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ZORA DUNTOV
A LOOK BACK AT THE FIRST CHIEF ENGINEER

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In each of the past four issues, we've interviewed a Corvette Chief Engineer; now it's time for the author of this series to discuss the first Corvette Chief Engineer, Zora Arkus-Duntov, a man he worked for as an engineer and interviewed as a journalist.

| BY **GARY WITZENBURG** | PHOTOS COURTESY **GM** |

Just out of school in 1965, I had the good fortune of being selected for Chevrolet's two-year College Graduate in Training (CGIT) program, which rotated new engineers through a series of three-month assignments to give them experience in every facet of automotive engineering, including research, design, development, component manufacturing and vehicle assembly. My two years stretched to five due to a three-year active-duty stint in the U.S. Navy; my first assignment after returning in the fall of 1969 was in Corvette Engineering.

The Tech Center-based Corvette group was small at the time—just three engineers and a secretary reporting to Chief Engineer Zora Arkus-Duntov. The three engineers were Walt Zetye, Gib Hufstader and Dan Crawford, a mad genius who drove like his hair was on fire. One day, after riding with him at warp speed for several laps around the Tech Center test track in a development Corvette, we put the car up on a lift and found loose rear suspension nuts. And I thought Navy flight training was dangerous!

At the time, the new, third-generation 1968 Corvette Stingray had set a sales record at nearly 30,000 units. Things were also going well on America's road-racing tracks, where Corvettes, in the hands of talented drivers like Jerry Thompson, Tony DeLorenzo and John Greenwood, were finally beginning to beat the once-invincible Cobras. Yet Arkus-Duntov desperately wanted the next-generation Corvette to be radically different, and was fighting hard for production approval of a mid-engine layout.

Duntov's latest prototype was XP-882, a sleek silver bullet powered by a 400-cubic-inch V8 mounted transversely behind the seats, driving through an Olds Toronado automatic transmission. The plan was to design a new 4-speed manual and later, perhaps, even a 4-wheel-drive system.

One day, I was sent across the Tech Center tracks to GM Styling to bring that top-secret XP-882 mid-engine prototype back to Chevy Engineering. I wasn't dumb enough to drive it on public roads, but I couldn't resist exploring the Tech Center in it on the way back. When I parked it in the Chevy garage, two guys in suits were standing there gawking at it. "What's that?" one asked. "Our mid-engine Corvette prototype," I answered with a grin. "Cool, eh?"

Early the next morning, I was called onto the plush carpet in front of Chevy General Manager John DeLorean's big mahogany desk. He was mad as hell, not because I had joy-ridden XP-882 but because I had told the two guys in the garage what it was. It turned out the one who asked was a journalist, the other a PR guy showing him around. "Why would you tell a journalist about our most secret prototype?" DeLorean demanded. "How was I to know who he was," I meekly responded. "And what was he doing in the Engineering garage?" Good points, DeLorean conceded, apparently deciding not to fire me on the spot. It wasn't long before that same "top secret" prototype graced the cover of *Road & Track*. And the following April, it was publicly shown at the New York Auto Show.

Even in prototype form, XP-882's performance and handling were as good as its looks, yet the car was a tough sell to GM management, which was concerned about raising the Corvette's price point. Each day, as we came into the office, we could see the status of Duntov's mid-engine program by his positioning of several "Car of the Year" plaques on top of the filing cabinets: If they faced outward, it was "on"; if they faced the wall, it was "off." Eventually, GM management decided a mid-engine Corvette could not sell well enough to be profitable at the price tag it would have to wear. However, Duntov's commitment to the layout never wavered.

My first real job was test engineer at the GM Proving Grounds, responsible for B-car (Impala/Caprice) and Corvette durability vehicles. In 1971, I moved to GM Corporate Advanced Product Engineering, then, two years later, I began my career as a journalist, a path that eventually led me back to Duntov. In 1978, I interviewed him for *Autoweek*. He had retired in 1975, but remained in the Detroit area, close to Dave McLellan, his successor, and the Corvette team. I visited him at his home, enjoyed a great discussion and learned much more about the man than I had previously.

Duntov was born in Belgium in 1909, graduated from Germany's Charlottenburg Technological University (now the Technical University of Berlin) in 1934 and married Elfi Wolff, a German-born dancer at the Folies Bergere, in Paris in 1939, just as World War II was breaking out. He and his brother Yura joined the French Air Force, then escaped to New York with Elfi and their parents ahead of the Nazi occupation after France surrendered.

Once settled in Manhattan, Duntov and Yura set up Ardun, which supplied parts to the military and designed and built aluminum overhead-valve hemispherical cylinder heads that could boost the output of flathead Ford V8s to more than 300 horsepower. Also a talented driver, Duntov attempted, but failed, to qualify a Talbot-Lago for the 1946 and 1947 Indianapolis 500s. He later worked on Allard sports cars in England and co-drove one in the 24 Hours of Le Mans in 1952 and 1953. He then co-drove a Porsche 550 RS Spyder to Le Mans class wins the next two years.

Most of us know that Duntov was so enamored of the Corvette "Dream Car" he saw at the 1953 New York Auto Show that he sent Chevrolet Chief Engineer Ed Cole suggestions on how to make it a serious sports car; and that Cole and engineer Maurice Olley were impressed enough to invite him to Detroit, then hire him as an assistant staff engineer starting May 1, 1953; also that he set records at Pike's Peak and Daytona Beach in prototype Chevrolets to showcase the the company's new small-block V8.

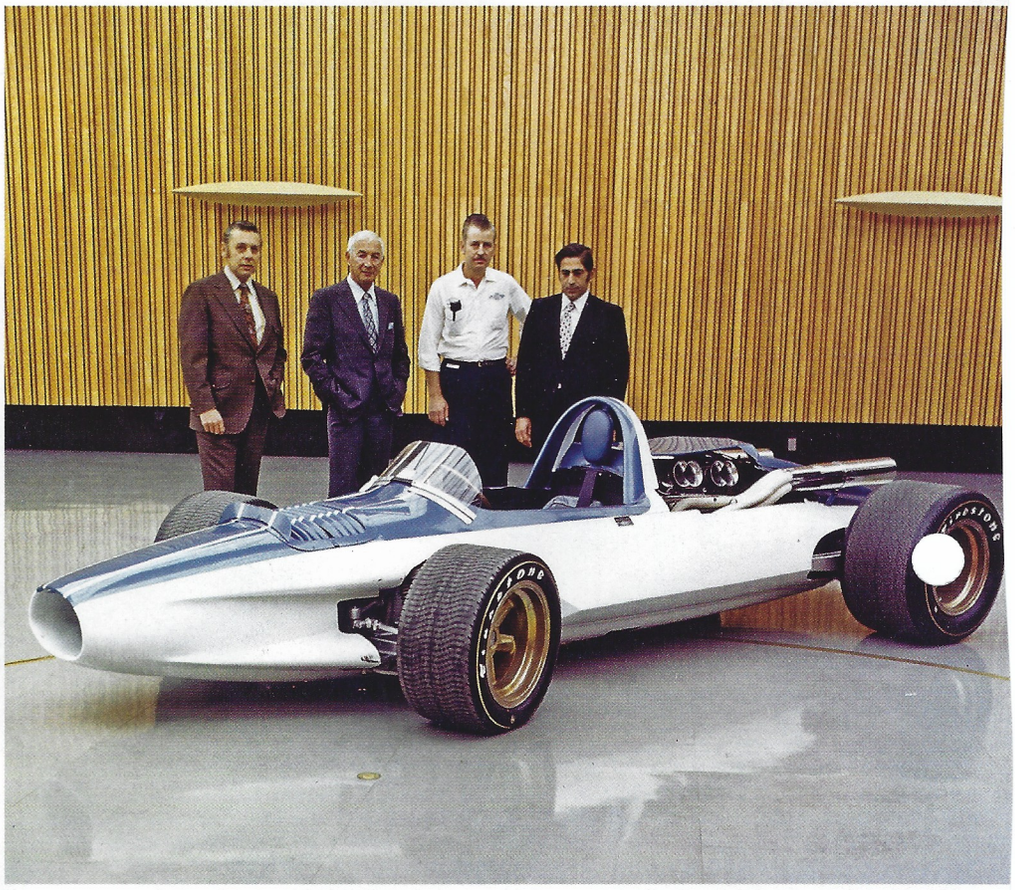
But who recalls that he designed a radical mid-engine, open-wheel Indy-type car called CERV I (Chevrolet Experimental Racing Vehicle) in 1960 and in 1964 drove it to an astounding 206.1 mph average on the GM Proving Ground circular track? I saw that car, as well as the full-fendered four-wheel-drive CERV II racer, when I worked in Chevy's Proving Ground garage as a CGIT in 1965. I heard that Duntov was banned from the circular track after launching one of his experimental Corvettes through its upper guardrail at high speed (without serious injury).

In my 1978 interview, Duntov told me that he had consulted for several companies since retiring from GM, including DeLorean, Bricklin, Holley Carburetor and a man in San Francisco with the "wild idea" to build a racing and/or truck V8 from two dual-overhead-cam Meyer-Drake Indy-type 4-cylinder blocks joined together. "With his engine," Duntov said, "when you have to grind the valves, you have to remove the pistons and try to do it from inside the cylinder, because the heads were fixed. I told him 'no' and have not heard from him since."

John Greenwood also tried to hire him to manage either his racing team or his limited-production Corvette business, but Duntov declined. "I don't have much interest in that kind of work," he said. "Recently, I was invited to participate in his super Corvette project, to help evaluate the car at the Transportation Research Center in Ohio. The car was very good, very responsive, had very good control in 90-mph maneuvers. After that, I talked to him a few times, but nothing was worked out."

I asked his opinion of the current, '78 Corvette. "It's still a damn good car," he said. "But we provided its replacement [pointing to a model of the mid-engine Aerovette show car on his bookcase]. The mid-engine project was go, no-go, go, no-go. The last time it was go was in 1972. Mr. Gerstenberg [then GM chairman] said, 'Today we are selling all the Corvettes we can produce. Wait until th market gets soft, then we will take a look at your design.'

"At that time, I thought that was the end of the Corvette, that the car would be retiring when I did, with the driving force behind it gone. I remember at my retirement party, I felt that they must have been happy to get rid of me. However, I feel we would be in production with that car right now if [then GM president] Ed Cole had not been so enamored with the Wankel engine. At one time, the rotary engine was scheduled to go only into that car, before they decided to put it into a modified Vega. But the decision was made not to go with the Wankel engine, and when that died, it threw the whole business of producing the car out of kilter."



I asked Duntov about DeLorean's thankfully short-lived exploration of building the Corvette and Camaro on the same platform. "Against my vehement objection!" he exclaimed. "It was a two-seater but had cor ventional drive, a rigid rear axle, drum brake. It was supposed to have been cheaper than the Corvette, but it would not have been a Corvette. He visualized maybe $3,500, but the

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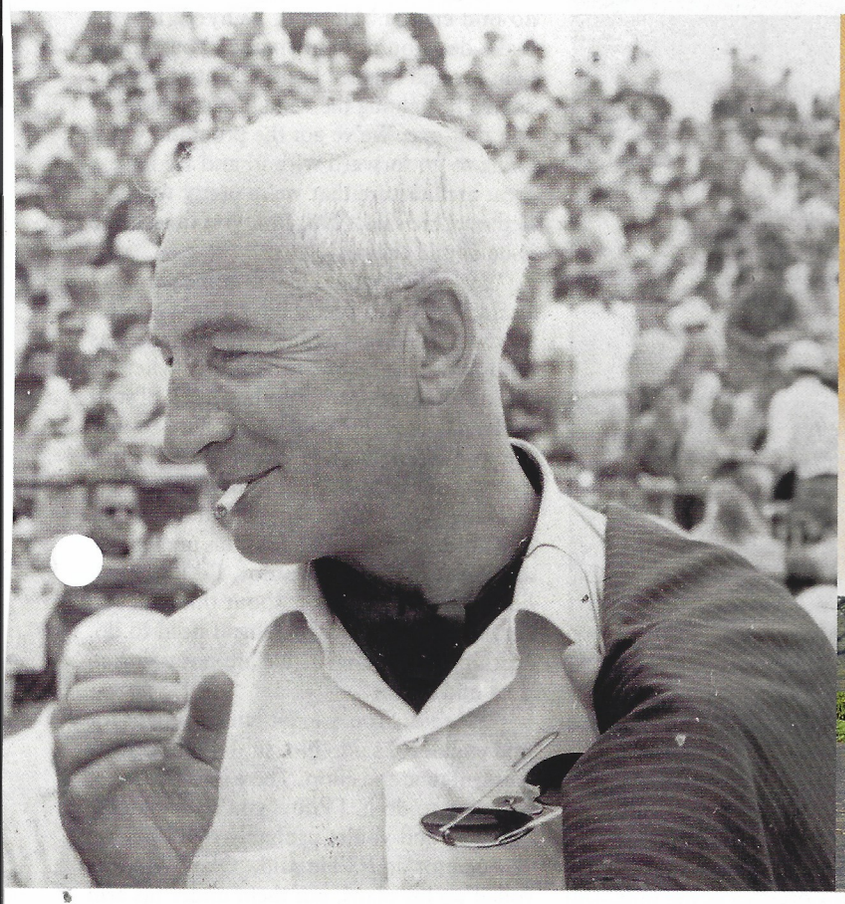


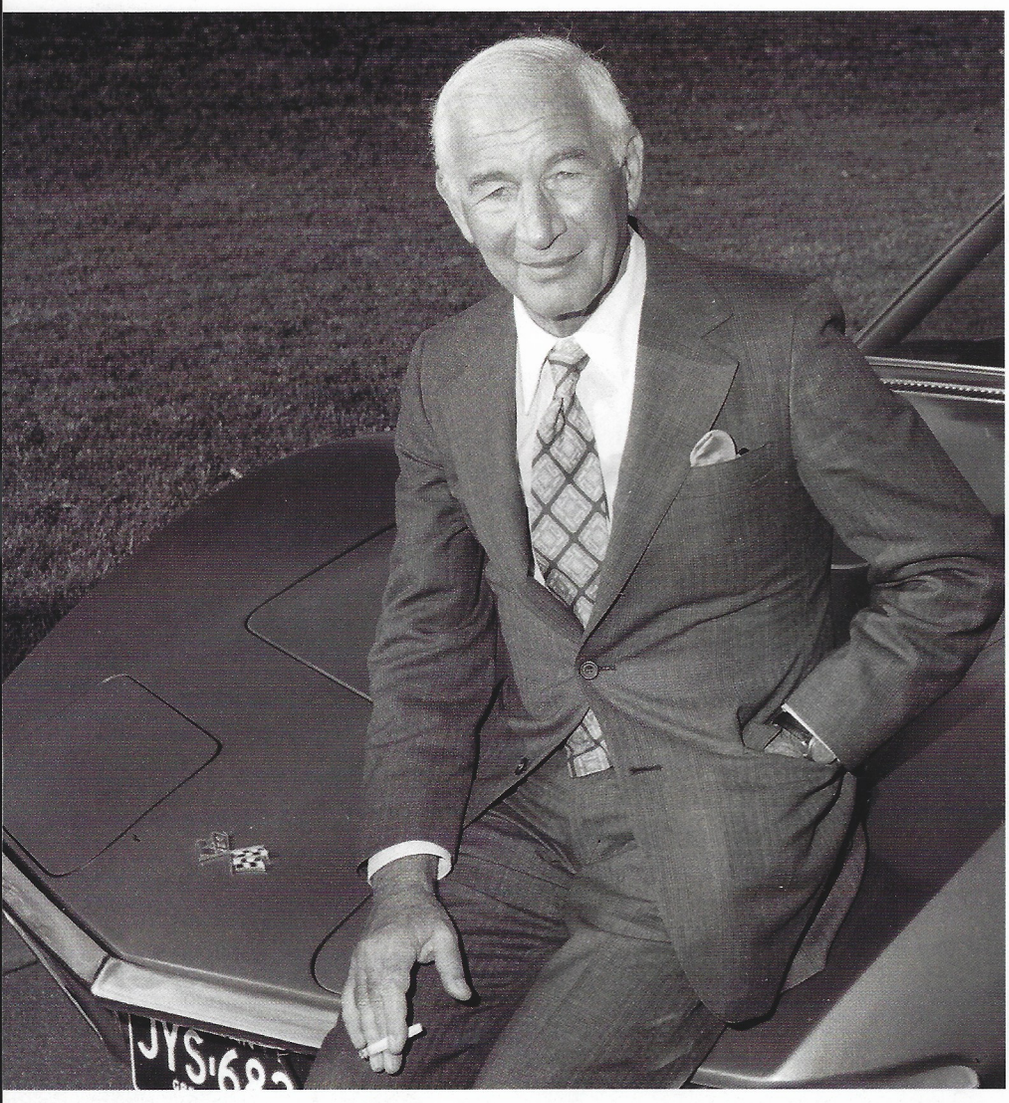
financial people determined that after the original investment, it still would've cost approximately as much as the Corvette. After that came the second and last resurrection of the mid-engine car, and DeLorean became an advocate of it."

Did he think that Chevrolet could continue selling the current Corvette for many years to come? "I believe that this year's projected production is already sold, like in previous years, and I don't see any slackening of the market. Dave McClellan has some good ideas, and he's trying to remove excess weight from the car. He would like to get it down around 3,000 pounds in the next few years."

Given new federal Corporate Average Fuel Economy (CAFE) rules, what about a smaller, even lighter Corvette? "What powertrain is available for a new car?" Duntov asked. "You can use front-wheel drive, or the front-drive engine/transaxle unit in the rear to make a mid-engine car, but then performance will suffer with only a four-cylinder engine. I don't know about this [still-in-development] front-drive V6. The engine picture will be changing, and I'm sure Dave McClellan is aware of that and will rearrange his thinking accordingly. I don't recall what the current fuel consumption figure is, but shedding weight will probably get it up to 20-22 mpg. Remember the fuel-injection engine? That got 20 mpg before fuel economy was important."

When (former GM chief designer) Bill Mitchell retired in 1976, he said a future smaller Corvette could look like the Aerovette prototype. "Five years from now," Duntov responded, "I see a car externally identical to the one they are building now, but much lighter. We discontinued the convertible, which required a much stronger frame, so now they can take something off the frame. Weight begets weight, and there is still a lot more you can do with it. Perhaps with a 300-305 cubic-inch engine, but still a V8."

Above, left to right: The 1960 CERV I was nothing less than a pure, mid-engine race car; the ever-present cigarette dangling from his mouth, Duntov gleams after winning his class in the 1954 24 Hours of Le Mans; standing next to a 1966 Corvette Sting Ray; the Aerovette was the mid-engine Corvette Duntov wanted Chevrolet to build.



Returning to the current car, I asked Duntov why Chevy didn't add a rear hatch for cargo access to the '78 instead of just a glassed-in fastback. He opened a book of engineering drawings and photographs and pointed to a shot of two prototype Corvettes. "This backlight was a hatchback," he said, "and cost $4 million for tooling. This one looks the same but is fixed, and cost $2 million. This decision was made in 1974, when the corporation was cutting corners. Given the choice of no change, a fixed backlight or a hatchback, we decided to go with a fixed design. Today, the corporation has much more money. If you were making that decision today, everyone would vote for the hatchback."

Looking back, was there anything he might have done differently on the current car, maybe rear coil springs instead of the single leaf, for example? "No," he answered. "For the '63 Corvette, I said we had to have independent rear suspension. But money was always a problem, and the way we were able to do it, it actually cost less than the previous design. The car was designed for 5-1/2-inch-wide wheels, and at that time the geometry was perfect. Now, with much wider tires and wheels, the geometry is less than perfect."

Finally, people were paying over $12,000 for well-optioned Corvettes at the time. Did he see a ceiling on the price people would pay? "That is an interesting question," he said. "A lot of people at GM are scratching their heads [about that]."

Duntov never gave up on his dream of a mid-engine Corvette. In 1993, at the age of 84, he was invited by Chevrolet General Manager Jim Perkins to come see the new C5 well before its public debut. Perkins had managed to save and revive the C5 Corvette program, which had been canceled due to GM's dire financial condition, and was excited to have Duntov see the revolutionary new architecture that then Corvette Chief Engineer Dave Hill and his team had designed. Here is how Perkins told the story when I interviewed him for *Motor Trend Classic*:

"I always did my best to make sure to honor the tradition, so I invited Duntov to a lot of functions. I was smart enough not to bring him in to see this display when the engineering group was there, but Joe Spielman and a couple of others were there when I walked him through it. And of course we had chosen a backbone and pod architecture for the C5 and moved the transaxle to the rear. Duntov looked at it, looked at everything else, didn't say much.

"Two or three days later, he called and said [imitating Duntov's Eastern European accent], 'Jim, I look at new Corvette architecture, and I am surprised. No mid engine.' I said, 'No, no mid engine.' He said, 'Why? Why you make decision no mid engine? You should fight for mid engine.' I said, 'Duntov, I might as well be fighting the wind. I'm not going to win that one. We've got the program, we're going to go forward with it, and we have a great architecture that we're pretty well settled on.' He said, 'No, Jim, you must raise issue of mid engine.'

"He said, 'I would like to come see you.' I said, 'Well, I'm pretty busy, but my secretary will try to find a time.' I thought he was going to come in just to talk, but when he walked in that morning, he had a roll of stuff under his arm. He said, 'I am here to talk about mid-engine car.' I said. 'Okay, but I don't know what there is to talk about.' He rolled out these plans that he had done himself and started talking about this mid-engine architecture. I said, 'Duntov, I'd like to sit here and talk with you about this, but I'm very busy, I have other things I need to do. Nothing has changed. We are not going to do a mid engine.'

"He said, 'You are not going to fight for mid engine?' I said, 'No, sir, I am not. It's a waste of time and effort. There is just no point in trying to do it. I know you're passionate about it, and you're probably right, but we just cannot do it.' He said, 'Okay.' And he rolled up his plans, put them under his arm and said, 'You are not going to build mid engine. I will raise the money, and I will build the son-of-a-bitch myself.' And he walked out of the office."

Duntov died on April 21, 1996, three months after Hill's breakthrough 1997 Corvette was unveiled at the 1996 North American International Auto Show in Detroit. I had not spoken with him since that 1978 *Autoweek* interview, largely because someone at Crain Communications—which had just bought *Autoweek* and was moving it to Detroit—had lost the package of his personal photos that he had lent us to illustrate the interview, and he blamed me. I have always regretted that, but considered it a rare privilege to have known and once worked for this remarkable man who set the Corvette on the path to what it is today. ○