



WHEN IT COMES TO CORVETTE



SEQUELS ARE ALWAYS BETTER

WORDS JIM KOSCS
PHOTOS GENERAL MOTORS & JOEY REYNOLDS



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A: Initial C2 proposals called for a major C1 re-skin, a decision fortunately vetoed.

B: Larry Shinoda designed lithograph of a 1963 Corvette Sting Ray. The drawing depicts a "Fuel Injection" badge on the fender, a feature introduced to Corvettes in 1957.

"The sequel is never as good as the original."

That's long been a common refrain when discussing movies. In most cases, it probably holds true, but movie fans cite exceptions. "Godfather Part II," "Terminator 2: Judgement Day," and "National Lampoon's Christmas Vacation" are a few that blew that old maxim out of the water.

We tend to hold a higher standard for sports cars, which come with the built-in expectation of leaping past their predecessors' benchmarks. That's certainly been the case for the Corvette through eight generations. Yet, some transitions from one Corvette to the next served up a big plate of drama with a side order of doubt about its continuation.

That the Corvette has evolved to its current state as a formidable line of supercars is perhaps the highest tribute to the Corvette Hall of Famers who steered the car through those changeovers. HoF biographies tell their individual stories, but how did their collaborations and even occasional battles preserve the respect and reverence for what came before while generating the curiosity and passion to drive the Corvette forward?

Zora Arkus-Duntov (HoF 1998) had set the standard. His acumen, vision, and zeal not only saved the Corvette from an early demise but also inspired his successors to push through obstacles to make the Corvette the world's longest-running, best-selling sports car at nearly 1.9 million and counting.

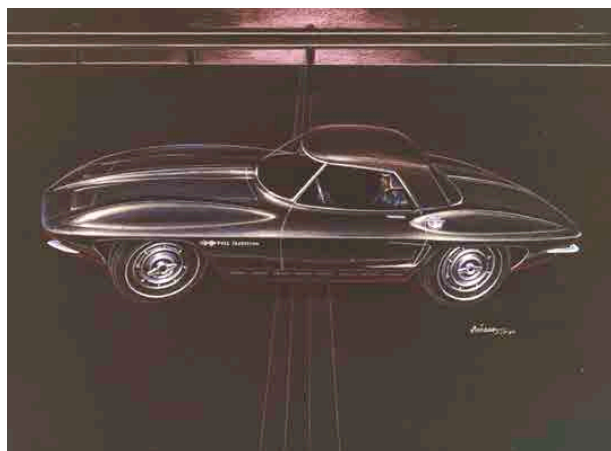
Second-Generation: The Sting Ray Era Begins

Chevrolet built just over 14,400 Corvettes through the car's first five model years. From a purely business standpoint, that hardly seemed like a strong endorsement to continue the car, let alone start planning a more elaborate second-generation model. While the 1957 Corvette was thrilling drivers and significantly outselling the '56, General Motors was entering a period

of especially daring engineering and design that would touch all its car divisions through the upcoming decade. Chevy's rear-engine Corvair was in the pipeline, and its ambitious "Q" program considered a 1960 full-size model with a possible aluminum V8, rear transaxle, and independent rear suspension.

Meanwhile, Bill Mitchell (HoF 1998) succeeded Harley Earl (HoF 1998) as GM Vice President, Styling Section. In the words of Chuck Jordan (HoF 2025), who became GM Vice President of Design in 1986, Mitchell was "obsessed with Corvettes." He had set up his own Studio X, which included Larry Shinoda (HoF 1998) and future Porsche design chief Tony Lapine, to develop his own ideas for Corvette designs (and others).

Mitchell greatly admired European sports car design and suggested (or, more likely, required) that Corvette designers take inspiration from the wheel bulges on the Pininfarina-designed Abarth record-setting cars he'd seen in Italy. He also invited designers to his home to see the mounted mako shark he'd caught while fishing in Florida to inspire "the feeling of a shark in an automobile."



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Sketches by 19-year-old Pete Brock (HoF 2017) captured Mitchell's vision and became the basis for the XP-84, a.k.a. "Q-Corvette." The next Corvette's basic form was already emerging in this 1957 clay model. An ardent racing enthusiast, Mitchell wanted to see that look on the track — quickly. He acquired one of the Corvette SS frames and had Shinoda and Lapine design a new body following the Q's theme. This became the legendary XP-87 Stingray racer, which, driven by Dr. Dick Thompson, "The Flying Dentist," (HoF 2000) won the 1960 SCCA C-Modified championship.

Mitchell decided the Stingray racer would set the direction for the next Vette under the XP-720 code. The productionized car became clearer in Shinoda's 1959-1960 sketches. Though he applied dramatic paint and trim for the 1961 Shark auto show teaser that Mitchell drove as his personal car, it was essentially the '63 Corvette hiding in plain sight.

Engineering Intrigue

Chevy engineers had a clean slate to make the Corvette into a world-class sports car while keeping its uniquely American character, but of the Q-program ideas, only the independent suspension reached production. Duntov and Mitchell, both equally passionate about the Corvette, fought over at least one design point.

Going all-in on the '63 Sting Ray's aquatic inspiration, Mitchell insisted on the famous split window that continued the "spine" from roof to tail. Duntov said it limited rear vision, but Mitchell was resolute. The two men, both equally passionate about the Corvette, reportedly stooped to name-calling, at least behind each other's backs. Chevy General Manager Ed Cole (HoF 1998) settled the issue,

giving the split-window a one-year life — and creating a future collector's treasure.

Initial second generation development had focused on the coupe, the convertible joining the program a bit later. Having the two body styles helped to double Corvette sales, with the convertible remaining the more popular overall.

Lasting Impact

With the 1963 Corvette, Chevy created America's first true mass-production GT, and the car floored auto media. *Car and Driver* said, "As an American car it is unique, and it stands out from its European counterparts as having in no way copied them but arrived at the same goal along a different route."

Crediting the IRS and good weight distribution, *Motor Trend* concluded, "We thought the old model cornered darn well, but there's no comparing it to this new one ... it's beautiful."

Road & Track noted, appropriately, "As a purely sporting car, the new Corvette will know few peers on road or track."

While the second-generation would live just five years, its legacy continued for 15 more under the next Corvette.

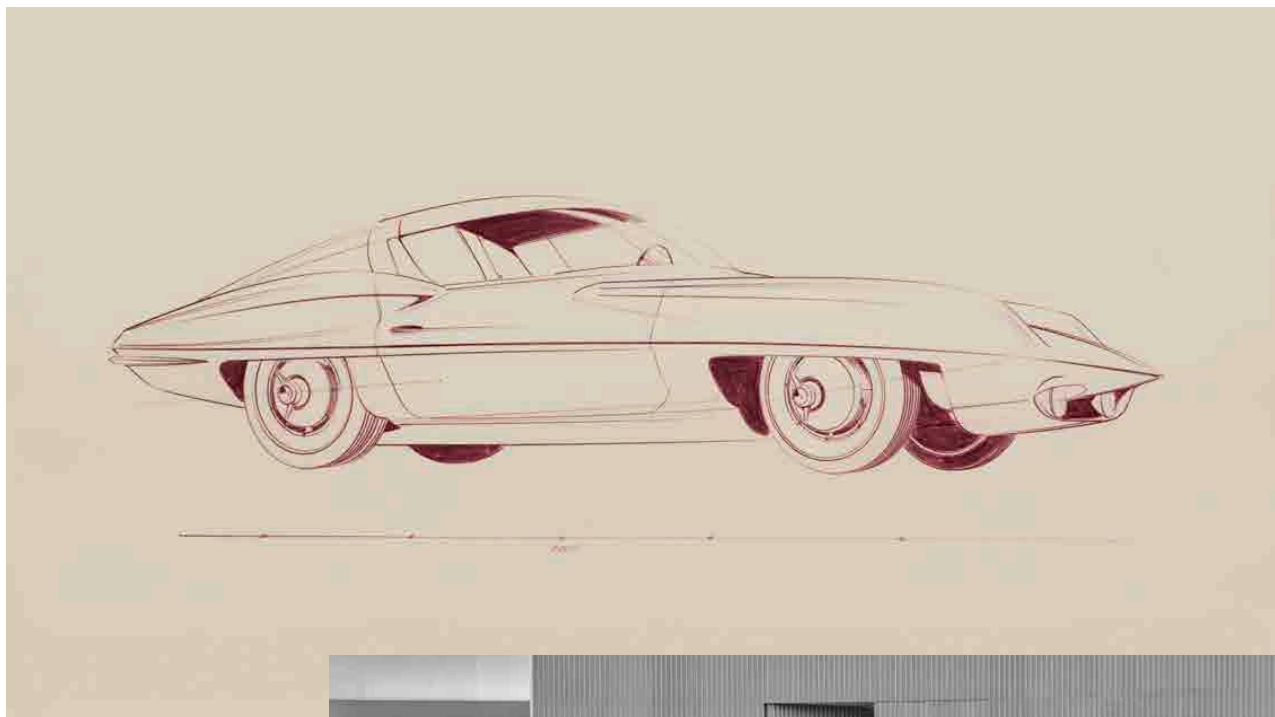
Third-Generation: Shark Warning

Soon after the Sting Ray's wildly successful launch came the inevitable question: What comes next? Proposals, models, and prototypes for a possible mid-engine Corvette revved up insider excitement and unlocked creative avenues for designers. Development, engineering, and tooling cost estimates, however, ultimately cast the decision: The Sting Ray's sequel would put a new body on the existing chassis.



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A: 1963 Chevrolet Corvette Z06 known as "Gulf One," at the Sebring International Raceway driven by Dr. Dick Thompson "The Flying Dentist".

B: Bill Mitchell, General Motors Vice President of Styling, shown alongside the legendary XP-87 Stingray Racer concept car.

C: The sketch by Peter Brock from 1957 which Bill Mitchell picked to become the design of the 2nd generation, capturing his vision.

D: This model from 1961 was part of Project XP-720, used to develop the iconic 1963 Chevrolet Corvette Sting Ray.

The “who” would be largely the same in terms of design and engineering leadership. Mitchell wanted designers to capture the crouching stance of an open-wheel racecar. Tasking Shinoda with creating a concept car, he sketched out a theme with high-thrusting front fenders and rear quarters framing a low hood and cabin. He also defined a fastback roofline flowing to a tapered tail and an upswept rear section, like the Sting Ray racer.

Shinoda turned that into the Mako Shark, while at the same time his studio was refining a theme car for the production third-generation Corvette. The Mako thrilled crowds at the 1965 New York Auto Show, including future Corvette designer John Cafaro (HoF 2002), who saw the car there when he was 10 years old. The public response confirmed Mitchell’s and Shinoda’s instincts. Remarkably, Shinoda and others were able to steer Mitchell away from the tapered tail he preferred. Instead, the car would get a flying-buttress roofline with a “sugar-scoop” shape and a recessed, vertical rear window.

Changing of the Guard

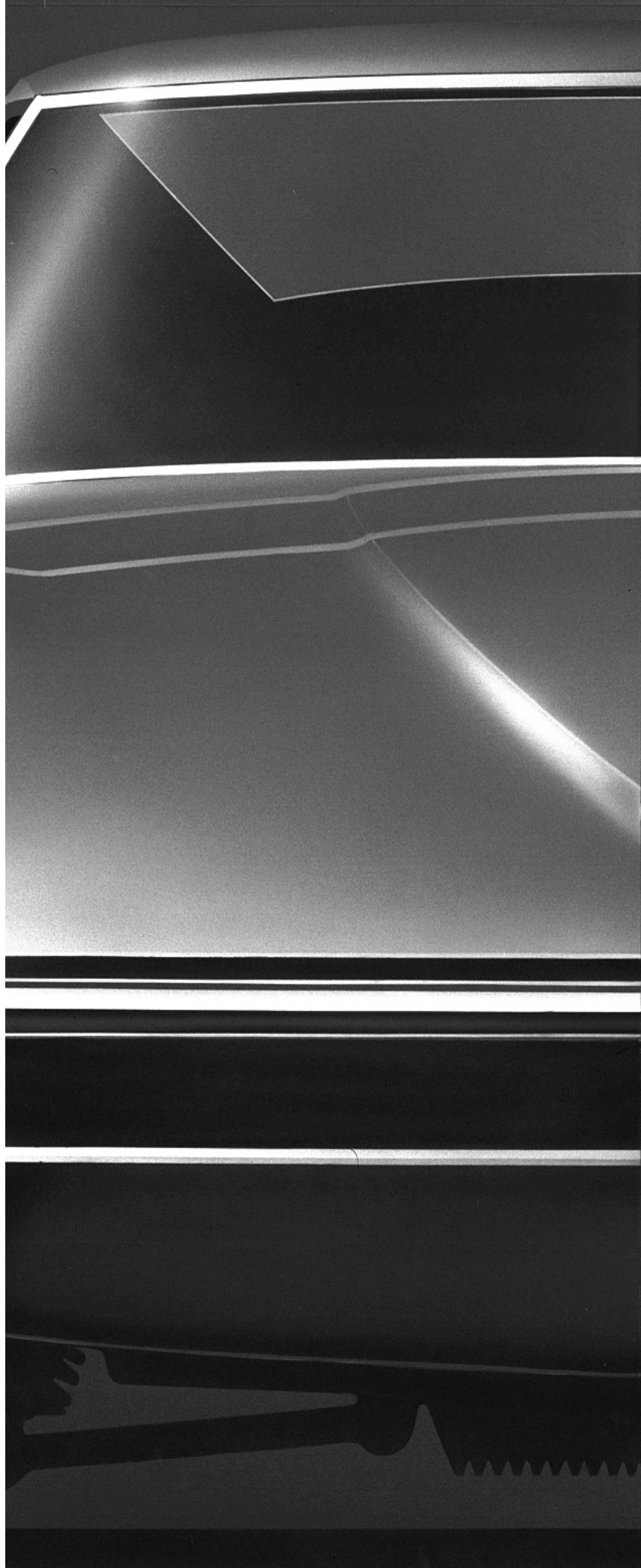
Hank Haga’s (HoF 2020) Studio 2 got the job to productionize the third-generation. Along with the new body’s “shark” design came a leap in Corvette fun and function: removable roof panels for the coupe, accompanied by a removable rear window. In the C3’s second year, the coupe outsold the convertible for the first time since 1963 and by 1972 accounted for 75 percent of Corvette sales. Chevy dropped the convertible after 1975, and “T-tops” soon became a popular industry trend.

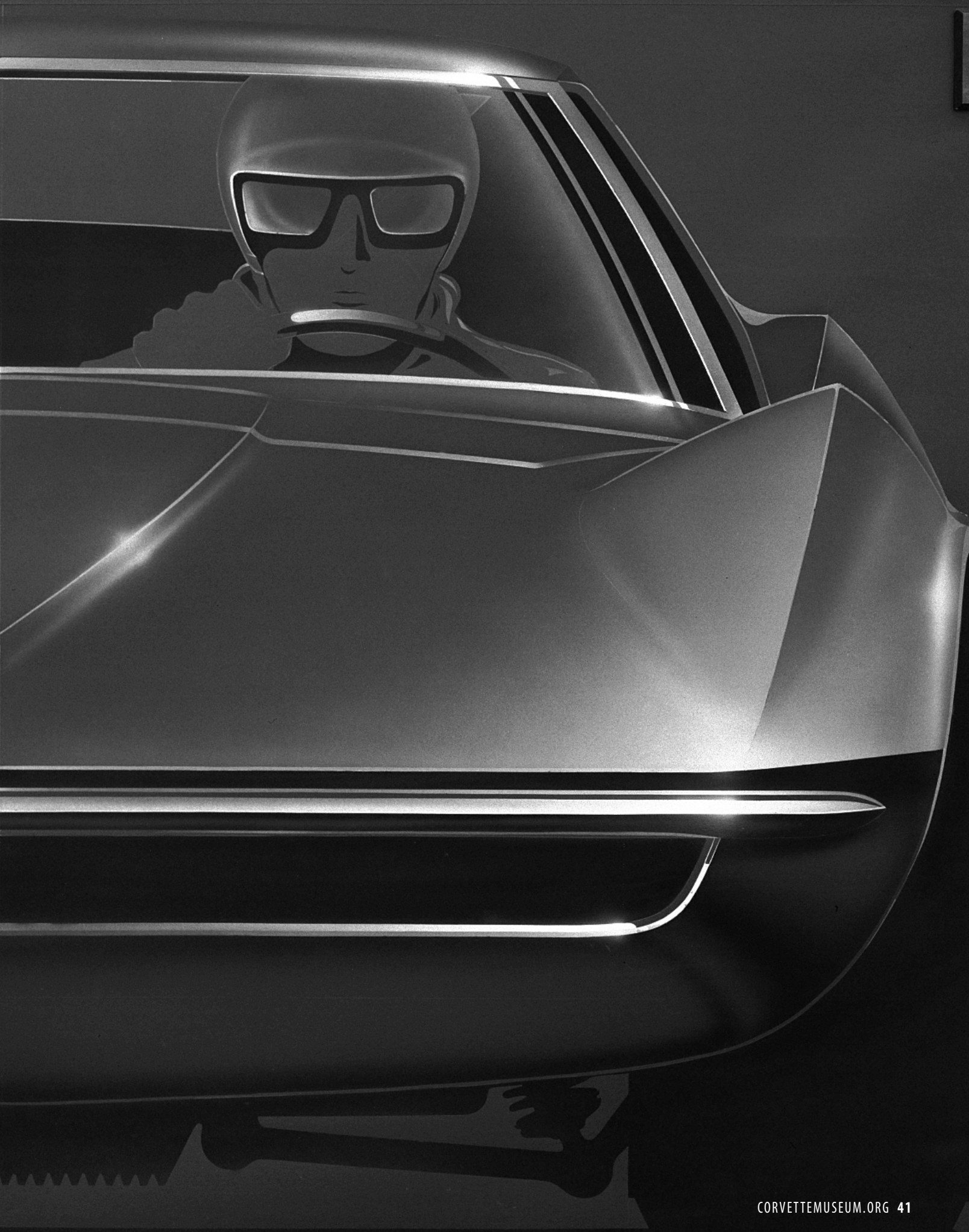
Mitchell and Shinoda could not have guessed the C3’s lasting impact. It was, in many ways, a tale of two cars, delineated by the hand-off from the godfather to Corvette’s second chief engineer, Dave McLellan (HoF 1999), in 1975.

Duntov, who would become the Corvette’s first official chief engineer in 1967, saw the third-generation through its chrome-bumper, high-horsepower years. McLellan stepped up to the herculean task of steering an old platform through a maelstrom of emissions, fuel-economy, and safety regulations. The drag of a stagnating economy and the late 1973 oil embargo that triggered gas price hikes and rationing only added to the misery.

Surprisingly, Corvette sales began to climb through that chaos. Credit the design. While most cars grew huge, repulsive bumpers in 1973 and 1974, the Corvette got a slim, body-color front bumper for ’73. Buyers loved it.

A: Full Size Corvette Rendering from 1964.





So did Shinoda, who said in the 1970s, “It comes closest to the original theme model that was done while I was chief designer at Chevrolet Studio 3.” A contoured, body-color bumper capped the rear for ’74, and sales kept accelerating. To many eyes, a decade-old design suddenly looked current, or even futuristic.

The Corvette, as well, had caught a tailwind from baby boomers, the nickname for the massive 1946-1964 population burst feeding an increasing number of young buyers into the market every year. Despite Corvette’s increasing sales, though, there was talk in GM of cancelling it. Fortunately, the third generation had more than demographics going for it.

Jerry Palmer (HoF 2000), who became head of Studio 3 in 1974, kept the design thriving. The Corvette marked its 25th anniversary in 1978 with a new fastback rear that improved practicality and visibility and reduced aerodynamic drag. It also looked fresh. The aging Vette could still excite drivers, too. In *Car and Driver*, Brock Yates hyperbolically said about the L-82-powered ’78, “It is obviously a taut, tough automobile that steers straighter, stops stronger and accelerates with more passion than any Corvette since the explosive days of the L-88, ZL-1 and LT-1.”

The following year, the Corvette set a record with 53,807 sales. (It still stands, though we’d call the eighth-generation’s 53,785 in 2023 a statistical tie.) For the next few years, McLellan and his team made further refinements and weight reductions and prepped the car for its 1981 transition to the Vette’s new Bowling Green, Kentucky factory. He was by then already well along on his next mission.

Fourth-Generation: Second Revolution

Following the 1978 Corvette refresh, McLellan turned attention to developing the first truly new Corvette since 1963. He knew by then it would not be a mid-engine car, nor would it have a turbo V6. He also knew that most Corvette buyers didn’t want those things. What they wanted, he reckoned, was a state-of-the-art V8 sports car that still looked and sounded like the Corvette they knew but could show its familiar four round taillights to Euro machinery. Making that leap

A: Used for aerodynamic testing, this clay model informed the design of the 1965 Chevrolet Corvette Mako Shark II concept car (internally designated as the XP-830) and in turn the third generation Corvette.

B & C: The 1968 Corvette designed by Larry Shinoda and finished by Henry Haga.





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would also mean a more expensive car. Was the market ready for a \$25,000 Corvette?

The Sharks Long Shadow

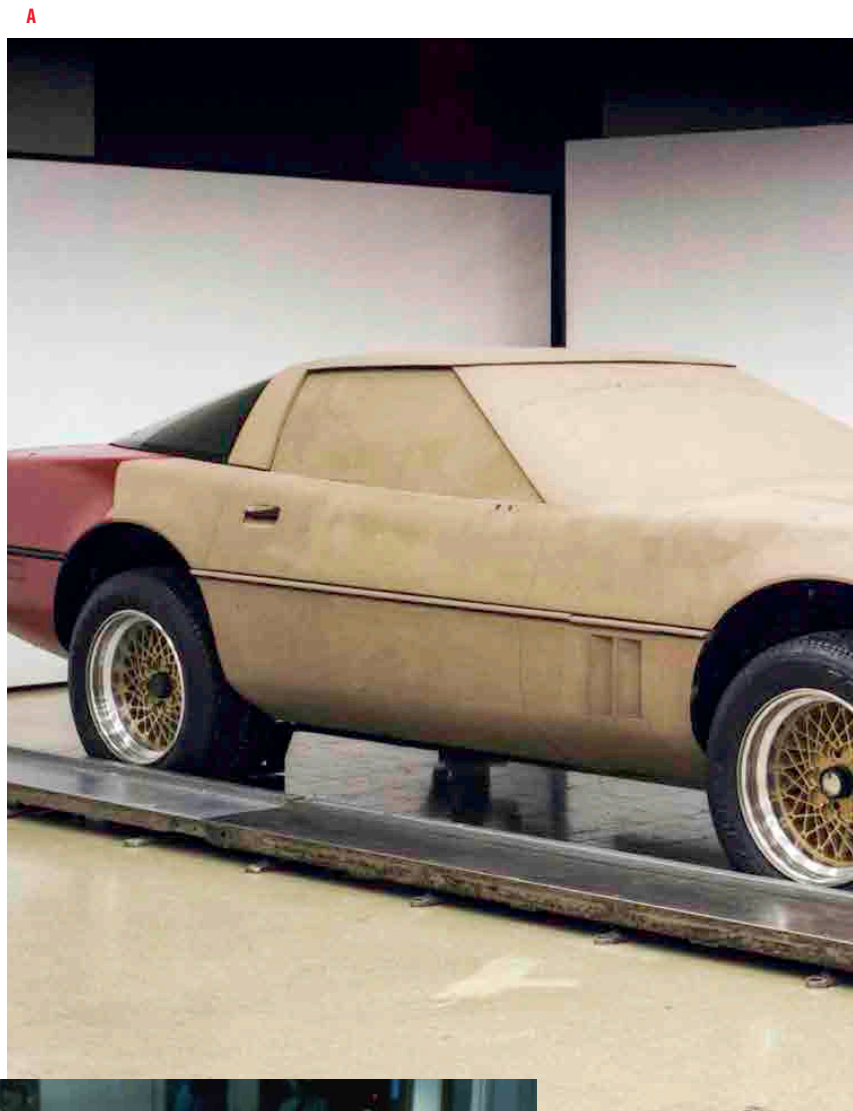
Having Palmer lead the fourth-generation design provided continuity with the two leaders who'd kept the previous generation kicking. His challenge was to create a body that could cheat the wind without robbing the Corvette of its instant recognition. For reduced aero drag's sake, the previous car's high fenders and Coke-bottle curves had to go, but the fastback profile would stay, with a glass hatch planned.

Design work began in 1978, and Palmer was walking a tightrope. To the 543,000 folks who bought a C3, plus all those buying them on the used market and millions more who admired it, *this* was the Corvette look. Early renderings and clay models showed the influence, but by summer 1979, a distinctive new shape had emerged. A late January 1980 model showed the design close to final.

The fourth generation would be shorter and lower than the previous, and a bit wider. The most laid-back windshield of any U.S. car to that point, at 64.7 degrees, was crucial to reducing the fourth-generation's drag coefficient to 0.34, a nearly 25 percent improvement over the 1982. The shark influence was there in the proportions, but the car was its own design. The one-piece, front-hinged clamshell hood was a keystone feature.

All-New Chassis

For McLellan and his team, computer-aided design (CAD) would prove critical for both reducing vehicle





A: Working on the hood of the clay model, January 1983. Corvette Chief Designer Jerry Palmer is in the tan suit.

B: Chief Designer Jerry Palmer and his team were challenged to improve aerodynamics and reduce weight to enhance both performance and fuel economy.

C: Irv Rybicki, Chuck Jordan, and Jerry Palmer with the 1984 Corvette.

D: 1984 Corvette.



A: This wireframe model, which is on display at the National Corvette Museum, provides visitors with a peek into the creative process that gave life to the innovative C5.

B: John Cafaro's winning "Black Car" design.



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weight and improving assembly quality. This meant parts would attach to the new “uniframe” structure the same way, every time, with no more tweaking body panels on the assembly line to make them fit.

Late in the process, Chevrolet Director of Engineering Lloyd Reuss threw McLellan a curveball. Instead of T-bar removable roof panels, he wanted a single lift-off panel, like the Porsche 911 Targa and Ferrari 308 GTS. The change was disruptive, requiring significant structural revision, but the one-piece roof would become part of the Vette’s identity going forward.

Forged aluminum suspension components, including tubular control arms, resembled racecar parts. The rear suspension still used the halfshafts as upper links, like the C2/C3, but with improved geometry. Significantly, the lightweight fiberglass transverse monoleaf rear spring first used on the 1980 Corvette was joined by one at the front for a significant weight reduction compared to steel coils. This unusual but effective configuration would continue through the seventh-generation. Rack-and-pinion power steering and specially developed Goodyear 255/50VR16 Eagle unidirectional performance tires bolstered the cars athletic talent. Huge Girlock disc brakes with aluminum calipers gave a stunning 1.0 g stopping power. This was a world-class mechanical package.

Thanks to Corvette’s low-drag body, the carryover 5.7-liter engine with Cross-Fire fuel injection could push the ’84 model to 142 mph, a top-end not seen from a Corvette in about 15 years. The return of a manual transmission stirred enthusiasm, though the Doug Nash 4+3 with automatic overdrive on the top three gears would have its detractors.

Excitement and Acclaim

The 1984 Corvette, though not perfect, earned widespread praise, including winning *Motor Trend* Car of The Year. *Car and Driver’s* road test recorded 0.90 g lateral acceleration, the highest the magazine had ever experienced in a production road car. That was with the optional Z51 handling package, which nearly 40 percent of 1984 buyers ordered thanks to such enthusiastic reviews. Many regretted the choice for its bone-rattling ride, and McLellan responded with a full suspension re-tune for the ’85 car, which still retained class-leading handling.

Tuned-Port Injection boosted performance in the fourth-generation’s sophomore year, and power would escalate from there. For McLellan and Palmer, it was mission accomplished, and 51,547 buyers agreed that first year. By the early 1990s, the Corvette had pushed America’s sports car to a new summit with the “King of the Hill” ZR-1 and the LT1 and LT4 small-blocks. The fourth-generation had revived the visceral feel McLellan admired in the early third-generation cars and attracted about 358,000 buyers. It also came shockingly close to being the last Corvette.

Fifth-Generation: The Transformation Corvette That Almost Wasn’t

Chevrolet built the one-millionth Corvette on July 2, 1992, almost 49 years to the day after the first ’53 came off the line. That November, Dave Hill (HoF 2006) replaced the retired McLellan, who had the C5’s chassis concept well along. Hill joined Cadillac in 1965 and had just become its Engineering Program Manager before moving over to Corvette. The 27-year GM veteran had just stepped into a situation more dire than McLellan faced 17 years before.

Although the fifth-generation design and engineering had begun in 1989, by the time Hill took over, Corvette’s future was in question. General Motors was in financial turmoil, the economy was in recession, and fourth-generation sales had been underperforming since 1988. Reuss, now president of GM, needed development money for the redesigned H-body full-size sedans.

Intense lobbying by Chevrolet General Manager Jim Perkins (HoF 1999) and Joe Spielman (HoF 2001), GM Vice President and General Manager of Manufacturing, put the C5 back on track. They had help from CERV IV, a fifth generation chassis mule that Hill’s team built with a rough fourth generation body draped over it. Perkins said executives at GM’s North American Strategy Board, including GM President Jack Smith, were blown away driving it. Hill got his \$240 million development budget back.

Structural Triumph

McLellan had already started the work to make the new Corvette chassis exceptionally stiff as a convertible, thereby making the coupe even better. The new foundation was a rectangular, folded-steel backbone four feet long and with a steel plate bolted to the bottom. The structure served as a torque tube connecting the engine to a rear-mounted transaxle, like the Porsche 928 but also recalling the layout envisioned for the 1957 Q-Corvette concept. A lightweight Metal Matrix Composite driveshaft ran through the tube.

The backbone was rigidly connected to rectangular-section, hydroformed one-piece steel side rails running front to back, with kickouts to form the door sills. These replaced 14-piece welded rails on the fourth-generation, one example of the C5’s 34-percent part-count reduction (1,467 fewer parts) that helped to simplify assembly and boost quality.

The structure would ultimately give the car four times the fourth-generation’s torsional stiffness and eliminate shakes due to the coupe’s one-piece lift-off roof panel, which now secured in place with easy-to-use latches rather than bolts. The new chassis and layout also allowed Hill to make drastic leaps in the Corvette’s handling, interior room, ride comfort, and reduced NVH. All-new true double-wishbone front and rear suspension used aluminum components, now made with a new casting-and-forging process.



The fifth-generation Corvette featured lightweight materials wherever possible, including aluminum and magnesium. Floors used a sandwich of composites around balsa wood cores. Despite a wheelbase 8.3 inches longer than the C4's, the fifth-generation weighed about 80 pounds less. Some of that was due to the all-new aluminum LS1 5.7-liter V8, a muscular jewel of a powerplant that, like the classic small-block before it, started an engine dynasty. Rated at 345 hp, the LS1 brought the 1997 Corvette's performance close to the C4 ZR1, with much more on the horizon.

New Look, Yet Instantly Recognizable

Two years after the fourth-generation debuted, John Cafaro, who'd worked under Palmer, replaced him as head of Studio 3 This included Camaro and Corvette design and was Cafaro's 10-year-old self's dream come true. Then came another Corvette curveball. In search of the absolute best ideas for the car, Design VP Jordan put its design up for grabs with an internal competition.

Cafaro would have to compete against John Schinella's Advanced Concept Center in Southern California and Chevrolet Advanced Design, headed by Tom Peters.

Cafaro's "Black Car" ultimately won, though the production car incorporated some ideas from Schinella's Stingray III concept and Peters' "Red Car" styling buck. The production C5 was a stunner, curvier than the C4 but just three inches longer and slightly higher. One could see subtle homages to the second and third generation, and even a nod to the C1's side coves. Low aero drag, still a high priority, dropped to 0.29.

Remarkably, the C5 weighed about as much as a 1968 base model yet was packed with standard comforts, tech, and safety unimagined back then. It was faster, better-handling, and more comfortable than previous Corvettes.

Said *Car and Driver* in a February 1997 preview. "If, as they say, God is in the details, then this is the first holy Corvette." Putting an exclamation point on that, the magazine's 1998 comparison test between the Corvette and \$30,000 more expensive Porsche 911 Carrera named America's Sports Car the winner. Nearly a quarter-million buyers would pick a fifth generation Corvette over its eight-year run.

A: Dave Hill and John Middlebrook accept the 1998 *Motor Trend* Car of the Year award for the new fifth generation Corvette. This made for Chevrolet's fourth consecutive year receiving the award.



Jim Koscs is a widely published automotive writer who started his career with the publisher of *Vette* magazine in the 1980s. He followed the road into public relations for BMW and then Mercedes-Benz and in 1999 started his own business writing media materials and executive speeches for premium and niche auto brands. He kept his hand in editorial, and his byline has appeared in print and web for *The New York Times*, *Performance Racing Industries (PRI)*, *Hemmings*, *BBC Autos*, various concours d' elegance programs and even *Porsche Panorama*. (But don't hold that against him!)