Under the Hood February 2022

In the November column I discussed engine maintenance of our earlier Corvette (and other manufacturers) engines. Chevrolet has had many great V8 engines since the introduction of the 1955 265 ci engine, but I want to talk about a couple of examples. For the 1965 C2, Corvette introduced the 327 ci-350 hp L79. In 1965 the base 327 engine was only rated at 250 hp, so this was a full 100 hp increase. Even better was the fact that the L79 was an inexpensive $108 option. The fuelie engine was rated at 375 hp but cost $538. It is no wonder that about 20% of the Corvette buyers in 1965 optioned the L79 engine. This was a high-performance engine that was still very useable in everyday life. The news was soon on the street and in 1966 the option rate for the L79 jumped to 27%. Basically, this engine combination continued through 1972 with the increased displacement 350 ci LT1 engine, although we have discussed before that the 1972 engines were dramatically downrated in horsepower partly due to lower compression, but also the change from SAE Gross to SAE Net rating system. This L79 engine was also available in the mid-sized Malibu/Chevelle. However, one of my favorite applications of the L79 was the 1966 Nova. The Malibu was a body on frame design while the Nova was not only smaller, but also of unibody construction (like almost every modern car and even some pickups/SUVs). Consequently, the Nova was about 10% lighter than the Malibu/Chevelle. Since performance can typically be measured by horsepower and weight, it is obvious that the Nova with a L79 was a great combination. Chevrolet could read the demand for the L79 and had almost doubled the option price for this Nova engine to $198.

The second engine I want to discuss was the 396 ci big block first introduced in 1965. Mid-year 1965, the 327 fuelie Corvette engine was dropped in favor of the new big block 396. In 1965 the 327 fuelie engine was rated at 375 hp, but the big block engine got a 50 hp jump to 425 hp. Not only did the 396 have increased horsepower, but it had considerably more torque (which we use in everyday driving) compared to the fuelie engine. The big block 396 also cost about half the option price of the fuelie engine. The Corvette 396 had an aggressive solid lifter cam which allowed high revs, but also required the routine lifter adjustment discussed in that November column. Personally, I have a soft spot in my heart for the 65 396 Corvette as this was the first Corvette that I had the opportunity to drive in earnest. The 396 was a one-year engine for the Corvette as the block was increased to 427 ci for the 66 model. However, the 396 became a legend in other Chevy models. At the time, GM has a policy that mid-sized cars had to use an engine smaller than 400 ci. A slightly detuned L37 396 ci, rated at 375 hp, appeared in a very special 1965 Malibu. Although with a more user-friendly cam, this engine was still heavily built for high performance with forged crankshaft, connecting rods and pistons and had 4 bolt main bearing caps for durability. This special 65 Malibu was option package Z16 and added almost 60% to the base V8 engine Malibu price. One of the major auto magazines called the L37 “Motor of the Year”, and even Tom McCahill, the automotive editor of “Mechanix Illustrated”, waxed euphorically about the L37 engine. Chevy offered 200 hardtop Z16s (and 1 convertible). Chevy wanted these cars to be seen on the street and on the track, or perhaps in the parking lots of the tracks. Drivers such as Briggs Cunningham, AJ Foyt, Phil Hill and Dan Blocker (Hoss on the TV program Bonanza) were all offered Z16s. CMCS founding member John Thomas was one of those lucky 200 buyers. At the time John had only owned Corvettes and was in need of a family car when he bought the Z16. Remember that at the time, few thought of future value and John drove the Z16 as a daily driver including trips to Snoqualmie where he and his daughter were learning to ski. I suspect John had to be a bit careful with the throttle coming off the snowy pass. Later in the car’s life, John had club member Rick Stark rebuild the engine, did some body work and sold the car for a bit more than the original purchase price. The 396 continued to be featured in mid-sized Chevys as SS396 models and also in the Camaro. Depending on the model, the 396 was offered in 325, 350 and 375 hp versions. The 375 hp model was the choice of more than a few street, and drag strip, racers of the day. Rick, one of my good college friends, bought a 69 Camaro 396 ci-375 hp for his

“graduation” present. I had left town before he took ownership. However, a few years later Rick visited Judy and I in suburban Chicago with his Camaro. At the time we were driving a 90 hp Toyota. After a demonstration drive by Rick, he stopped the car to give me an opportunity to do a 0-60 mph run. Rev the engine, drop the clutch and the car dropped on its face. Try again, rev the engine even higher, drop the clutch and again the car bogs off the line. Finally, Rick says “It works a lot better to start in first than third gear”. Oh well. My last comment on Rick’s Camaro. A couple years later, his wife is pregnant and he makes a deal to buy a pedestrian Plymouth Satellite with a family friendly 318 V8. He takes the Camaro out the night before the trade-in for one last blast of that 375 hp and blows up the engine. Of course, this was before the manufacturers installed rev limiters for most engines. I expect it was a cold homecoming when he finally got home.

The latest automotive fad seems to be the number of pistons in our disc brake calipers. When disc brakes first came out, most were single piston. A piston pushed against one brake bad, the caliper slid, so that the brake disc was pushed against the fixed brake pad on the other side of the disc from the piston. In theory the single piston worked fine, but most people that looked at the design would find some fault. A significant improvement was made when we went to two pistons, one on each side of the disc pushing the brake pads against the disc. Then four piston calipers started showing up where we have two pistons on each side spaced equally along the brake pad to more evenly press the pad against the disc. At least most of these 4 piston calipers still used a single brake pad on each side. After this point, I think we went a bit crazy for street vehicles, or even track friendly cars. The C6 Z06 featured 6 piston calipers, three on each side, now pushing on 3 individual brake pads on each side. Ask any C6 Z06 owner the difference in cost for the 6 little brake pads vs, the two pads that we have on a “normal” Corvette. I suspect they won’t think it funny. I had thought the drive for brake caliper piston bragging rights would stop at 6, but now I understand that the new Bentley Continental GT Speed features carbon-ceramic discs and 10 piston calipers. I assume that each caliper now has 10 little brake pads but have not yet seen a picture of the assembly. I can’t wait to see which manufacturer is next to raise the ante in brake piston count. Or perhaps as Judy often says, I need to find some new outlets for my interest.