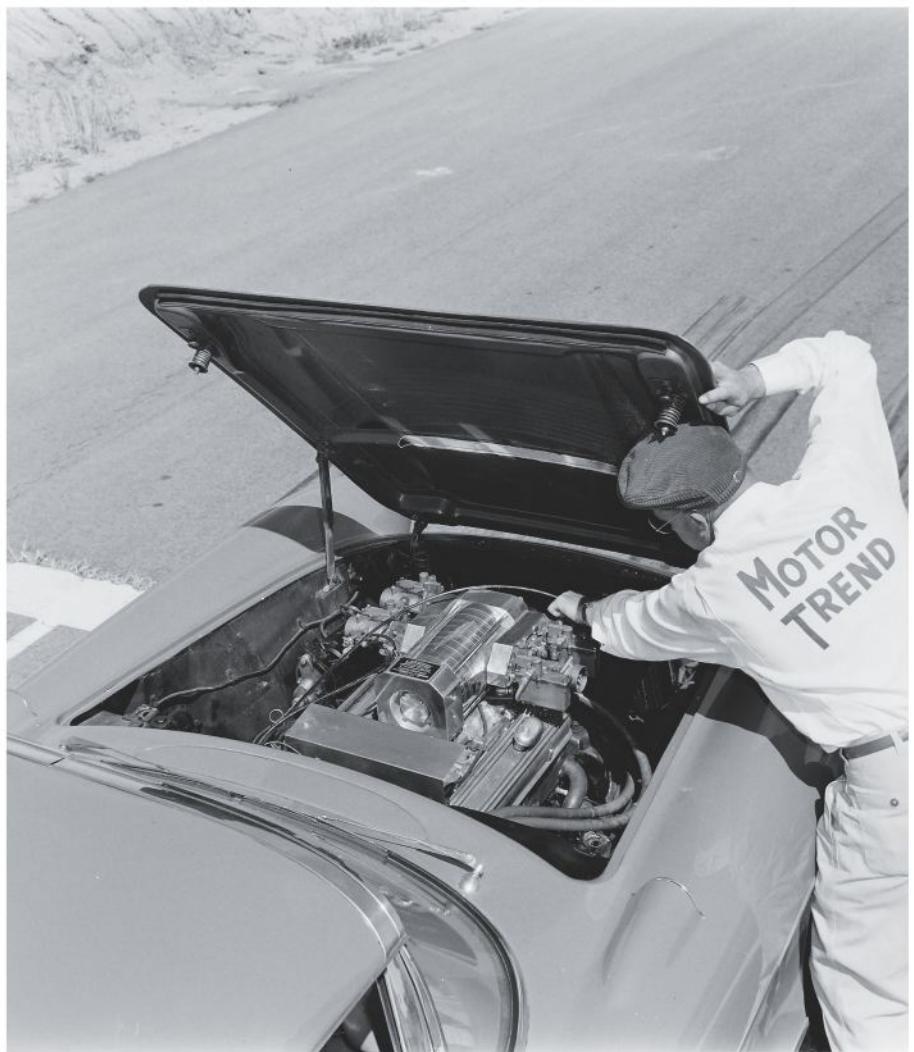
stock cars is completely disarming."

Disarming, too, was the car's behavior on the track. Wearing Inglewood recapped slicks (camouflaged by wide whitewalls), 4.11s in the diff, and with the Lakes pipes uncapped, Landel's Vette tore down Riverside's dragstrip in 13.4 seconds at a top speed of 106 mph. To maximize traction, Nerpel put a 125-pound bag of cement in the spare wheel well. Prior to adding the ballast, the Vette produced so much wheel-hop that the black streaks of rubber left by the slicks at launch looked like ladders lying on the ground.

Under the hood, the V-8 had been bored and stroked to 328 ci. Its 270 heads had

been reworked to deliver an 8.8:1 compression ratio "to take better advantage of the volume from the Latham blower that produced 8.75 pounds of boost at 5,000 rpm," wrote Nerpel. A Chet Herbert 270 cam actuated stock valves, and induction was via four Carter side-draft carburetors, "the same type used on the old '54 six-cylinder Corvette," Nerpel pointed out. "Plus a lot of tuning and jet experimentation on the engine dyno finally produced an engine that was docile enough for the street but could give a good account of itself on the 'strip." After all the tuning was finished, the dyno logged some 415 hp coming from the engine.

Nerpel and his crew didn't stop after the



acceleration tests. They allowed the 20-year-old Landel to take a few hot laps around Riverside's road course as something of an experiment. "We have watched these young drivers do fantastic things with fast accelerating cars at the dragstrips, but were often concerned about the other phases of their fast driving of stockers on the highway," he wrote. Since Landel's "real ambition" was to road race, and they were testing at Riverside, "an internationally known road-racing circuit that had seen some of the best drivers in the business learn a new respect for this type of racing," Nerpel wondered how this "young, eager driver with a hot car" would "handle braking and cornering problems."

After taking Landel around the course "to point out the tricky turns, the cut-off markers and how to downshift to conserve brakes and aid cornering," they turned him loose. "Five erratic laps later he pulled into the pits, excited and amazed. 'I had no idea that a car had to do anything but go,'" he told the magazine guys, who waved him off for more practice. His drag slicks "actually aided him to reduce lap times in the corners," Nerpel said, "as the 4.11 rearend kept straightaway speeds down to about 130 mph."

Apparently, Landel lapped Riverside until he was low on fuel; Nerpel estimated the car was getting about 5 mpg. "By the time he decided to quit, the tire dust that seeped up

from behind the seats was well imbedded in the rivulets of perspiration running down from beneath his crash helmet." Landel was a changed man, said Nerpel. "He now not only wants to go, but stop and turn, as well."

About the blower, slicks, and other changes made to the Vette, Nerpel said, "No one is ever satisfied with such modifications unless he can use them to the fullest. Locked rearends and slicks have certain limitations for street use...and while this engine does behave well in traffic, it is very hard to start...Only top premium gasoline works well, and around town the car has a hard time getting better than 8.5 miles per gallon, but it sure does go-o-o-o..." **VETTE**

# TECHNICALLY SPEAKING

JAMES BERRY CORVETTE TECH GURU



**Q:** I'm new to the Corvette world, having recently purchased a C6. When I took the car to the dealer for an oil change, I found out it was subject to a safety recall that had not been performed. Did the manufacturer drop the ball? Should I be concerned that there may be more recalls on the car? Are there a lot of recalls on the C6? I don't want to start off on the wrong foot with my new Vette.

Jim  
Via email

**A:** Jim, your dealership did its job by performing the recall the first time you took the car in for service. While there are undoubtedly flaws in the system, the responsibility for ensuring that a car has been checked for recalls ultimately rests with the current owner.

Manufacturers send out letters informing owners of these recalls as they're issued. Unfortunately, not all of these letters reach their destinations, and some owners simply ignore them when they do. Once a vehicle has been sold, it becomes more difficult for the carmaker to track down subsequent owners.

There are a few different ways to find general recall information for your Corvette. One is to call your local dealership, give the service writer your VIN, and ask him or her to check for applicable recall bulletins. You may also wish to download the National Highway Transportation Safety Administration's (NHTSA) recently released SaferCar app, which allows you to access recall data, safety ratings, and other model-specific info using your smartphone.

To give you an idea of how recalls are addressed at the manufacturer level, I've included below is a *partial* list of recall bulletins for the C6 Corvette. Note that these bulletins are incomplete, listing only the model year(s) covered, the problem, and the correction. If you feel your car is affected by one or more of these recall campaigns, contact your local dealer.

## 11258B—REAR HATCH SEPARATION IN CRASH

### SERVICE CAMPAIGN BULLETIN

REFERENCE NUMBER(S): 11258B

DATE OF ISSUE: October 21, 2011

AFFECTED MODEL(S): 2011-2012 Chevrolet Corvette coupe

#### CONDITION

General Motors has decided that certain 2011-2012 model year Chevrolet Corvette Coupe vehicles fail to conform to Federal/Canada Motor Vehicle Safety Standard 206, Door Locks and Door Retention Components, for rear door retention in a crash. The rear hatch hinges on these vehicles may not meet the load requirements specified in the Safety Standard, which may allow the rear hatch to separate from the vehicle in a crash.

#### CORRECTION

Dealers are to replace both rear hatch hinges.

## 08312B—CONVERTIBLE ROOF COVER SEPARATION

### SERVICE CAMPAIGN BULLETIN

REFERENCE NUMBER(S): 08312B

DATE OF ISSUE: May 26, 2011

AFFECTED MODEL(S): Some 2008-2009 Chevrolet Corvette convertibles

#### CONDITION

Certain 2008 and 2009 model year Chevrolet Corvette manual- or power-roof convertible vehicles may have a condition in which the fabric roof cover may begin to separate from its retainer bracket near the top edge of the windshield. When the vehicle reaches speeds of approximately 100 mph (160 km/h) or greater, the roof cover could begin to pull away from the retainer bracket and, depending on the speed of the vehicle and duration at that speed, could tear to the rear glass. If this were to occur, the headliner would remain intact and the roof cover would not separate from the vehicle.

#### CORRECTION

Dealers are to install a new design retainer bracket.

### VEHICLES INVOLVED

Involved are certain 2008 and 2009 model year Chevrolet Corvette manual or power roof convertible vehicles built within these VIN breakpoints:

YEAR:	2008	2009
DIVISION:	Chevrolet	Chevrolet
MODEL:	Corvette	Corvette
FROM:	85117774	95100002
THROUGH:	85135284	95112678

Not all vehicles within the above breakpoints may be involved.

## 10037B—UNWANTED REPEAT CALLS TO ONSTAR

### SERVICE CAMPAIGN BULLETIN

REFERENCE NUMBER(S): 10037B

DATE OF ISSUE: May 13, 2011

AFFECTED MODEL(S): 2004-2008 Chevrolet Corvette

#### CONDITION

Certain 2002-2009 model-year vehicles equipped with OnStar may have a condition in which the vehicle's OnStar system repeatedly makes incomplete calls to OnStar without the vehicle's occupant's input or knowledge. Customer initiated Blue Button call, Emergency calls, and Automatic Crash Notification calls will also fail to establish a data connection with the OnStar Call Center. Eventually, the customer's call will connect as a voice-only line and the customer will be able to talk with an OnStar advisor; however, the advisor will not get crucial customer data such as vehicle identification and location.

#### CORRECTION

Dealers are to replace the OnStar module (VCIM).

### VEHICLES INVOLVED

Involved are certain 2002-2009 model year vehicles equipped with OnStar, and built within these VIN breakpoints:

YEAR:	2005	2007	2008
DIVISION:	Chevrolet	Chevrolet	Chevrolet
MODEL:	Corvette	Corvette	Corvette
FROM:	55102684	75109811	75136663
THROUGH:	55122295	85102704	85123161

Not all vehicles within the above breakpoints may be involved.

## 09160A—CLUTCH SPRING FRACTURE

### SERVICE CAMPAIGN BULLETIN

REFERENCE NUMBER(S): 09160A

DATE OF ISSUE: June 25, 2010

AFFECTED MODEL(S): 2009 Chevrolet Corvette ZR1

#### CONDITION

Certain 2009 model-year Chevrolet Corvette

ZR1 vehicles may have a condition in which the clutch-damper spring may fracture. If this were to occur, the driver may or may not notice gear rattle, and/or the transmission may be hard to shift. If the vehicle is driven with a fractured clutch-damper spring, it could result in damage to the transmission.

#### **CORRECTION**

Dealers are to replace the clutch assembly.

#### **VEHICLES INVOLVED**

Involved are 2009 Chevrolet Corvette ZR1 vehicles built within these VIN breakpoints:

**YEAR:** 2009  
**DIVISION:** Chevrolet  
**MODEL:** Corvette  
**FROM:** 95800667  
**THROUGH:** 95801069

Not all vehicles within the above breakpoints may be involved.

## **08386—MISSING MERCURY DISPOSAL NOTICE LABEL**

#### **SERVICE CAMPAIGN BULLETIN**

REFERENCE NUMBER(S): 08386

DATE OF ISSUE: April 28, 2009

AFFECTED MODEL(S): 2008-2009 Corvette

#### **CONDITION**

Certain 2008-2009 Corvette vehicles, registered in Connecticut, Louisiana, Maine, Maryland, Massachusetts, Minnesota, New York, Rhode Island, and Vermont, may have a condition in which the Mercury Disposal Notice Label was not included on the vehicle. This label contains instructions for the proper disposal of mercury-containing components that are installed on the vehicle.

#### **CORRECTION**

Dealers/retailers are to inspect and, if necessary, install a Mercury Disposal Notice Label on the driver-side door post (B pillar). Since this label can easily be installed by the customer, and to reduce their inconvenience, the label and installation instructions will be mailed to customers of record.

#### **VEHICLES INVOLVED**

Involved are certain 2008-2009 model year Chevrolet built within these VIN breakpoints:

**YEAR:** 2008 2009  
**DIVISION:** Chevrolet Chevrolet  
**MODEL:** Corvette Corvette  
**FROM:** 85100227 95100069  
**THROUGH:** 85135183 95800342

## **08259A—ONSTAR SYSTEM INOPERATIVE**

#### **SERVICE CAMPAIGN BULLETIN**

REFERENCE NUMBER(S): 08259A

DATE OF ISSUE: November 06, 2008

AFFECTED MODEL(S): 2009 Corvette

#### **CONDITION**

Certain 2009 Corvette vehicles may have an OnStar module with a component that was not manufactured to GM's specification. This can result in an open circuit and an inability to call or receive calls from OnStar. Although a customer trying to make a call would hear the message, "Connecting to OnStar" and the LED light would blink green, no connection would occur.

#### **CORRECTION**

Dealers/retailers are to replace the OnStar module.

#### **VEHICLES INVOLVED**

Involved are certain 2009 Corvettes vehicles built within the following VIN breakpoints:

**YEAR:** 2009  
**DIVISION:** Chevrolet  
**MODEL:** Corvette  
**FROM:** 95100053  
**THROUGH:** 95700054

Not all vehicles within the above breakpoints may be involved.

## **07260A—KEYLESS ACCESS SYSTEM INOPERATIVE**

#### **SERVICE CAMPAIGN BULLETIN**

REFERENCE NUMBER(S): 07260A

DATE OF ISSUE: January 30, 2008

AFFECTED MODEL(S): 2008 Chevrolet Corvette

#### **CONDITION**

On certain 2008 model-year Chevrolet Corvette vehicles, the keyless access system may become inoperative at times. The doors may not automatically lock or unlock, and the vehicle may not start. The DIC will also display a "NO FOBS DETECTED" message.

If this condition occurs, the driver can lock or unlock the doors by pushing the buttons on the keyless access transmitter. The vehicle can be started by placing the transmitter in the glovebox transmitter pocket with the buttons facing toward the passenger side. Then, with the vehicle in PARK (P) for an automatic transmission, press the brake pedal and the START button. If the vehicle has a manual transmission, press the clutch and the START button.

#### **CORRECTION**

Dealers are to install a new module for the keyless access system.

#### **VEHICLES INVOLVED**

Involved are certain 2008 model year Chevrolet Corvette built within these VIN breakpoints:

**YEAR:** 2008  
**DIVISION:** Chevrolet  
**MODEL:** Corvette  
**FROM:** 85105302  
**THROUGH:** 85106987

Not all vehicles within the above breakpoints may be involved.

## **09230B—ROOF PANEL SEPARATION**

#### **SERVICE CAMPAIGN BULLETIN**

REFERENCE NUMBER(S): 09230B, Date of Issue: May 18, 2010

AFFECTED MODEL(S): 2005-2007 Chevrolet Corvette with Removable Body Color Roof (CF7/C2L); 2006-2007 Chevrolet Corvette Z06

#### **CONDITION**

General Motors has decided that a defect, which relates to motor-vehicle safety, exists in certain 2005-2007 model-year Chevrolet Corvette vehicles equipped with a removable body-color roof (CF7/C2L), and 2006-2007 model-year Chevrolet Corvette Z06 vehicles. Some of these vehicles have a condition in which the adhesive between the roof panel and the frame may separate. If there is a partial separation, the occupant may notice one or more symptoms, such as a snapping noise when driving over bumps, wind noise, poor roof-panel fit, roof-panel movement/bounce when a door or hatch is closed, or a water leak in the headliner. If there is a complete separation, the roof panel may detach from the vehicle. If this were to occur while the vehicle was being driven, it could strike a following vehicle and cause injury and/or property damage.

#### **CORRECTION**

Dealers are to install a new-design roof panel.

#### **VEHICLES INVOLVED**

Involved are certain 2005-2007 model year Chevrolet Corvette vehicles equipped with a removable body-color roof (CF7/C2L; transparent roof panels [CC3] are NOT involved in this recall), and 2006-2007 model year Chevrolet Corvette Z06 vehicles built within these VIN breakpoints:

**YEAR:** 2005 2006 2007  
**DIVISION:** Chevrolet Chevrolet Chevrolet  
**MODEL:** Corvette Corvette Corvette  
**FROM:** 55100002 65100001 75100002  
**THROUGH:** 55137340 65133987 75104035

Not all vehicles within the above breakpoints may be involved. **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](mailto:vette@sorc.com). Be sure to put "Technically Speaking" in the subject line.

# 1

It's not retirement. It's rebirth.



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# “EVERY ENTHUSIAST’S DREAM!”

Five lucky Mobil 1™ winners got the thrill of a first-ever, behind-the scenes invitation to Motor Trend’s high-stakes, high-octane Best Driver’s Car competition!



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**MOTOR TREND'S** annual Best Driver's Car shoot-out has rapidly become a hotly anticipated and eagerly followed event on the year's automotive calendar. Every summer, the magazine's elite team of editors, test drivers, and technicians brings out some of the planet's most exciting automobiles in search of the one machine that stands above all the rest, the year's Best Driver's Car.

This year's 2013 Best Driver's Car was even more unforgettable. Drawing from a huge pool of contest entries, the Mobil 1™ team chose five lucky winners from across the United States and flew each of them to Mazda Raceway Laguna Seca in Monterey, California, to watch—and even join!—the Best Driver's Car competition up-close. "I had to pinch myself when I first saw all the cars in the pits," says Michael Dobbins, of San Antonio, TX. "The Aston Martin Vanquish! The Jaguar F-Type! An SRT Viper! A Nissan GT-R Track Pack! It was like a car guy's candy store!"

No outsiders had ever before been allowed to attend Best Driver's Car, but this year's Mobil 1™ winners did much more than just watch. "I got to meet and talk with all of my favorite Motor Trend editors like Ed Loh and Angus MacKenzie," says Steven Nasir of Ashburn, VA. "Jessi Lang gave us a tour of the track!" Gushes Ben Young of Dalton, PA: "They even let each of us take a spin in our favorite car! I drove an Audi R8 V-10!"

Next, the adrenalin really turned up. Each winner strapped into the new, 622-horsepower Mercedes-Benz SLS AMG Black Series sports coupe for a whirlwind of full-speed hot laps around Mazda Raceway Laguna Seca with professional racer, and 24 Hours of Daytona winner, Randy Pobst at the helm. "Mind boggling...insane...incredible..." says Kevin Sanders. "It felt like I was in one of your YouTube videos!" says Michael Dobbins.

As you'd expect, Motor Trend's Best Driver's Car is a punishing competition, demanding the utmost from every vehicle. So it's no surprise that 7 of the 12 cars in this year's field—including the 2013 winner—are factory-filled with Mobil 1™ synthetic motor oil. In fact, 3 of the last 4 Best Driver's Car winners relied on the unparalleled performance and durability of Mobil 1™.

Ask any of the five winners of this year's Best Driver's Car contest, though, and they'll tell you ExxonMobil does much more than make the world's leading synthetic motor oil brand. It also makes auto enthusiasts pinch themselves.

**See if you can pick the winning vehicle by visiting [MotorTrend.com/BestDriversCar](http://MotorTrend.com/BestDriversCar)**



1) Steven Nasir – Ashburn, VA 2) Kevin Sanders – Irving, TX  
3) Michael Dobbins – San Antonio, TX 4) Ben Young – Dalton, PA  
5) Brad Flack – Double Oak, TX



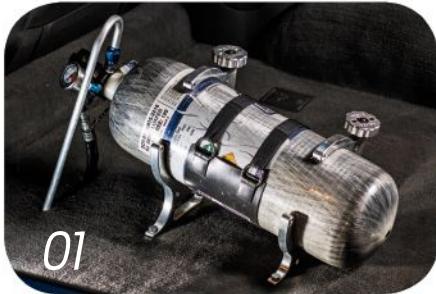
[COVER STORY]

# EXTREME OF THE CROP

LASHWAY MOTOSPORTS' NITROUS-SNORTING  
Z06 IS A TRUE-BLUE SUPERCAR

CHRISTOPHER R. PHILLIP WORDS KEVIN DIOSSI PHOTOS





**D**uring the C6's illustrious eight-year production run, 28,176 Z06s—all bred as track-ready fighters—set a new standard for factory-issued, naturally aspirated Corvette performance.

Upon its introduction in 2006, Corvette's flagship Z was the cream of the crop. But what if you demand quicker than its official performance numbers of 0-60 mph in 3.7 seconds and 1,320 feet in 11.7 seconds at 125 mph? It's then time for a new reference standard—let's say, the "extreme of the crop."

"The first time I laid eyes on an '06 Z06, I was madly in love," Erik Bentley, the co-owner of Lashway Motorsports in Fort Lauderdale, Florida, says. "The curves, power, and sounds were all a bit too much to handle for an aspiring Corvette enthusiast. The first time I drove one, all of those emotions...became a reality. Little did I know it would be several years before I would have the opportunity to own, drive, and modify a factory stocker into something unique and beautiful."

Early one morning in April 2012, Bentley decided to take a look at some Corvettes on an Internet auction site. "I typed 'Corvette Z06' into the search bar, hit enter, and sat back with my cup of coffee. A few seconds passed, and a list of several Vettes populated on my screen. The first one on the list was a black '07, which was priced at \$37,000."

The car, which was located at a dealership in North Carolina, was listed as "fast" and "ready to go," but the latter descriptor didn't turn out to be entirely accurate. "It had 77,000 miles on the odometer, which I found unusually high compared with other Vettes of that model year," says Bentley. "The dealer disclosed that the body needed a good wet sand and buff, and that it had been involved in a front-end collision with a deer earlier in its life. None of this mattered to me, though. It was a C6 Z06, I could afford it, and I bought it."

One week later, Bentley took delivery of the car. "The first thing I did was take it down the street, do some doughnuts, and test the 427-cube, 505-horsepower small-block under the hood," he says. "It lived up to every expectation I had."

But Bentley hadn't just bought his Corvette for personal pleasure: He also wanted to promote his flourishing performance shop. "The co-owner, Josh Isaacs, and I wanted to attract a higher level of clientele, and, of course, more

Corvettes. In order to do that, we felt the Z had to show off a total package, which would include performance, great looks, and unique mods. We set out to create a streetable sports car that I could drive to work or the movies, and that felt equally at home on the dragstrip and road course."

Bentley was well prepared for the build, having spent years mentally planning a Corvette superbuild before he ever owned the Z.

First up was the engine. "I put our years of LSX performance expertise to work, and spared no expense when thinking about what parts to use," he says. "We have a great relationship with Texas Speed and Performance, so it was fitting that we utilized their parts on this vehicle."

To that end, Bentley installed a TS&P LS7S cam and a set of the company's Performance Racing Components (PRC) 265cc castings, along with a port-matched FAST 102mm intake manifold and complementary Nick Williams throttle body. To bolster the driveline for the additional power, he then swapped in a Monster Level 3 single-disc ceramic clutch and 18-pound billet-steel flywheel; outsourced

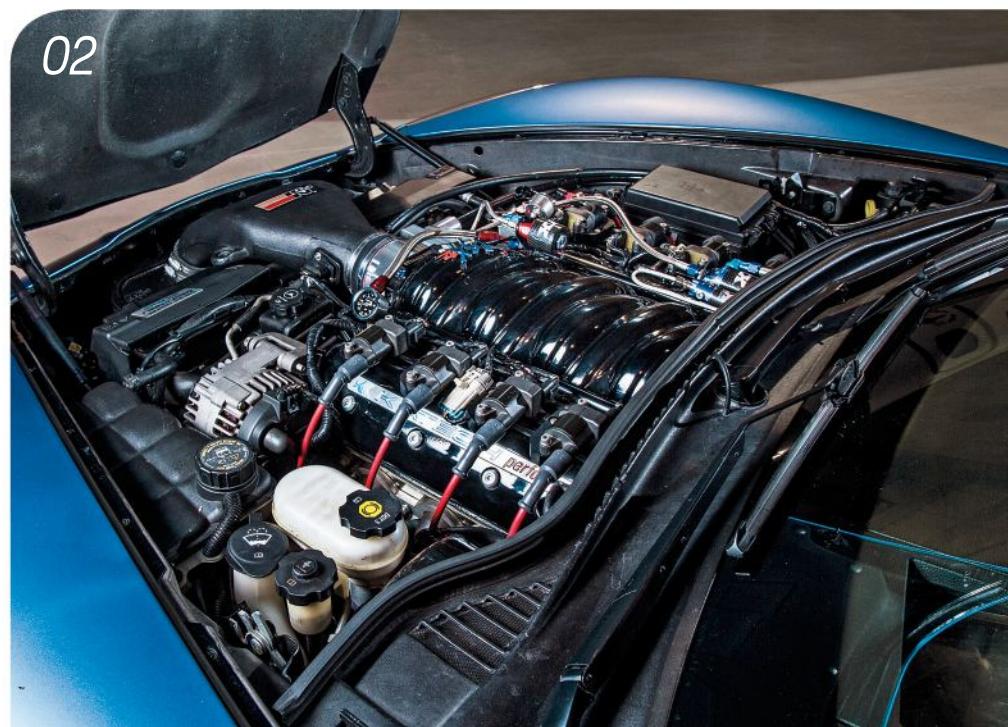
Promotion Powertrain of Fort Lauderdale to fortify the six-speed gearbox's internals; and retired the main shafts in favor of bulletproof units from Lingenfelter Performance Engineering.

"The factory exhaust system also had to go," Bentley notes. Accordingly, a Stainless Works system, featuring long-tube headers and an S-tube exhaust (and augmented by a set of low-profile DMH cutouts) was bolted up. To clear the big, 2-inch primaries, he eliminated the stock transmission cooler and lines, and grafted a Moroso 41200 filtered cooler onto the subframe near the rear of the vehicle. "The Vette is loud and sounds nasty, and that's just the way we like it!" he reports.

In the first round of chassis-dyno testing, the custom-tuned Z produced 588 hp and 520 lb-ft of torque, but that was just the start. "I wanted a kick of spray, just in case I wanted to go nuts," Bentley says.

Enter Nitrous Express, which supplied its NX 102mm plate kit. Bentley installed the system in-line, between the throttle body and the intake manifold, adding carbon-fiber solenoids, a purge kit, and a lightweight (12-pound)

**01 ➔** Should the LS7's output ever prove insufficient, this hatch-mounted nitrous bottle stands ready to unleash another 150-odd horses. **02 ➔** A Texas Speed top-end kit helps the stock-cube LS7 scare up an invigorating 588 rwhp—without the nitrous.



# [COVER STORY] EXTREME OF THE CROP



03

composite bottle mounted in the hatch area. An NOS Progressive Controller rides herd on the setup.

Bentley says the most important part of the N02 system, however, is the Nitrous Outlet one-gallon fuel system, which pulls 116-octane race gas when the juice is activated, and blends it at a 1:1.5 ratio with the factory tank's 93-octane fuel before delivering the mix to the plate kit. "It allows us to run more timing than with regular 93 octane, and helps to eliminate any kind of lean spike normally associated with big nitrous hits like this. We set it to spray at

WOT between 3,500-6,800 rpm," he says. The results?

"The seat-of-your-pants feeling was absolutely insane," Bentley says. "I had never driven a vehicle with such an enormous amount of throttle response and instant kick. The best part of the LS7 is the power band. Just when you think you should shift, you realize you have another 2,000 rpm to spare! The car could hit 160 mph, and that's with Fifth and Sixth gear left!"

Dragstrip testing confirmed Bentley's impressions. On motor, the Vette clicked off

10.7-second passes with 1.5-second 60-foot times, and that's with a bone-stock suspension. A 150hp shot of juice brought the e.t. down to a mind-numbing 10.01 seconds at 140 mph.

With the performance part of the equation squared away, Bentley had Superior Automotive Design in Pompano Beach wet-sand the body and apply 3M's Matte Blue Metallic vehicle wrap to the exterior and doorsills; a complementary Black Carbon Fiber wrap was added to the doorjambs and sill surrounds. Other than the purge, bottle-heater,



04

# SPEC SHEET

## '07 Z06

<b>OWNER</b>	Erik Bentley; Fort Lauderdale, FL
<b>BLOCK</b>	LS7 aluminum
<b>DISPLACEMENT</b>	427 ci
<b>COMPRESSION RATIO</b>	11.5:1
<b>HEADS</b>	Precision Racing Components six-bolt 265cc aluminum
<b>VALVES</b>	Stock 2.20-in titanium intake, 1.61-in stainless-steel exhaust
<b>CAMSHAFT</b>	Texas Speed LS7S (242-/250-deg duration, 0.650/0.650-in lift, 112-deg LSA)
<b>ROCKER ARMS</b>	Stock 1.8-ratio
<b>PISTONS</b>	Stock hypereutectic aluminum
<b>CRANKSHAFT</b>	Stock forged steel
<b>RODS</b>	Stock forged titanium
<b>INTAKE MANIFOLD</b>	FAST 102mm, ported
<b>THROTTLE BODY</b>	Nick Williams 102mm
<b>FUEL INJECTORS</b>	Modified ZR1, 56-lb/hr
<b>FUEL PUMP</b>	Stock with Nitrous Outlet supplementary system
<b>IGNITION</b>	Stock coil-on-plug with MSD Super Conductor 8.5mm wires and NGK VR-7 plugs
<b>ENGINE MANAGEMENT</b>	Stock, tuned with HP Tuners software by Josh Isaacs, Lashway Motorsports
<b>POWER ADDER</b>	Nitrous Express 102mm plate "wet" kit
<b>EXHAUST SYSTEM</b>	Stainless Works 2-in long-tube headers and 3-in S-Tube system, DMH cutouts
<b>TRANSMISSION</b>	Tremec T56 six-speed, modified by ProMotion Powertrain
<b>CLUTCH</b>	Monster Level 6 with sintered-iron 11-in pressure plate and billet-steel flywheel
<b>DRIVESHAFT</b>	Stock
<b>FRONT SUSPENSION</b>	Stock with lowering bolts
<b>REAR SUSPENSION</b>	Stock with lowering bolts
<b>REAR END</b>	Stock differential upgraded with LPE 300m mainshafts, built by ProMotion Powertrain; 3.42 gears
<b>FRONT BRAKES</b>	Stock
<b>REAR BRAKES</b>	Stock
<b>WHEELS</b>	Strasse Forged SM7 Deep Concave; 20x10 (front), 20x13 (rear)
<b>FRONT TIRES</b>	Nitto Invo 275/25ZR20
<b>REAR TIRES</b>	Nitto Invo 345/35ZR20
<b>FUEL OCTANE</b>	93
<b>WEIGHT</b>	3,480 lbs with driver
<b>BEST E.T./MPH</b>	10.01 seconds at 140 mph
<b>BEST 60-FT. TIME</b>	1.50 seconds
<b>CURRENT MILEAGE</b>	84,000
<b>MILES DRIVEN WEEKLY</b>	200



**03** ➔ The matte-blue wrap was installed by Superior Automotive Design in Pompano Beach. **04** ➔ Bentley exercises the car among its accelerative equals, at the Fort Lauderdale Executive Airport. **05** ➔ Aside from the big, red button on the center console, the interior remains largely unmodified. Suede-rimmed steering wheel adds a dash of class. **06** ➔ Stunning Strasse Forged wheels are equal parts carbon and lightweight aluminum. Stock brake calipers bear the Lashway Motorsports logo in finish-matched blue powdercoat.

and nitrous-arming switches on the center console, and a suede steering wheel from a '11 Z06 Carbon Edition, the Ebony cabin remains stock.

As a final stroke, Bentley powdercoated the factory calipers Matte Blue and bolted up a set of Strasse Forged SM7 Deep Concave wheels wrapped in Nitto Invo rubber.

The transformation from cream to extreme took approximately one month, but Bentley wasn't finished yet.

"Who can run 10.01s and not want to drop down into the 9s?" he asks. So it was back to the shop again for a Monster 11-inch Iron Race Clutch, a 28-pound billet-steel flywheel, and a Daytona Electronics nitrous controller, which the men programmed to fire a progressive, 200-horse shot between 3,500 and 7,200 rpm. "We're hoping the heavier flywheel and new controller will help with grip out of the hole," Bentley notes, adding that a test day at Palm Beach International Raceway is currently in the works.

He might want to hurry, as his C7 is already on order, and his goal is to pursue fresh quarter-mile records in the all-new Vette. Sound interesting? Tune in to [www.lashwaymotorsports.com](http://www.lashwaymotorsports.com), where you can check out the Stingray's delivery, dyno testing, mods, and performance numbers as they unfold. **VERTE**



[SPEED READING]

DRESSED TO  
**IMPRESS**



# THIS RESTOMODDED SHARK WAS A SEMA-SHOW STANDOUT

SCOTT ROSS WORDS  
JOHN MACHAQUEIRO PHOTOS



02

**A**t first it looks like almost any other '70-'72 Corvette Stingray convertible. Then you notice the fender vents are gone, the five-spoke American Racing Torq-Thrust IIs are bigger than the stock Rally wheels were, and the chassis bristles with chrome and stainless-steel hardware.

Then you *really* start to notice the changes on Jim Campbell's '72 shark, starting with how the bumpers were fitted onto the body. "They were cut and sectioned, to pull them in," says Campbell. "That's because the '72s had a bumper 'nose' that pinched up where it comes together with the body. So that was cut out, and then the bumpers were repositioned to fit."

Given the drastic nature of the transformation, Campbell is quick to point out that

his Vette isn't based on a super-rare C3s. "A member of my Corvette club had a '72 for sale," he recalls. "It was pretty much a standard car, but it was nice and had been well taken care of."

Campbell has long nurtured a love for America's Only True Sports Car. "It started when I was a senior in high school," he recalls. "I was born and raised in Illinois, just across the Mississippi River from St. Louis. We were fortunate enough to go on a field trip to the St. Louis Assembly Plant, where they built them then."

He adds, "I like the '72 because it was the last year for chrome bumpers, front and rear."

With his own '72 socked away in the garage, Campbell undertook a four-year project to transform the car into the House of Kolor "Osmosis Red" Vetterod seen here. Finish-care giant Meguiar's was so impressed with Campbell's handiwork, it gave the scintillating shark a premier spot in its 2012 SEMA-show booth.

Campbell started by keeping the original body and glass, but little else. The stock frame gave way to a welded-tube SRIII Motorsports setup, in anticipation of the LS-series engine, T56 six-speed gearbox, and high-tech suspension that would follow.

But surprisingly, not even the car's

**01** → Not your typical '72 Stingray: Jim Campbell's Vetterodded C3. **02** → Ridetech air springs provide five inches of vertical adjustability, facilitating the slammed stance.



01

# [SPEED READING] DRESSED TO IMPRESS



03



04



05



06

**03** ➔ That's an LS2 residing under the MagnaCharger, and surrounded by custom-fabbed engine bay panels by Kenny Morrison (who also made the one-off cold-air intake). **04** ➔ Close-up look at the Heidt's Super Ride IRS setup also shows inboard-mounted Wilwood disc brakes and Ridetech air springs. **05** ➔ Power C6 sport seats are at the heart of the restomodded '72's cabin. Auto Meter gauges replaced the stock ones. **06** ➔ Five-spoke

American Racing Torq-Thrust IIs on Nitto tires front big Wilwood discs. **07** ➔ Modified and smoothed SRIII frame now hosts a blown LS engine, a six-speed trans, plus Heidt's and Ridetech suspension hardware at all corners. PHOTO COURTESY JIM CAMPBELL **08** ➔ "Wrong-way hinged" hood features custom-fabbed strut rods and electric actuators. **09** ➔ Leather-swathed buckets flank a custom-made "waterfall" that houses the hand-brake lever.

# SPEC SHEET

## '72 CONVERTIBLE

<b>OWNER</b>	Jim Campbell; Palm Beach Gardens, FL
<b>BLOCK</b>	Stock LS2 aluminum
<b>DISPLACEMENT</b>	364 ci
<b>HEADS</b>	Stock LS2 aluminum
<b>VALVES</b>	Stock 2.00/1.55-in
<b>CAMSHAFT</b>	Stock LS2 hydraulic roller
<b>ROCKER ARMS</b>	Stock 1.7-ratio
<b>PISTONS</b>	Stock hypereutectic aluminum
<b>COMPRESSION RATIO</b>	10.9:1
<b>CRANKSHAFT</b>	Stock nodular iron
<b>RODS</b>	Stock powdered-metal steel
<b>OIL SYSTEM</b>	Stock
<b>POWER ADDER</b>	Magnuson supercharger, 7 psi max boost
<b>IGNITION</b>	Stock electronic coil-on-plug
<b>EXHAUST</b>	Custom Street & Performance stainless-steel with Borla mufflers
<b>TRANSMISSION</b>	Tremec T56 six-speed manual with close-ratio gearing
<b>SUSPENSION</b>	Heidt's stainless steel with Ridetech air springs (front); Heidt's Super Ride IRS with Ridetech air springs (rear)
<b>BRAKES</b>	Wilwood discs with power assist (front and rear)
<b>WHEELS</b>	American Racing Wheel Torq-Thrust II; 17x8-in (front), 18x10-in (rear)
<b>TIRES</b>	Nitto NT55; 235/40ZR17 (front), 275/40ZR18 (rear)
<b>CURRENT MILEAGE</b>	308 since completion



underpinnings were immune from Campbell's customizing fever. "When the chassis came in, the tubes on the front were square," he says. "So Kenny Morrison of K-Tech Automotive cut them out and made them more rounded. That fit the look of the rest of the chassis."

"We also ground the welds down, sanded them, and got them just as smooth as the outside of the car. So the underside of the car looks as fabulous as the top side," he adds.

It isn't just the frame that looks great underneath: Check out the high-tech suspension pieces by Heidt's—especially the company's Super Ride IRS with inboard disc brakes—and the Ridetech air suspension system. "We have [up to] a 5-inch change in ride height with the air suspension," notes Campbell.

Performing even better than it looks is the supercharged LS2 under the hood—not to mention the hood itself. "It opens by raising up and coming back toward the windshield," says Campbell, who adds that this unique feature generated no small amount of interest the first time he showed the car.

"It was an all-Corvette show at Silver Springs State Park, near Ocala [Florida]. All the Corvettes were lined up with their hoods up, and there was this red one with its hood open in the wrong direction," he says with a big laugh. "Everybody was looking at it and thinking, *What the heck is that?* It got more attention than you could imagine."

It got even more attention in November of

2012, in the Meguiar's booth in Las Vegas. "There were probably 6,000 pictures taken," says Campbell. "There would be as many as 10 to 12 people around the car. I had to sit there all day, because I didn't want anybody to get too close."

Take one glance at the '72, and you'll understand why the knowing car people at the SEMA show needed to get a closer look. Especially noteworthy are the parts that K-Tech Automotive's Morrison fabricated, which include the engine bay's side and rear panels, along with a 4-inch cold-air intake to keep the MagnaCharged LS2 (which puts out around 550 hp and 500 lb-ft of torque) happy.

Campbell has a story about one showgoer's reaction to that intake. "There was a gentleman looking under the hood who appeared to know what he was talking about. He said, 'I saw one of those air intakes—I can't remember what magazine they were advertising those in, but they were quite expensive.' I'm just listening to the guy, and I didn't correct him at all, but he didn't have a clue. You can't buy that [intake] anywhere!"

How does Campbell's C3 perform on the road? "It handles and drives great," he says. "It's got a six-speed, it cruises, and gets out of its way—trust me!"

If you're inspired to create your own restomodded Corvette, Campbell offers the following admonition: "It's a major undertaking, and a thing that can snowball out of control, if you

let it. That's because once you get in there and have all these creative ideas, it can be hard to stop. And those 'while I'm at it' projects quickly start adding up."

But the results can be well worth it. "I think restomods are coming on—they have for the last couple of years," Campbell says. "Corvette enthusiasts are looking at what's being done with all restomods, not just with Corvettes. It's the ideas that are fascinating."

"When you go to a car show, you want to see something different—not just a lot of store-bought chrome on someone's so-called 'custom.' That's nonsense. They may have added flash, but that's not...much of a modification."

And not anything to compare with this once-ordinary, now-extraordinary shark. **VETTE**



**W**hen did your love affair with the '57 Corvette begin? Maybe it was when you saw the first one arrive at your hometown Chevy dealer. Or perhaps it was the first time you spotted one on a race track. There's also a good chance it was when you finally got to see one up close. In Al Salomone's case, he's had a love for the '57 Vette for three decades, a passion that culminated in his finding one advertised for sale in Hershey, Pennsylvania. An original RPO 579E/four-speed model, the car was already

something of a world traveler. "It came from Japan," Salomone recalls. "From what I was told, the owner was some kind of personality in the entertainment field, and he road raced it. So, it wasn't taken care of very well."

After its racing days, the '57 ended up in a Japanese museum. "This fellow I bought it from, who was in Japan on business, bought it from the museum, brought it back to the States, and did nothing to it," says Salomone.

That collector had about 10 other cars in his garage, and he'd put the C1 up for sale because he never used it. So, in 2002, Salomone purchased it and took it home.

For the next decade, he worked at restoring the '57. "I did a little bit every year," he says. "I had the engine rebuilt, the upholstery—everything was redone, outside and inside."

Almost everything, that is. "The only thing that I didn't touch was the body," says Salomone, who recounts the "sticker shock" he got when he sought out quotes from Corvette refinishers. "They wanted \$45,000 to completely strip it, gelcoat it, and repaint it. I didn't have that kind of money, [so] it was just out of the question."

For Salomone, that meant making the best of what was on the C1's body, regardless of

# HERSHEY'S BLISS

THIS PENNSYLVANIA-BOUGHT '57 IS A DELECTABLE EXAMPLE OF THE BREED

SCOTT ROSS WORDS BILL ERDMAN PHOTOS



whether it was the original nitrocellulose lacquer that went on at St. Louis, or a later Venetian Red re-spray. "I brought it back by wet-sanding it, and tons and tons of polishing," he says. "When it's in the sun, the car just 'pops.'"

Salomone used outside assistance where needed, like Tuffer Wilton at Corbo's Automotive in Somerville, New Jersey, and Corvette Paramedics over in Mount Holly. But for the original Rochester mechanical fuel-injection unit, he sought out some truly in-demand help. "I had it rebuilt by probably the Number 1 person in the country, Jerry Bramlett in Alabama,"



## [SPEED READING] HERSHY'S BLISS



# SPEC SHEET

## '57 CORVETTE

<b>OWNER</b>	Al Salomone; Hillsborough, NJ
<b>BLOCK</b>	Stock Chevrolet SBC iron, casting #3731548
<b>DISPLACEMENT</b>	283 ci
<b>HEADS</b>	Stock iron, casting #3731539
<b>VALVES</b>	Stock 1.72/1.50-in
<b>CAMSHAFT</b>	Stock flat tappet/solid lifter
<b>PISTONS</b>	Stock forged aluminum
<b>COMPRESSION</b>	10.5:1
<b>CRANKSHAFT</b>	Stock forged steel
<b>RODS</b>	Stock forged steel
<b>OIL SYSTEM</b>	Stock with mechanical pump
<b>FUEL INJECTION</b>	Stock Rochester "RamJet" mechanical, PN 7014360
<b>IGNITION</b>	Stock points-style
<b>EXHAUST</b>	Stock dual
<b>TRANSMISSION</b>	Borg-Warner T-10 close-ratio four-speed manual
<b>CLUTCH</b>	Stock
<b>DRIVESHAFT</b>	Stock
<b>REAREND</b>	Stock Positraction with 3.70 gears
<b>SUSPENSION</b>	Stock unequal-length A-arms, coil springs, tubular shock absorbers and antiroll bar (front); stock semi-elliptic leaf springs, tubular shock absorbers, and antiroll bar (rear)
<b>BRAKES</b>	Stock 11-in manual drums (front and rear)
<b>WHEELS</b>	Stock 15x5-in painted, stamped steel with chrome "spinner" covers
<b>TIRES</b>	Reproduction BFGoodrich Silvertown bias-ply, 6.70-15 (front and rear)

he says. "I had to wait a year to get him—that's how busy he is."

When the restoration of that FI unit was complete, Salomone ventured to Mobile, as he wanted to see Bramlett's operation. "After he rebuilds one, he puts it on his own '57 Corvette and road tests it, then takes it to the shop and dynos it," says Salomone. "When I got there, my unit was on his car, and we took it out for a spin. He ran it through the paces and showed me how to set it up, even though it was [properly] set up the way he gave it to me."

According to Salomone, Bramlett's rebuild also cured one of the system's recurring issues. "I always ran it on racing fuel, because I had a problem with vapor lock otherwise. After the rebuild, I can run it on pump high-test."

For the rest of the restoration, Salomone kept his '57—and the parts that went onto and in it—as original as he could. "Whatever I replaced, I replaced with either original or N.O.S. parts. Or, if I could save what was there, I had it rebuilt," he recalls.

The result is a '57 fuelie that Salomone drives weekly during the good weather, especially to shows and club events with the Central Jersey Corvette Club. While he enjoys his time behind the wheel, he adds that it's no C7. "It rides like a '57," he says. "You feel every bump and stone. It doesn't have power steering, so the effort is a little tough. But that's what you expect from a 50-something-year-old car."

"It's part of the 'patina'—that, the way it rides, and it also has an old-time smell to it."

If you're thinking about restoring a Vette of that, or any, vintage, Salomone suggests that you have plenty of green—and not the Cascade Green that was an original '57 Corvette color choice. "Have a few dollars," he says. "If you do it right, it's not cheap. The regular shop rate here in Jersey is \$110 an hour."

He also says that, while he did a lot of the work himself, he wasn't afraid of getting help when he needed it. "I knew my limitations—like, the fuel-injection unit was way over my head," he says. "I also had the engine rebuilt professionally, along with the interior. Things like the brakes I was able to do myself." Salomone notes that he used to joke that while he had the '57 in his garage for work during the winter, "I would just open the doors and shovel money into it."

Still, he adds that if you like your car—like he does his '57 fuelie—it's a labor of love. "Every winter, I would do something to it," he recounts. "I wanted to spend the summer driving it. I got to the point where all I was doing was replacing things as needed—everything else was done."

And it was time to resume the on-road part of his love affair with '57s Corvettes—especially this one. **VETTE**

**01** → Just like it was installed in St. Louis—an RPO 579E fuel-injected 283, complete with solid-lifter cam and restored Rochester FI. **02** → Can you tell if the bright trim on this corner is N.O.S., or refurbished original? **03** → Same as it ever was—down to the painted stock wheels and BFG Silvertowns. **04** → Jerry Bramlett's FI unit restoration cured a vapor-lock problem the car had with pump gas. **05** → The '57 model was the first Corvette with an available four-speed gearbox, and Salomone's is one of the 664 built with that late-year option. **06** → Instead of using repro seats or seat frames, Al Salomone refurbished the '57's original buckets.



[LIFESTYLE]



TO THE **NEXT**



# C4: 1984-1996

DREW HARDIN WORDS

COURTESY THE  
SOURCE INTERLINK  
MEDIA ARCHIVE AND GM PHOTOS

**E**very new Corvette generation, it seems, misses its due date. The arrival of the fourth-generation cars was pushed back so much that GM executives decided to skip the entire '83 model year and launch the C4 as an '84 model. The first Corvette to wear the stamp of Chief Engineer Dave McLellan, the C4 was an immediate hit with buyers and the media, and it achieved several landmark milestones during its 13-model-year run. McLellan and company had, indeed, taken America's favorite sports car to a whole new level.

## EVOLUTION vs. REVOLUTION

VERTE sister publication *Motor Trend* devoted a big part of its March '83 issue to the new Corvette, and within that special section was an article by Jim Hall describing the car's genesis, a case of evolution versus revolution. Was it finally time to make Duntov's revolutionary dream of a mid-engine Corvette a reality, or should the car take an evolutionary approach and retain its front-engine/rear-drive layout?

As far back as 1976, the Corvette engineering group and the Chevy 3 design studio were drafting proposals examining each of those architectures. The designers favored Duntov's dream and worked up a clay model based largely around the Aerovette show car. McLellan and his engineers built a mid-engine mule to study the design using a Porsche 914 platform. They realized packaging constraints would force them to use a V-6 in a mid-engine Vette, and the only engine available at the time was the anemic 2.6-liter six-banger available in the X-cars. It was deemed too expensive to power up that engine with a turbocharger, so the engineering team discarded the mid-engine concept, though the designers held onto the dream for a while longer.

Reportedly it was the introduction of the front-engine/rear-drive Porsche 928 in 1977 that put the final nail in the mid-engine Vette's coffin. At that point the mid-engine concepts became "experimental" vehicles once again, and Chevy 3 was tasked with designing a Corvette with the conventional powertrain layout.

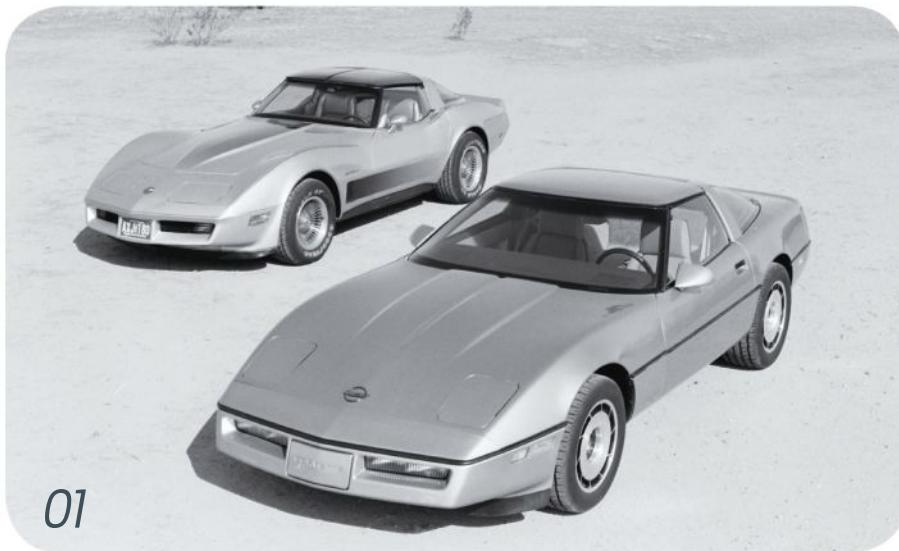
The new car, they were told, had to have more interior room and more cargo capacity, but it had to be shorter overall, have a better firewall-to-axle proportion, and have a lower drag coefficient. Oh, and it had to look like a Corvette. An early rendering, done in October 1978, set down the C4's basic shape, though the car's nose looked a lot like a Firebird's.

It was packaging, in the end, that determined the car's look. To reduce height while not impacting ground clearance, the engineers tucked the exhaust system up into the center tunnel. The windshield pillars were dramatically raked back, and the car's fuel-injected motor was positioned lower, allowing a low hood line. For a while the designers incorporated cooling grilles into the car's nose, but the bottom-feeding radiator didn't need the airflow, so the grilles were replaced with light lenses. A fiberglass model finished in early 1980 was nearly identical to the production version that went on sale in March 1983.

Beneath the skin the C4 was all-new, too. Transverse monoleaf springs were used at both ends of the car, rack-and-pinion steering was fitted, and the independent rear suspension now used five locating links instead of three. The previous year's 350ci Cross-Fire V-8 (now making 205 hp) returned, as did the 700-R4 automatic

# LEVEL

# [LIFESTYLE] TO THE NEXT LEVEL



01

transmission, though the Vette could now be ordered with a Doug Nash four-speed manual, which earned the “4+3” nickname for the computer-controlled overdrives in the top three gears. A new Z51 performance suspension was available as an option, and it helped the car earn near-1g lateral-force figures in skid-pad testing.

Inside, the new interior marked the first use of an all-digital display instead of traditional analog gauges. While it looked high-tech at the time, the instrument panel met with decidedly mixed reviews.

The '84 Corvette was a big hit. High demand and an extended on-sale period netted sales figures of more than 51,000 units,

and the car earned all sorts of media accolades, including *Motor Trend's* Car of the Year award.

## REFINEMENTS, ENHANCEMENTS

Good as the C4 was out of the box, revisions started almost immediately. For the '85 model year, the small-block's Cross-Fire throttle-body injection was replaced by Tuned Port Injection, and the resulting L98 made 25 more hp, 40 more lb-ft of torque, and got better fuel economy. While the press loved how the new Vette's suspension handled around the skid-pad, in the real world customers were complaining about the car's stiff ride. So spring

01 → Petersen Publishing's Bob D'Olivo photographed this final shark-era Corvette with one of the first of the C4 models, showing just how much the car's styling changed between the two generations. 02 → The all-new Corvette won (*VETTE* sister publication) *Motor Trend's* Car of the Year award in 1984, with the editors saying it had the “highest excitement quotient of anything to come out of an American factory. Ever.”

rates were softened for both the stock suspension and the Z51 sport package.

In '86 the Corvette ended its 11-year open-air hiatus with a new convertible model. McLellan had a drop-top in mind when designing the C4, so it didn't take a tremendous amount of extra chassis bracing to make up for the lost roof panel. Antilock brakes became standard equipment aboard the Vette, and aluminum cylinder heads were available as a mid-year addition, adding 5 hp to the L98's output.

For the second time a Corvette paced the Indianapolis 500, and as was the case eight years earlier, the car used for pace duties was essentially bone stock, save for safety gear and strobe lights.

In '87 the L98's output rose again, to 240 hp, thanks to a change from traditional hydraulic lifters to roller lifters. New for the year was the Z52 suspension option, a “sport” package that teamed most of the Z51 equipment—quicker steering, Bilstein shocks, oil cooler, heavy-duty radiator, thicker front sway bar, wider wheels—with the softer stock springs.

The Corvette celebrated its 35th anniversary

02



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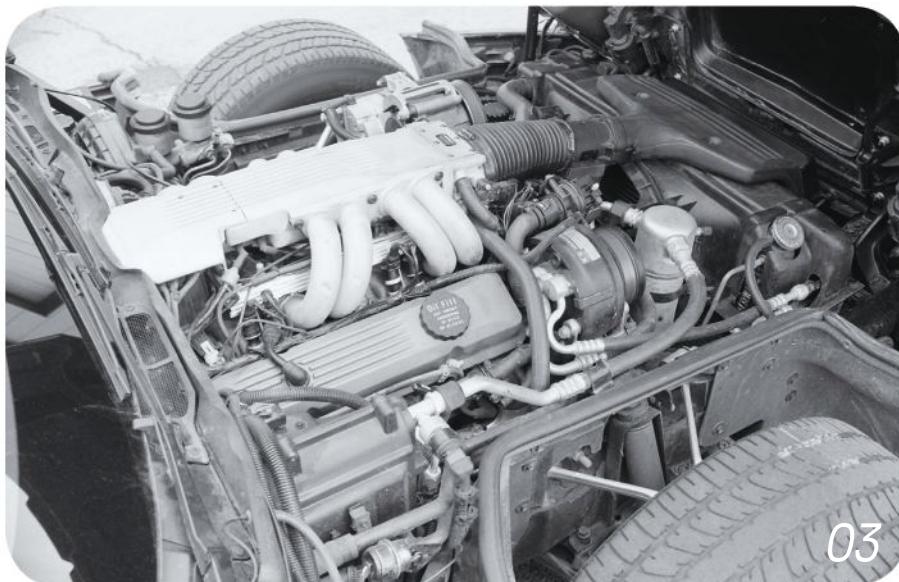
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# [LIFESTYLE] TO THE NEXT LEVEL



in 1988, and Chevrolet marked the occasion with a 35th Anniversary Edition. Some 2,050 coupes got the special treatment, which included white paint, white wheels, white leather upholstery with anniversary embroidery, the Z52 suspension, and other goodies. All '88 Vettes saw improvements to the front suspension and brakes, and some were shod with a new six-slot wheel, which appeared only in this model year.

In '89 the Doug Nash 4+3 manual was replaced by a six-speed ZF gearbox, the infamous "skip shift" transmission. In the interest of fuel economy, this trans was outfitted with what was called Computer-Aided Gear Selection, which forced the driver to shift from First to Fourth if the gear change was made at low speeds or low rpm. Of course, most just revved their Vettes higher before shifting to avoid the annoying First-Fourth change, which didn't help fuel economy at all.

Also in '89 the 17-inch, 12-slot wheels that first appeared on the '88 Z51 and Z52 suspension packages were made standard equipment on all Corvettes, and convertible owners could now order a hardtop option with a glass rear window and fully lined roof.

## KING OF THE HILL

As the C4 was making its debut, Corvette engineers and product planners were looking down the road at ways to keep the Vette the top-of-the-heap halo vehicle Chevrolet needed it to be. It was feared the incremental power gains squeezed from the L98 weren't going to be enough to fend off foreign competition.

So McLellan put Chevy's powertrain people to work. Early experiments at turbocharging didn't pan out, but the engineers were encouraged by the potential offered by overhead camshafts and multiple valves in the heads. Following this path led to an arrangement with Lotus, with whom GM designed an all-aluminum, 32-valve, dual-overhead-cam V-8. Once the design work was completed to Chevy's satisfaction, manufacturing of the engine was turned over to Mercury Marine in Stillwater, Oklahoma.

**03** → The C4 got a serious performance boost in '85 when the Cross-Fire injected L83 gave way to the Tuned Port L98. Output immediately jumped to 230 hp, and that was just the beginning. **04** → In the early '80s, *Motor Trend* began a long-standing tradition of top-speed testing sports and supercars. The C4 acquitted itself well in the July 1984 go-around, its 155.2-mph top speed besting the likes of a Porsche 911 Carrera, a Lotus Esprit Turbo, and a Ferrari 308GTBi. **05** → The convertible body style returned to the Corvette lineup in '86. The timing of the convertible's introduction coincided with the availability of aluminum heads for the L98 engine—which were good for another 5 hp—so all drop-tops were fitted with them.



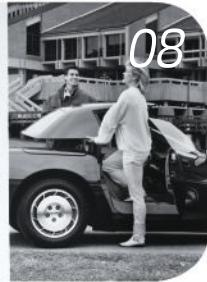
06



07



08



09



06 ➔ Retired Air Force General, former test pilot, and breaker of the sound barrier Chuck Yeager, enjoying newfound celebrity in the wake of the movie *The Right Stuff*, handled the pace-car driving chores when Corvette returned to Indy in 1986. 07 ➔ The six-slot wheels seen on this '88 convertible were available in that year only. For '89 the 12-slot wheels that were part of the Z51 and Z52 suspension packages became standard equipment. 08 ➔ For the first time since '56, a hardtop option was available for '89 convertibles.

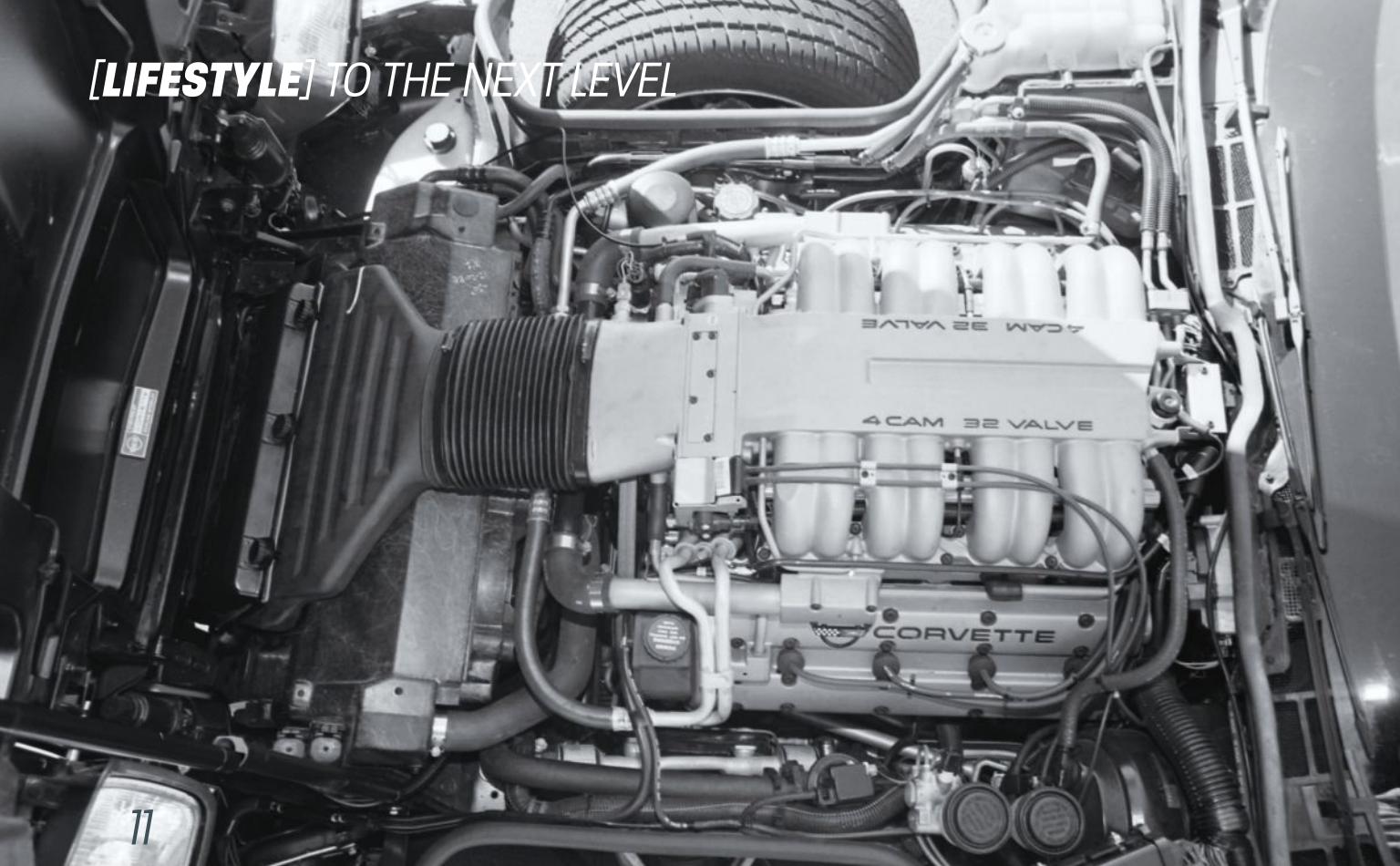
09 ➔ Chevrolet planned to introduce the ZR-1 as an '89 model, and several prototypes were built using a LT5 rear-end badge that didn't make it into production. That badge appeared on the ZR-1 in this Chevrolet press photo for the '89 model year; interestingly, the car wasn't identified as such in the photo's caption.

10 ➔ Motor Trend recorded a quarter-mile pass of 13.13 seconds at 110 mph in the ZR-1. "Power flows from the ZR-1 in a Niagara-like rush that makes the slick-shifting Getrag six-speed seem ridiculously redundant," wrote Jim Miller in the June '89 issue.



10

# [LIFESTYLE] TO THE NEXT LEVEL



11 → Lotus, working in concert with GM, developed the LT5 and its dual overhead-cam, 32-valve top end. Initially the LT5 produced 375 hp and 370 lb-ft of torque, though output grew to 405/385 by '93. 12 → The one-millionth Corvette was produced on July 2, 1992. On hand to note the milestone were (from left): Zora Arkus-Duntov, GM Vice President E. Michael Mutchler, UAW President Billy Jackson, Chevrolet GM Jim Perkins, Corvette Chief Engineer Dave McLellan, and Bowling Green Plant Manager Paul Schnoes. 13 → Another Motor Trend top-speed showdown, this time with the 40th Anniversary '93 model and a ZR-1 under the (radar) gun. The King of the Hill was the king of the June '93 shootout, registering a 180-mpm blast. The LT1-powered Anniversary coupe came in third, just behind a Viper, with a 162-mpm top end. 14 → Two years later, a '95 LT1 coupe proved the fastest car in yet another *MT* top-speed test, achieving a terminal velocity of 167 mph. "The Corvette was rock-solid and confidence-inspiring...its pushrod LT1 screaming just shy of the 5,700-rpm redline in Fifth gear," said the magazine. The 89-mpm reading on the radar machine was fixed there for photo purposes; later the picture was retouched to show the Vette's 167 reading.

The overhead-cam design made for a small-block with a wholly different character, a high-winding motor that didn't hit its 375-horse power peak until 6,000 rpm. McLellan knew putting all that power to the ground meant installing fatter rear tires, which would also necessitate wider rear-end bodywork. To further set off this new super Vette, the car's round taillights were squared off.

The engine was named the LT5, and early prototypes of the Vette had an LT5 badge under the passenger-side taillights. GM brass didn't want to use the engine's RPO code that way, though, so production versions were badged with the car's official name. Though early in its development Chevrolet Chief Engineer Don Runkle called it the "King of the Hill," the company went back in time to revive a high-performance RPO number from the early '70s: ZR-1.

Journalists first tested the car in Europe after its debut at the Geneva Auto Show in 1989. Though it was intended to be an '89 model, by the time all the engineering was sorted out, the corporation tagged the cars as '90s.

The ZR-1 was an incredible performance



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

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

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# [LIFESTYLE] TO THE NEXT LEVEL



15

machine. *Motor Trend* clocked the car at 4.75 seconds from 0-60 and 13.13 seconds through the quarter-mile, while the hot shoes at *Car and Driver* dipped into the high 12s. Yet the ZR-1 RPO carried an equally stratospheric price tag: \$27,000 over the \$32,000 cost of a '90 coupe to base it on. Despite that steep sticker, some 3,000 ZR-1s were sold in the model's first year.

All told, the ZR-1 option was available from 1990 to 1995, and the car saw minimal changes during that time. Output rose to 405 hp in '93, the same year Corvette celebrated its 40th anniversary. That was also the year Mercury Marine stopped making the LT5

engine, leaving enough of a surplus to continue building the car in limited numbers for two more years.

## CLOSING THE GAP

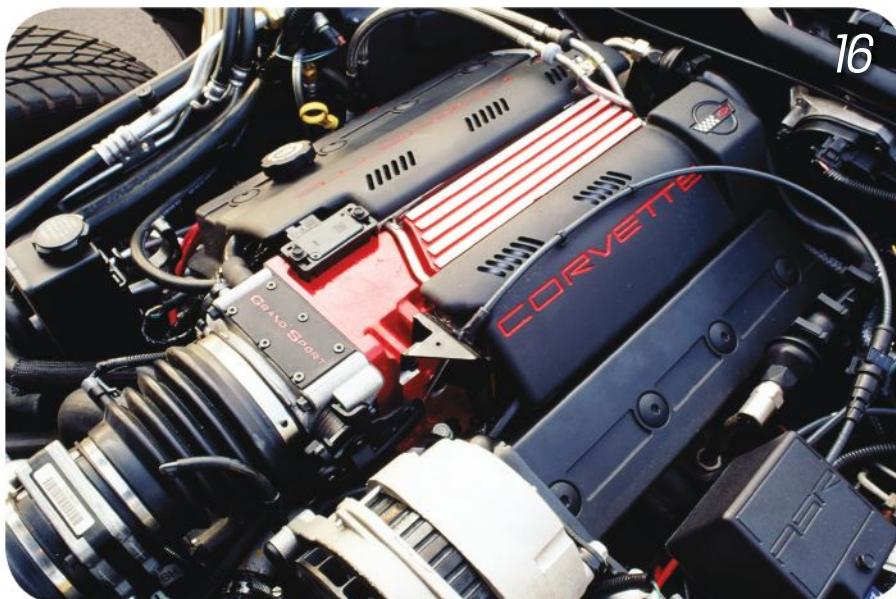
There were several reasons for the ZR-1's short life. A stagnant economy made it hard for Chevrolet to find buyers who would pay the car's steep price, and getting the LT5 to pass the stricter emissions standards for the upcoming '96 model year would have been prohibitively expensive.

Plus, the standard Corvette was going through a series of upgrades that closed the gap between it and its supercar brother. First came

a new look: All Corvettes received the ZR-1's squared taillights in '91, in addition to a revised front fascia, new fender louvers, a new turbine-style wheel design, and the Z07 adjustable-suspension package, which replaced the Z51 option. Then in '92 the L98 small-block V-8 was replaced by the first of the Gen II small-blocks. The new 350-inch motor, named LT1 after the LT-1s from the '70s, was good for 300 hp—a significant increase.

Another milestone passed in 1992, as Dave McLellan retired and handed his Chief Engineer job to David Hill. Hill had come from Cadillac, but he had extensive personal experience with sports cars, both foreign and domestic.

That changeover happened just a year shy of the Corvette's 40th anniversary, which was commemorated in the '93 model year with a



15 → The C4 generation ended in grand style with two special models, the Collector Edition and the Grand Sport, the latter seen here in full, tire-roasting glory. Named for the racing Vettes built by Duntov in the '60s and wearing Sebring stripes in his honor, the Grand Sport was limited to just 1,000 units. 16 → Also going out in style was the Gen II small-block, which appeared in all manual-trans '96 Corvettes as the LT4. *Motor Trend*'s Don Sherman called it "an LT1 with a hormone injection," in the October '95 issue. "By making it breathe deeper and work harder, GM powertrain engineers stretched both the output curve and redline to new heights: 330 hp at 5,800 rpm with maximum revs limited to 6,300 rpm."

40th anniversary package: Ruby Red Metallic paint (with leather upholstery to match), special emblems, and body-color wheel centers. Also new for the model year was the first keyless entry system.

The '94 model year saw several changes to the Vette's interior. Leather upholstery became standard (and cloth unavailable), the steering wheel and instrument panel were redesigned, and there was now an airbag in front of the passenger seat. Underhood the LT1 was fitted with a new sequential fuel-injection system that improved throttle response and lowered emissions, though output numbers remained the same.

Corvette paced the Indy 500 for the third time in 1995, and 527 pace-car replicas were built, each finished with the Indy car's distinctive purple-over-white paint scheme. Standard '95 Vettes received revised front fender louvers and softer springs, while the big front disc brakes that were part of the ZR-1 and Z07 packages became standard on all Vettes.

By 1996 the much-delayed fifth-generation Corvette was finally waiting in the wings, as was an all-new small-block V-8. Chevy marked the end of the C4 era with not one but two special one-year-only models. As it did with the last shark in '82, a Collector's Edition was offered, with special paint, wheels, upholstery, and badging.

The second special was called the Grand Sport, an homage to the racing Corvettes spearheaded by Duntov in 1962. The Grand Sports were finished in Admiral Blue paint with a white stripe down the car's center and two red hash marks—or "Sebring stripes"—on the driver-side front fender. Grand Sport coupes were shod with black painted ZR-1 wheels and fitted with rear fender flares to cover the wider rear tires, while convertible Grand Sports received the standard Corvette wheel-and-tire package.

The Grand Sport was no mere appearance package, though. Under the hood was a highly modified LT1 with freer-flowing heads, bigger valves, a more aggressive cam, 1.6-ratio roller rockers, and high-flow intake manifold. Called the LT4, this Gen II swan song put out 330 hp and 385 lb-ft of torque, and it was dressed for success with bright red accents and a "Grand Sport" plate on the throttle body. While the pumped-up engine was initially planned as a Grand Sport exclusive, Chevy ultimately decided to install the LT4 in all six-speed Vettes for '96, while cars fitted with the 4L60E automatic received the standard LT1.

In addition to the C4, another Corvette legend passed in 1996. Zora Arkus-Duntov, whose legacy would forever be intertwined with his beloved sports car, died in April of that year. Duntov never did see his mid-engine dream car become a reality, but he was able to attend the opening of the National Corvette Museum in Bowling Green in 1994, which must have been deeply satisfying for the man who almost singlehandedly saved the Corvette from certain death in the mid '50s. **VERTE**



**A**

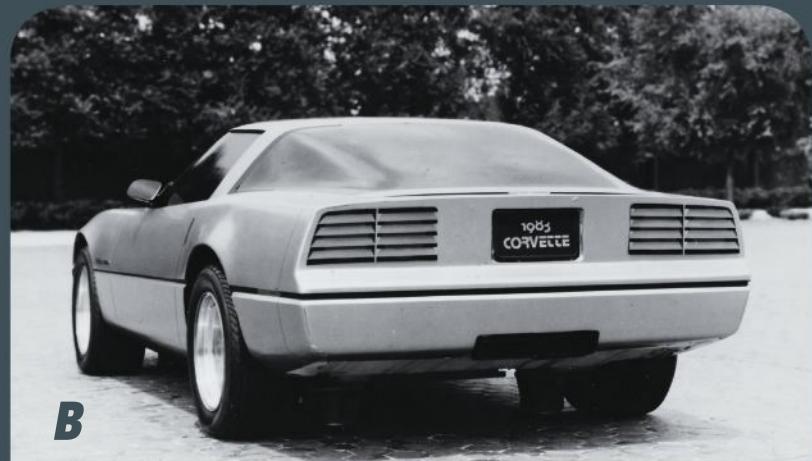
## GENESIS: HOW THE C4 EVOLVED



These illustrations and styling models show how the look of the C4 evolved in the late '70s. The car came together in a fairly

short period of time: the front-engine concept sketch was done in 1978, and the final fiberglass model was finished in 1980.

**A** → Once the Chevy 3 design team was told to abandon its mid-engine versions of the new Vette, they came up with this sketch in October 1978. **B** → In this model there are circular taillights behind the slats that would shine through the louvers when the lights were on or the brakes were applied. **C** → This final clay model has the bottom-feeding front bumper and twin side louvers. Note the "1983 Corvette" sign in the studio.



**B**



**C**

# DOWN **MEMORY LANE**

NOT SO MUCH A STROLL AS A ROAR  
AT THE SONOMA HISTORICS

STEVE TEMPLE WORDS | PHOTOS

**01** → Larry Bowman brought out two of the event's most historically significant Vettes, including this one-of-five '63 Grand Sport. Look for a full feature on this coupe in an upcoming issue. **02** → This red No. 43 '57 raced in SCCA "B" Production from '67 to '72, with Bob Dye manning the wheel. In addition to occasionally besting Sting Rays and

Cobras on the track, it had a cameo in the film *Herbie the Love Bug*. The red '63 on the right was purpose-built for competition in 1992, eventually running in more than 60 races. Rick and Sue Orme restored it to full "run what you brung" configuration in 2004. **03** → Here's an interesting historical trio in the Winner's Circle. At far left is Rich





Mason's SR-2 race car. In the center is one of Dick Guldstrand's early racers, a '57 restored by Stand Wrightsman. Also from Guldstrand is a rare GS-90, owned by Charlie Budenz. It's based on a C4 ZR-1 chassis, and one of only six ever built. We're working on features on at least two of these three Corvettes, so stay tuned. **04** ➔ Doug

Fehan, head honcho of Corvette Racing, brought out a real-deal C6.R for the event. **05** ➔ Also from Larry Bowman's considerable collection is the '69 V.V. Cooke L88, which won the '69 and '70 National B-Production Championships. With Allan Barker behind the wheel, it went on to win a phenomenal string of 26 races.

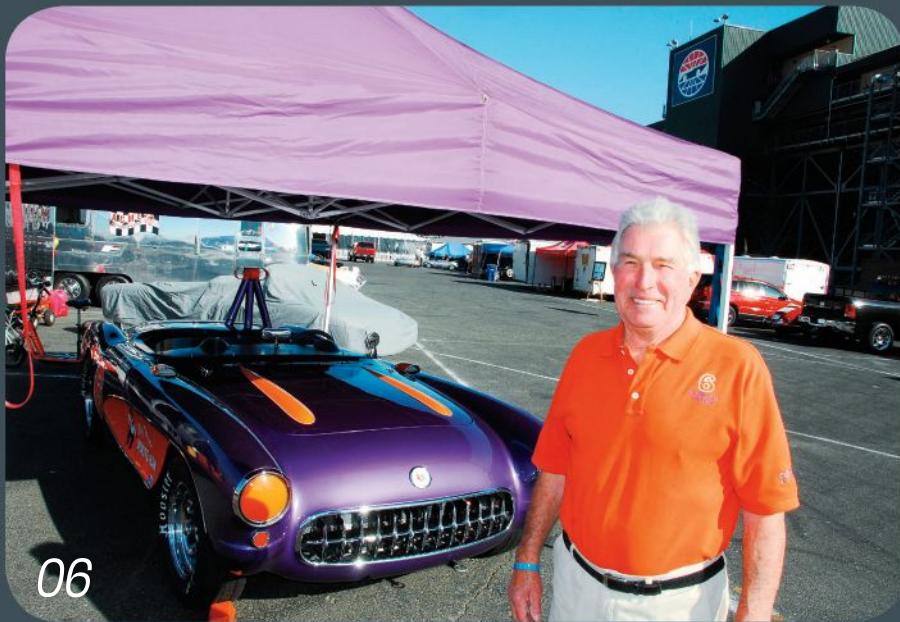


**04**



**05**

## [LIFESTYLE] DOWN MEMORY LANE



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**06** ➔ Renowned racer Paul Reinhart is still going strong after all these years. Fellow Corvette owners are amazed at how hard he drives his purple-and-orange C1. He was awarded the Phil Hill Trophy by Steve Earle in Sonoma. **07** ➔ A panel of racing luminaries related Corvette's history from the early '50s through today. Tony DeLorenzo, who won 22 straight SCCA A-Production and FIA endurance races with the Owens Corning team in 1969 and 1970, admitted that, "This is my first time back at Sonoma Raceway since 1978. We were always moving on, so these cars were tossed aside.

Seeing the guys who care for them now is the biggest treat for me." **08** ➔ In 1974 John Greenwood developed an aero-enhancing widebody, working in concert with GM at its wind-tunnel facilities. The body later evolved into the fastback coupe design seen here, which went on to play a huge role in both IMSA and Trans-Am competition. This car also won in its group at Sonoma. **09** ➔ Regular readers might recall our previous feature ("Hail, Centurion!" July '11) on Wes Abendroth's rare Fiberfab body conversion, styled after the '59 Sting Ray racer. This one-of-a-kind prototype, fitted on a C2,

In the movie *Casablanca*, Bogie's favorite melody was "As Time Goes By," even as it brought back painful memories, requiring a few stiff drinks to hear it. But experiencing times gone by in older Vettes required only sipping some high-octane race gas at the Sonoma Historic Motorsports Festival at Sears Point, California. In celebration of the marque's 60th anniversary, collector-car impresario Steve Earle, president of General Racing, Ltd., organized a fond look back at some classic Corvettes during the weekend of May 18-19.

In addition to relishing the roar of action on

the 12-turn, 2.52-mile road course, we also took a stroll down memory lane through the pits. There, we took a closer look at a number of memorable Corvettes with significant racing histories, even at the risk of getting a bit misty eyed over all these wild and woolly machines.

Among the Corvettes representing the brand were an array of collector cars from the '50s through the '80s: Paul Reinhart's '57, Vic Edelbrock's '63 Sting Ray, Edward Hugo's '66 427, Randy Peterson's '69 L88, and quite probably the most treasured of all, Larry Bowman's '63 Grand Sport.

Adding to the rich recollections (and collections) was an illustrious panel of Corvette racers, historians, and team managers, who recounted Corvette's history from the early '50s up to the modern-day triumphs in the 24 Hours of Le Mans and the American Le Mans Series. Participating in the seminar were current Corvette Racing Program Manager Doug Fehan, former Corvette Racing public-relations representative Rick Voegelin, and Corvette racers Paul Reinhart, Bill Pollack, Tony DeLorenzo, and Dick Guldstrand, among others.

Honored guest Reinhart—still active and



09



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12

features a '65 F-41 suspension, J-56 brakes, and a '65 Chevy 327 mill mated to a Muncie M22 close-ratio trans. Abendroth has since come across another C2-based Centurion, and is currently restoring it. **10** ➔ In its first outing in the fall 1960, this factory-prepped Corvette took Third in the "4 Hour Enduro" at Vineland, N.J. Second owner Steve Elfenbein drove it on the street and at hillclimb events throughout the east, achieving a three-peat as Pennsylvania Hill-climb Champion in '63-'65. After repowering the car with a 327, he went on to win consistently in road-course events. Elfenbein drove

the car for pleasure as well until he passed away in 2004, and later it ended up in the hands of Greg Johnson. **11** ➔ Both Fred Yeakel and Dick Guldstrand have driven this '57 to class victories. It's fitted with '62 Rochester fuel injection and a Borg-Warner T10 four-speed, and it also includes the rare "Elephant Ear" drum brakes with cooling ducts. Its current owner is Ron Erickson of Bainbridge Island, Wash. **12** ➔ Noel Park of J&D Corvettes is a regular on the vintage-racing circuit in his '55 (seen here) and '58 racers. His yellow '58 won the Group 9 category at Sonoma.

hard-charging on the road course at the age of 84—was also awarded the Phil Hill trophy that weekend. Reinhart began racing Corvettes in Northern California in the late '50s, and in 1962 he was crowned Pacific Coast SCCA B-Production champion. He went on to compete against Carroll Shelby's Cobras, driving a Sting Ray coupe. Today, he continues to race his Union Oil 76 '57 in vintage events.

"We tip our hats to Paul Reinhart," said Earle, whose '59 racing Corvette was also entered in the event. "He was a hero of the day...as he mercilessly harassed the Cobras. The '50s and '60s in California were magical

years, as Corvettes dominated in SCCA racing."

One vintage racer in particular, Noel Park of J&D Corvettes, is equally respectful of Reinhart—but he didn't hold back on the track, taking First in Group 9 in his yellow '58.

"Some people said I should let Paul win," he noted. "I'm a good sport—but not that good of a sport. I like to come in First. I like to honor him, though. Even though he retired last year, Earle coaxed him out of retirement, God love 'em!"

Park was also appreciative of Earle for staging the event through his organization, General

Racing Ltd. He formed it in 1970 to encourage the restoration, preservation, and use of historic sports and racing cars. Earle envisioned events that would unite former racing greats with the enthusiastic amateurs who owned some of the rare cars that once graced road courses worldwide. The success of the first Monterey Historics in 1974, which attracted a field of 66 cars, led to additional events at other tracks.

In keeping with this year's particular celebration of the Corvette's 60th anniversary, look for our coverage of other "As Time Goes By" events later this year. Play again, Sam. **VETTE**



# THE SHOW **GOES ON**

## NEW-GEN STINGRAYS SEIZE THE SPOT-LIGHT AT THE 15TH ANNUAL NCM BASH

WALT THURN WORDS | PHOTOS

In April the National Corvette Museum held its latest "Bash," an event that, during its 15-year existence, has developed into the nation's premier spot for Corvette fans to learn details of upcoming models and mingle with the people who design and build them. The Bash was conceived by Dan Adovasio and Jake Drennon, a pair of Corvette enthusiasts best known for launching the C5 Registry organization and website in 1997. The following year, shortly after the '98 Corvette Convertible was named Car of the Year by *Motor Trend* magazine, Adovasio and Drennon convinced then-Corvette Chief Engineer Dave Hill that the C5 deserved a "birthday party." Hill agreed, and the duo developed the C5 Registry Birthday Bash, which ran for eight consecutive years. Although the Registry no longer plays an organizing role, the event—now known simply as

the NCM Bash—continues to draw large and enthusiastic crowds every spring.

As usual, this year's event found both NCM parking lots packed with Corvettes over the course of the long weekend. The buzz about the new C7 could be heard throughout the museum, and the Corvette team brought 33 engineers and managers from Detroit to stoke the excitement. In a series of detailed seminars, Chief Engineer Tadge Juechter and his team spoke about the numerous engineering challenges posed by the new car, while GM Design Director Tom Peters and his team addressed design objectives.

Team Corvette also displayed two experimental, or "EX," C7s inside the NCM conference center. The first was a Laguna Blue manual coupe equipped with the Z51 package, while the second was the same Night Race Blue automatic convertible that appeared at

**01** → We dodged security to snap this picture of early-production C7s gathered in the Bowling Green Assembly Plant parking lot. Paint colors from front to back are Blade Silver, Laguna Blue, Black, Crystal Red Metallic, and Torch Red. Notice that none of these cars is fitted with the optional unpainted-carbon roof panel.



## [LIFESTYLE] THE SHOW GOES ON



02



03



04



05

**02** ➔ Two Stingrays were on display in the NCM conference center, along with a bare C7 frame. The cars remained inside throughout the event due to heavy rainfall in the area. **03** ➔ This Night Race Blue convertible is fitted with a Brownstone interior, a color combo available only with the 3LT package. Note that this car also boasts the optional suede package. **04** ➔ Laguna Blue is one of two new Corvette colors for 2014. It makes for an especially arresting presentation when fitted with the Z51 chrome wheels. **05** ➔ The Laguna Blue coupe features a Medium Ash Gray interior, minus the sumptuous suede.

was completed, the first '14 Corvettes were built slowly, giving workers time to familiarize themselves with the new car and make any necessary adjustments to the production process. These first cars will enter what is known as the Captured Test Fleet, an arrangement by which engineers and brand managers rack up test miles and sort out any remaining bugs before the first customer cars are built.

As announced previously, pricing for the 1LT coupe is \$51,000, while the convertible lists for \$56,000. (Both models carry a \$995 destination charge.) The Z51 Performance Package adds \$2,800. Ten exterior color choices will be available: Black, Blade Silver, Crystal Red, Night Race Blue, Laguna Blue (new), Velocity Yellow, Torch Red, Lime Rock Green (new), Cyber Gray, and Arctic White.

Highlights of the 1LT package include eight-way power leather seats, a seven-speed manual trans with Active Rev Matching and Launch Control, a rear-vision camera, and a nine-speaker Bose audio system. The 2LT model adds more-highly adjustable seats (with heat and vent features), Bose premium audio, home remote, a memory package, heads-up display, Sirius XM radio, an enhanced theft-deterrent system, and a luggage shade net. The top-line 3LT brings a leather-wrapped interior with Napa seating surfaces, navigation, a cabin-colored instrument

the New York Auto Show. Unfortunately, the cars had to remain inside due to the heavy rain that settled over Bowling Green during the event.

We learned that the last C6 was a 60th

Anniversary 427 Convertible built February 28, 2013, and that it will remain at GM. The process of switching over to C7 production began almost immediately at the Bowling Green Assembly Plant. Once the new assembly line

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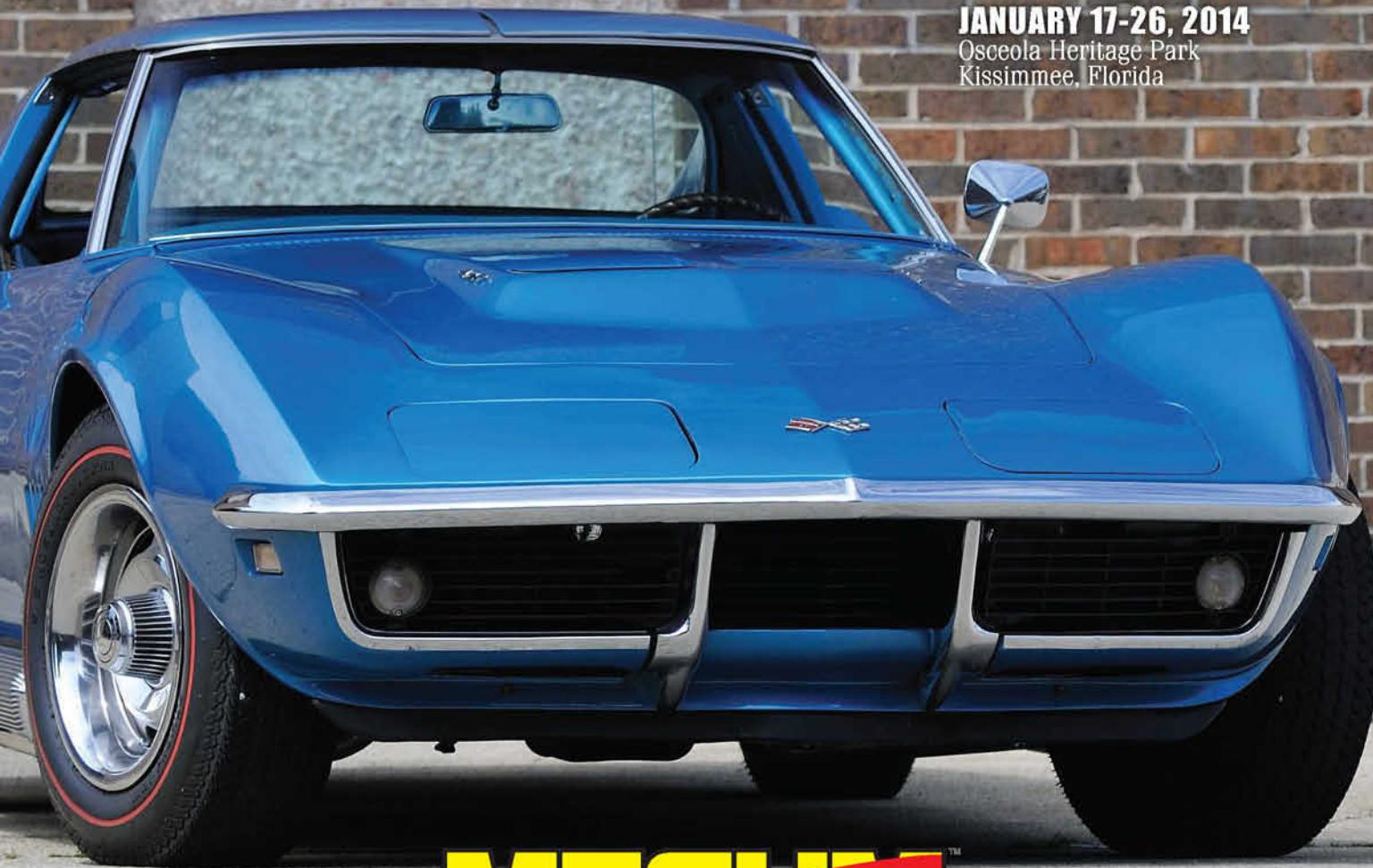
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## [LIFESTYLE] THE SHOW GOES ON



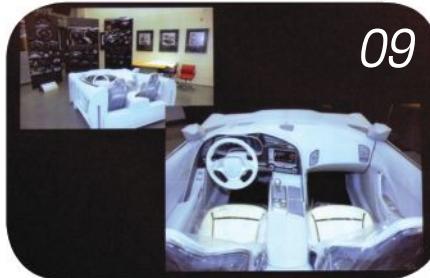
06



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08



09



panel, and an optional suede trim package.

The Bowling Green Assembly Plant staff is working overtime to build the best Corvette yet, and if the early pre-production models we checked out are any indication, we think you'll be very pleased with their efforts. We hope to have driving impressions for you in our next issue, so stay tuned. **VETTE**

**06** ➔ This is the same Callaway C6 featured in our June '12 story, "The Mile-High Club." It had 77,000 miles on its clock when we were handed the key fob, and we racked up 3,000 more in two weeks. To date it has logged than 154,000 miles and still looks new. **07** ➔ Corsa Performance was on hand to perform on-site exhaust-system installations. In spite of the damp conditions, the

install team stayed busy throughout the weekend. **08** ➔ The Museum featured an impressive display of all the Corvette Anniversary editions, including the 50th (left) and 60th seen here. (A 35th is just visible in the lower left.) The NCM always rotates displays to keep their offerings fresh. **09** ➔ The numerous seminars given by the Corvette team provided rare insight into the C7

development process. This 2010 photo shows a mockup of the interior awaiting final approval. **10** ➔ Corvette Design Manager Kirk Bennion (visible at bottom right) shows a computer illustration of a C7 sitting in front of a F-22 Raptor fighter jet. According to Bennion, many of the jet's advanced aerodynamic surfaces were adapted for use on the new Vette.

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# BEHIND THE WALL

...AND BEHIND THE SCENES AT DAYTONA  
WITH A CORVETTE PROTOTYPE TEAM

WALT THURN WORDS | IMAGES



**S**ports-car endurance racing began in the 1920s, the goal being to demonstrate the reliability of gasoline-driven motorcars. The 24 Heures du Mans is the oldest endurance race in the world, having first been run on the Circuit de la Sarthe near the French town of Le Mans 1923. The growing popularity of endurance racing convinced the owners of the Daytona International Speedway to hold their first 24-hour race there in 1966. Forty-seven years later, the Daytona race, sponsored since 1991 by Rolex, is the premier 24-hour enduro in the U.S.

Spirit of Daytona Racing (SDR) has deep roots in Florida. Troy Flis founded the team in 1987, and it is currently headquartered near DIS. In 2011 SDR was selected by Chevrolet Racing to debut the new Corvette Daytona Prototype there.

SDR's No. 90 Corvette went on to finish Third in the 2012 Grand-Am series championship, with drivers Richard Westbrook and Antonio Garcia scoring three pole positions and three overall victories along the way. For 2013 Westbrook is paired with Ricky Taylor for the short races. Oliver Gavin and Antonio Garcia join the SDR team for longer races,

including the 24 Hours of Daytona.

Earlier this year, Flis and his wife, Michelle, invited us to shadow the team during the Rolex 24 Hours of Daytona. Naturally, we accepted. Our goal was to not only document what went on out on the track, but more important, to capture the carefully coordinated action that unfolded behind pit wall.

DIS provides teams with large garages to use during the race, and SDR makes the most of its space. The team parks a tractor-trailer nearby, using it to house an office, tools, and spare parts for the Corvette. A team of 36 people supported the



car during the 24-hour Daytona race.

The race really begins in early January, with the Roar Before the 24. This three-day event gives teams the opportunity to test their cars and adjust for any rule changes that might have been made. The SDR team was happy with its

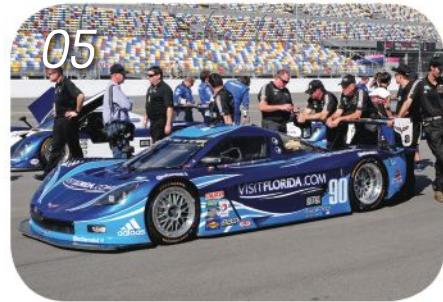
**01** ➔ (From left) Spirit of Daytona Corvette drivers Ricky Taylor, Antonio Garcia, Richard Westbrook, and Oliver Gavin relax against the pit wall before making their walk to the starting grid.



# [MOTORSPORTS] BEHIND THE WALL



**02** → Unlike a NASCAR race, the track is not fully illuminated at night during the Rolex 24. (Some track lighting is provided on the start/finish line, in the pits, and in select corners.) Accordingly, strong on-car lighting is mandatory. **03** → The Spirit of Daytona Racing team sets up its track HQ in a car hauler parked in the Speedway pits. Everything the team needs for a 24-hour race is packed into this vehicle. **04** → The Daytona Speedway garages are large and well lighted, with ample space for the crew to prep the No. 90 visitflorida.com Corvette. Here, the car rests on a scale that allows the crew to monitor its weight and make suspension adjustments as needed. **05** → Before the race, the cars are placed on a pre-grid at Turn 4. Event organizers then signal the teams to push their cars to the starting grid. The entire SDR crew participates in this ceremony, including the drivers.



car's and drivers' performance during the Roar. However, after the test, Grand-Am pulled the Corvette's engine and sent it to North Carolina for testing. Race officials were concerned that the DP Vettes were too fast, and the test was meant to determine whether they had an unfair horsepower advantage. Apparently they did (at least in the eyes of Grand-Am), as all Corvette teams were subsequently saddled with a power reduction.

When the team arrived for the race they were upbeat, having recently secured a new sponsor, visitflorida.com. The crew worked overtime to tweak the Corvette to maximize its performance to make up for the loss of engine

power. That power reduction became evident during qualifying, when the three BMW-powered Riley Daytona Prototypes took the top spots. Fourth was a Ford-powered Riley, while No. 90 was fifth, 1.29 seconds slower than the pole sitter. On a positive note, the SDR entry was the fastest Corvette.

Team manager Flis remained optimistic, telling the crew before the race that he felt very positive about their chances. Minimizing the time the Corvette spent in the pits would be key. "Good clean pit stops will keep us in the game," he said.

The team did exactly that during the first five hours of the race, executing their stops with

precision while continuing to keep pace with the leaders on track. Stops came every 45 to 50 minutes, during which time the car received fuel and fresh tires. Drivers changes were performed at every other stop, and by the fifth hour, Antonio Garcia had taken the overall race lead.

Behind the pit wall, the team engineers were monitoring the car's vital signs, while the crew's activity level varied with the car's location. When the SDR Vette was on course, crewmembers could relax a bit. But as soon as the car entered the pits, everyone sprang into finely choreographed action. Their efficiency was impressive: Hot front brakes were

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# [MOTORSPORTS] BEHIND THE WALL



06



07



08



09

**06** ➔ The yellow flag was waved at 6:52, after a heavy sea fog settled over the entire speedway. The cars circulated the course behind the pace car from 6:52 a.m. until the green flag finally waved at 9:04 a.m. **07** ➔ Team members and drivers have access to live TV coverage of the race. They also monitor readouts from the car's onboard computers, which supply information related to fuel level, engine performance, tire pressure, and more. **08** ➔ Antonio Garcia exits the car while the crew performs a tire change, adds fuel, cleans the windshield, and secures Oliver Gavin in the driver seat. At center (with back turned) is crewman Doug Kenny, whose sole job on this stop is to train a fire extinguisher on the car, just in case. **09** ➔ The No. 90 Corvette crossed the finish line in Fifth overall, one lap ahead of the Sixth Place Ford Riley. Corvette DPs also finished Second and Fourth in the Rolex 24, making for a strong showing for the marque.

fully changed out in just 3 minutes, after eight hours of racing. Meanwhile, the Flises made sure that the crew had plenty of liquids and high-carb foods to help them maintain their energy.

At 3:30 a.m. Garcia went off track at DIS's "bus stop" section and damaged the exhaust system. The right-side tailpipe was dragging on the banking, leaving behind a shower of sparks. Garcia brought the car into the pits, where the crew made hasty repairs. The unplanned stop dropped No. 90 from third to sixth place, but it was still on the same lap as the leader.

By the 16th hour the crew and drivers had

maneuvered the car into third place overall. It was then that a heavy fog rolled in off the Atlantic and enveloped the Speedway. "You could see [it] coming in at the horseshoe and bus stop. Grand-Am threw the yellow flag at 6:52 a.m.," Gavin said later.

Troy Flis called in the car during the yellow period, and the crew again changed the front brakes. They also removed the rear clip to work on the damaged exhaust system. The race resumed under green at 9:04, after running for 2 hours and 52 minutes under yellow.

During the yellow the crew had discovered a broken left-side header, which was dumping hot gasses onto the electrical system. They

attempted to redirect the exhaust away from the wiring using hoses, but the heat only got worse. After calculating what pace they'd need to maintain to finish Fifth overall, the team did exactly that. Considering the obstacles they'd faced, it was a job well done.

After spending 24 hours with the SDR team, it was clear why it has amassed a winning record. Crew members maintained their focus and drive over the course of the grueling endurance race, pushing on toward victory until the checkered flag fell. Along the way, we learned that it takes a multitude of dedicated people to support a winning Corvette, both behind the wheel and behind pit wall. **VENTE**



# 'TRANSACTION

WE TAKE AN IN-DEPTH LOOK AT THE NEW STINGRAY'S MANUAL AND AUTOMATIC TRANSMISSIONS

STEVE TEMPLE WORDS COURTESY GM PHOTOS

**A**ll the horsepower in the world is useless until it's transferred to the wheels. Which makes the transmission an unsung hero of the new '14 Stingray, since the only obvious manifestations of its pivotal performance role are either a shifter or a pair of paddles on the steering wheel. Otherwise it's just a mysterious box concealed in the chassis.

All the more reason to dig into the remarkable details of the C7's "trans actions," in eager anticipation of the next installment in our Stingray series. That's when our editors plan to man the wheel and stomp on the loud pedal. We can hardly wait, but for now we'll continue to whet your appetite for what is shaping up to be the best Corvette ever.

To that end, let's take a closer look at the Stingray's new transmission offerings. Looking at Corvette-buyer preferences overall, historically the breakdown has been 70 percent auto, 30 percent manual (on models offering a

choice between the two). We'll start with latest developments on the latter.

## MANUAL.

First off, the seven-speed manual does not merely consist of an extra OD gear grafted onto the existing C6 setup. For a look inside the case and all the upgrades, we spoke with GM's Todd Rooney, Global Assistant Chief Engineer for RWD Manual Transmissions. His background at GM dates back more than a dozen years, through three eras of Corvette trannies, as he's worked on the C5's T56, the C6's TR6060, and now the C7's TR6070. His responsibilities have also included overseeing clutches, clutch-release hydraulics, and manual shifters for RWD drive applications, on both U.S. and international GM models. Additionally, he's worked on automatic transmissions and AWD/4WD systems, as well as other driveline components.

Rooney's first assignment was as development engineer on the C5 manual transmission

clutch, so he has an in-depth historical perspective on all the proverbial "gear changes" over the years. Since that initial work, he has been involved in a number of other Corvette-related projects, both in production and prototype arenas. Out of all his varied assignments, he notes that, "I feel that being a part of the Corvette legacy at GM is truly an honor."

Starting with the basic overall unit, Rooney notes that the gears from First to Sixth on the C7's manual are fairly similar to the C6's, except for the aforementioned additional OD, which required extending the case 42 mm to make room for the extra gearset. This change upped the overall weight slightly, by about 3.3 pounds, a gain that was partially offset by the shortened torque tube required.

All of the upgrades for the new transmission (including Active Rev Match, twin-disc clutch, dual-mass flywheel, and Seventh gear, which we'll cover below) are included in both the base and Z51 models. The Z51 option, however, has different ratios since it's intended for track duty, as noted here:

## Gear Ratios

	BASE	Z51
First	2.66	2.97
Second	1.78	2.07
Third	1.30	1.43
Fourth	1.00	1.00
Fifth	0.74	0.71
Sixth	0.50	0.57
Seventh	0.42	0.48

Clearly, the Z51's lower (numerically higher) close ratios in the First through Third gears will make for quicker acceleration, while the higher ones should provide fuel efficiency similar to the base model's—assuming drivers are able to keep a light touch on the throttle. From there, things get more involved, with an all-new output shaft, counter shaft, and internal shift system (forks and rails). The most obvious difference is evident in the relocation of Reverse from the upper left to the lower right, since the new Seventh gear fills in where Reverse is



**Contrary to what you may have heard, the Stingray's seven-speed TR6070 manual trans is much more than a revamped C6 box with an extra overdrive attached. Inside, the output shaft, counter shaft, and internal shift system—among other parts—are all new.**

PHOTO BY WALT THURN



# [TECH] TRANS ACTION

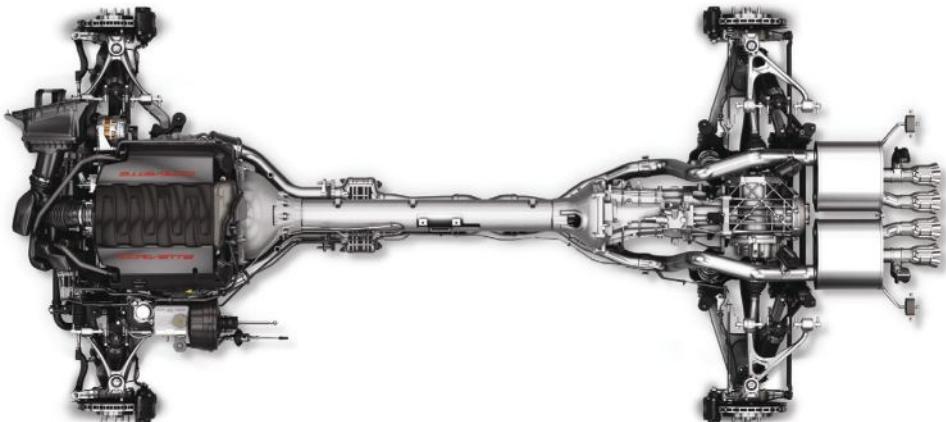
found on the C6 shift pattern.

The change in the shifter layout only hints at the extent of the upgrades. We're told the feel of the clutch is improved, thanks to the incorporation of a new twin-disc unit from LuK. Each of these discs measures 240 mm, compared with 290 mm (total) for the previous single-disc setup. The twin configuration lowers inertia, so there's less effort required, with a cleaner, smoother action, Rooney points out. Pedal effort is a touch lighter, too.

Sounds simple enough, but Rooney admits to sweating the details on the dual-mass flywheel, also supplied by LuK. Designing it presented a quandary, in that a heavier one reduces noise and vibration, but its extra rotational mass inevitably degrades acceleration. Conversely, one with less mass makes for better performance but feels harsher. Balancing these two competing concerns required some fresh thinking and a lot of late nights on the CAD system.

"The C7 market demands a step up in refinement," Rooney notes. "But we didn't want to sacrifice any performance either." So what they came up with is an arrangement called Dual Flywheel Lite. Sounding a bit like the name for a "great tasting, less filling" beer, this relatively new setup has reduced mass at the outer edge. Yet it's still up to handling ZR1 power levels, and likely more, a trait that will be increasingly important as Stingray owners begin enhancing the output of the car's LT1 engine. To minimize noise and vibration, the engine's firing pulses, which are normally transmitted to the driveshaft, have been isolated somewhat with springs, among other measures.

Also contributing to the driveline smoothness is a new Active Rev Matching system. Basically what it does is make the Corvette both easier and more exhilarating to drive by blipping the throttle to match engine speed with each anticipated gear change, resulting in smoother shifts. Although the concept is not completely new (the Nissan 370Z offers a



similar feature), the methodology is different on the Stingray, Rooney says.

Breaking it down, this setup starts with a GAP (Gear Absolute Position) sensor. It basically consists of two components, a 3D Hall Effect transducer on the transmission and a magnet on the main shift rail. As the magnet moves, either in rotation and/or back and forth, the 3D Hall Effect transducer identifies its spatial location (hence the 3D reference). That information is relayed to the engine controller, and an algorithm and other computer programming adjust engine speed so it's in sync with the transmission. In other words, it's taps the throttle for you.

But don't think it turns the Stingray into a numb, driverless automaton. It's really just a helping hand for entry- to intermediate-level drivers. Feel free to insert names of our editorial staff here. More-seasoned track stars can turn off Active Rev Matching and heel-and-toe shift to their hearts' content. We'll report back on how well we managed this tap dance in our next installment.

## AUTOMATIC

From a historical perspective, the Stingray's six-speed, paddle-shift automatic has been in development for at least three years. It's about

Dimensionally, the new manual's case is slightly longer than the old TR6060's, and the trans itself weighs a few pounds more. The latter increase is partly offset by the reduced weight of the C7's shorter torque tube.

as different from the '53 Corvette's Powerglide two-speed slushbox as the new 450hp LT1 is from the 150hp Blue Flame Six. In other words, they're not even in the same ballpark.

Comparing the Stingray's automatic with its more immediate predecessor from the C6 is more relevant. For that, we sought some input from two of GM's automatic transmission engineers, Rich Mardeusz and Gabe Gibson. Together they're sort of a tag team, with Mardeusz providing details on the hardware side, and Gibson covering the software algorithms, in particular as they relate to both the AFM (Active Fuel Management) and the various Driver Modes that can be selected with the turn of a knob. We'll start with the hard parts, and then move onto the intricacies of the software that controls them.

By way of background, Mardeusz has worked at General Motors since 1974, starting out in the Cadillac division on the chassis, electrical, and HVAC engineering groups. He then spent several years in the engine-engineering group, overseeing the controls hardware group for various powerplants. From there he moved to the transmission-engineering group, where he has spent the last 10 years. In addition to his current responsibility for the C6 and C7 Corvette automatics, he also oversees the six-speed, rear-wheel-drive automatic transmissions in the Cadillac ATS/CTS, Chevrolet Camaro, and Holden models.

Comparing the transmission layouts of the C6 and C7, Mardeusz notes that the Stingray's automatic has been moved forward in the chassis a few inches. That's been done for a couple of reasons: first, to make room in the rear to accommodate the new suspension structure (see our previous chassis/suspension installment for details); and second, to provide space for the transmission cooler, now located in the rear corner of the driver's side. (This placement has the added benefit of eliminating various piping and fluids.)

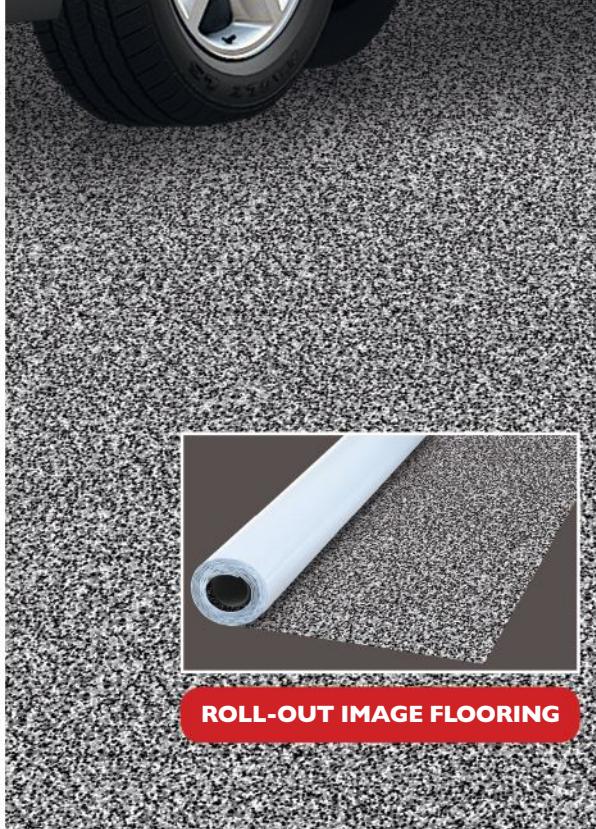


On automatic Stingrays, changing the setting of the Drive Mode Selector dials up different shift strategies to suit various driving environments.



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While the more-forward mounting provides better balance within the chassis, the new automatic is also 8.15 pounds lighter than the C6's unit. "We consider this a significant difference in weight," Mardeusz says with a note of pride. Trimming off excess poundage is a recurring theme on the new Stingray, as alluded to previously.

But how were GM engineers able to reduce the case size of the automatic, in order to allow this relocation? They went to a smaller torque converter—258mm, as opposed to the previous 300mm unit—which offers a 14 percent reduction in diameter

and a seven percent shorter axial length.

According to Mardeusz, other numerical benefits of the smaller converter include a 31 percent reduction in both primary and secondary inertia. We won't delve into Newton's laws on this arcane aspect of physics (due to limits on both space and your author's intellect), but suffice it to say that this change alone resulted in a 0.1-second quicker 0-60 mph time.

Knowing Corvette owners' inordinate interest in enhancing performance, we raised a question about how much power the new automatic can handle. With an engineer's typical emphasis on precision, Mardeusz declined to provide

a specific number, citing the need to do a damage analysis of the gearset, along with clutch capacity. Adding to the complexity, he says it would also require knowing the weight of the specific vehicle, along with the wheels and tires. But given GM's powerful computer modeling, used extensively during the three-year development of the transmission, that could be determined in just a couple weeks, if ever needed. Some of that work has actually already been done, as the data on torque and horsepower outputs of the new LT1 indicated that a major redesign of the C6 transmission was not needed, since the gearsets and clutch packs were already up to the task.

Even so, other upgrades were made, such as modifying the isolator clutch to improve the functionality of the Active Fuel Management feature. This unit now moves 2.5 times faster, Mardeusz says, providing a smoother transition to the engine's four-cylinder mode. In addition, a 258mm turbine in the torque converter provides additional driveline isolation to reduce vibration, needed in part due to the change in the length of the torque tube. Otherwise, most of the hardware is fairly similar, except for the size of the bellhousing, which is now slightly smaller since the innards take up less space.

Moving to the software programming, Gabe Gibson started at GM in 2006, working on RWD transmission calibration. He's been on Corvette calibration specifically for the last five years, serving as Lead Clutch Control Calibration Engineer. In these days of electronically controlled transmissions, this responsibility is critical for optimizing performance, even if the technical vocabulary employed might be a challenge to comprehend.

Gibson says that one of the main upgrades involves heavy-throttle upshifts. Keeping those upshifts smooth requires suspending the engine's torque via a fuel cut for a very brief and precise moment—about 100 milliseconds. He says this imperceptible pause in fuel delivery decreases shift time by as much as 50 percent.

Even more promising is how the new auto transmission's software takes full advantage of the lower gears, allowing the driver to run right up to the redline before tapping an upshift. On the previous automatic, the rev limiter would kick in sooner, spoiling all the fun.

Crisper acceleration is enabled by the use of a dual clutch face, in contrast to the single clutch face on the previous 300mm unit. In addition, more cooling is available via the rear ducting on the driver's side; this helps keep the automatic from cooking while the driver burns rubber.

Of course, not everybody drives like John Force on a dragstrip. That's where the Drive Mode Selector comes in. In the standard Touring setting, the automatic provides quick, efficient shifts. But turn the dial to Sport, and it'll hold longer in the lower gears. This software setting is identified by the acronym PAL (Performance Algorithm).

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Lifting), for the "lift foot" style of shifting.

Switching to Track mode engages PAS (Performance Algorithm Shifting). This programming factors in several variables—such as throttle rate and position, as well as brake pressure—to stay in the lowest possible gear for optimum performance on a road course. Putting it simply, PAL is for straight-line acceleration, and PAS is for the twisties.

Another shift-control enhancement involves the "Torque-Phase Fill," in which the automatic "is asking for a positive torque request from the engine," Gibson says in engineer-speak. To break that down into simpler terms, we asked if this is roughly akin to the throttle blip provided by the manual's Active Rev Matching feature. "It's the same but different," he offered. Hmm. Put another way, in a conventional automatic there's a slight loss in torque output between shifts, but on the new C7, the automatic carries torque continuously so there's no drop-off or disturbance to the vehicle.

How does this Torque Phase Fill function work with the fuel cut mentioned above? After all, at first glance they might seem like mutually exclusive features, since one eliminates torque while the other adds it. Gibson explains that these two different torque requests occur during different phases of the upshift. The Torque Phase Fill happens both before and after the ratio change, while the fuel cut kicks in for just an instant during it, since it's the fastest way to get to the next gear. He adds that it happens so quickly, right in between the Torque Phase Fill events, that the driver experiences ratio changes with minimal acceleration disturbances during shift events.

Looking briefly at other driver modes, in Eco, the software mapping optimizes the AFM torque operation for better fuel efficiency, while in Weather mode, it provides softer shifts to minimize tire spin on wet or snowy pavement. Also enhancing performance in slippery conditions are StabiliTrak, Traction Control, and Performance Traction Management. All three (abbreviated as Stabili, TC, PTM) are technically under the same system because they're all managed by the same unit: the Electronic Brake Controller, which also controls ABS.

The eLSD (electronic Limited Slip Differential) described in our previous article is a completely separate system under a different controller—the Integrated Chassis Control Module, which also controls Exhaust Value (exhaust note/sound), among other things. Although they are different systems, they all communicate and work together all the time. For instance, when you enter PTM, it configures the rest of the vehicle (eLSD and TC included) according to your situation, including track type and conditions, as well as the amount of traction available.

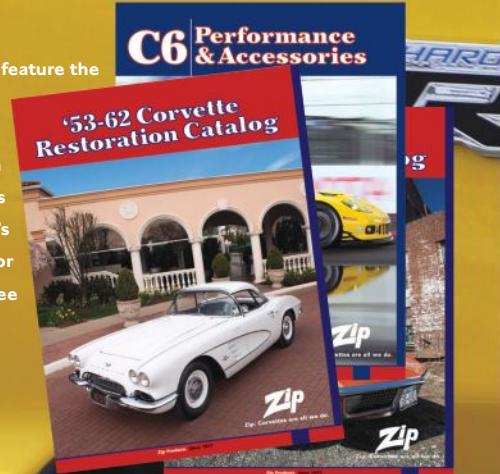
In sum, while the Stingray's new transmissions play a pivotal role in putting the power to the ground, there are several other sophisticated systems that help tailor the car's performance to particular applications. We can hardly wait to try out all of them. **VETTE**

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# JEWELRY FOR YOUR SHARK

LOCATING AND REINSTALLING  
FACTORY EMBLEMS ON OUR  
'72 COUPE

JEREMY D. CLOUGH WORDS | PHOTOS

I'm not exactly a code-correct-overspray kind of guy, and if you've read any of the previous articles on "Scarlett," our '72 coupe project car, that should be pretty clear by now. While I appreciate that aspect of the Corvette hobby, it's simply not my bag, and an abiding respect for what a numbers-matching car represents explains why I've never bought one.

All that aside, there are still some things that belong on a Corvette simply because it came that way, and one of them is the emblems. I'm not talking about add-on bling (like the "Chopper Edition" lettering glued to a pale-blue Crown Vic I once borrowed for an ill-fated dive trip to Florida), but the chrome emblems the car came with from the factory. Consider them jewelry for your Vette.

In Scarlett's case, the previous owner had the car painted, and in the process shaved the emblems on the front half. While the rear gas-filler emblem holes were still there, and the rear "C-O-R-V-E-T-T-E" letters were mercifully installed, the side Stingray emblems and the crossed flags from the nose were removed, and the holes were filled in and painted over.

Perhaps it's a cleaner look, but I'm too used to those little flashes of chrome to not see a huge blank space when they're not there.

With that in mind, I contacted Volunteer Vette Products. Based in East Tennessee, not terribly far from where I wasted my undergrad years fly fishing and driving mountain roads, Volunteer has been manufacturing and selling Corvette parts for about 24 years, and they were happy to provide a new set of emblems for this project. Since we've already replaced the fuel-filler door with a chrome Le Mans-style filler from Mustalgia, the only ones we needed were the crossed flags for the nose and the two Stingray emblems from either side of the front fender. With these in hand, it was up to me to locate and re-drill the holes for them. Time to get your ears pierced, Scarlett.

The nose emblem was by far the easier of the two, partially because there was a pair of small dimples where the material used to fill the mounting holes had sunken back in. Employing a template that I made using the emblem itself, I placed a small black dot in the middle of each of the two dimples to check the alignment.



**01** Volunteer Vette Products provided the emblems for this project, including the crossed-flags piece for the nose. It



A previous owner had shaved the emblems on Scarlett when he had her painted—no doubt a cleaner look, but I always saw that big, open expanse where the “Stingray” script should have been.



comes with a pair of self-threading nuts.



**02** One of the first things I did was to make this template showing the distance between the mounting holes. You can always just measure, but this removes that step, and the potential for error along with it.

# [TECH] JEWELRY FOR YOUR SHARK



**03** Fortunately, the filler material used to plug up the old mounting holes sucked in a little, leaving a barely discernible dimple in the paint. I used these to locate the holes, and marked them with a Sharpie.



**04** Laying the template over the nose of the car to make sure the holes are laid out properly. Note that the paper template will have to fold over central ridge in the nose, bringing the holes closer together than they should be.



**05** Using the studs on the emblem to check the marks made using the template. It's pretty easy to scratch the paint like this, so be careful.

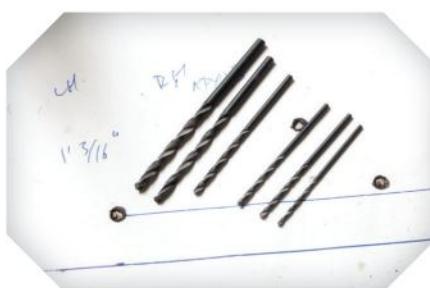


**06** The moment of truth, when you actually start drilling holes in the fiberglass. Make sure to orient the drill bit at the same angle to the surface as the mounting studs will be.

I refer to the assembly manual for most projects, but unfortunately it casts no light on the nose-emblem install. While the side-emblem sheet does have dimensions for where the holes should be drilled (more on their laughable errancy later), the only relevant information it offers on the nose emblem is the torque value for the nuts that hold it in place. So, back to making a template.

For that, I took a white sheet of paper and laid it on top of a cardboard box, then punched the two mounting studs on the back of the emblem through the paper and cardboard, leaving a round hole in the paper from each stud. This is the template. I then laid that over the nose of the car and aligned it with the two black dots I had made in the original holes, and enlarged the dots to match the hole layout on the template.

For reference, when I drew a line between the center of each of the two holes, it crossed the center ridge of the nose approximately 6 $\frac{1}{2}$  inch from where the nose steps down for the front bumper. Your mileage may vary, especially if you're dealing with a car outside of the



**07** Once you've started a hole, gradually enlarge it, one drill bit size at a time, to keep it clean. If necessary, you can "oval" the holes as you go, to account for minor alignment problems.

'68-'72 year range, where the front crossed flags are interchangeable ('73 and later models are dramatically different).

While I started making the hole markings with a Sharpie, I later switched to a black dry-erase marker, which proved a better choice. Also, be aware that when you put the template

on the nose of the car, it has to be bent in the middle, along the nose's center ridge. That will necessarily move the two holes on the template closer to one another than they are on the actual emblem, so you'll need to adjust accordingly when you locate them.

In my case, I did that by gently holding the emblem against the nose, with the two studs aligned with the black dots. This allowed me to see what adjustment needed to be made to make sure the studs would fit in the holes once drilled. With that checked, I then used the finest bit that would fit in the chuck of my  $\frac{1}{8}$ -inch drill and drilled the two holes. Make sure you drill them at the angle at which the emblem will be installed: If you square the bit up with the angled surface on either side of the center ridge, the parallel posts won't be able to slip down into place.

With the first pilot holes drilled, check them again against the emblem studs, ovaling the hole if necessary to make them line up. That's pretty much the process: Drill the hole larger one bit size at a time, checking alignment and opening up the hole as necessary to one side

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# [TECH] JEWELRY FOR YOUR SHARK



**08** Here's what happens if you jump too much in bit size. It'll be covered by the emblem, but still, perfection is the goal.



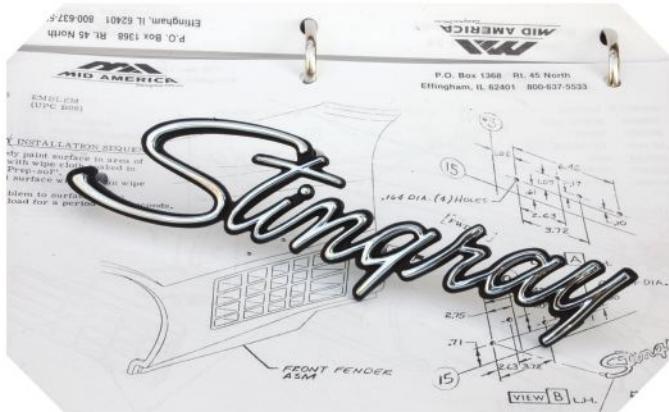
**09** I used a dial caliper to pick the size of the drill bit. The studs measured 0.155-inch in diameter, and I picked the next larger bit size. Basically, you want it to slip in easily without being loose.



**10** The self-threading nut shown on the smooth stud. Once the emblem slipped into place in its holes, I used a socket to push the nut into place on the stud while turning it, cutting the threads.



**11** The end result, with the crossed flags riding proudly on Scarlett's prow.



**12** The Stingray logo, also sourced from Volunteer. Unlike the flags, the studs on this emblem only serve to locate it. It's actually held in place with double-faced tape, which comes already in place on the back.



**13** As with the nose flags, I started by making a template using the studs on the rear of the emblem. Since the stud measurements can vary to some degree (my two were different from each other), I'd make one template for each side.

or the other. It's a tedious process, but if you skip straight to the largest-size bit you'll need, there's a good chance it will chip the paint around the edges of the hole. (Ask me how I know.) It'll be covered by the emblem once installed, but it's worth avoiding if possible.

Next, I used a dial caliper to select the final hole size. After measuring the base of the stud, which came out to 0.155-inch, I chose the next-largest bit size. Once the emblem will slip easily in and out of the holes, clean behind it and use the included nuts to install

it permanently. No doubt, you'll have noticed by now that the studs aren't threaded. The nuts cut their own threads, and it's something of a trick to align one and hold it against the stud while turning it to get the initial "bite." I first tried to come in from beneath in the

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# [TECH] JEWELRY FOR YOUR SHARK

license-plate bracket area, where we previously mounted a pair of Cibié driving lights, but that proved pretty much impossible. Raising the hood and accessing the area from above works much better, but you'll be working blind. Remember to hold the emblem down while you're trying to get the nut on; if it slips up and out of the hole, it can scratch your paint.

With the nose done, it was time to add the scripted "Stingray" logos that go above the fender vents. These came on '69-'76 Corvettes, and could theoretically be added to later models if you're unconcerned with originality.

Locating them on the car proved far more difficult than the nose emblem. Since neither the hole spacing nor the final hole diameter for the front crossed flags is in the assembly manual, measuring the emblem itself is the only way. It's also the best way with the side emblems.

While the manual includes a series of grid-like measurements that show where the holes relate to one another and to the body line, let me be frank: It's wrong, on both counts. In my case, the hole spacing varied between the two emblems, and when I used them to create a template, as I did with the nose emblem,

aligning that with the body line put them about a half-inch lower than they should have been.

With that in mind, I fell back to using the dimples left when the original holes were filled in—after all, it may not be the way every car came, but it's the way this one did—then

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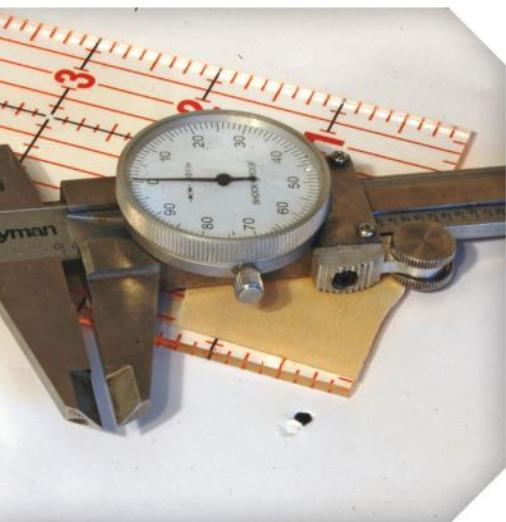
**14** Once I had the holes in the paper, I drew layout lines based on the measurements in the assembly manual. For both these measurements (which I ended up not using) and the later ones that resulted from locating the emblem in the original holes, I focused on the lowest two studs, one of which is found at either end of the emblem.

**15** According to the manual, the emblem is located vertically by creating a line that runs through the center of the front stud and then 0.10-inch beneath the center of the stud on the other end. That line is then placed parallel to and 0.71-inch above the body line above the fender vent. On my car, this didn't work.

**16** Using painter's tape to mark the body line that the template will line up with. Unfortunately, it's pretty hard to find the exact point to lay the tape on the curvature of the body, especially considering you're using measurements that go into the hundredths of an inch.

compared their location with close-up emblem photos of other Corvettes in the appropriate model-year range.

I also mocked up the emblems in place and sent a photo to painter Darrin Wood of Wood's Body Shop (whose work has appeared in



these pages) for his opinion. When I was as confident that the dots were in the right place, I drilled them as before. After drilling the right-side holes, I was able to slip my hand inside the fender where I had removed the vent and feel where they passed roughly through the center of the filler material. Bingo. Since I could only see the dimples on the right (passenger) side of the car, I did my best to reverse those measurements, mirror-image style, for the left.

Here's how the process played out on my '72: First, I drew a straight line through the middle of the two lowest emblem holes and

forward toward the front of the car. On the right side, this line intersected the wheelwell (at an angle) about 13-inch from the center of the nearest hole (the one behind the "y" in Sting-ray). On the left side, it was 12 $\frac{3}{16}$ -inch.

Returning to the right side, after drawing a line at right angles to the original one between the two lowest holes, the center of both the front and rear holes was about 2.55-inch above the line where the body squares off for the fender vent. While I then transposed these measurements to the left side of the car, I did so incorrectly, which resulted in the rear of the

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# [TECH] JEWELRY FOR YOUR SHARK



**17** Using the line of tape and the measurements from the manual (the set of four dots on the bottom) provided a set of mounting points far different from the original mounting holes (top).



**18** The differences between the manual measurements and the ones transposed from the original holes were slightly less dramatic on the other side. Removing the fender vent gives you easier access to the backside of the fender, to locate filler material from original holes. The squared opening also provides a better measuring surface.



**19** After drilling through the black dry-erase dots, check the hole alignment against the emblem's studs before continuing. In all likelihood, you'll need to adjust the hole location slightly. Also watch the hole angle while drilling.



**20** Open the holes up until the emblem will seat in them snugly without binding. Next, clean the fender, expose the emblem backing tape, and hold it against the car until it sticks. Since the emblem is flat, and you're sticking it to a curved surface, it's not going to seat perfectly against the body. Just get it as close as you can.

emblem canting upwards. That's the opposite orientation of the emblems in my stock of photos, which are either parallel to the body line, or if they're at an angle, seem to be higher at the front than at the rear.

Again, your car may vary. Accordingly, when you lay out the holes, mock up what you're doing, and if you have any questions, consult an expert before punching holes in the fiberglass. While Darrin Wood was kind enough to provide an opinion on the right-side emblem, I simply did the math backwards and drilled for the left side one—without having anyone verify my calculations. This mistake could very well cost me down the road.

I also departed (in this case, properly so) from the assembly-manual dimensions for the size of the mounting holes. While the manual said to drill them 0.164-inch, that was substantially larger than the studs, so I simply picked the drill bit that was the next size



**21** Done and washed. Now the big, blank spaces are gone, and all is well with the world.

larger than the stud diameter. Unlike the nuts that hold the nose emblem in place, these studs are only there to locate the side emblems, which are actually held in place by adhesive. (In fact, you could theoretically

grind off the studs and just stick them in place.)

Once the emblem slipped easily into its holes, and I had cleaned the area behind it, I peeled the white backing from the adhesive on the rear of the emblem and held it in place (the manual says to apply 10 pounds of pressure for 15 seconds). Since this is a flat emblem going on a curved surface, you're not going to get 100 percent contact, so just go for the most you can.

Done. Clean everything up and go see how pretty that chrome looks in the light. **VETTE**

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# UNDER **LOCK AND KEY**

## IMPROVING C1 CONVENIENCE AND SECURITY WITH A MODERN LOCK SET

JAY HEATH WORDS | PHOTOS

**L**ike a night in a Mexicali jail or a ride on a particularly nauseating theme-park attraction, the job of restoring a vintage Corvette often seems far more exciting when viewed from a safe temporal remove, long after the paint dust has settled and the bloodied knuckles scabbed over.

In the case of our '58 project car, we've done our best to schedule the "fun" projects early in the process, adding custom wheels; dropping in a shiny, new fuel tank; and executing a period-faithful performance makeover on the stroked small-block engine. But with most of the big-ticket fixes struck from our to-do list, it eventually came time to turn our attention to some of the more prosaic details of the restoration.

High on our roster of tedious-but-necessary tasks was the job of replacing the car's aging lock cylinders, whose functionality ranged from partial to nonexistent. The ignition key was also MIA, meaning the only way to start the engine was by leaving the steering column unlocked and cranking it over without one.

It's worth noting that even if your C1's original locks remain operational, installing an updated set still confers a welcome benefit: Because most replacement kits use a single key cut for all of the included lock cylinders, you'll no longer need to tote around two different keys for complete access to the car.

For parts, we relied on Michigan-based Corvette Central, from whose vast product inventory we've drawn liberally over the course of this project. While we opted for CC's basic lock kit (PN 501101, \$119.00) to keep our investment to a minimum, the company also offers

a "Super" version of this package (PN 501100) for a few bucks more. Priced at \$165, the latter includes all the contents of the base kit—specifically, a full complement of lock cylinders and a pair of keys—while adding the bezels, retainers, and trunk-lock rod you'll need to execute the install on a fully stripped body.

Let's take a look at the installation process, which, in keeping with our pattern up till now, took place at AntiVenom in Seffner, Florida. Though the job itself isn't overly challenging, there are a few tips you'll want to keep in mind as you work. Count on spending around two hours on the project.



**01** We selected Corvette Central's basic lock set (PN 501101, \$119) for our installation project. The package comes with new lock cylinders for the doors, trunk, glovebox/center console, and ignition, along with a pair of set-specific keys in a period-faithful design.



**02** We started with the trunk lock, mostly because it's the easiest one of the bunch. Begin by gently prying off the cylinder's spring-clip retainer, which can be found inside the lock housing. It's virtually impossible to photograph, due to its location, but you should be able to ID it using the pictures that follow as a reference.

15 STAGES 62 MAKES  
2101 APPLICATIONS

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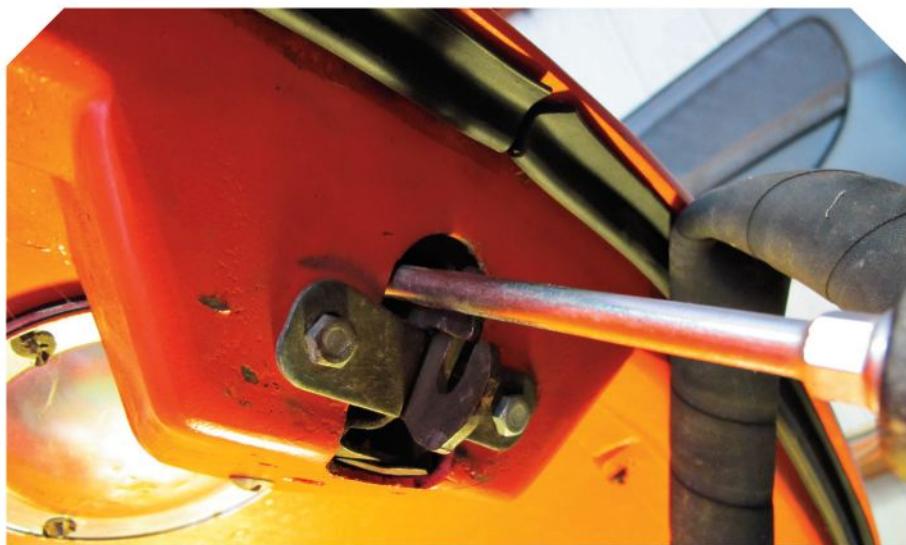


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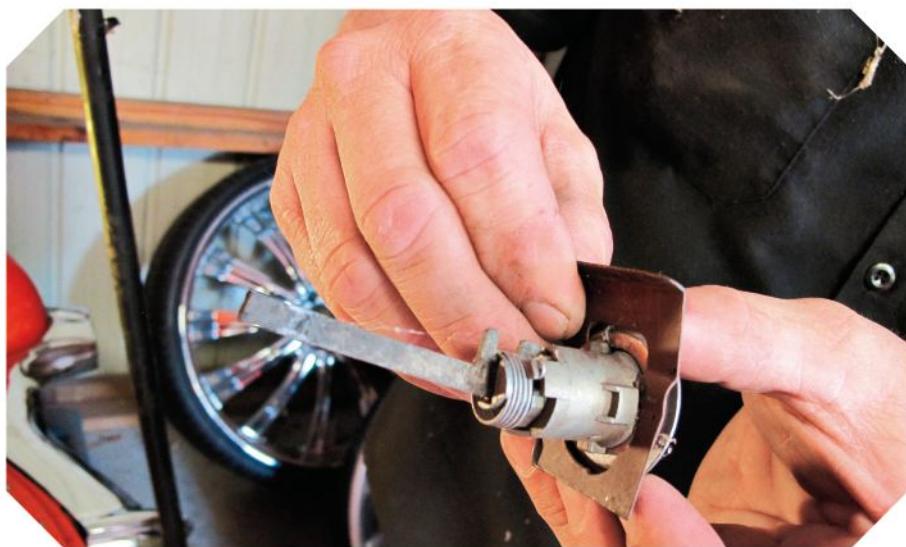
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## [TECH] UNDER LOCK AND KEY



**03** With the retainer free, break loose the cylinder, again using a long screwdriver. Then, simply use both hands to push it out through the mounting hole and remove it from the car.



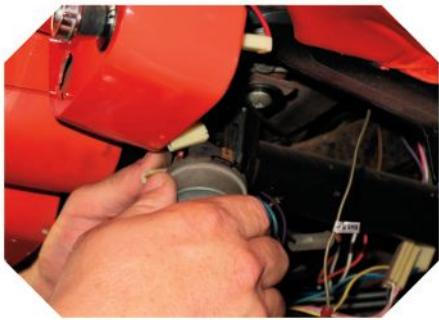
**04** This photo shows how the original assembly fits together inside the lock housing.



**05** You'll need to transfer the bezel and lock rod from your stock setup onto the new cylinder. With that done, slide the whole assembly back into the mounting hole, reinstall the retainer, and you're ready to move on to the ignition.



**06** Start by removing the ignition cylinder bezel, using a specialty tool like the one shown here. These purpose-specific tools, which typically go for around \$20 on eBay, are designed to liberate the bezel without scratching it.



**07** With the bezel removed, the only thing holding the cylinder in the dash is the wiring bundle plugged into its base. Unhook that, and the assembly should come right out.

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## [TECH] UNDER LOCK AND KEY



**08** Because the car's ignition key had long since gone missing, we were forced to drill out the factory base to gain access to the internal lock pin. Start by popping off the outer key slot, as shown here.



**09** Next, drill out the cylinder until you have room to depress the lock pin with an angled pick.



**10** At this point, you should be able to slide out the old cylinder and insert the new one in its place.



**11** Reinstall the assembly in the reverse order of removal, and your new ignition cylinder is ready for action.



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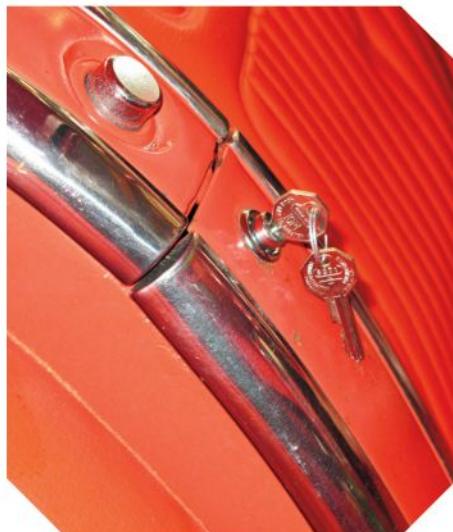


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## [TECH] UNDER LOCK AND KEY



**12** Pulling the glovebox cylinder is a piece of *punschkrapfen* by comparison. Just use an adjustable wrench to lightly wiggle the back of the mechanism until the bezel (which also serves as the nut) is loose enough to unscrew.

**13** Out with the old, in with the new, and you're ready to move on to the doors.



**14** Start by twisting off the lock knob, then remove the three screws that hold the upper door panel in place.



**15** Next comes the lower panel, which is secured with its own set of six screws. Don't forget to also unscrew the white knob on the door-opening mechanism.



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## [TECH] UNDER LOCK AND KEY



**16** Allow the lower panel to swing down out of the way (there's no need to completely remove it), exposing the black panel over the lock compartment.



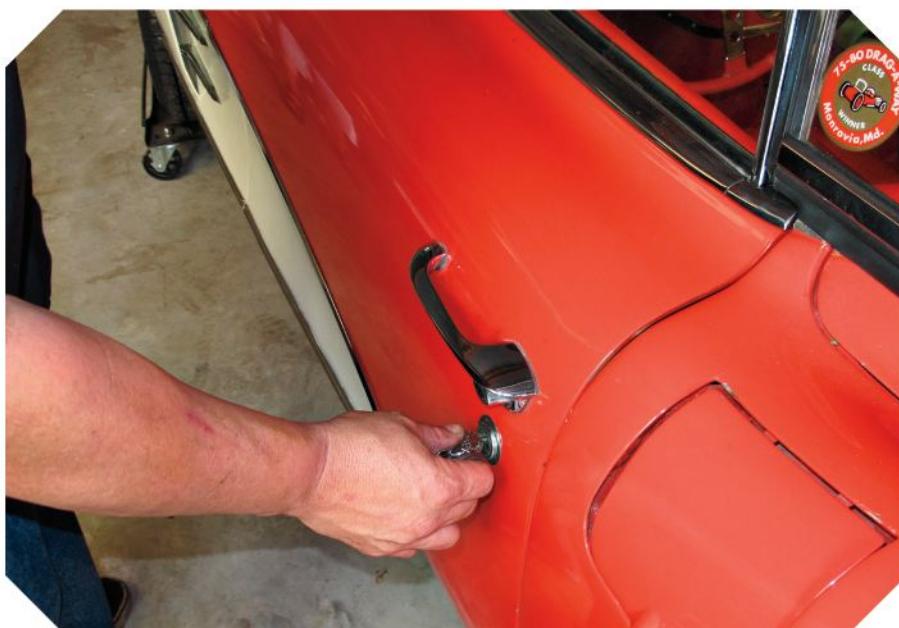
**17** The panel is held in with nine screws (or fewer: ours was missing two of them). Remove these to access the inside of the door.



**18** As with the trunk, the door-lock cylinders are secured with a spring-clip retainer. Use a long screwdriver to release the clip, and pull the cylinder through the outside of the door. Once free, the entire assembly should look like this.



**19** Use one hand to insert the new cylinder into the door from the outside, and the other to reinstall the spring clip from the inside. Reverse the door-panel disassembly process and start enjoying your new, single-key lock setup.



**20** Note that the action of your freshly installed lock cylinders may be a bit stiff at first. This is normal, and shouldn't be a cause for concern. Over time, and with regular use, they'll loosen up and attain the kind of like-new feel you'd expect. **VETTE**

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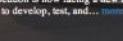
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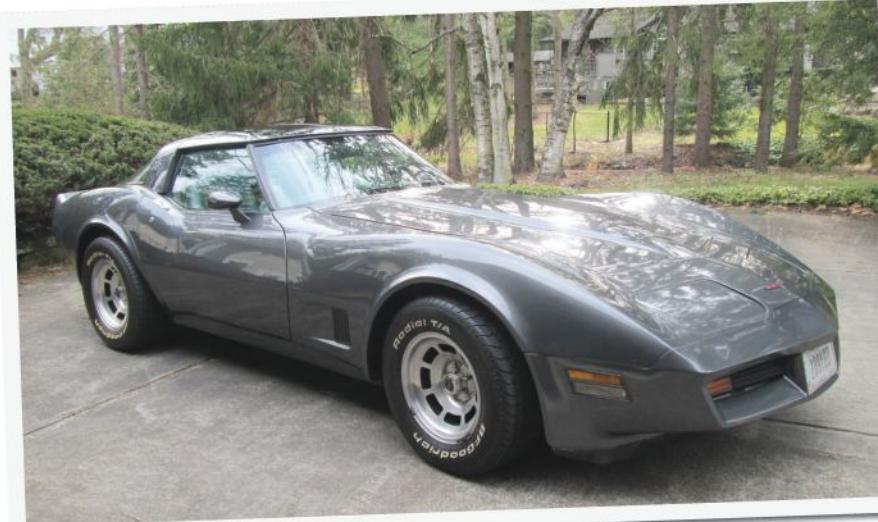


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# THE 'GLASS MENAGERIE



## FUN (EARLY) '81

**WHO:** Sam Lavanty

**WHERE:** Poland, OH **WHAT:** '81

**C3** → After searching for a low-mileage C3 following my early retirement, I purchased this numbers-matching '81 in 2009.

It has an L81 350 (the only Corvette engine in 1981) with a mild cam, Hooker headers, a Holley carb, and a Turbo-350 trans. The color is Code 84 Metallic Gray (only used at St Louis) over a Silver leather interior. The car now has just over 54,000 miles on it.

I've replaced the seats and floor mats, brakes, belts, hoses, water pump,

shocks, and tires, along with a transmission seal and some suspension parts. Other updates include buffing most of the paint to a nice glossy finish, polishing the wheels, detailing the engine compartment, and cleaning and painting the frame and suspension. I plan to repaint the exterior, but even now it draws attention and compliments during our May-October cruise season.

The car is a work-in-progress that I've enjoyed along with my 12-year-old grandson, Michael, who loves working on it and cruising with me on nice summer days.

Michael and I look forward to reading VETTE each month—and he looks forward to someday owning this Corvette.

## POP-POP'S PRIDE

**WHO:** Pat Geary **WHERE:** Bristol,

**PA WHAT:** '99 C5 coupe → I went to a car-and-motorcycle show in Glenside, Pennsylvania, three years ago to look at the bikes, but I found there were more beautiful Vettes there. I told my biker buddies that I had to get one.

So, I did my homework, and six months later, I drove home this beautiful, one-owner, Torch Red C5. It's now nearing 100,000 miles—it had 79,000 when I purchased it—and running as strong as ever.

I've added chrome Z06 wheels, a twin-flow intake, and many interior mods.

The car ran flawlessly last summer when I took a trip to the National Corvette Museum in Bowling Green via the Blue Ridge Parkway, to watch the last of the C6 generation being built. I have never had so much enjoyment in driving a car.

By the way, Christopher, my six-year-old grandson, loves riding shotgun with his Pop-Pop!





## LUVOURC6

**WHO:** Tom Gladfelter **WHERE:** Graham, NC **WHAT:** '06 C6 con-

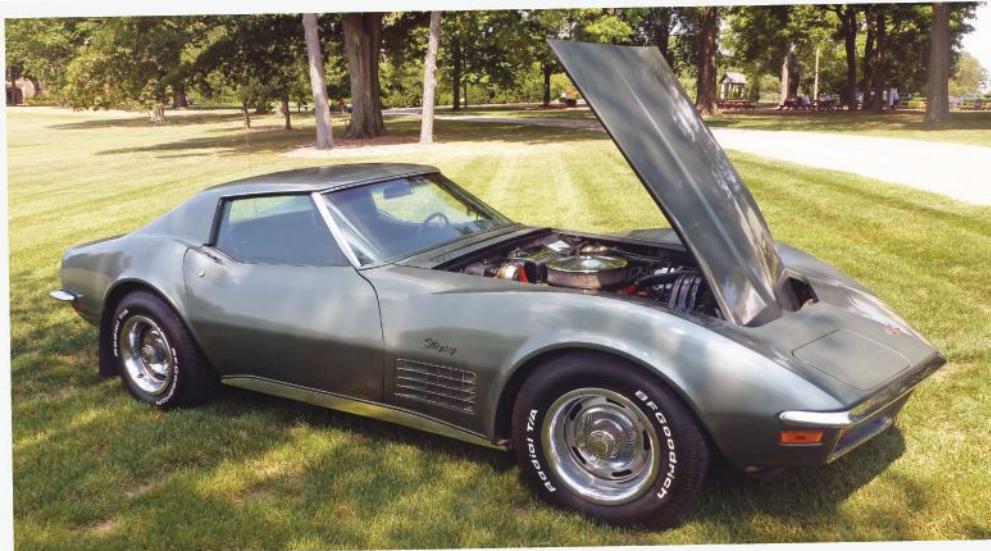
**vertible** → I'm sending you some pictures of my Monterey Red '06 Corvette convertible, which is equipped with the Z51 Performance Package and 3LT Preferred Equipment Group. I got it over Labor Day weekend in 2010, at which time it had only 13,000 miles.

It's my third Vette, after a '76 and an '04.

I've added updates like a chrome grille, a K&N air intake, a Corsa exhaust, chrome on the engine, plus some interior items. The license plate reads LUVOURC6.

I'm a proud member of the Triad Corvette Club in Kernersville, North Carolina.





## STEEL GRAY SHARK

**WHO:** Mike Kelley **WHERE:**

**Akron, OH** **WHAT:** '72 C3

**coupe** ➔ I purchased my '72 Steel Cities Gray Stingray coupe in October of 1971, from Jack Sommer Chevrolet in Wadsworth, Ohio. The paint is original, as are the standard 350 engine and M-22 Rock Crusher four-speed. The car currently shows 51,100 miles.

Over the years, I've added upgrades such as a stainless-steel exhaust and brakes. In 2005 I replaced all the hoses, clamps, and plug wires, as well as the master cylinder, power-steering pump, vacuum actuators (for the headlights and windshield wipers), and clutch. I also upgraded the stabilizer bars.

The car is only driven during the spring and summer months, so it's as nice as can be for an original '72. It's won several trophies in local shows and is a pleasure to drive on bright, sunny days. I hope to enjoy it for many more years to come.

## TALE OF THE C4 ON "THE TAIL"

**WHO:** Doug Oaks **WHERE:**  
**Vandalia, OH** **WHAT:** '96 C4

**coupe** ➔ While I love my '67 convertible, and I loved my '95, I jumped at the chance to buy my friend's '96 LT4 in 2006. It had just 13,000 miles on it and was as mint as a used car could be.

We sold the '95 and have since used the '96 for both show and travel. It has gone from the Copper Country of Michigan's Upper Peninsula to Atlanta, and from Carlisle to Chicago and central Illinois. It is a wonderful car to travel in, it gets 30 mpg (if I keep my foot out of it), and I believe Torch Red is the ultimate in Corvette colors. The C4 styling is definitely my favorite of all the generations.

The car is shown here on the famous Dragon's Tail in North Carolina.

Will I trade up for a newer car? Probably not in this lifetime. PHOTO BY US129 PHOTOS



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## NOT "IF"—WHEN!

**WHO:** Bruce Gordon **WHERE:** Center Valley, PA **WHAT:** '81 C3, '06 C6 coupe ➔ While in high school, I commented to a friend that if I ever owned a Corvette, I wasn't sure whether I'd want a C2 or a new (at the time) C3. He immediately responded, "What do you mean *if*?" and I knew he was right.

I waited patiently and bought my first Vette, a rebuilt four-speed C3, after I had already purchased a house and started a family. I brought the car back to like-new condition over a period of 12 years, overhauling one major item per year to spread out the cost.

I was content with that car until the C6 was introduced. The overall package of styling and engineering was irresistible, so I took the plunge and special-ordered an '06 coupe from Kerbeck.

I love to take my family out for rides in both Vettes. After all, you get to drive them more that way, right? Save the wave!

## FATHER-AND-SON Z06

**WHO:** Pat Weinheimer Sr. and Paul Weinheimer **WHERE:** Amarillo, TX **WHAT:** '04 C5

**Z06** ➔ My father and I became Corvette owners at the same time, after admiring the engineering and styling of the marque for years. My future father-in-law shared the same passion, and he discovered this Millennium Yellow beauty in New Mexico.

I called my father and said, "Hey, there's a yellow Vette with your name on it." Shortly after our conversation, we went "halves" on this 405hp machine. I was granted the fabulous honor of speeding away from my wedding in our Corvette, making a special moment even more memorable. (And no, I did not grant permission to put shaving cream on it!)

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# THE ILLUSTRATED CORVETTE DESIGNER SERIES NO. 198

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## '97 TIGER SHARK CONCEPT CORVETTE: THE ONE AND ONLY "SHARK" C5

**W**e tend to mark the beginning of each Corvette generation from the moment we first see the car. But the final designs are approved more than a year before the official debut. It takes time to work out details, develop parts, and tweak each piece for production. Even earlier in the process, hundreds of sketches and renderings are created to work out the basic design. Countless ideas are considered and rejected before the first 3D models are built. Only the top designs move on to the next step.

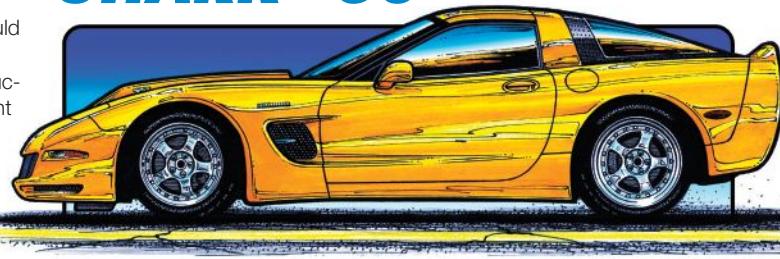
Although the C6 made its magazine debut in the winter of 2004, designer Tom Peters actually started sketching the car in the fall

elements that would take some time to make it into production. The wide front grille and vertical bars eventually showed up on the C6 Z06, ZR1, and Grand Sport. The C3 L88-style hood dome, meanwhile, was necessary to clear the supercharged, 427ci LS1 stroker; a version of its leading-edge air extractor would eventually appear on the C7.

Other Tiger Shark design elements never went anywhere. The first was the side-cove treatment, which featured a grated opening with a single chrome spear. Out back, the tall rear spoiler was pure musclecar-era design. The license plate was also relocated between the taillamps, the inboard lamps included the backup lights, the third brake light was wider and thinner, and the horizontal bars in the lower vents were removed.

The Tiger Shark could have made for a nice midyear refresh, but Chevy quickly quashed any rumors that the car might go into production. Only the body panels would be offered as a kit.

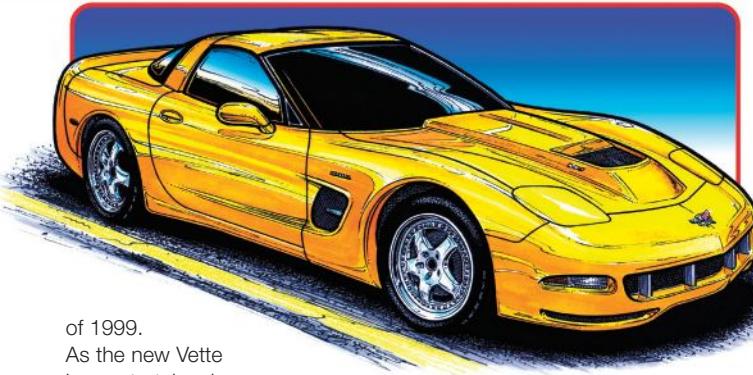
But the Tiger Shark concept was far more than a stock '97 coupe with a body package. The stump-puller LS1 featured a Vortech T-Trim supercharger, 8.7:1 compression, modified heads, a custom cam, stainless-steel headers, and a 3-inch Corsa exhaust



system with 3.5-inch exhaust tips. The much-modified mill generated an incredible 742 hp and 690 lb-ft of torque. The suspension was treated to Hotchkis Performance stabilizer bars and coilover shocks, while the brakes were upgraded to Brembos measuring 14x1.25 inches on the front and 12.32x1.25 inches in the rear. The 18-inch Kinesis Motorsport K58 forged wheels were shod with Goodyear F1 Fiorano tires.

The interior of the Tiger Shark was equally impressive. The custom-contoured seats were wrapped in black leather with gray bolsters and Seaton diamond-perforated inserts. Accessory gauges were mounted on the lower portion of the dashboard, and the dash gauges featured yellow trim. Custom aluminum pedals were added for a race-car touch. Detroit prototype shop Wheel-To-Wheel handled the complete Tiger Shark conversion.

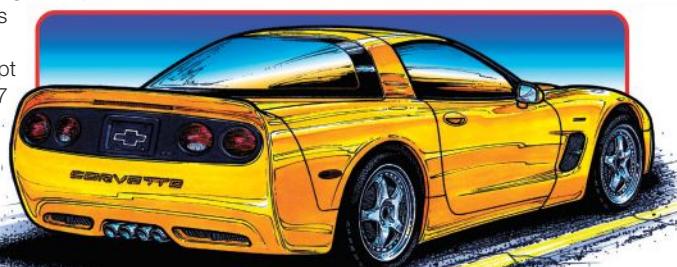
Tiger Shark kits are still available in the aftermarket, albeit minus the hood extractor and enlarged front-fender vents. As slick as the Tiger Shark package was, it seemed that the majority of C5 owners liked the looks of their cars just fine. Consequently, you'll see very few of these predators out prowling the streets. **VETTE**



of 1999. As the new Vette began to take shape, it eventually came time to try out some of these fresh ideas on the existing model.

Concept cars generally take on two forms. One is the over-the-top styling exercise that has no real chance at production. Think of the '65 Mako Shark II and the '10 Corvette Stingray Concept. The second approach takes the current production car and pushes its styling to the extreme. The C5 Tiger Shark is one such vehicle. Chevrolet debuted the Tiger Shark (and Tiger Shark accessory kit) at the 2001 SEMA Show in Las Vegas. Painted PPG Tiger Yellow, the car was very well received, even showing up on the cover of the Dec. '01 issue of **VETTE**.

The Tiger Shark offered a preview of design



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