



**IS  
THIS  
THE CORVETTE  
IN YOUR  
FUTURE?**

*by Dean Parker*

***GM's sports car has come a long way since the days of the Polo-white six-cylinder plastic bath tub, but look what the Company's planning for the future.***

If Chevrolet is planning to use steel instead of fiberglass as the body material for the new Corvette, this would involve a redesign of all body dies. There is no reason to believe that the 1960 model will resemble to any great extent the models of the past years. Using as a basis the customized Corvette of Mr. Mitchell, and especially the rear deck and fender treatment, Don Typon'd has carried this through in the design shown on the following pages. The "wind-split" down the center and the knife edge line around the middle are continuations of the design of the rear end. The Corvette family resemblance is maintained by the use of cut-outs on the sides of the body, and by the familiar shape of the windshield which has been raked back at a greater angle. The flattened hood and front fender line has been suggested by this year's Chevrolet.

**T**HAT CHEVROLET is going to bring out a new Corvette next winter is common knowledge. They've done it every year since the model was introduced. But this year the rumors have gotten wilder than a high-lift camshaft. Aluminum engines, five-speed transmissions, independent rear ends, space frames, aluminum bodies, 400 + cu. in. engines . . . if you believe everything you hear it looks like the sports car to end all sports cars is about to emerge from the Motor City.

Actually the new 1960 Corvette won't be quite this radical. It will be a solid, evolutionary improvement on what is basically a five-year-old design. It will be one of the world's top sports cars, from standpoints of performance, handling and style.

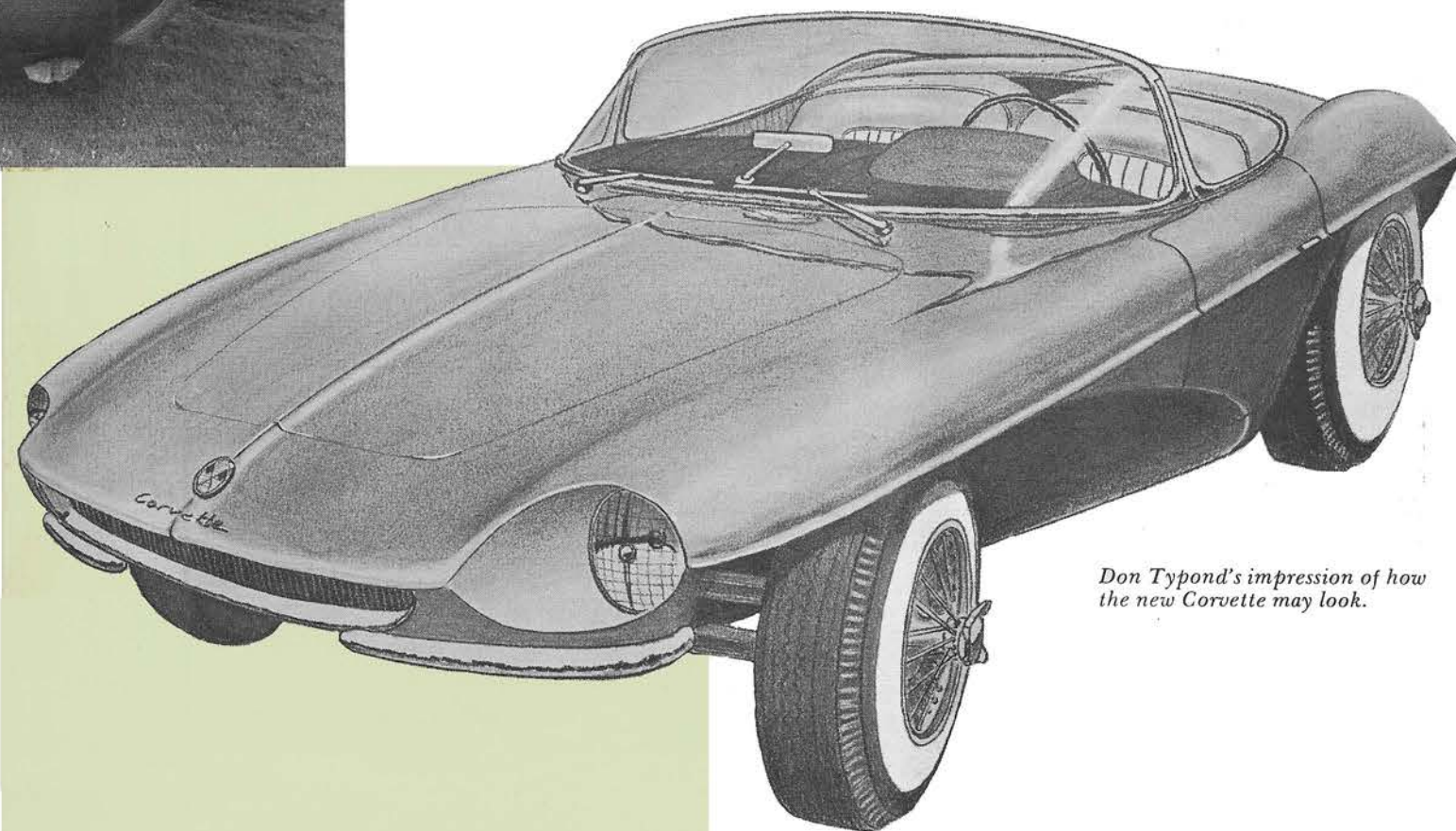
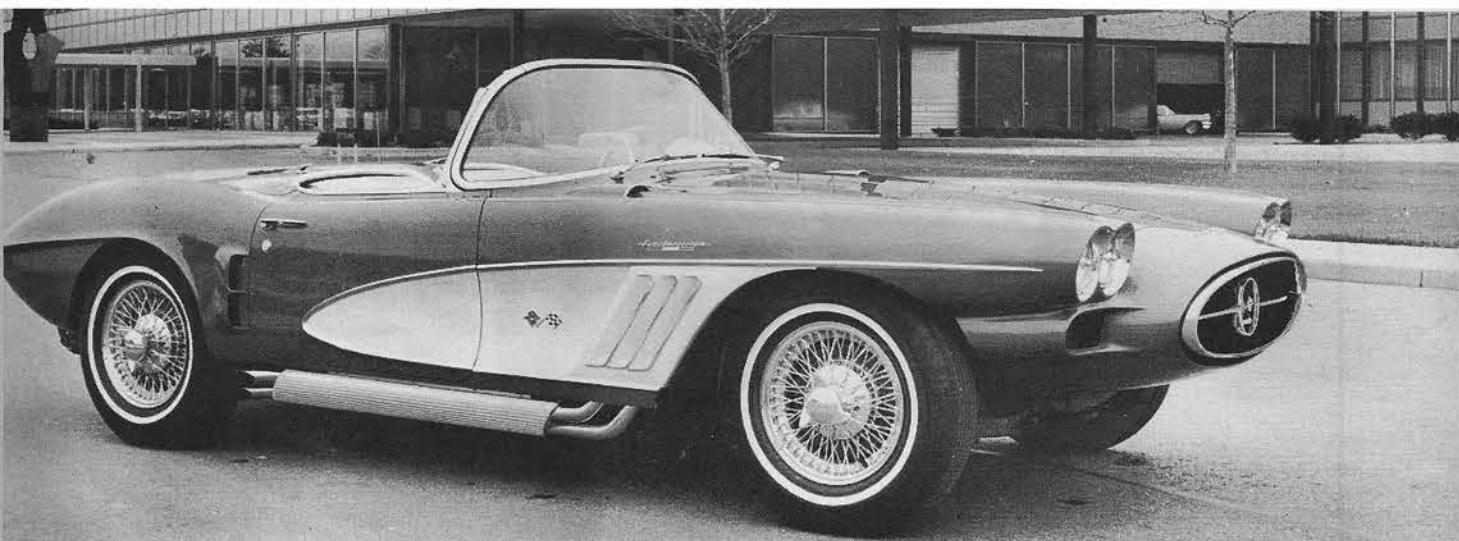
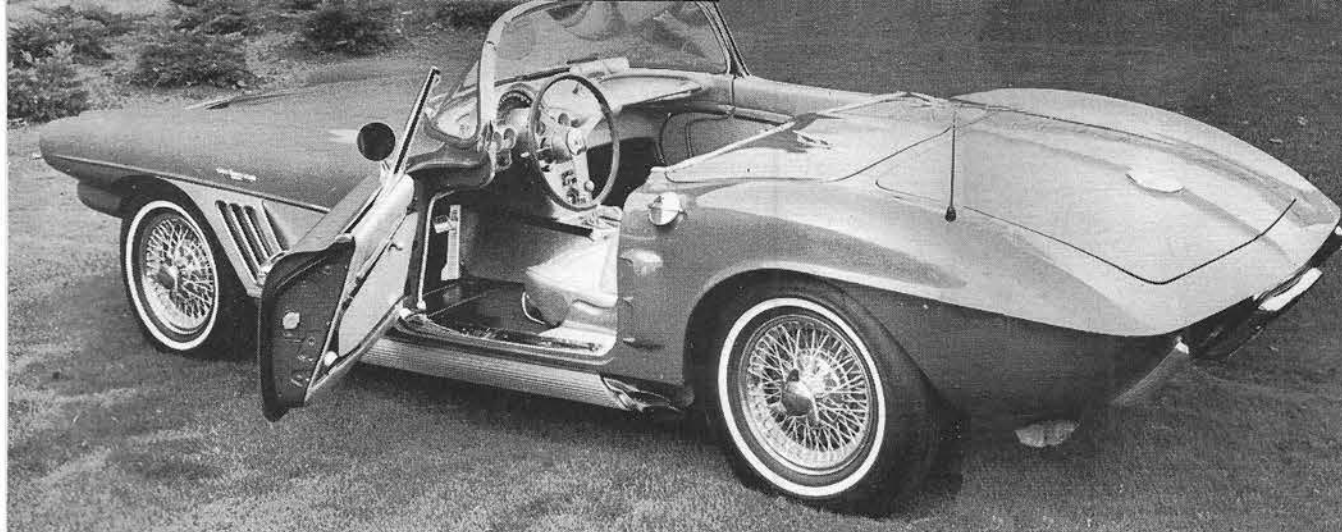
Here is some "well-informed speculation" on what's coming up, gathered from many reasonably reliable sources.

Let's begin by establishing that Chevrolet has been thinking seriously about a new Corvette for three years. The current body and chassis has been basically unchanged since the car was introduced in early 1953. The bulk of the tooling investment was paid off long ago. Furthermore, this original Corvette never achieved its intended sales goal — the big market for a "personal" two-seat sports-type car. Ford came in with their better-styled and roomier Thunderbird and all but ran the Corvette right out of the market. Chevrolet had little choice but to concentrate on performance and push the Corvette as an out-and-out sports car. (This was no hardship to project head Zora Arkus-Duntov!) But this is the why behind options like fuel injection, 4-speed transmissions, metallic brake linings, etc.

Under other circumstances this failure to achieve a planned sales goal could've killed the Corvette before it ever got rolling. Fortunately Chevrolet general manager, Ed Cole, was patient. Today, even though the Corvette has never been a big seller, its value to G.M. in terms of free publicity and prestige has been great enough to warrant tooling for an entirely new version. And what's important to you, the performance theme, has now become firm company policy. Chevrolet is not going to compete with Thunderbird with their new Corvette. Performance and handling will continue to be the design watchwords. The engineers will consider luxury and big-car roominess—but you can bet they won't sacrifice performance to get it. They'll be more apt to spend a few extra bucks to save weight, and include technical features that would be a waste of money on the mass market.



Two views of the special Corvette built for William L. Mitchell, GM vice president in charge of Styling Staff.



Don Typond's impression of how the new Corvette may look.

Duntov's crew are on a never ending five-year plan to build a suitable car for U. S. enthusiasts. But because it represents a small percentage of Chevrolet production the Corvette gets only a fragment of each year's re-tooling budget. Many changes will come, but not all at once.

It looks now like the new body will be steel, constructed with new low-cost plastic dies. (These dies are suitable for production rates up to about 25,000 a year, and are much less expensive than steel dies.) The fiberglass body has not proved to be as economical in limited production as originally hoped. The hand layup and vacuum molding process is a nuisance. The body weight of only 340 lbs. is attractive; but Chev engineers tell us the extra beef built into the frame to compensate for lack of strength in the fiberglass structure takes away all the weight advantage. They say they could build a short-wheelbase body for the Corvette out of steel that would carry some of the car structural loads; then a relatively light frame could be used—and the whole car would weigh less than the current fiberglass job, maybe by as much as 150 lbs. if they designed carefully! The bug earlier was the die problem. New plastic dies now make it practical to tool for steel bodies in production rates less than 10,000 a year. This looks like the pattern now.

Stylewise the new Corvette will bear little resemblance to the current model. Wheelbase and overall dimensions will be comparable, but the car will be given a longer, sleeker look by extending the hood forward and down into a Ferrari-like "snorkel" grille opening. Then the front and sides of the body will be shaped to act as huge air ducts for front brake

cooling. The fender sections will be cut away at the front to expose the brakes, and the body sides will be swept inward behind the wheels to provide an exit vent for the air flow. The whole deal will be a lot like some late Testa Rossa Ferraris. Actually, some of these rumored styling features coincide suspiciously with a "customized" Corvette that was built last summer by G.M. Styling for their new chief, Bill Mitchell. The car has been on display in the lobby of the Styling building at the Tech Center in Detroit. This is the car, photos of which appear on these pages. It hasn't yet been run on the streets. Draw your own conclusions.

Chassis plans are far from finalized. We know that Duntov was well pleased with the handling of the experimental SS chassis at Sebring in '57, and the word is that he would like to incorporate as many of these engineering features as possible on the new Corvette, within the required cost framework. You can discount space frames, unit or monocoque body construction right off . . . much too expensive. The frame will likely be a channel X, but much lighter than the current design. Front suspension is said to be of the conventional coil spring-wishbone layout, with tubular shock inside the coil, and incorporating ball joints. Some regular Chevrolet passenger car parts could be used here.

The big story would appear to be in the rear end. Persistent rumors mention a DeDion setup on coil springs, with the transmission mounted in unit with the differential. You'll recall the SS used a DeDion rear end, but with the gearbox on the engine. No details have leaked on the wheel control linkage; but the SS setup, with two sets of trailing

links for both fore-and-aft and lateral control, looks economical and practical on paper. We hear the rear brakes will probably not be mounted inboard. This would cost some unsprung weight, but might be considerably cheaper to produce. The idea of mounting the transmission at the rear, of course, is to get a more even front-rear weight distribution for traction . . . and, don't forget, the "polar moment" of the car is increased by putting this mass farther from the center of gravity. By thus increasing the "flywheel effect" when turning about the CG, we get somewhat more directional stability at speed and when cornering hard (up to a point). The rear-mounted transmission is the coming thing on all types of cars. Incidentally, we hear no rumor of any new transmission for the Corvette; the current 4-speeder will likely be standard.

Brakes? — no need for improvement here.

And, last but not least, the engine. The next Corvette will not have an all-new engine, as rumored—nor will it use the big 348-cu.in. V8 that's doing such a good job in the passenger cars (see Borgeson's road test in the January '59 SCI). The current 283-cu.in. engine weighs 90 lbs. less than the 348—and that's more than enough reason for the Chev engineers to stick with it for the Corvette. They're serious about this weight problem. In fact, they're doing a lot of experimenting with aluminum to trim the already-low weight of the 283. Remember the experimental aluminum heads for the SS? These were not used at Sebring; but they say the bugs are out of this design now, and there's a good chance they'll be standard on the '60 Corvette. (Remember that,

with minor modifications, aluminum can be cast in conventional iron sand-casting equipment.) The water pump casting is also aluminum. The intake manifold will likely be aluminum. They're experimenting with all-aluminum blocks—using an aluminum-silicon alloy that needs no bore liners or plating—but this is not likely for '60. Anyway, with just aluminum heads, manifold and water pump we'd save about 75 lbs.—so the whole engine shouldn't run too much over 450 lbs. Is that worth thinking about??

The other big news item on the '60 Corvette engine is that it's going to be bigger. Chevrolet engineers have cherished their three-inch stroke with a passion—figured it was one big reason why the little 265 and 283 would turn such ungodly engine speeds and get so much horsepower per cubic inch. Could be. But certainly they've pushed the power development of this basic engine so far now (with the special cam, light valves, f.i., etc.) that piston displacement is about the only well left to tap. It is known that Chev engineers are experimenting with bores up to 4 inches and strokes up to 4 inches on the 283 block—which would give 402 cu.in. if combined! (The lower cylinder walls are relieved in the casting stage for rod clearance.) The standard '60 displacement won't be anywhere near this big, but we hear a figure of 332 cu.in. frequently mentioned. Of course we can expect the usable rpm to come down when we lengthen the stroke—and this, in turn, will tend to bring down the hp per cu.in.—But certainly a rating of, say, 325 hp at 5600 rpm wouldn't be too much to expect from a 332-cu.in. '60 Corvette engine with special cam and f.i. We'll see.