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# PROGENITOR OF CHANGE

Pulled off the '54 production line and pressed into duty as a GM test mule, this unique car likely played a crucial role in bringing V8 power to the Corvette.

| BY JIM RICHARDSON | PHOTOS BY DAVID GOOLEY |

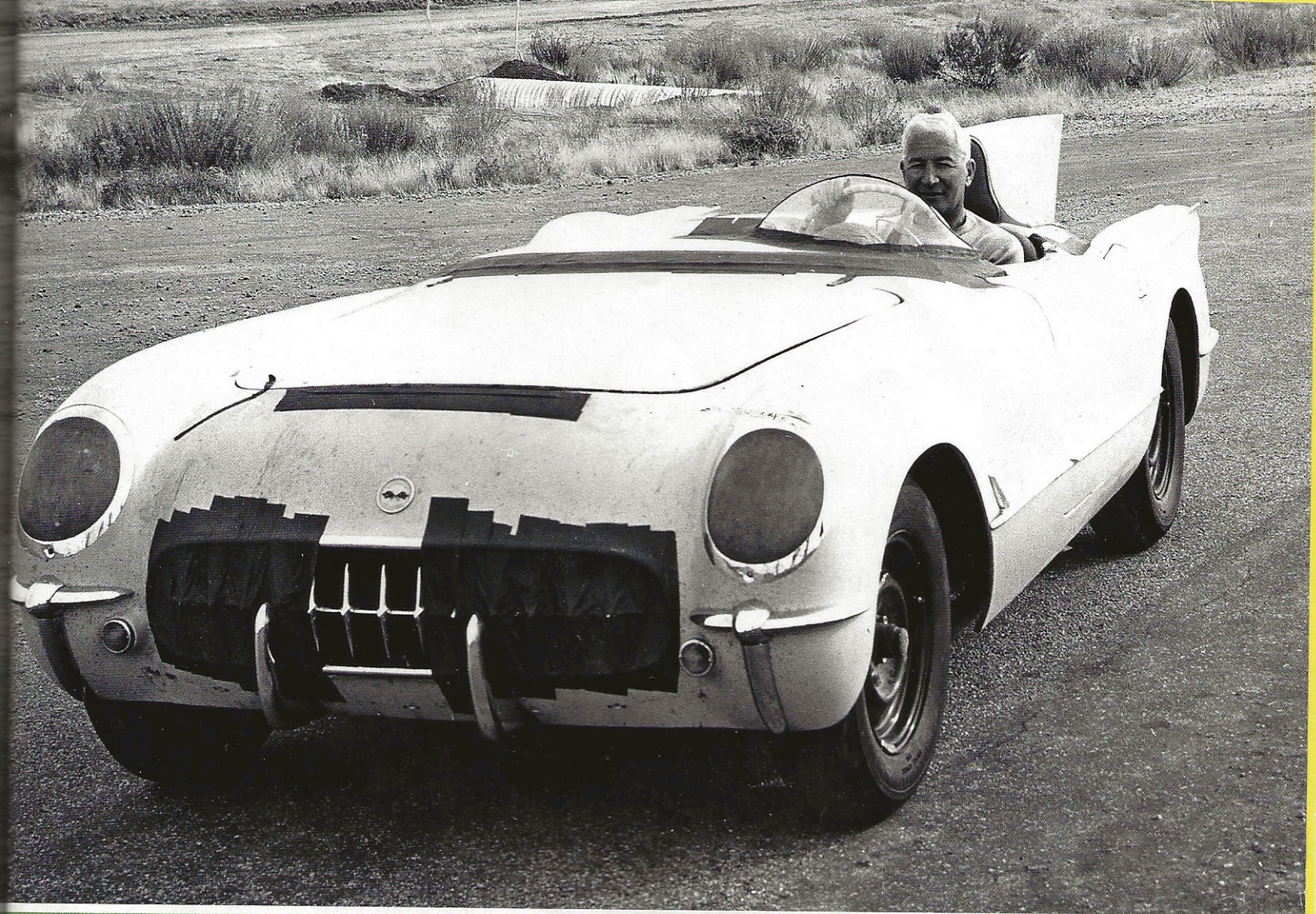
**W**e jump into the shiny, red, first-generation Corvette and hit the starter. Without hesitation, the Chevy small-block V8 rumbles to life. We pull the Powerglide into drive and are off like a greyhound. As the engine comes on cam, the front end lifts slightly and we are beyond what the law will allow in no time. Nothing built in 1955 could stay with us.

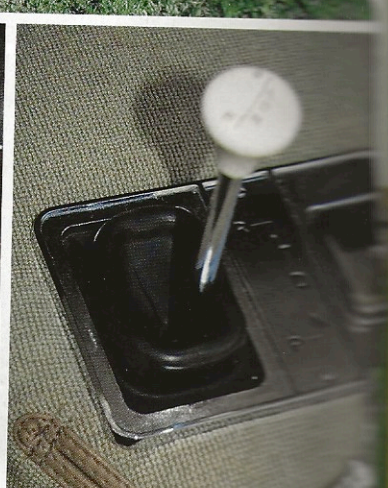
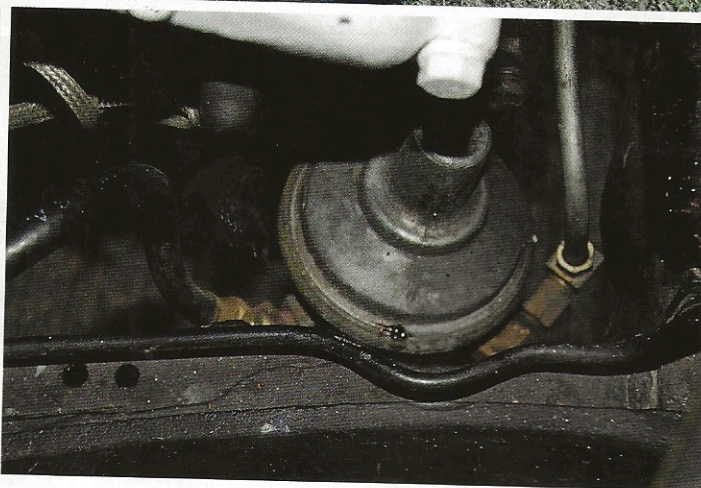
As it turns out, however, this is not your standard '55 Corvette. The car's bodywork may be from that model year, but its chassis was built in 1954. As we all know, the Corvette didn't receive V8 power until 1955, so did the owners of this particular car simply upgrade their machine by installing the more powerful eight-cylinder engine? According to Pam and Gordy Stroud, who have owned the car for over 40 years, it was not their idea to install the V8, but GM's. Their car is believed to be one of the '54 models Chevy engineers used to test the new engine in the existing chassis. Given that the small-block V8 helped save the Corvette from an early grave, such test mules played a significant part in the model's history.

**I**t all started in 1953, when General Motors presented a two-seat concept car at its Motorama show in New York. It was stunningly beautiful, and a complete departure from the rest of the rather stolid 1953 Chevrolet lineup. The reaction to the Corvette show car was so enthusiastic that GM decided to rush it into production.

In doing so, the carmaker wanted to keep down costs and development time, so under that innovative and elegant fiberglass bodywork was essentially a standard 1953 Chevrolet chassis, engine and running gear. Chevy's long-serving 235-cubic-inch inline-6 was treated to a more aggressive cam, three Carter side-draft single-barrel carbs and a more efficient exhaust manifold with dual pipes. These changes bumped the Stovebolt up to 150 horsepower from 115. But behind it was Chevrolet's two-speed Powerglide automatic transmission (no manual transmission was offered), which made for rather agricultural performance. Even a late 1954 dealer-installed optional Paxton supercharger didn't help much.

Opposite, top to bottom: Zora Arkus-Duntov behind the wheel of the V8-engined test mule EX87/5951 at General Motors' proving grounds in Arizona, where he drove it to a top speed of 163 mph in 1955; that car's chassis is now underneath a '55 body.





The chassis was heavy, the suspension softly sprung and the steering slow. Truth is, for all their beauty, the 1953 and '54 Corvettes were not really sports cars. They were more like touring roadsters or boulevard cruisers. And because of problems with building the bodies out of fiberglass—a new and largely untested material—production was slow and costs were greater than anticipated.

Due to delays and a late start, only 300 '53 Corvettes were built. The '54 models were basically unchanged from the previous year, but GM expected high demand for them. This

optimism turned out to be over-blown; though it had ramped up to produce many more, Chevy only built 3,640 '54 Corvettes, and many of them languished on dealer lots.

Poor Corvette sales weren't the division's only problem; Chevrolet as a brand was losing ground in the early '50s. Ford had been eating into its market share, and in 1954 it introduced a modern, overhead-valve V8, which further accelerated this trend. The best Chevrolet had for a powerplant at the time was the previously mentioned inline-6, a pre-war design originally intended for trucks. It

was smooth and nearly indestructible, but it was heavy, inefficient and obsolete.

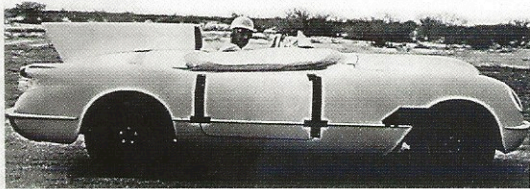
Ed Cole, who became chief engineer at Chevrolet in the early '50s, knew something had to be done—and fast. He had helped design the 1949 Cadillac V8, and though Chevrolet was already working on a new six-cylinder powerplant, he decided the division really needed a V8 if it was to compete with Ford. He had just 15 months to go from concept to production in order for the car to be introduced in 1955. In just four months, Cole and his engineering staff had designed a new



# The First Corvette "Mule"



You are looking at Corvette EX87/5951, which was pulled off the production line by General Motors in mid-1954 and given engineering tracking number 5951. This car was turned over to General Motors Engineers Mauri Rose, winner of the Indianapolis 500 three times, and Maurice Rosenberger, transmission specialist, for V-8 and manual transmission testing for the 1955 and 1956 Corvette. Their work was completed in mid-1955 and 5951 was sent to Zora Duntov, newly named head of Corvette engineering, for further experiments at the GM Desert Proving Grounds near Mesa, Arizona.



Zora Duntov in EX87/5951 at the proving grounds near Mesa, Arizona.

Duntov's creation of a specially designed "hi-lift cam shaft" (the famous "Duntov Cam") in the Chevy Small Block Engine enabled EX87/5951 to reach a speed of just under 163 MPH.



EX87/5951 was then trucked back to the Tech Center in Warren, Michigan, where the engine and transmission were removed, retested, and placed in a 1956 prototype, ready for speed week racing at Daytona Beach in early 1956. EX87/5951 was reassembled in early 1956, using a red 1955 body and the latest 1956 products available at the Tech Center, including engine and transmission. It was then used as a demonstrator (note holes in the bumper and frame that accommodate the tow hitch).

Due to the success of the 1956 Corvette, the demonstrator was retired, assigned the VIN EX87 and sold to an unknown (to this date) GM employee sometime in 1956. It's whereabouts were unknown until purchased by the present owners in 1968. Aside from painting the car "Venetian Red" in the mid-1970s and replacing worn parts, all of what you see is the original car as it was purchased in 1968.



In order to determine what was required to stuff the new V8 in a Corvette, Chevrolet pulled a '54 Corvette off the line and installed one in it. The car was designated it EX87/5951, the "EX" standing for experimental. (This was the number likely stamped on the identification plate on the Strouds' Corvette, but this item no longer exists, however, having succumbed to rust.) The Corvette was subjected to a battery of tests at GM's Milford Proving Grounds, with the chassis coming under particular scrutiny given the need to adjust the suspension tuning in accordance with the car's lighter nose.

As it turned out, the small-block V8 was a natural fit in the Corvette and the new powerplant was pressed into duty in time for '55 production, though seven six-cylinder Corvettes were also built that year. The test mules, including EX87, were not put out to pasture quite yet. Since some engineers involved in the project were former race-car drivers—most notably Zora Arkus-Duntov and three-time Indianapolis 500 winner Mauri Rose—testing, which included work on the '56 model, eventually turned to speed; those involved wanted to see how fast a Corvette could go. Fully aware of the marketing potential of posting a high top speed, Duntov decided to enter a Corvette in the annual Speedweeks at Daytona Beach, Florida in

Left: Installed on the Corvette beginning in the 1955 model year, the Chevy small-block V8 displaced 265 cubic inches and produced 195 horsepower, which represented a 40-horsepower gain over the 235-cid inline-6 that it replaced. Opposite bottom, left to right: This is a '54-spec gas pedal; the frame was notched by hand to add room for a V8 fuel pump; the car was pulled off the assembly line equipped with an automatic transmission, and while it has one now there is evidence that it was fitted with a manual transmission at some point. Top: The history placard the car's owners display at car events.

V8. What they came up with was astounding.

Despite its higher cylinder count and larger displacement (265 cubic inches versus 235), the V8 was 40 pounds lighter than the inline-6, plus it was lower and more compact. With an output of 195 horsepower, it also produced 40 more horsepower than the warmed-over inline-6 used in '54 Corvettes.

The new V8 was chock full of innovation. By truncating the crankcase at the parting line for the main bearings, a lot of weight was saved. The heads were interchangeable from side to side, making production easier and the

intake manifold doubled as the lifter valley cover, thus saving more weight and eliminating complexity. And instead of cast rocker arms and shafts, which was standard practice at the time, the engine used stamped-steel rockers that pivoted on short studs.

The Chevy small-block V8, as it came to be known, is arguably the best American automotive engine design ever. It is compact, light, powerful and durable. Over 100 million small blocks have been made, and the original Gen I small block is still in production in Mexico as a replacement crate motor.

February 1956. His goal was to reach 150 mph, an especially lofty target considering the event took place on sand.

Duntov knew that a standard, V8-engined '55 Corvette would never reach that speed; the car would need both engine and bodywork modifications to attain it. He calculated that the engine would need an additional 30 horsepower, and to that end he developed a special camshaft that extracted the desired output and allowed the V8 to rev higher—all the way to 6,500 rpm. An engine with this new "Duntov cam" was installed in EX87.

## When they bought it, the Strouds had no idea the Corvette was anything other than an off-the-shelf 1955 roadster.

To improve the mule's aerodynamics, a tonneau was made to cover the passenger seat, a headrest was attached and a small, racing-style windshield was added, as was a belly pan, evidence of which still exists on the Strouds' car.

In late 1955, EX87 was taken to GM's proving grounds in Arizona for testing. With Duntov at the wheel, it achieved a top speed of 163 mph at 6,300 rpm using a rear axle with a 3.27:1 final-drive ratio. Pleased with the result, Duntov was convinced a Corvette thusly configured could hit 150 mph at Daytona Beach. Alas, a different '54 test mule was used for that historic run, one fitted with '56 bodywork. Duntov set a two-way average speed of 150.6 mph.

After several more alterations, EX87 was sent Warren, Michigan, where it was torn down and analyzed. Records indicate that its modified engine was installed in a Corvette raced in Sebring. A new 1956 225-horsepower production V8 was installed, as was a new 1955 body, which was painted red. A Powerglide automatic transmission was also fitted, and the interior was redone, as well.

Freshly spruced up, EX87 wound up being used as a courtesy car and demonstrator. Some

time later, it was sold to a GM engineer. Between that point and the Strouds' purchase in 1968, the car's history is largely unknown. The Strouds, who live in Southern California, bought it from a divorcee in Arizona whose husband had owned the car. She knew nothing about its provenance.

**W**hen they bought it, the Strouds had no idea that the Corvette was anything other than an off-the-shelf 1955 roadster. But as the years went by, and experts examined it and judged it at car shows, it became more evident that they possessed the EX87 test mule (though there have been other Corvettes purported to be the real McCoy). Such things as the handcrafted notch in the frame for the V8 fuel pump, the 1954-spec gas pedal and the custom-made trailer hitch for the rear of the car—often as not, speed calibration devices were towed behind experimental cars—provide compelling evidence.

In addition, the car features all of the brackets and braces required for a standard transmission welded in—EX87 had a manual gearbox—and it is equipped with a differential for a '55 three-speed transmission, as well.

Obviously the car was altered and tested in several different configurations.

The Strouds' Corvette, though it has been rebodied, still has its original 1954 side-curtain windows. In fact, many of the latches, handles and such have remained with the car since it was pulled off the line in 1954. The engine in the car today is a 327 short block installed in 1964, but it still has the '56 heads, manifolds and valve covers.

Seeing and driving EX87 is like visiting a shrine. It has an aura all its own. To Corvette buffs, the tarmac under it is hallowed ground. This mule is a historical treasure trove to Corvette historians. And Gordy Stroud says his wife Pam loves the car as much as he does, even after 44 years of ownership. "It's just a great car to drive, and there is not another Corvette like it anywhere," he says.

The car is much faster and handles better than the 1954 models because the engine sits further back in the chassis, giving the car better balance, and the steering is quicker than the earlier models'. It stays flat through the corners and its braking is very good for the era, thanks to the car's relatively light weight. No wonder the Strouds have such a love affair with their mule. ○

