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Vince Piggins: Chevy's High-Performance Mystery Man

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CHEVROLET'S UNDERCOVER MOTORSPORTS MAVEN

Best known as creator of the Camaro Z/28, he did so much more for so many years.

BY GARY WITZENBURG

edan road competition is becoming increasingly more popular since the advent of the short-wheelbase sedan-sport type vehicle," wrote then-Chevrolet Product Performance manager Vince Piggins to his Chevy Engineering managers in an August 17, 1966 inter-office letter. "In 1967, SCCA has plans to expand their activity in this type of competition.... A manufacturer's championship will be awarded to best performance."

The Sports Car Club of America's Trans-American Championship (Trans-Am) series for compact "sedans" had started the previous year, but for Chevrolet to jump into it in 1967, two major hurdles would have to be cleared: First, factory support of racing had been forbidden at General Motors since the U.S. Automobile Manufacturers Association (AMA) had banned it a decade earlier. Second, the '67 Camaro's base V8 was a 327cid small-block, while the SCCA's A-Sedan class maximum displacement was 5.0 liters (305cid).

RICHARD PRINCE

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The first could be dealt with by keeping Chevy support secret beyond Piggins' group and divisional leaders with a need to know. The second could be handled, Piggins proposed, by creating a special 302cid V8 with a 283 V8 crankshaft in a 327 block for an A-Sedan/Trans-Am-legal performance package.

"Chevrolet always had a wide catalog of interchangeable parts that racers could buy in the dealerships," Bill Howell, Piggins' engine expert at the time, told the *New York Times*' Jim Koscs for a 2014 story. The idea of using a 283 crankshaft with a threeinch stroke in a 327 block with fourinch bores to get a high-revving, short-stroke 302cid V8 came originally from USAC Sprint Car

racers, Howell explained. "It was a known combination, but it took Vince to push it through to get Chevy to adopt it."

This proposed engine would feature a high-performance camshaft, 283 fuelinjection pistons and RPO (Regular Production Order) L-79 cylinder head, manifold, Holly 4-bbl. carburetor, connecting rods, bearings and valvetrain components. The powertrain/chassis package would include F-41 performance suspension, front disc and metallic rear drum brakes, an M21 close-ratio 4-speed gearbox, an 11-in. clutch and (optionally) a 36-gallon fuel tank. This combination "will provide performance and handling characteristics superior to either Mustang or the Barracuda," Piggins asserted.

"Assuming that the foregoing proposal fundamentally is approved by management for release, it would be desirable to target availability of vehicles before December 1, 1966. This would make us eligible for both the Daytona Continental and Sebring 12-Hour race in early '67." And when then-

MOTORS 2018

Johnny Beauchamp poses with one of the six "Black Widow" Chevy stock cars built in 1957 for NASCAR's Grand National Series.

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Packard tech reps gather during WWII at St. James Park, London in 1943. Vince Piggins, Harlan Fengle and Walt Gladson in front row.

Chevrolet general manager Elliott M. "Pete" Estes approved the proposal that October 4, the very special Z28 (later Z/28) – because its option package was RPO Z-28—Camaro was literally off to the races.

As Martyn L. Schorr notes in his 2017 book, "Day One, an Automotive Journalist's Muscle-Car Memo," Piggins "prepared for the possibility of the Z/28 Camaro not meeting the SCCA's 1,000-car minimum for entry in the Trans-Am series by applying for FIA homologation for two Camaros. He filed papers for the SS 350 Camaro and Z/28 Camaro for [FIA] groups One and Two, respectively. In 1967, Chevrolet sold just 602 Z/28s, but the 398-unit shortage was covered by SS 350 sales of almost 30,000. Z/28 Camaro production started on December 29, 1966 and the first 16 were 'tagged' for racing." Then, as we know, Mark Donohue drove Roger Penskeprepared Z/28s to three Trans-Am Series wins in 1967, then back-to-back championships in 1968 and '69, which established the car's legend

and boosted its sales to 7,199 1968 models and 19,014 1969 units.

Vince Piggins was born (in 1917) and raised in Detroit. He attended Detroit's Cass Technical High School, worked in Packard's engine department, then spent World War II in England working on Rolls Royce and Allison aircraft engines. Though not a degreed engineer, he became a self-taught engine expert brilliant at understanding and creating whatever was needed to win in just about any form of motorsport. Following the war (reportedly while working for metal casting company Wilson Foundry in Pontiac, Mich.), he helped Whizzer engineers muscle up their tiny motorbike engine to a whopping three horsepower, good for a 40-mph

top speed. Then he joined Hudson racing.

In those early days of "stock-car" racing, the cars actually had to be "stock," meaning unmodified. But Piggins used that requirement to his advantage by developing a "Severe-Duty" parts program to design and supply Hudson racers with competition-capable components. "I think Hudson was first to figure out that they could make trick parts, put them on the car in production, and convince NASCAR they were legal," Howell says.

His "7-X" engine package bumped the Hornet's inline-6 from a stock 145hp to 210hp or better, much stronger than competitors' V8s of the time. Its special camshaft drove oversize valves, its pistons were domed and its cylinder head shaved for higher compression, its exhaust manifold was split into dual exhausts, and its dual side-draft carburetors were fed by a

> functional ram-air hood scoop. Its fairly flat torque curve for good lowend response and the car's "heavyduty" drivetrain and chassis

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At the end of a 1.900-mile trip near Balcarce, Argentina. drivers Betty Skelton and Vince Piggins are greeted by Juan Manuel Fangio and friend. A Chevrolet dealer in Balcarce, Fangio was a five-time world driving champion.

pieces, relatively light weight and low center of gravity made Hudson Hornet racers nearly unbeatable from 1952 through 1954, when Hudson merged with Nash-Kelvinator Corp. to form American Motors.

Joining Chevrolet

And it was not long after that when Chevrolet's Ed Cole-promoted in 1956 from chief engineer to general managerhired Smokey Yunick, the best Hudson chief mechanic and proprietor of Daytona Beach, Florida's soon-to-be-famous "Best Damn Garage in Town"-and he insisted that Piggins be hired as part of the deal. That fall, a few months after his May 16, 1956 arrival—with Cole's blessing—he established the Southern Engineering Development Co. (SEDCO) in Atlanta to work closely with Yunick and others on Chevrolet racing efforts and brought driver Jim Rathmann (who would later win the 1960 Indy 500) on board to manage it.

"Piggins...hired a staff of veteran racers and stocked the facility with the parts



A big part of the early 1960s horsepower race, the 1961 Chevrolet 409cid V8. As the Beach Boys sang, "She's real fine, my 409."

needed to compete in both NASCAR and USAC events," wrote Don Sherman for Automotive News in 2011. "One of Piggins' smartest moves was avoiding the use of the word 'racing' to describe the fortified powertrain and chassis components capable of withstanding the rigors of competition. The descriptors 'heavy-duty' and 'for off-highway use' were more likely to pass scrutiny with officials committed to maintaining purely stock specifications."

One noteworthy SEDCO program was the 1957 Chevrolet "Black Widow" NASCAR race car, of which six were reportedly built and distributed to Coleselected teams for the 1957 Grand National series. All black-and-white 2-door coupes, they were powered by a new 283-hp 283cid small-block V8, with Rochester fuel injection and Fenton headers, driving through a column-shifted 3-speed manual and a heavy-duty 3.90:1 rear axle. They rolled on special six-lug wheels and had high-performance Hydrovac power brakes and 20-gallon fuel tanks.

VINCE PIGGINS' INTERNAL MEMOS

A search through GM heritage Center files of early 1960s internal memos from "V. W. Piggins, Engineering Product Information Department" (later "Economy, Safety and Performance Department") yields interesting snapshots of what he was up to at the time:

June 30, 1961 - We have released the new 2 x 4 manifold, cylinder heads and exhaust manifold as interim changes to the 1961 409 engine in order to keep dragstrip leadership for Chevrolet. If economically possible, this material could be made available for sale as soon as possible to owners who wish to update their present 409 engines to be competitive.

October 26, 1961 - The first of our highperformance field tests will begin Monday, October 30 at the Desert Proving Grounds. Two vehicles will be used in the initial test, a '61 Ford and a '61 Chevrolet.

November 27, 1961 - We have just received results of a 24-hour endurance run on Corvair held at Riverside International Raceway on November 24 and 25. This was conceived by Carroll Shelby as a means of focusing attention on his School of High-Performance Driving and to provide material for magazine articles by Peterson publishing (Hot Rod magazine). The idea was to run two Corvair Monzas, one equipped with all possible modifications supplied by various West Coast equipment companies, the second car strictly production stock. The modified Corvair went out approximately one hour after the start with the...cam lobes worn off. The stock Corvair ran the full 24 hours trouble-free.

February 14, 1962 - Daytona activity: Rex White reports best lap times of 155 to 156 mph using Crower set-up with 3.08 axle ratio. He estimates that at present he could qualify at 156 to 157 mph using a 3.15 gear ratio. White's car is 1-3 miles faster than all 1962 Fords.

March 20, 1962 - A Chevrolet 409, driven by Dan Gurney, won the 200-mile USAC Stock-Car event at Riverside, California on Sunday, March 18, but was disgualified late Monday afternoon because, according to USAC officials, approximately 150 pounds of weight had been removed from the car. In the minds of some 10,000 people, however, Gurney's Chevrolet was the winner showing performance that surpassed the Ray Nichols Pontiacs of Goldsmith, Ward, Foyt and Sutton.

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Cotton Owens' Pontiac) in their February 17 Daytona debut, then Black Widows finished one (Jack Smith), two (Buck Baker), three (Speedy Thompson) two weeks later at Concord, NC. They would score 16 1957 NASCAR Grand National wins, with Baker winning the Championship. But after the Automobile Manufacturers Association (AMA) banned factory support for racing that June, Piggins had to shut down SEDCO. "After the AMA racing ban, Duntov, Piggins and Rathmann conspired to find

Johnny Beauchamp drove his to 2nd (to

Piggins and Rathmann conspired to find some means of staying in racing," Jerry Burton writes in his 2002 book "Zora Arkus-Duntov, the Legend Behind Corvette." 'We were concerned that if we dropped out, even for one year, we were out of it,' said Rathmann. With this in mind, they approached Ed Cole about establishing a front organization. Cole approved, and the Advanced Marine Corporation was born. It would be based in Miami, and Jim Rathmann would again be the manager. While Advanced Marine produced some marine engine components...its primary business was supplying NASCAR teams with the latest technology from Zora's engine group in Detroit."

Big-Blocks Evolve

Burton adds that, "since the small-block was beginning to lose its edge" vs. the competition, its top agenda item was a larger race-capable engine. A new 348cid "big-block" V8 (intended primarily for trucks) was in the works for 1958, and Advanced Marine set out to develop a version of it to be the next great Chevrolet racing engine. And although this "W-Series" (aka "Mark I") 348 would prove somewhat problematic, "Rex White won the [NASCAR] championship with it in 1960," Howell points out. "Then they made it a 409 in '61."

In 1963, Piggins made a 500hp stroked 427cid version available for NASCAR and drag racing. "By checking off RPO Z-11 on a 1963 Chevrolet new-car order form, you could buy a factory-built race car," Schorr writes. "Only 57 people made that choice before GM pulled the plug." The 409 was replaced by the better-designed "Mark IV" 427 for 1965.

That same year, a race-only 427 "Mystery Motor" (later dubbed "Mark II") turned up in February at Daytona. "You had to have serious NASCAR cred to get one of the 20 built," Schorr writes. "As far as Chevrolet was concerned, the engine did not exist. The Mystery Motor rattled the troops at Daytona, generated reams of misinformation, and became a cult engine."

It ran first in Mickey Thompson Z-06 Corvettes (the first actual big-block Corvettes) in the 250-Mile American Challenge Cup, and Bill Krause drove one of them to 3rd. Then, despite being illegal, since there was no production version, they powered a pair of Smokey Yunick Chevy stock cars in the Daytona 500. Johnny Rutherford set a closed-course record 165.14mph lap in one and finished 9th, while Junior Johnson (who would go on to win seven of 55 Grand National races that year) parked the second one with a broken distributor.

The year after his Penske Trans-Am Camaro effort began, Piggins hooked up with what would become the dominant McLaren Can-Am Series team. "They won the '67 championship with iron smallblocks," Howell relates. "Then switched to aluminum big-blocks in '68." Frank Winchell's Chevrolet R&D group had developed aluminum small-blocks and bigblocks for Chaparral, which Howell calls "fairly trick" engines with dry-sump oiling systems. "They had been romanced by Ford, but somebody upstairs brought them



in to set up a deal with Vince, and he took them through the aluminum R&D stuff. Chevrolet Engineering cast a bunch of aluminum big-blocks similar to the Chaparrals, and we supplied them free to McLaren and sold them to other racers. They set up their shop in Livonia in the winter of '68 and started building their stuff there in '69, and that's where we went when we needed development."

Some say that Piggins invented

Chevrolet's Central Office Production Order (COPO) system as a way to sell factory-built race cars. But it actually started in the late 1940s to enable fleet operators to order low volume, nonstandard trims, suspensions, paint colors, police, taxi, ambulance, funeral cars...and, yes, special high-performance cars. "Vince Piggins was a master at working the COPO system," Schorr writes, "and getting senior management to sign off on some of the wildest performance cars of the era." Examples from 1969 include the COPO 9560 ZL1 Camaro, COPO 9561 427 Camaro and COPO 9562 427 Chevelle.

Heavy-Duty Accomplishments

It would take a thick book to document all that Piggins and his small team accomplished over his 17 years as Chevrolet's manager of Product Performance (aka Product Promotion). According to Herb Fishel, who worked in the group and took it over when Piggins' retired in 1983, they developed "heavyduty" parts and manuals for Chevy racers and worked with teams in Indy car, drag and off-road competition in addition to

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April 25, 1962 - Although power gains have been achieved within the design limitations of our present 409 engine over the past year, these have not been sufficient to match or offset similar improvements made by our competitors. This clearly demonstrates that if we are to regain a dominant position in the performance field, we must raise our sites (sic) and approach the problem with an uncompromising attitude.

August 21, 1962 - NASCAR: Mr. Keinath was directed to expedite the development of the Mark "2" engine as quickly as possible in order to provide 10 engines for use at Daytona Beach in February 1963. Drag activity: management has agreed to build 50 special 1963 Impala SS Sport Coupes to incorporate aluminum front-end sheet metal (hood, fenders, bumpers, etc.) for weight reduction.

December 27, 1968 - I suggest we take the following course of action: Build the first 50 COPO Camaros with the present ZL1 engine specifications. The chances of any of these first Camaros being used for street transportation is extremely remote. Most have already been sold for exclusive dragstrip usage. Having built these first 50 units for NHRA Super Stock "C" class, we will have satisfied their minimum quantity requirements for this class and qualify the specifications for which NHRA have factored the power rating (same as L88-485 hp). - Gary Witzenburg

A Personal Encounter

In the fall of 1966, three months before the limited-production (streetable race car) Camaro Z/28 would reach production, I was afforded an incredibly special privilege. As a young College Graduate in Training (CGIT) engineer just a year out of school, I drove out to the Milford, Mich. GM Proving Grounds, met a Chevrolet development engineer and got an aggressive ride on the handling course and high-speed oval...in a Z/28 development car.

Then he let me drive it. Hard and fast! It helped that I had spent three months of CGIT training working at Milford, knew the tracks and was certified to drive them. But still...!

Exactly as I would read in many magazine reports later, it was a bit of a high-strung handful with little low-end torque-you had to keep the 302 up on its cam-but surprising high-rpm power for its modest displacement, and with truly amazing cornering capability.

I'm still not sure how that happened. It must have started with my CGIT sponsor, executive engineer (later Chevrolet chief

engineer) Paul King. He knew that I had SCCA raced my Triumph TR4A with some success that year, he knew that I was about to depart for three years' active duty in the U.S. Navy, and I must have told him that I was hoping to race a Camaro one day following my return. And he must have mentioned that to Vince Piggins.

I do remember sheepishly walking into Piggins' office one day before that happened, and I must have had an appointment because I was shown right in. I wasn't even sure who he was or what he did, and he did not know me from anyone. I vaguely recall that he was tall, prematurely grey, and a little intimidating. But he must have decided to grant permission for that pre-production Z/28 drive. Wow!

One of the internal memos from Piggins' Engineering Product Information Department.

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Chevrolet celebrated its Legends of Performance individuals with this ad for the automotive press.

NASCAR and sports-car racing.

"Major effort was devoted to heavy-duty parts and how-to brochures for engine building and suspension/roll cages," Fishel relates. "In this era, the term 'heavy-duty' was used for racing components to skirt the corporate policy. Each part was boxed with a disclaimer label: 'For off highway applications only.' In the late '60s, early '70s, I worked with Smokey on a 209 cubic inch turbo small-block V8 program that qualified for the Indy 500 in 1973 with Jerry Karl driving. The NASCAR Monte Carlo debuted at the World 600 in May, 1971 with the Junior Johnson Team, Charlie Glotzbach driving. It won its first race at Bristol. That was my program."

How big was the group? "In the beginning, it was Vince and Paul Prior," Fishel recalls. "Later, John Pierce and Bill Howell were added, and I came to the group in the late '60s. There was also a parts release specialist, Gene Malloy, and heavy-duty parts were marketed through GM Parts, managed by a guy named Ernie Callard."

While Piggins kept a low profile, Schorr says he was usually on hand when highperformance and muscle car Chevys were introduced to the motoring press. And in an era when even production Corvettes weren't fast enough for serious racing pacecar duty, his group prepared hopped-up versions for the Indianapolis 500 and other major races.

For example, a March 1, 1978 interoffice letter from ("Product Promotion Engineering manager") V. W. Piggins to then-Chevy chief engineer R. C. Stempel provides the status of four "1978 Limited-Edition Corvettes for that year's Indy 500 Pace Car Program." The actual Pace Car, to be driven by Jim Rathmann to start the May 28 62nd annual Indianapolis 500, would be the "first production-line build of RPO Z-78 Limited Edition Corvette," he wrote. Designated a corporate historical vehicle, it was to be returned to Chevrolet following the race.

A second "back-up" Pace Car would be a "production pilot-line RPO Z-78 modified with high-performance



hydraulic-cam L-82 engine, low-restriction exhaust system, and qualified driveline components for maximum street performance and handling." It would be used by the race chief steward during practice and qualifying runs throughout the month of May, then parked at the Pit Road entrance ready to go on race day in case the Official Pace Car experienced a problem. It was then to be donated to the Indianapolis Speedway Museum.

A third car, the second production RPO Z-78, equipped "with all available options and automatic transmission," would be used for the VIP Parade prior to the start, then presented to the race winner at the Monday evening Victory Dinner. The fourth car, also used for pre-race VIP Parade laps, would be a spiffed-up engineering protype that had been used for RPO Z-78 development and sales promotion. After the race, it was to be turned over to USAC for use as its Official Pace Car for the rest of the season, "which will provide us continued press and TV exposure through November, 1978," Piggins wrote.

What kind of a guy was Vince? At a lanky six-foot-four, he was known as tough but very supportive of his selected teams and drivers. His mission, like theirs, was to



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win. Everyone racing a Chevrolet wanted something from him, but since his small group, limited budget and mostly clandestine operations enabled him to help just a few, he had to say "no" to most.

Former Chevrolet Public Relations director Ralph Kramer remembers visiting him regularly after being named assistant director for Engineering in 1979. "I think he was leery of this new kid," he relates, "but over time we became good friends. I remember walking into his office one day, and there was Bobby Allison sitting outside waiting to see him. I said, 'Isn't that Bobby Allison out there?' He said, 'It is, and he can sit there all day as far as I'm concerned.' Vince had this way, and I was thinking this was how he handled all of the people who were after him for different things. He had his friends, he had his enemies, and he was more careful in dealing with some people than others."

Piggins retired in 1983 and passed away in October, 1985 at the age of 68. His major contributions to Chevrolet racing and motorsports in general are fondly remembered today.