

“The 10-Second Trip”

**Blow your entire mind on the hottest street machine in the
Chevrolet Sports Department**

Corvette engineers Gib Hufstader, Tom Langdon, and Bob Clift built an all-aluminum 454 1968 Corvette “Super Stocker” for the 1969 Long Press Lead event! Automotive journalists drove the beast to 10-second quarter-mile passes!



The 10-Second Trip

Exclusive! One day only by invitation!

Blow your entire mind on the hottest street machine in the Chevrolet Sports Department

The way to do it was like this: you brought the car up to the starting line until the man said you were staged. You set the brake and brought the engine up to about a 2800 rpm stall where it would just start to pull the front wheels into the timing lights. It all happened so fast. Time compressed down into about two crucial seconds when you could feel the car begin to slip forward, and nailed the accelerator. With one tremendous hop, the machine leaped forward, shifted into second and then third and you were immediately down in the "eyes" taching 7100 rpm @ 127 mph in 10.99-11.00 seconds!

At least that was the way you did it to begin with. Then, Gib Hufstader, Corvette project engineer wondered how the slightly reworked Turbo Hydra-Matic would take a neutral start. After that, you just brought the rpms up to 6000 and pulled the shift lever into drive. Kapow! The brilliant red Corvette exploded from the line and faded. Inside, driving, it always felt at the start as if the car were weaving a bit on the course. But from behind the runs were arrow straight. The 10.65 x XS-12 Racemaster slicks, set at six psi have a natural tendency to act a little spongy, like driving on Jello. When you got back you found you had gone 130 mph in 10.89 seconds.

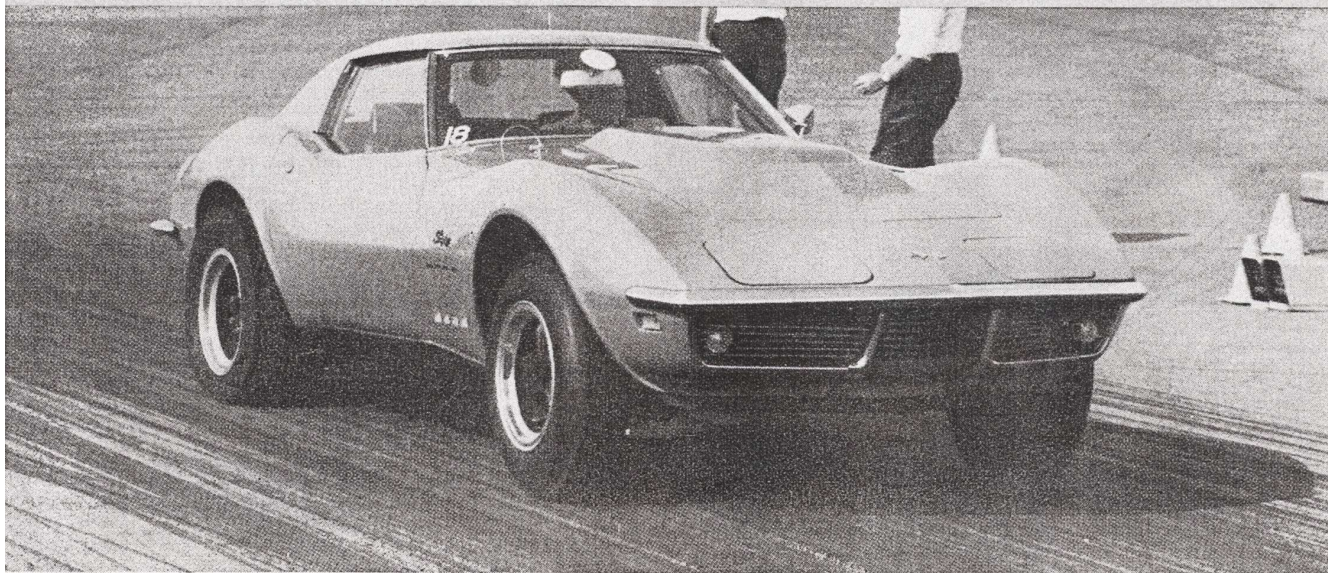
This wasn't the fantastic Chevy race-what-they-brung press day, it was better. At the original bash somebody took out the top-speed lights so we never got a chance to run the hottest drag car of the program—the ZL 1 super 'Vette. Enthusiasts that they are, the Corvette guys took pity on us and mentioned that if we could get back a few days later when they were going to run some header evaluations, we might get another shot at driving it. As we got further into the deal, we learned, that no one at the press day had bothered, or dared, ask what was actually in the car. Pretty amazing, because the people in the 'Vette group were proud of their blazer and had the information.

On the appointed day, Gib Hufstader, Tom Langdon, Project Engineer for high-performance engines, Bob Clift, Corvette engineer who has been with them since the airport racing days back in the '50s, and the ultra flat-rater of all times, mechanic Bob Keithman, showed up with cars. Swelling this group were about a dozen more interested parties, Chevy engineers who hadn't had a chance to run the hot stuff at the show and wanted to now.

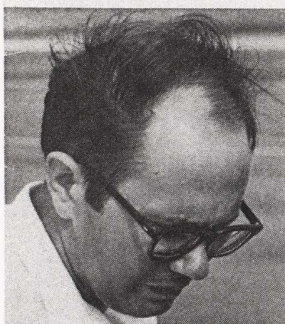
The plan was to make some base-line runs with the 'Vette using a set of frantic sounding 180° design headers made by Custom Equipment in Lansing and then switch to a normal set of collector-type pipes. After everyone had gotten his jollies, a base elapsed time of 11.01 seconds was averaged before the car was taken back to the garage to change the exhaust. During the initial runs an oil line began to leak and we retired with Tom Langdon to an Impala with air to get the engine story while it was repaired.

"The engine is a prototype 1970—let's just say very similar to a current ZL 1 all aluminum unit. The aluminum cylinder heads are the same as currently released in the ZL 1, as is the camshaft, but this particular car has a special induction and exhaust system. A normal Tufftrided crankshaft is used and four-bolt main bearing caps—literally the same cylinder case. One new thing it does have is an aluminum water pump.

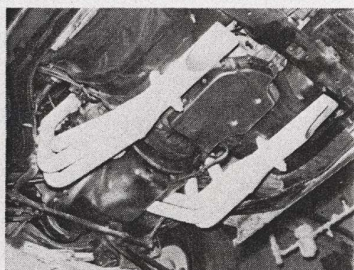
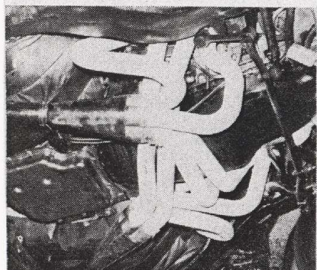
"The pistons are very similar to what we have now—TRW forged aluminum, using the same ring set and connecting rods. Modifications to the engine include what most people would call a blueprint job—the piston to bore clearance set at .007 to .0075-inch and bearing clearances in a range from .002-.003-inch. The cylinder bores are finished with a fine 500 grit honing stone. Cylinder decks are such that the flat on the piston protrudes approximately .005-.010-inch above the cylinder deck in conjunction with a .042-inch Victor core gasket as currently released for ZL 1. *continued*



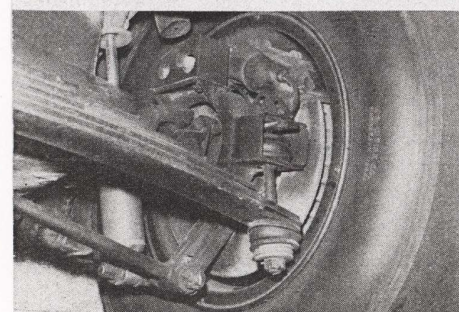
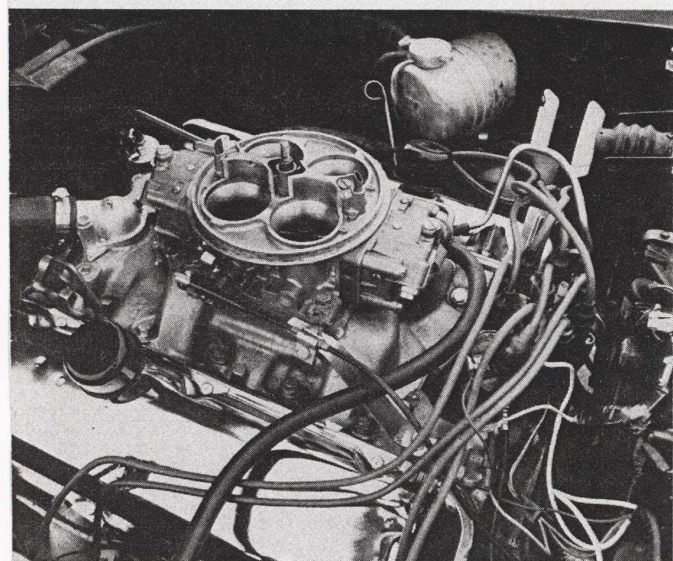
Chevrolet performance is such a relative thing, relatively unbeatable.



Tom Langdon (left), the guiding light behind the ultimate 'Vette ZL 1, waits for time. Gib Hufstader guides project.



Sounding like it ought to be at Indy or Le Mans, 180-degree header arrangement (left) looked very formidable, ran high 10-second range. But, so did the old drag racer collectors.



Aluminum ZL 1 is hot item for today. Holley 4500 carb dominates scene, passes plus 1100 cfm.

Rear suspension uses two-inch metal spacer and three-inch rubber. Car has no hop.

"Cylinder heads have undergone what you might say is a minor amount of rework which we felt would get the most reward for a minimum amount of effort. The exhaust ports have been deburred, all the sharp edges are removed together with any sharp corners, although no enlargements are made to either the intake or exhaust ports. Inlet and exhaust valves are seated on their outer edge on .040 and .060-inch wide seats respectively.

"A double angle is cut on both valves (22½ degrees), in addition to their 45-degree seat. The head seat is 45½ degrees so we have a half-degree interference between the valve and the insert. Then, after the valves are double cut, seats lapped in on the outer edge, they're hand-lapped onto the valve seat insert. A 65° stone is used to open the insert out to within .010-inch of the lap line. Cylinder heads are then cc'd and brought down to minimum specification. On these heads the cc's are running just about 115 on an average yielding a 11:45:1 compression ratio.

"We seem to gain horsepower up to around 11.5:1 to 11.75:1 compression and over that point on the dynamometer we see no change. I would say that in the field it's very possible you would see a loss due to inability to get fuel with enough octane to be able to run optimum spark for compression ratios over 12:1. This may or may not be true for drag racing but I would say it's definitely a factor for oval track or Can-Am races. With the majority of average premium fuels that are available we don't feel we can run over an 11.5:1 compression ratio.

"This car has a current production L88 or ZL 1 transistor ignition distributor and runs around 12° initial and 40° total which comes in maximum of 5000.

"Our inlet manifold is shielded with a steel pan under the inlet manifold which keeps the hot oil off. It's in the parts book. There are some very slight gains to be had by opening up the passages on the inlet manifold to match the side gasket. The manifold carburetor pad was milled off and a ¾-inch spacer plate welded back and then bored with four two-inch holes to accept this Holley model 4500 NASCAR-type carburetor. The 4500 has two-inch throttles and 1 1/16 butterfly.

"Holley claims the flow rate to be 12-1400 cfm. As you can see, even with the automatic, the thing seems to respond well at low rpm. We had a very minimum of work to do on this carburetor at the strip here. All we did was set the fuel level in the car and re-time the primary accelerator pump. Incidentally, this carburetor has two accelerator pumps exactly like our currently released ZL 1 carburetors and the secondaries are staged to come slightly later than the primary so you have a primary pump, a time lapse and then another secondary pump.

"The exhaust headers are one of the most interesting things on this car. We've been playing around with them on the dyno for some time to learn if appreciable gains could be realized by using a 180° exhaust. But we were restricted because we never had a vehicle or never found a person with a vehicle who was willing to go through the work that it takes to build the first set. Most of the people who were drag oriented didn't have the money or didn't want to spend the time to make this possible for the additional gain in power.

"I understand it has been tried in the past by several people and some have had good results with it and some haven't. After doing the development on the dynamometer, I understand why this is true. In the car, the system gets quite lengthy if you don't pay attention to the length and know that this is important. It becomes more critical on a 180-degree system like this to correlate your diameter lengths with each other.

"This particular car has 2½ inch o.d. tubing and the pipe lengths run from 36 to 38 inches measured from the flange to the collector. The collector in total length is 45 inches. The reduction cone is nine inches long and the megaphone exit is 36 inches long and it necks down to a 2½-inch diameter where it fits together."

When the oil line was repaired, by the simple expedient of blocking it, the group adjourned back to the garage to

continued on page 106

WINNER- IZE WITH NGK

THESE BUGGIES DID, AND TOOK FIRST
PLACE IN THEIR CLASS IN THE BAJA 500.

On the tough trip through the toolies from Ensenada and back, these winning NGK-sparked buggies stormed home without a hitch.

In non-production buggies (lower photo), 1st in class 2nd overall Vic Wilson and Drino Miller. For production two wheel drive buggies—1st in class—3rd overall—Tom McClelland and Andy DeVercely, Jr.

Exclusive NGK Heart-of-Copper cores dissipated blazing heat. Kept plug tips clean, provided full power from high speed to rough going. You get the same sure-fire performance for your car or buggy. NGK makes standard, competition, and racing plugs. Wide-range NGK's... proven best on and off the road. Winnerize your buggy today!



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THE 10-SECOND TRIP

continued

switch to the normal collector system that uses identical diameter pipes as the 180° but two inches shorter. While the car was on the hoist, Gib Hufstader enumerated the changes that had been done to the car's suspension. In back, the F-41 spring (3828811) with two leafs is used with F-41 shocks (3171489). A two-inch metal block is bolted to the top of the hub carrier which, after traveling about two inches, meets a three-inch rubber bumper. This car has absolutely no wheel hop.

In the differential is a set of 4.88:1, 4650 high nickel alloy gears that are a standard option. Gib took pains to point out that these Chevrolet gears are the best available and that the serious tuner would be money and time ahead to use them. Eight and half inch wide American mags are on the back with seven-inch in front. With a 400-pound load, 0-degrees camber is maintained in the rear suspension for square bite. On the front end three degrees positive caster is recommended with 0-degrees camber and 1/16-inch toe in per wheel.

In what was probably one of the most rewarding days of our lives, several things stand out. The performance of the car (3000 pounds with gas), as consistent and fantastic as it was, was overshadowed by the performance of the men, Hufstader, Langdon and Clift, who flogged the car right along



with Keithman, the mechanic. They all exhibited the same sort of boyish enthusiasm and dedication to their jobs as the guys you find at Indy, Daytona, Laguna Seca or Lions.

You could see it whenever it got down to the short hairs. The 180° exhaust has gotten oil spotted and the replacement looked a little faded and that just wouldn't have looked right in the pictures. So a can of white exhaust paint was hunted up and the situation corrected. It's the little things that make you a champion.

As always happens, the old fashioned headers ran as good or slightly better than the super-science 180° type—11.01 compared to 10.90s. (The neutral starts were just an after-thought.) With a slightly higher stall speed convertor, the all-time best for the car is 10.60 seconds @ 132 mph. Which, against a national class record of 10.75 @ 128.75, is impressive. The fact that almost anybody who knows how to drive could jump in and duplicate this run after run, may be the most shattering aspect of all.

Perhaps that is why Chevrolet has been No. 1 for so long, they build some pretty darned good iron. Or, perhaps it is all the Gib Hufstadters, Bob Clifts and Tom Langdons. We probably better ask Zora Duntov, he would know.

POSTSCRIPT: The one-off all-aluminum 454 mule drag Vette was thrashed and enjoyed by the automotive press, then stripped of its good reusable parts, and crushed. For decades, only those with a copy of the October 1969 issue of Motor Trend and a good memory remembered the car because it was only seen once at the by-invitation-only Long Press Lead in the summer of 1969 to show off the upcoming 1970 Chevrolet cars.

Dave Miller and friends decided to recreate the one-of-a-kind Chevrolet-built 454 drag Vette. I covered this car in the July 2023 issue of Vette Vues Magazine. You can read the story here... <http://www.corvettereport.com/454-zl-1-big-block-drag-car-craziest-corvette-story-ever/>



The lead engineer on the original car was Gib Hufstader. Gib had mountains of documentation and knew exactly how to build the re-creation. Were it not for Gib's knowledge and background, the project would not have happened.

In 2009, my Illustrated Corvette Series monthly column had a two-part story titled, "Zora Arkus-Duntov's Mule Corvettes". Part 2 covered the all-aluminum 454 drag Vette. Gib was very helpful with my story. I sent him a few of my Corvette prints, and he wrote back a very kind letter that you can read below.

On May 5, 2025, Gib Hufstader died at the age of 94. I will be publishing a review of Gib's long career in June 2025. - Scott





9 June 2009

Dear Scott

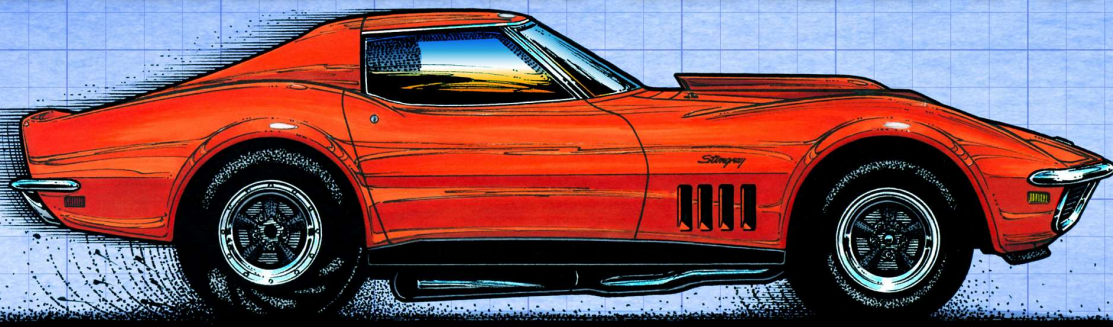
Thank you for the Corvette illustrations, very nice. My wife is planning to frame the 1974 car. That year is the one I bought from Chevy at my retirement. It is a 454 with A.C., P.S., M-21 trans, original Nassau blue, silver leather interior and only 16,700 miles. A nice show car except I had built a 2.92:1 axle for our last chance at economy. Very tall gearing to drive in town!

Enclose the mag. article and the pictures I took of the Drag Car at our Proving Ground in 1969. Please use as you like. I hope it helps.

My Best-
Hil

ALL-ALUMINUM BIG-BLOCK LT-2 454

K. Scott Leivers 5.23



EXPERIMENTAL DRAG VETTE



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