

CHEVROLET C7 CORVETTE

Should they or shouldn't they? A panel of experts (and you) takes a look at the viability of a super Corvette, with its engine behind the driver.
By *Reilly Brennan* with Illustrations by *Poblete* and Portraits by *George Angelini*



Yes, it's already time to crack the code on General Motors' next halo car. Not scheduled for introduction until the next decade, the plans for Chevrolet's Corvette sports car are already taking shape. According to our sources, final designs were presented to GM management at a briefing conducted by Ed Welburn and Chevrolet in June. Like each of the six generations of Corvette built since 1953, the company is preparing a vehicle with its engine up front, driving the rear wheels. But, rumors of "special" Corvettes continue to waft through the air

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We're looking forward to an all-new interior, which has been a chronic weak spot with Corvettes.

like a Bowling Green cow pie, as everything from supercharged coupes to four-door sedans has been mentioned as a potential project. The most challenging—and, what some engineers within the company want most of all—would be the introduction of a mid-engine car, to be sold in parallel with the regular Corvette.

We'll know soon. 2011 has been set as the introduction date for GMX711, GM's internal code for the next Corvette. That code not only has a nice ring to it, but it also fits

into the company's numbering and naming convention for the Chevrolet brand. Divisions within GM are moving in the direction of sharing the same final digit; therefore, Chevrolet products have a "1" at the end of their code. There are aberrations here and there, but no other division within the company would be worthy of the numero uno.

2011 will be an important year for GM and Chevrolet, and not only due to a wave of upcoming product introductions. It's also the year of Chevrolet's centennial (GM's hap-

pens next year) and could provide the perfect platform for the introduction of a special car. What kind of special car? A Corvette, of course.

In our panel discussion of the Corvette and its potential special project, we walk through the past, present, and future of the crossed flags. And we invite you to be a part of the conversation: [click here to enter our contest](#), and win the chance to meet with Corvette chief engineer Tom Wallace and Corvette Racing program manager Doug Fehan.



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The Scoop John Wolkonowicz, Global Insight

Wearers of green eyeshades and scholars of sales data, consultants are third-party insiders to the comings and goings of the automotive business. They not only study companies and the viability of their products, they're often employed by them directly to handle special projects or scope out a future model plan. This allows them a glimpse into a world known only by company insiders.

One such analyst, Global Insight's John Wolkonowicz, believes that

GM is dedicated to building a classic, evolutionary C7 Corvette with all the traditional trimmings: engine up front, rear-wheel drive, and cargo space that can accommodate a golfer's weekend.

But, the door has been left open for something else: a mid-engine car.

"Our research shows that we're almost assured of a regular C7 Corvette as an evolution, with an engine up front," said Wolkonowicz. "But, there does remain a good chance that we could see a mid-engine project as a supercar for Chevrolet in the U.S. and other brands in Europe. It's the kind of thing that Lutz and a lot of people within GM would be pushing hard to make happen. There's a history of GM wanting to do a mid-engine Corvette in the 1960s.

"That's not to say a mid-engine car would be the right choice. I think they're feeling their mojo and this is part of them showing the world that GM is back and that GM is going to be around for a while. If I were running the show, I wouldn't do it. But, they're fun for enthusiasts. These are not good business decisions, but they are interesting."

How would they do a mid-engine Corvette? Wolkonowicz says that engineers within the company are exploring all options, including an interesting two-market strategy: a small-block V-8 with a supercharger as a

Chevrolet in the U.S. market and a V-12 for the rest of the world as a Cadillac.

"The Chevrolet brand is possibly the greatest untapped resource on the American automotive horizon," said Wolkonowicz. "GM knows this, but it's hard for them to stretch it. Using it to help Cadillac in the other parts of the

"One of the problems is that mid-engine cars have bad proportions," said Wolkonowicz. "In this time of design, I think we're moving beyond those mid-engine proportions. I think doing a mid-engine Corvette is mistimed right now and even in 2011 or 2013. We're only just starting to create vehicles with classic

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world would be beneficial, now that it's a global brand. What GM doesn't have here is the Ford GT heritage. But that's not necessarily a bad thing. It could allow them to step outside of the box for this."

But, stepping outside of the box might present some design challenges that won't mesh with the Corvette's history. While European supercars have a forgivable appreciation for oddball proportions, the same can't be said for Corvette. Always with an engine up front, the production cars have looked good naturally.

proportions again, and in turn people are only just starting to appreciate what great proportions mean. The Chrysler 300 and C6 Corvette both have great proportions. The Ferrari Enzo does not.

"The Corvette is successful because it doesn't try to be something else. It winds up being a totally unique entity in the marketplace that is totally Chevrolet. If this mid-engine car ends up being something other than a Chevrolet, it will be a mistake. No doubt, GM is in a tough spot." »

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The next Vette is more likely to be an evolution of the C6 in both form and function.



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The Engineer's Voice of Reason Reeves Callaway, Callaway Cars

"We are automotive engineers," said Reeves Callaway, owner of the famous specialty car company that bears his name. "Given a problem, we're going to come up with a solution for that problem that best suits the facts. As much as a race car guy like me would say, 'I want a more purist version of the Corvette,' that argument has always hung like a piñata in front of the

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"If there was a good reason to make it mid-engine, it would have already been done."

design guys for the next generation. Believe me, if there was a good reason to come down in favor of mid-engine, it would have already been done."

Entrepreneur, racer, and car builder Callaway knows a thing or two about the challenges of building special Corvettes. The only high-performance Corvette ever built by an outside company and offered as a dealer RPO (regular production option) was Callaway's Twin-Turbo Corvette, called "B2K" on the order sheet. Five hundred lucky buyers went home with the forced-air monsters from 1987 to 1991, with power rated at around 400 horsepower and torque at some 600 pound-feet.

"Every time the Corvette platform has come up for review, this question has been on the table," said Callaway. "The main instigator in terms of Corvette history was always Zora Arkus-Duntov. Zora desperately wanted to have a mid-engine vehicle. Yet, any rational engineering analysis comes back to the fact that the front-mid-engine configuration is a better package for carrying two people. In mid-engine, you have the problems of the path of the heat and the crash-worthiness. There are a whole host of

reasons that have always come in favor of the front-mid-engine configuration.

"The current car is such a good value. There is no better example of great engineering at an expeditious cost. It's remarkable to me that they do it at \$40,000. Thank God they do, because in the specialty car business you start with the best car you can buy and revamp from there.

"Personally, I always come down in favor of cars with engines in front. It gives a stronger sense of feedback to the less talented driver. There's much more latitude and forgiveness. The seating position, noise, visibility, and heat are better in front-engine. Every time I drive a mid-engine car, I can't spend more than fifteen minutes in them. They generally drive me crazy. It's not about pushing the car to the extreme. It's about how you drive the car the other 99 percent of the time.

"If you can keep making the same basic thing for thirty or forty years, you get pretty good at it. Keep doing it until it's perfect. If you start catering to the people who complain about what Corvette should or shouldn't be, you're just gathering wool."



The History Lesson Dave McLellan, former Corvette chief engineer

In the land of Corvette, Father Abraham has had many sons, but many sons have not had many Father Abrahams. There have been only four Corvette chief engineers in history, and Dave McLellan's role from 1975 to 1992 might have been the most difficult, because he succeeded the grand master, Zora Arkus-Duntov. The desire to create a mid-engine car was even stronger thirty years ago than today.

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"The C4 Corvette was definitely pushed by design staff as a mid-engine vehicle, because at the time we didn't have V-8 engines that were very useful," said McLellan. "So they were pushing V-6 concepts, which ultimately became the [Pontiac] Fiero. My direction from Chevrolet management was to be polite but not put any effort into mid-engine Corvettes. For some reason or other, within Chevrolet's management, it was not a viable idea.

"When we got to the C5 Corvette, I told [designer Jerry] Palmer that if he wanted to do a mid-engine Corvette, I would support it because I knew we knew how to do it and do it well. In the end, it would have been easier to do than the front-mid-engine rear-drive that we came up with and it wouldn't have cost a nickel more. That a mid-engine car would cost more than a front-engine car is basically phooey.

"Fundamentally, cost gets thrown up as to why it wouldn't work, but it's not true. The engine is the real cost and the engine can basically go anywhere. And we can make transaxles now that we couldn't back then. It's not a big deal. The question is, is that what Corvette people want?"

"Personally, I would do both cars. Both a traditional car and a mid-engine car."

But, would both configurations work as Corvettes?

"That's a marketing choice, but you could. There are those that argue that you

shouldn't have Corvette as a two-tiered brand. That argument ultimately prevailed and got us into trouble with the ZR-1."



The Business Angle David Welch, *BusinessWeek*

"If they build a car greater than the Corvette Z06, whether it's mid-engine or not, it would make sense for racing applications, but I can't see it otherwise," said David Welch, *BusinessWeek's*

Detroit bureau chief. "I could see them getting some marketing bang out of this, but it strikes me that Corvette already is enough of a halo car by itself. They're sort of preaching to the choir on this. If they're going to do a super-car, I'd prefer a big car for Cadillac. Or something that goes up and above."

Welch says that any potential additional Corvette project comes at the cost of other vehicles and the ability to support them—something the company can't seem to afford at the moment.

"If you look at the company right now, it is dealing with marketing issues more than product issues, so what does this really get them? GM has so much work to do and Corvette is one of the things they have that works great. With the exception of the 180-horsepower Corvettes that people didn't like a number of years ago, people are focusing on fixing things that aren't working. I can't see them focusing on a separate project that takes time and people and money away and off the ball.

"I'd rather them put the money in a car that could leapfrog the Japanese and beats the [Toyota] Camry or [Honda] Accord. The first domestic car company to do what Ford did with the original Taurus in 1986 will be the one that goes the farthest. Then, it might be possible to do something like this."



The Driver's Perspective Jim Musser, co-owner of Chaparral Cars LLC and formerly of Chevy R&D

"With a skilled driver behind the wheel, mid-engine cars can be better for performance," said Jim Musser, a former executive at GM. "But, in the hands of an inexperienced driver, they can be very difficult to control."

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Musser, a brilliant young engineer at Chevy R&D in the 1960s and earmarked by some to be a future president of GM before his departure in 1970, had exposure to all sorts of projects within the company—many involving mid-engine configurations. Now in his seventies and running the Chaparral Cars continuation business with racer Jim Hall, he says the decision not to change the location of the engine in the Corvette was the right one.

“The early Sixties was the point where race cars were going to mid-engine and there was a lot of momentum to be at the current state of the art,” said Musser. “In looking at the situation now, it’s kind of a toss-up. If you’re building a racing sports car, mid-engine vehicles have definite pluses. But for a sports car for the street, for normal driving, the front-engine arrangement is very satisfactory. The advances of the mid-engine arrangement back then meant that the engine could be lower. But the mid-engine cars built for the street don’t incorporate that severe a reclined driving position, so they are not really any lower. Therefore, on a street machine, where you want a more normal seating position, one of the advantages of the mid-engine thing goes away.

“It was all pluses for mid-engine cars as far as racing went. The weight on the rear tires meant that you could have

as much as 80 percent of the weight of the vehicle on the driving tires. During braking, getting the weight transfer to the front would give you almost 50/50 weight distribution. From a braking point of view and an acceleration point of view, it was and is fantastic.”

But, most cars aren’t driven by skilled drivers. With a mid-engine placement, driving under normal conditions produces a slight tendency to understeer, while jumping off the throttle erratically can produce oversteer.

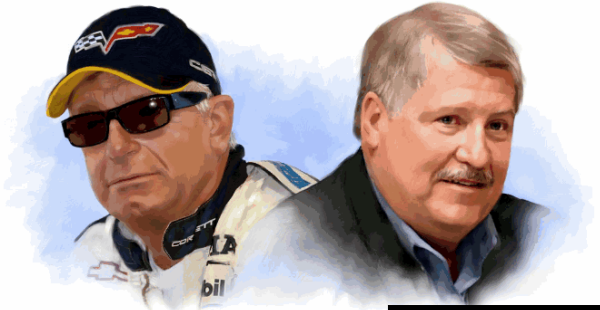
“When we developed our prototypes, we were able to balance the car out, but on and off the throttle the cars were pretty tricky. With a skilled driver, that tends not to be a problem if you watch it. But for the regular driver, the front-engine placement is not as sensitive as that. And, most people are regular drivers.

“I have a hard time believing that GM would want to do two cars that were different, but there is a lot of image in special cars like this. It does cost you in resources, but on the other hand what GM could do is contract the car out to someone, which Ford was able to do with its GT. It might make sense, but it still won’t change how they handle.

“One thing is for sure. We’ve learned that Ferrari’s mid-engine cars have had some problems with wealthy people who don’t know how to handle them!”



The Response You, the Reader



What will become of the next Corvette, or perhaps, Corvettes? Here’s your chance. [Click here](#) to let us know what you want to see in the future generation of the cars. A mid-engine car? A sedan? Superchargers? Turbochargers? You make the call.

The best three letters we receive will win an all-expenses-paid trip to meet with Corvette chief engineer Tom Wallace and Corvette Racing program manager Doug Fehan later this summer. This is your chance to write the ultimate product plan and tell it to the people who are writing the future of Corvette history. ⚡

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