



This is the very car that Zora (standing next to car) proudly showed to auto journalists during the 1957 production Long Lead press preview and also to famed writer, Tom McCahill (shown getting in car). Copyright 2009 GM Corp. Used with permission, GM Media Archive.

First Fuelie FOUND!

THIS YEAR'S PROJECT VEHICLE IS THE ONE THAT STARTED IT ALL FOR HIGH-PRESSURE FUEL SYSTEMS IN CORVETTES.

BY ANDY BOLIG AND KEN KAYSER \ PHOTOS COURTESY OF J&M ENTERPRIZES

Everything has a "first." Sometimes, we are privileged to experience them firsthand and other times, we can only re-live them. Only 1,040 1957 Corvette buyers experienced fuel injection firsthand, but the rest of us are still very much enjoying our turn more than 50 years later.

Fuel injection first appeared on Corvettes in 1957. Until that time, only race-specific cars had been equipped with fuel injection, and their systems were riddled with issues that prevented them from being used on the street for daily transportation. In 1957, Chevrolet introduced Ramjet fuel injection on the Corvette, giving both the car's image and performance a boost.

Chevrolet had installed at least one prototype pre-production fuel-injection system on a 1956 Corvette ex-race car in May of 1956 at the Engineering Center in Michigan. Zora Arkus-Duntov and his engineers were desperately working out the bugs and sweating the details for the upcoming proposed introduction of fuel injection for the entire Chevrolet 1957 line-up. All previous fuel-injection



COPYRIGHT 2009 GM CORP. USED WITH PERMISSION, GM MEDIA ARCHIVE

test vehicles were either 1955 or 1956 production cars, and the F.I. systems installed on them were all experimental development units, never intended for public sale. Seriously worn-out or severely damaged Chevrolet Engineering test vehicles were usually scrapped. However, for test vehicles deemed reasonable to be sold as current model year used cars, experimental parts were removed and replaced with their original "saved" production parts prior to sale. Chevrolet management, employees and "favored" dealers were eligible to purchase these test cars at significant savings.

Even for 1957, the year that the Fuelie Corvette was brought to the public, the first fuel-injected Corvettes didn't start out as fuel-injected Corvettes. Due to a series of circumstances, the 1957 model year was the first time that Corvette production experienced a traditional "pilot-line" vehicle build. The RPO-579 fuel-injection V-8s were not ready for inclusion in the planned "pilot run," so consequently, the batch size was reduced and only the single- and dual-carburetor V-8s were scheduled. These first 20 or so 1957 Corvettes (VIN's 001 thru 020) were spliced into the end of the 1956 production run in mid August 1956. The last of the 1956 Corvettes were assembled in September, and St Louis then prepared for the assembly line for the 1957 Corvette model year changes to start 1957 production on October 1, 1956.

For the 1957 Corvette pilot line run, all 20 of the cars were painted Cascade Green with Shoreline Beige interiors, and they all carried 1957 serial numbers and were considered part of the 1957 production run. For many 1956 Corvette components that were scheduled to change for 1957, if the changes were considered non-essential, the 1956 part was used for the pilot run. For example, changes to the 1957 AM radio were the engraved "WONDER BAR" on the signal-seeking push bar, and the AM dial with the Conelrad emblems. The 1956 radios did not have these features and were used on the "pilot" 1957 Corvettes. Similar trim items from 1956 that were also used on the pilot Corvettes were the 1956 rearview mirror and the narrow chrome molding on the leading edge of the hardtop.

One of those cars, serial number E57S100010 was equipped with the new-for-1957, RPO-469C Duntov Cam 270hp dual-quad 283cid V-8 engine and both tops, including the RPO-473 power-operated folding top and the RPO-419 auxiliary hardtop. It was scheduled to go to the Engineering

1 The serial numbers were double-stamped on the frame rail and still exist as they were stamped back in August of 1956.

2 The chassis had been recently "touched-up," but it is believed that those doing the work were not aware of the significance of the car or the parts it contained.

3 The frame and chassis components were treated to blasting and coated with sealer, in preparation for assembly and painting.

4 The A-arms were dip-painted from the stamper because they could not be painted thoroughly after assembly to prevent rusting. The orange and yellow paint marks differentiated Corvette forged parts from similar passenger-car parts. The yellow-paint-marked Corvette parts were specially heat-treated and shot-peened to make them stronger for competition use. The first use of these parts with the "special heat-treat and shot-peening" are for Duntov's Chevy Engineering 1955 Corvette "5951" test car in December 1955 for testing at the GM Desert PG in Arizona that would eventually be used for Zora's 150 mph record run in test car "6901" at Daytona Beach, January 15th, 1956. The word "green" was used on the crossmember to denote the color of the car's body. It was written in grease pencil, as it is believed that this is what was used on the assembly line in 1956.



1



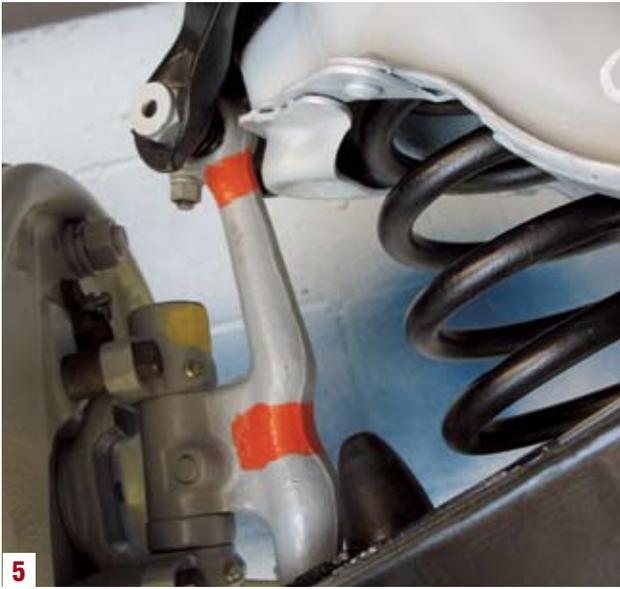
2



3



4



5



6



7

5 It is believed that this car's suspension was retro-fitted with the 1957 RPO-581 HD suspension when it was fuel injected for the press preview. It is also believed that a prior "restoration" removed the heavy-duty springs and the steering adapter, but left the heavy-duty stabilizer bar. In 1957 Chevrolet Engineering developed an even more extreme RPO-684 package beefing up the springs even more and added HD shocks and HD-finned competition brakes to it.

6 The light and dark blue on the tie rods was for right hand or left hand threads. There had to be one of each inside the adjusting sleeve or tube for it to function as a turn-buckle. The sleeve was also stronger for the Corvette, so again the yellow paint marks. RPO-581 would have included a quick-steering adapter, and it is believed that this car should have one. It will be installed before the chassis restoration is completed.

7 The interesting lack of paint around the hub and lug nuts was specified by Chevy Engineering so that the lug nuts would not strip or cross thread. Sometimes just the studs were sleeved, and other times they were covered in one mask. The front suspension was completely assembled before painting; it was painted upside down on a rail car, so there wouldn't be a lot of coverage on the top side. The rear end was pre-assembled and painted the same way. Then, they came back and added blackout to the top side of the suspension just before installation.

Center in Michigan for evaluation and track testing. Shortly after arriving, it was selected to receive the first of the production-based Chevrolet fuel-injected V-8s with a Rochester Model 7014360 fuel-injection system.

This car was destined to represent Corvette performance to a crowd of automotive journalists with their expectations of what a sports car should be, at the Long Lead Press Conference scheduled for late September. Therefore, in early September 1956 this "first fuelie" received an engine transplant with the first of the hand-built RPO-579C 283cid, 283hp Chevrolet V-8s assembled just a week earlier! These high-performance fuelies are famous for their Duntov camshaft and mechanical tappets and are stamped "EL" on the block pad. The engine was hand assembled and dynamometer tested at Flint V-8 prior to shipping to Chevrolet Engineering in Warren, Michigan. Zora Arkus-Duntov was personally managing the Chevrolet V-8 fuel-injection program development

for the Corvette per Ed Cole's orders. This first fuelie would become the car that noted auto journalist Tom McCahill of *Mechanic's Illustrated* magazine would drive in the first allowed test drive outside of GM. In 1957, just as they do today, auto manufacturers open up their gates and invite the motoring press to come and test-drive their newest offerings.

Zora and Tom were well-acquainted due to their past association when NASCAR certified Zora's record breaking 150-mph-plus Corvette run at Daytona Beach in January 1956. Zora offered to host Tom McCahill in a personal one-on-one Corvette fuel-injection road test just prior to the Long Lead press event.

Zora fully understood the suspension requirements for all-out performance driving on the GM Test Track better than anyone and wanted to wow McCahill, not just give him a fast car to drive. It is believed that this first fuelie proved to be so over-powered and ill-mannered for the GM Tech Center Test track, that Duntov ordered a quick upgrade to

its suspension. It received heavier-duty front coil springs and rear five-leaf springs developed for the 1956 Corvette "SR" racing cars built by Chevrolet Engineering for the 1956 Sebring event! Coupled with the 1956 Sebring Corvette fast steering adapter and the heavy-duty front sway bar, Chevrolet Engineering hastily dubbed it the RPO-581 Heavy-Duty Suspension option. Since the hardtop possessed better aerodynamics than the canvas folding top and weighed significantly less, the power convertible top and its apparatus was removed to help improve performance. The radio ignition shielding for the fuel-injected V-8 was not yet available, so number 10 was converted to a radio delete status.

After the first fuelie had lived out its testing and evaluation purpose at Chevrolet Engineering, the car was transferred to Chevrolet Sales and Marketing for disposal via the Chevrolet Company Car Program. Ed Cole kept a close watch on special Chevrolets, including ex-Motorama show cars that were available for company sale



8



9



10

8 Notice the aluminum shims mounted between the frame and front suspension. The shims were initially developed for the 1956 SR cars. An October 1956 Chevrolet Service Bulletin stated that the first 1956 Corvette with the 240hp engine was VIN 3175 and all 240hp Corvettes from St. Louis received the new 1957 front end with the shims. After 1956 VIN 4156, all remaining 1956 Corvettes received the new 1957 Corvette front end with the shims.

9 The factory 1953-62 Corvette rear leaf springs had grooves in each leaf, called a "Keystone." It was specified by the U.S. Auto Industry Standards Organization that published spring manufacturing specifications for the Big Three. The Corvette springs were manufactured by Eaton Corp. Here is the original, unrestored spring next to a modern replacement.

10 The car retains a special 3.55-g geared, non-posi rearend installed by Chevrolet Engineering, part number 3725899. It is dated March 1956, and Ken Kayser reports that leftover parts from '56 production would have been used in creating the '57 pilot line cars. Note that the factory springs (with Keystone) are used.

and is known to have recommended these cars to friends, relatives and select dealers. Since this first fuelie was equipped with all 1957 Corvette production options and parts, it was allowed to exit through the gates of Chevrolet with the "EL" V-8 engine, the early fuel-injection unit and the additional heavy-duty chassis components. A Chevrolet dealer in the Chicago Zone purchased the car from Chevrolet.

While under the initial ownership by the Chevrolet dealer as a driver, number 10 suffered front end body damage and the fuel-injection unit was removed. It was re-painted several times, hiding the factory Cascade Green paint, and was considered just another old, tired Corvette. Along the way, the original "EL" engine succumbed and number 10's original duty at Chevrolet Engineering faded into obscurity.

The 1957 Corvette RPO-579 V-8s finally became available for the start of production and 12 RPO-579 Corvette fuelie pilot cars were built between October 2nd and the 15th of 1956.

Production RPO-579 fuelie Corvettes then started November 1st, 1956 in very limited quantities. In one famous 1957 Corvette advertisement, Campbell-Ewald even called the fuelie Corvette an "American Classic."

In less than 20 years, the original 1953 Corvette and the '57 fuelies became legendary bookends of the mid-Fifties era, causing a popular resurgence in the early 1970s that started the restoration movement and resulted in the formation of the National Corvette Restorers Society (NCRS) in 1975. Mike Hunt, an early member of the NCRS who was passionate about the 1956-57 Corvette, began a serious quest to uncover as many documented examples as he could and to record original data from these examples to construct a historical database. Mike named his quest, "Research Project '56-'57" and sent out questionnaires via the NCRS. Number 10 was reported to Mike's RP '56-'57 when it still fortunately retained the original "EL" engine and its early history. Soon thereafter, the car

changed hands, and Mike lost track of it.

Gone but not forgotten, the car eventually found its way into the hands of Corvette restoration specialists at J&M Enterprises in Brooksville, Florida. Subsequent inspection of the car hinted as to the colorful history that this car has enjoyed, but John Ames couldn't be sure of exactly what he had, at least not until a chance meeting with early fuel-injection historian Ken Kayser. Besides writing what may be the quintessential work on early fuel-injection systems, Ken also knew a lot about this particular car!

Ken Kayser and Mike Hunt became close associates due to their common love for the '57 Corvette, and they shared significant Corvette and fuel-injection information starting in 1980. When Mike Hunt gradually dissolved his RP '56-'57 in the early 90s, he allowed Ken to continue on, sending Ken all his most secret information about the "real documented 1957 fuelies in his data bank." There were a great many "made-up fuel-injected Corvettes," and Mike did not want to



11

11 A correctly restored wheel will show paint overspray on the backside of the wheel. The wheel would have been natural steel when painted. J&M used a self-etching primer to keep them from rusting and to help paint adhesion.



12

12 The fronts of the wheels were painted with Cascade Green, which would flow through the openings of the wheels and partially coat the inside of the wheel as overspray.

aid in the creation of still more. The one 1957 fuelie Corvette that Mike admired more than the two he owned himself and always hoped to re-discover, was the Duntov-McCahill test car, E57S100010. About the same time Mike received the status of number 10, its fuel-injection unit was sold at an NCRS meet in Illinois to a serious collector acquaintance of Kayser. Ken ultimately purchased the unit for safekeeping, and used it as a featured fuel-injection unit in his *History of Fuel Injection* book, see www.tachometerpress.com for more info.

A chance encounter between John and Ken occurred at the NCRS Orlando Regional Meet. Ken was autographing copies of his book when John mentioned he "has '57 number 10." Of course Ken replied, "Ten what?" John said VIN number 10 and started asking Ken about strange features of the car. Ken then started asking questions of John, and it soon became obvious that Ken knew something about the car that even John didn't, like the original color. John told Ken about the black and silver paint on the car, but it was Ken who stated the original factory paint was Cascade Green. John didn't believe it! Ken promised to help John with his project, but did not say a word about the car's original history, wanting to double-check his facts first. Ken asked John if the car still had the original ignition-starting harness. John did not know for sure, but agreed to send it to Ken. The ignition harness was the original dual-quad

1956 harness, correct for the 1957 pilot Corvette. The fuel-injection business end of the harness was, in fact, cut from an early Packard Electric Corvette fuel-injection harness that was grafted to the original harness with Chevrolet Engineering style due care!

Under some hard-to-spray areas where aftermarket re-sprayers fear to go, John found traces of the long-lost Cascade Green paint and called Ken about a month later. Ken decided it was finally time to inform John about the unique history of number 10. He told John that number 10 was in fact the Duntov-McCahill test fuelie in 1956 and that it should be restored correctly. That's also when Ken informed John of his ultra-rare model 7014360 fuel-injection unit serial number three (1003) and the necessity to re-unite it with the car that wore it so proudly, so many years ago. They agreed that either one or the other must undertake the restoration of the car. After months of deliberation, John was compelled to undertake the project.

Taking on a restoration of historical importance like this shouldn't be taken lightly. Understanding the wealth of knowledge that Ken brings to the table with his many years working inside GM and following these early fuelies throughout the decades, John asked Ken to assist

in the restoration of this car to ensure accuracy of the restoration and to make it the closest representation of what the car was, as it represented the best-performing Corvette that Chevrolet had to offer.

We'll be following along with the restoration of this fascinating Corvette throughout the next year and will have the car, completed, in our booth at this year's Corvettes at Carlisle. Follow along and re-live history with us and be sure to stop by our booth at Carlisle to see this car for yourself. The one that put fuel-injected Corvettes on the map, the first Corvette with the one-hp-per-cube engine, the first fuelie! ■



The chassis for the first fuelie, restored as it was when it was specially prepared by Chevrolet's Engineering Center, complete with RPO-581 and waiting for its special fuel-injected engine. But, before we get into that, we've got a special treat for our early fuel injection-loving enthusiasts, next month!