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Title: *Corvette Sting Ray: Genesis of an American Icon*

Author: Peter Brock (GM Design '57-58, Shelby American '61-65, BRE '65-present)

Foreword by: Ed Welburn, VP of GM Global Design

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Sting Ray... even the word has a special quality that transcends the popular image of America's best known sports car. Who created it and how? What was the unusual combination of personalities and events that enabled its production? Peter Brock knows the story intimately as he was part of it. Just 19 and fresh out of California's prestigious Art Center College of Design he had little idea that corporate circumstances far beyond his understanding would deliver the opportunity of a life time; a chance to interpret the vision of William "Bill" Mitchell to create the 1963 Corvette Sting Ray.

In 1957 the Corvette program was in jeopardy. America's first modern sports car was just four years old and projected sales were nowhere near meeting upper management's goals. A corporate mandate by General Motor's President had already been issued to terminate any hint of "performance" across GM's entire line. There seemed little hope the Corvette would survive. Bill Mitchell thought otherwise. A 20 year advocate of exciting automotive beauty, with a love of performance and classic design, he took it upon himself to defy authority and create, in secret, an entirely new Corvette that would reverse all corporate opposition and set a new standard of aesthetic design and technical excellence for Chevrolet and ultimately GM.

Brock's new book on the creation of the first Corvette Sting Ray tells the inside story, from the foreign inspiration to the adoption of prior dreams that never made it, to the actual design of the prototype that did. More than 180 never before seen images share the behind the scenes history and evolution of the Sting Ray, including Brock's original design studio drawings showing the variations that were contemplated along with the sketch Mitchell ultimately chose as the direction to pursue. This story is about far more than the design of an American Icon; It's a personal history of the era and the inside story of the team that collaborated to create the iconic 1963 Corvette Sting Ray.

About the Author

Peter Brock's involvement with high performance automobiles dates back to the early 1950s. Just 12 years old, long before he even knew that automotive design could be a profession, he convinced the dubious owner of a small "foreign car" garage that his team of three mechanics could operate far more efficiently with a non-paid "gopher" to sweep floors and wipe tools. Being around fast cars and the men who built and raced them was his entre to an adult world that fired an interest in beautiful equipment that has never diminished.

After almost seven decades in the fascinating world of high performance cars of all types Brock has traveled the world racing his own cars or those of manufacturers he's been hired to work with as a driver, designer, consultant or team owner/manager. His role at GM Styling in the late 1950s has been well overshadowed having joined Carroll Shelby in 1961 where he designed the Daytona Cobra Coupe that won its class in the 24 Hours of Le Mans in 1964 and then scored America's first FIA GT World Championship in 1965 for Shelby American. After that he formed Brock Racing Enterprises (BRE) winning several national SCCA and 2.5 Trans-Am championships in the late '60s and '70s.

Brock's interest in aviation then led him to pioneer flex-wing flight with foot-launched hang gliders that won the World's cross country championships six years in a row. This was followed by a return to his first passion, automotive design, as a popular instructor at Pasadena's Art Center College of Design. Now based in Henderson, Nevada Brock is married to his business partner Gayle. For numerous years they have spanned the globe covering racing of all kinds as photojournalists for a number of American and foreign publications.

Brock is also the author of the highly acclaimed tome *Daytona Cobra Coupes: Carroll Shelby's 1964 World Champions* and the following companion book *Cobra Daytona Coupe CSX 2601: World Champion*.

Book Excerpts:

Following are excerpts from the book for your viewing pleasure. **For pages to display as they are seen in the book PLEASE REVIEW IN ADOBE Reader as VIEW/PAGE DISPLAY/TWO PAGE VIEW.**

Corvette

STING RAY®

Genesis of an American Icon



Peter Brock

foreword by Ed Welburn
VP of Global Design, General Motors

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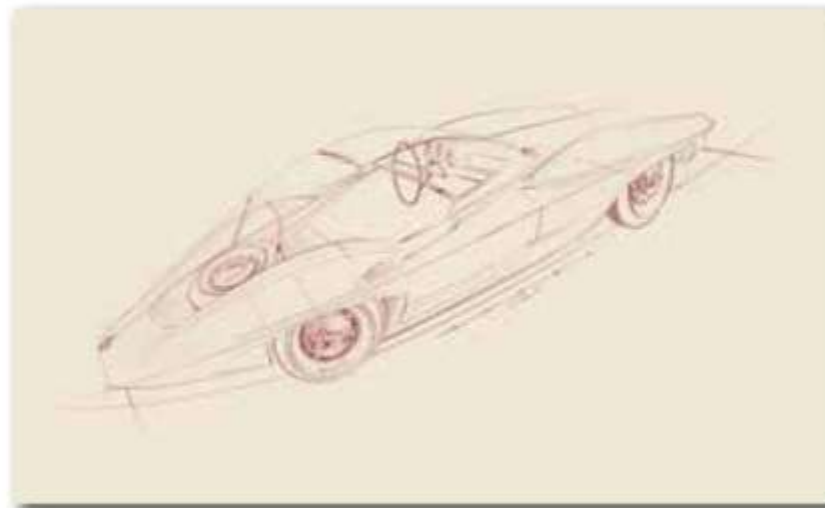
Variations on a Theme

The interesting thing about working with a group of designers, especially talented ones, is that you constantly learn from your colleagues. What you thought was hot or on-track one day could easily be influenced by a subtle shift in thinking that might not have entered your mind until you saw it displayed alongside your own. That was the advantage of a studio environment. In addition to Mitchell's critiques, our work was also constantly being evaluated and carefully scrutinized by our own group and thus inspired for individual refinement to help define a specific direction. An individual's work might stand-out, if recognized by someone like Mitchell, but it was almost more important that your peers commented favorably. We were very competitive.

The value of good presentation is being able to draw and display an idea that creates desire in others. There are some designers who have great talent in creating lovely impractical renderings and others

who can't draw as well but understand the technical and mechanical realities of what's possible. Mitchell seemed to be able to sense both. He appreciated good art, but could also see the honesty in a simple line sketch that conveyed a form which could be commercially produced and best, still seemed so fresh that it looked like the future.

When Mitchell returned for the first review of our work he didn't come alone. Like Earl, he had a couple

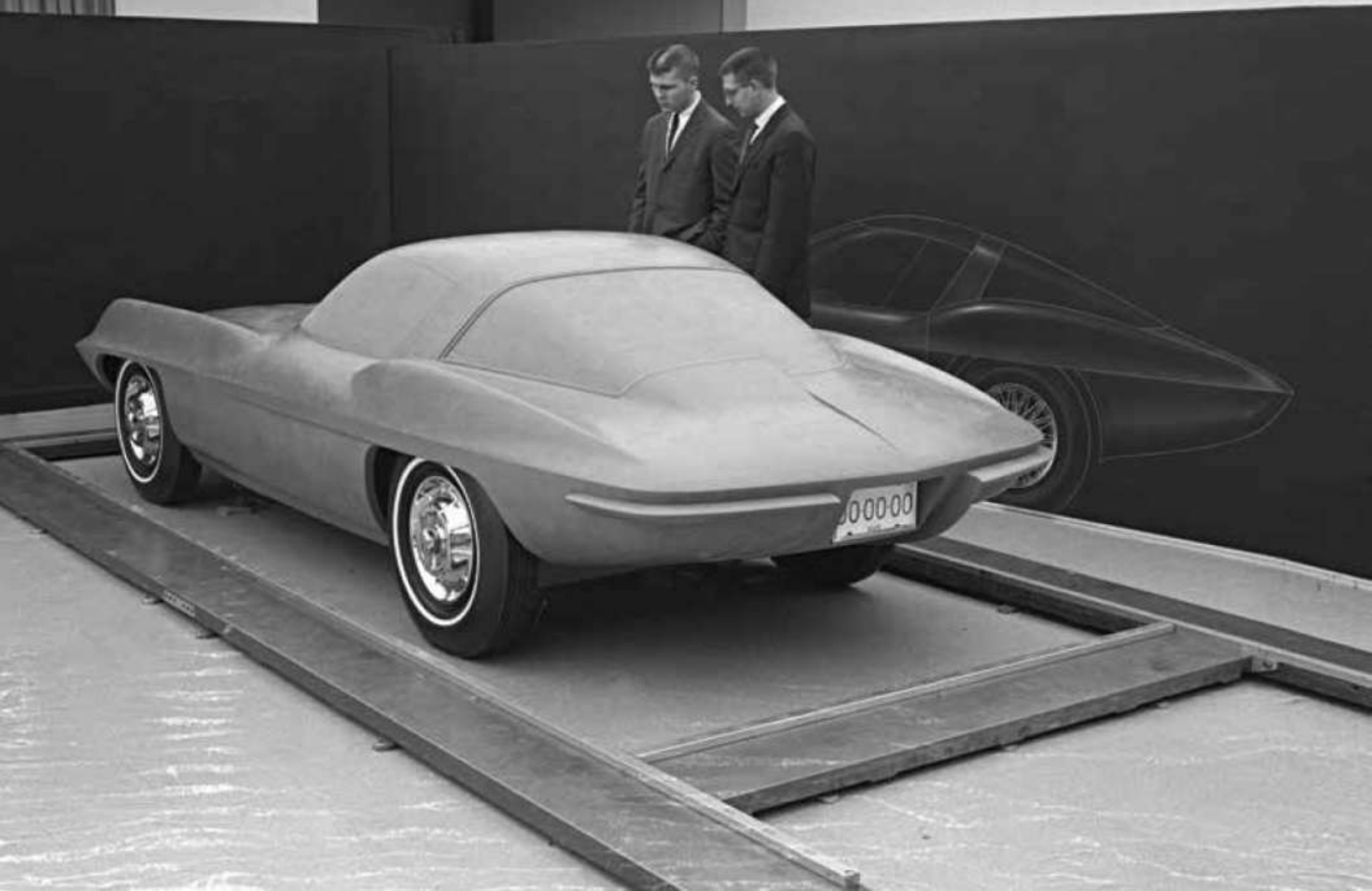


Opposite: This sketch dated November 22, '57 was the one that really nailed it for Mitchell. There were obviously several more prior to this one (several of which are shown in this chapter) that exhibited similar lines but they were all narrowing down on this look. If one compares the lines of the production '63 Sting Ray coupe with this sketch it's easy to visualize the transition from the inspirational Turin show cars, including the Disco Volante coupe, right on through Mitchell's open-topped XP-87 "Racer", to the final production split window coupe. What's amazing is that this basic sketch form lasted through several years of intense design competition and constant re-evaluation.

left: This early quick sketch from September '57 was one of the first that Mitchell felt had some directional value. It's far from the more finished November form exhibited on the opposite page but most of the design elements that Mitchell felt were important are still evident. Note the fully transparent roof. That was a hot design theme that had evolved from the first wrap-around windscreens on the C1 in late '53 and then transitioned to the full canopies used on the Firebird III Motorama show car.

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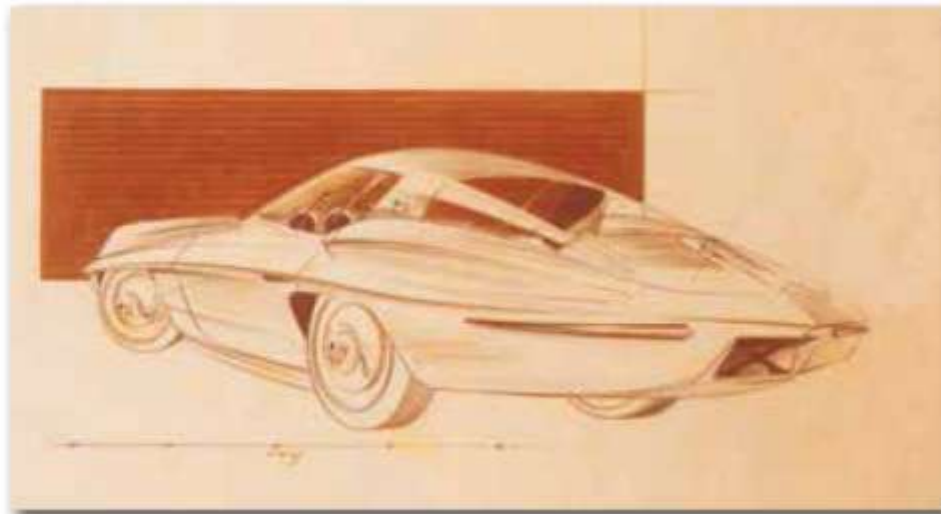


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Genesis Sting Ray, the XP-87

As a junior designer I had little interest in or knowledge of corporate status. I acted as if nothing had happened and never discussed the subject of my sketch with Veryzer, but it was my first lesson in the subtle politics of corporate design. Once my sketch was pinned back up on the wall, Mitchell continued. He again looked closely at the drawing and proceeded around the room. He was encouraging to all, commenting briefly on various pieces but finally came back to his starting point. "This form still seems closest to the direction I'd like to follow. This crisp belt line should create a shadow break that really separates the top from the underside and from what the Corvette has looked like in the past. It gives some leanness to the form we haven't had before. Let's continue on here and see if we can find something else in the theme."

So far I'd never talked to Mitchell. Other than raising my hand on his original query, it was all the communication we'd had. I didn't think much of it until he returned a couple of weeks later, again going back to that first seminal sketch. By now I had a body of work and had it grouped together so each of the other details I felt were vital could be discussed and compared. Naturally my attention was now focused on his presence, so when he looked over at me and nodded that I should approach I came over. It was at that time that he first



opposite: Research B studio head Bob Veryzer (right) and I discuss the lines of our almost completed XP-87 coupe. Note there is still some indecision on the details of this full scale clay. Two versions of the rear window and rear deck are shown. At this point the top line of the front fender is still too flat. It will eventually be refined to match the graceful curve of the rear fender. Note also the very subtle line going forward off the rear wheel opening. That will get deleted. The "thin" stepped rear under section, below the rear bumper, is still evident and will also get changed but I'm pretty excited about the overall look. Mitchell has not yet incorporated his "split window".

left: As successful as this proposal looks in both clay and sketch form it's about to be radically changed. Two major points in the design and engineering are killing off its chances of going into production. The radical wrap-around windscreen that pivots upward from the center of the car is impractical from a production standpoint and the Duntov-inspired transaxle is also just too expensive to put into production. Mitchell will soon walk in and tell us to "Cut the roof off, we're going to build a roadster!"

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Function vs. Aesthetics

When Mitchell came in to study progress on the small model it was easy to discuss the form as our clay modelers could have the right and left sides done in alternate variants to compare. I had certain ideas that I considered important, like knowing the crisp belt-line, as viewed from the side, should be slightly lower in the front and higher in the rear to improve aerodynamic stability. But I soon learned that Mitchell had equally strong opinions on form and that this most critical line on the coupe was going to be his interpretation of the theme, not mine! I was also trying a variant of the side view with a higher underside in the rear section; almost a "stepped" break just after the rear wheel center that had come from looking at the stepped hulls on hydroplanes. Mitchell wasn't too enthusiastic about the idea and he was right for a number of reasons; mostly because it didn't fit his aesthetic sense, but also because it just wasn't mechanically practical. But he was open minded enough to let me run with the concept until I could see that it just wasn't going to work.

Corvettes have precious little space around the rear axles, exhaust system and fuel tank. Any attempt to

reduce the mass in that area would have created even more problems with Duntov's proposed independent rear suspension. When he visited the studio in Mitchell's presence, and the opportunity seemed propitious, Duntov seldom missed the chance to mention that we should be "considering" a transaxle to improve weight distribution. Mitchell and I soon "agreed" (with Mitchell finally telling me to, "quit screwing around with that damn step") that my stepped rear idea was impractical so we eliminated that option. It can still be seen in some studio photos of the early full size clay models of the coupe. Looking back now that rear-end looks



opposite: A painted 3/8 scale clay model of the production Corvette Sting Ray was tested in Chevrolet's experimental wind-tunnel. Note that two methods of testing are being used here; carbon black infused oil drops are on the right side of the body while tufts of yarn are being used on the left. No wind is evident in this shot as the tufts are dormant on the left while the airflow pattern from a previous test on the right is clearly evident. Yarn is valuable as it can help determine boundary flow just above the surface while oil droplets only show what the air is doing next to the skin. The erratic flow of air on the side windows is always a problem area in terms of cockpit wind noise and aero-efficiency.

below: The XP-87 coupe's ideally shaped windscreen and upper body can be easily compared here with the production version's more abrupt transition from windscreen to roof and side windows. If dreams could be easily realized in practical form, progress would be so easy! Note the "stepped" underside of the rear end. Not very practical. Dumb idea. Even though this shape implied a certain "lightness" to the form it would have been poor aerodynamically. We all learn as time passes.

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*Inspirational prototypes: Corvette was the honored
marque at the Monterey Historics at Laguna Seca in 2002.*

*GM Design brought its freshly restored Mitchell '59
Stingray Racer. It was accompanied by the completely
original 1957 Sebring SS Corvette, owned by the
Indianapolis Speedway Museum.*

Epilogue

William "Bill" Mitchell

The Sting Ray, with so many concept variations and so much input from so many designers, engineers and sculptors over the six long years of its gestation, often raises the question by multiple generations of proud Corvette owners and fans; "Who really designed the 1963 split window Corvette Sting Ray? The answer, unequivocally, is Bill Mitchell.

Without having drawn a single line or personally pushed an ounce of clay, Mitchell was the man who created, by direction, the form we still revere. As studio designers, engineers and modelers we were simply the interpreters of his vision and he got outstanding results. Sometimes he got sidetracked a bit, with his penchant for inconsequential, non-functional and often garish details we laughingly called his "surface entertainment", but Mitchell knew exactly how to ignite automotive lust in future owners. When he saw something in our offerings that meshed with his vision he had us include them to his measure.

I used to talk about speed and performance with Mitchell when he was directing the design of the original Stingray Racer. He knew then it would accelerate quicker and ultimately be faster than 99% of all the cars he might ever encounter on the road. It was more potential power under his right foot than he could ever use but what he felt was far more important to a potential Corvette owner was the aura the car projected; the car's sense of style and taste that would impact all those who had even a fleeting moment to sense its passing. That's why he enjoyed driving this particular car so much. Of all the cars Mitchell owned, designed or even drove briefly in his long career with GM Design, his "Racer" was the one that always seemed to convey that sense of fine design to which others aspired.



below: Harley Earl and GM's female designers, known as Earl's "Damsels of Design".

From left to right: Dagmar Arnold, Peggy Sawyer, Jayne Van Alstyne, Jan Krebs, Harley Earl, Sandra Longyear, Helene Pollins, Gere Kavanaugh.

The striking and talented Pontiac interiors designer, Jeanette "Jan" Krebs, would marry Tony Lapine, requiring her to end her career at GM, per company policy.

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From those first design cues selected in '57 on his trip to Italy, Mitchell continually provided us the verbal briefs and spontaneous updates that ultimately resulted in still argued perfection. He confidently allowed us to deviate from the basic themes he'd presented in almost every way possible, always exhorting us to reach, explore and to finally distill all the ideas that we'd tried, just to make sure that he hadn't missed a valid nuance of style that might add to his total.

Like a great and talented auteur, Mitchell had, almost from the very beginning, a clear direction guiding him toward the end result. With the force of his unique personality he swept us along, even those equally talented dissidents with equivalent power, like Duntov and Cole at Chevrolet Engineering, creating as he went, always enthusiastic and passionate about what we were designing.

Mitchell's 42 year career at GM ended when he retired in 1977. His '63 Stingray Coupe, and perhaps his Ned Nickles-designed '63-'65 Buick Rivieras are the cars that will most certainly be identified with GM's "Mitchell era".

Harley J. Earl

In 1958, Harley Earl retired as he had planned. For years after however, he was often seen walking the halls of GM Design, being warmly and respectfully received in the studios he'd invented and nurtured with his protégé and loyal friend and associate, Bill Mitchell. Since 1935 the two had an enduring and collaborative 23 year relationship that changed forever the perceptions of American automotive design. Perhaps because he was such a giant in the industry and responsible for so much more than the Corvette, the media rightly focused on the achievements of his entire career and erroneously attributed to Zora Arkus-Duntov the honor of being the "Father of the Corvette". Nothing could have been farther from the truth. It was Earl who was the true initiator of America's first sports car two years before Zora even saw the prototype in 1953. To those who know the story, Earl was the man who led the team that created and then produced one of history's best automotive concepts, the Chevrolet Corvette. Earl may have left this world at the age of 75, but his influence will endure forever.



This fascinating book on the history of America's first Corvette Sting Ray opens up a world most never knew existed, answering questions most never knew to ask. You will never want it to end.
Brock satisfies that itch by providing an 18 page Epilogue (3 pages seen here).

The Epilogue covers when the major players left and what they did after life at GM. Also described is the Corvette Grand Sport, including its first match against the Cobras in 1963 (something Brock knows a thing or two about). Brock also provides his critique of GM today and the introduction of the C7, the new Corvette Stingray for 2014.

Mark August 10th on your calendar.

What the world knows about the history of the 1963 Corvette Sting Ray... is about to change.



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