

AUTOWEEK TALKS TO:

Zora Arkus-Duntov

By Gary Witzenburg

If you've been waiting for the Chevrolet Corvette to get that long awaited redesign in the next four or five years, forget it!

At least that's what Zora Arkus-Duntov believes. Duntov retired three years ago as Corvette chief engineer but obviously still knows what's going on at GM, at least in the sports car section of Chevy engineering.

Duntov says he believes that in five years the Corvette will look "externally identical" to the one now on the road. But he predicts it will be several hundred pounds lighter and perhaps use Chevy's 305 cubic inch V8 instead of the present 350.

These were some of his observations during an interview he granted *AutoWeek* in his suburban Detroit home, where he talked over strong coffee and delicious German pastries.

Contrary to what some may believe, Duntov did not invent or design the original Corvette—but he had been given the task of perfecting it. That he had nearly done, to the point where the ultra-sexy 1968 Stingray had set a near-30,000-unit sales record, and soon after was finally beating the once-invincible Shelby Cobras on the country's road racing circuits in the capable hands of Jerry Thompson, Tony DeLorenzo, John Greenwood and others.

Yet he, more than anyone, knew his product was still far from perfect, and this mid-engine car was to be his *coup de grace*.

This car was a sleek, super-aerodynamic silver coupe, powered by a 400cid Corvette engine sitting sideways

what you've been doing to stay busy since your retirement?

DUNTOV: Since I retired in January, 1975, I have been doing consultant work for several companies. For a year and a half, I was a consultant to John DeLorean, working on his car and especially on aerodynamics. With a 1/5 scale model, we achieved a 0.35 drag factor in the Cal Tech wind tunnel. The fuel consumption of the prototype with the PRV (Peugeot/Renault/Volvo) V6 engine bears out these results. I have also done theoretical work on intake manifolds with Holley Carburetor for the past two years. That work was completed the first of this year. It was a very pleasant association.

AW: Anything else?

ZD: There was one wild idea. A man in San Francisco, a very enthusiastic fellow, wanted to build a sports car engine. It was a V8 engine, based on two DOHC Meyer-Drake Indy-type 4-cylinder blocks

passenger sports car, although I did have an opportunity to drive it when I was still with Chevrolet. I did help with the concept of the proposed 4-passenger car. I can tell you very little of that, except that my time was fully occupied one way or another. But it would be difficult to explain exactly what I was doing. Basically working with concepts...engine, transmission, rear axle...along with Alan Cross, an ex-Bricklin employee. If Bricklin raises the money, that involvement will continue.

AW: What do you think of the Corvette today? Isn't it in need of replacement?

ZD: It's still a damn good car. 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" in 1972 I had all the people I needed. But Mr. Gerstenberg (the GM chairman at that time) said, "Today

resurrection of the mid-engine car, and DeLorean became an advocate of it.

AW: Do you think they can continue to sell the current Corvette for years to come?

ZD: 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. The current chief Corvette engineer, 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 3000 lbs. in the next few years.

AW: O.K., but won't an all-new car be needed soon, a smaller car?

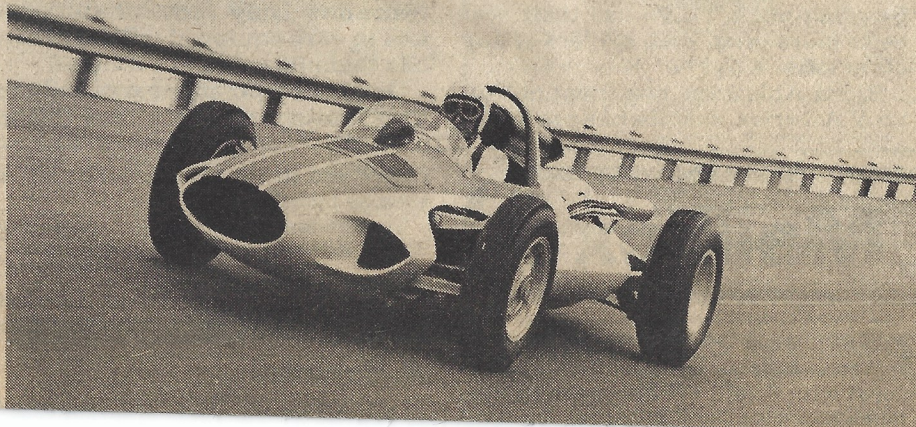
ZD: What powertrain is available to build a new car? You can use front wheel drive, or simply put the front-drive engine/transaxle unit in the rear, to make a mid-engine car but then performance will suffer with only a 4-cylinder engine.

AW: Aren't they doing a new V6 engine for the front-drive cars? Wouldn't that make a good sports car engine, perhaps with a turbocharger?

ZD: Maybe. I don't know about this front-drive V6. This engine picture will be changing regarding the V6, and I'm sure Dave McClellan is aware of that and will rearrange his thinking accordingly.

AW: But if they keep the Corvette, it seems inevitable that some day it will have to be a much smaller car. When Bill Mitchell (former GM chief designer) retired last year, he said it would look like that Aerovette show car.

ZD: Five years from now, 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's still a



behind the seats and coupled to a Toronado/Eldorado automatic transmission by the production chain drive unit (the 4-speed was to come later). Even in prototype form, its performance, roadability and handling were as superb as its appearance; but the bean counters figured it would never sell at the \$6000-7000 it would have to bring. Every day when you walked into the office, you could tell whether the program was on or off by glancing at the several "Car of the Year" plaques on top of the filing cabinets: If they faced outward, the mid-ship car was "on"; if they faced the wall, it was "off."

Zora is not a big man, but he is possessed with an electric energy level and an impish grin that makes you wonder what he's up to even today at a youthful 68. Belgian born, he learned to drive as a chauffeur's assistant in Russia, worked on supercharged sports car engines in the 1930s, built (along with his brother, Yura) the famous "Ardun" overhead-valve conversions for the post-war flathead Ford V8, developed and raced sports cars both here and in Europe, and, in general, had attained a rather impressive reputation as an engineer/driver before ever joining Chevrolet in 1952.

Deceptively soft-spoken, he was also a colorful maverick in a GM hierarchy composed mostly of grey-flanneled, bottom-line businessmen. He climbed Pike's Peak to demonstrate the '55 Chevrolet V8 engine's potential and set speed records with modified Corvettes on the sands at Daytona Beach. In 1959 he built CERV I, a radical mid-engine Indy-type car to promote the coming '60 rear-engine Corvair, assaulted the Pike's Peak record with it two years later and in 1964 drove it an astounding 206.1mph average around GM's circular Proving Ground track.

Following is what he said in the AutoWeek interview:

AUTOWEEK: May we begin by asking

Zora at the wheel of the CERV I, a radical mid-engined Indy-type car.

joined together. Aside from sports car uses, he saw this engine being utilized for racing and even in trucks. But a good truck engine, Chevrolet for instance, runs maybe 100,000 miles without maintenance except for valves. With his engine, 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.

AW: Would it have been a good racing engine?

ZD: For what class? Indy? An Indianapolis engine is limited to 183 cu. in., but this engine was 400 cu. in. He wanted to put it into a sports car, but a good sports car stands or falls with its chassis and that was not taken care of. It was a good engine, 600hp; but a Chevy big-block can do 670hp.

AW: Speaking of horsepower, we saw you at one of John Greenwood's test sessions a couple of years ago. Have you been working with him?

ZD: Not really. I was looking at his operation, and then he proposed that I be racing manager. But I declined. Then he wanted me to be involved with his limited production Corvette business, and I declined that too. I don't have much interest in that kind of work. Recently, I was invited to participate in his super Corvette project, to help evaluate the car at Transportation Research Center in Ohio. The car was very good, very responsive, had very good control in 90-mph maneuvers. After that John left his facility in Detroit, and I talked to him a few times when he was in Orlando, but nothing was worked out.

AW: We've heard that you were involved with Bricklin.

ZD: I had no involvement with the 2-

we are selling all the Corvettes we can produce. Wait until the 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 (former GM president) Ed Cole had not been so enamored with the Wankel engine. At one time, the rotary engine (a 4-rotor version) 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.

AW: When would that car have been put into production?

ZD: At one time when it was a "go" program, it could have been on the market in fall of 1974 or early 1975.

AW: Wasn't (then Chevrolet general manager) John DeLorean enamored with a Corvette replacement called the "K-car" during the early stages of mid-engine work?

ZD: Against my vehement objection. It was a 2-seater but had conventional drive, a rigid rear axle, drum rear brakes.... It was supposed to have been cheaper than the Corvette, but it would not have been a Corvette. He visualized maybe \$3500, but the financial people determined that after the original investment in tooling, it still would have cost approximately as much as the (then current) Corvette. So this army of draftsmen (working on the K-car) was dismantled, and the K-car was forgotten.

After that came the second and last

weight began to weigh in... perhaps with a 300-305 cu.in. engine, but still a V8.

AW: When they did the '78 car, they added a glassed-in fastback roofline. Why not a hatch opening?

ZD: (Opening a book of photographs and engineering drawings, pointing to a photo of two prototype Corvettes). This backlight was a hatchback 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 the fixed design. Today the corporation has much more money. If you were making that decision today, everyone would vote for the hatchback.

AW: Looking back, is there anything you would have done differently on the current car... coil springs in back instead of the single leaf, for instance? Anything you weren't satisfied with?

ZD: No. 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 us less than the previous design. But the car was designed for 5½"-wide wheels, and at that time the geometry was perfect. Now, with much wider tires and wheels, the geometry is less than perfect.

AW: What do you think the fuel economy standards will do to the Corvette?

ZD: I don't recall what the current fuel consumption figure is, but shedding weight will probably get it up to 20-22mpg. Remember the fuel injection Corvette? That got 20mpg before fuel economy was important.

AW: Do you think there's a ceiling on the price? People are paying over \$12,000 now with options.

ZD: That is an interesting question, because a lot of people at GM are scratching their heads.

Johnson Claims Overall Mexican! Win

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