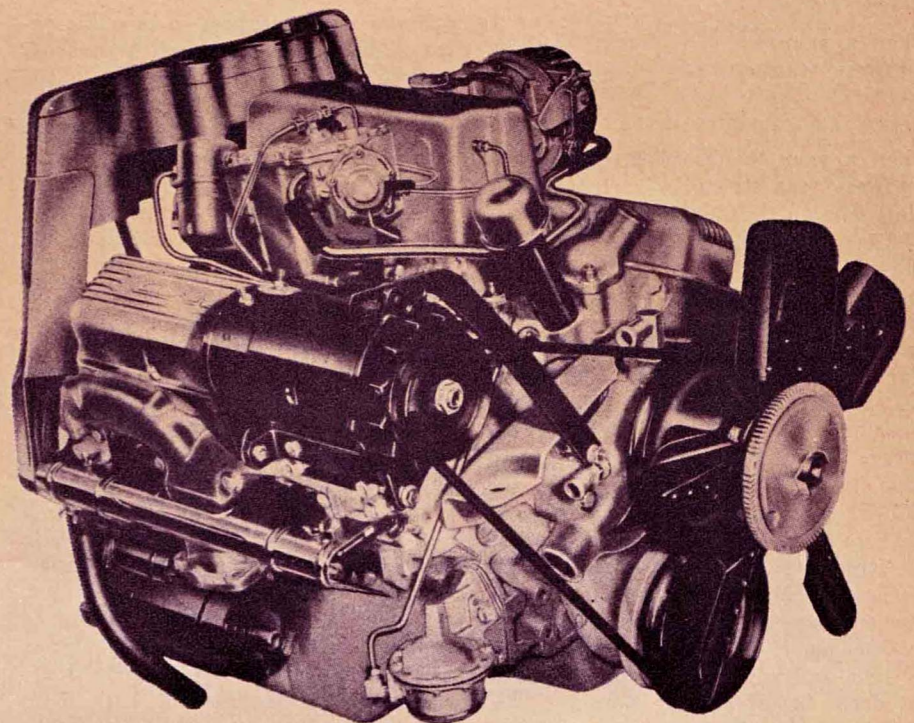




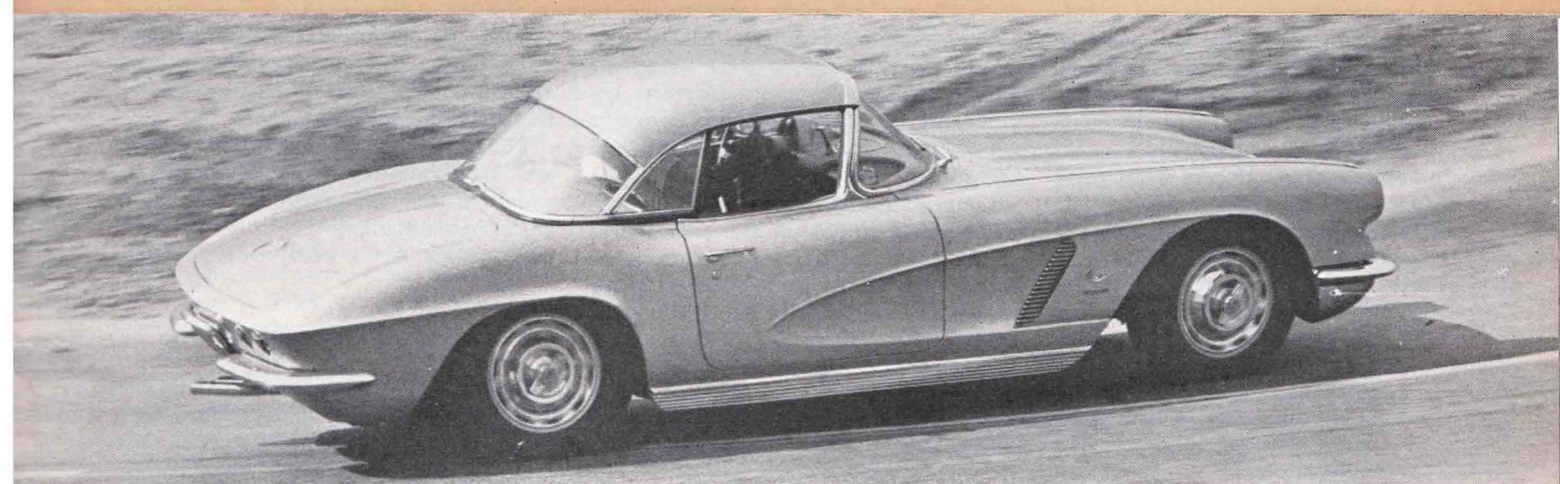
BIG 'VETTE



RIGHT — Exterior dimensions of '62 Corvette engine are unchanged from '61 but displacement has been jumped to 327 cubic inches. Top engine option uses fuel injection, develops 360 hp. Shielding over all secondary ignition wiring is to prevent radio interference.

LEFT — With limited-slip differential and 4.10 axle, HRM's test Corvette was real tiger on steep dirt mountain trails, equally rapid on paved streets.

BELOW — On sharp corners, sporty 'Vette (that's what owners call 'em) stays level but can be "drifted" with good control despite 3000 lb. weight.



Once again that old adage, "There's no substitute for cubic inches," holds true as the '62 Corvette adds 44 and produces a maximum of 360 horsepower

by Ray Brock

Is that a '62? Does it have fuel injection? The big engine? Four-speed box?" Those were the questions we were asked every time we drove into a service station to fill up the Corvette we tested for this article. After we answered yes to each of the questions, the comment we then heard was, "Boy, what a car!" This didn't happen just a couple of times but every time we stopped for gas.

"Is it a '62," was always asked first because the new Corvette has minor exterior styling changes when compared to the '61 and with only a few '62 models on the road in early November, service station attendants were not sure. We were usually asked to point out the exterior differences while the

tank was being filled and the windshield washed. They are: The side cove is not outlined with chrome as it was in '61; the cove grille has many small chrome "teeth" instead of the three large ones last year; hood and cove emblems of crossed flags are changed; wide chrome rocker panels have been added beneath the doors; and the aluminum grille screen is black anodized.

After we had explained the styling changes, the next request was to explain the big new engine they'd heard about. "Was it a bored and stroked version of the 283?" Yes. "How much power with the hot cam and fuel injection?" 360 horsepower. "Does it go?" You bet. *Those extra 44 cubic inches can really be felt, especially in low speed operation.* By this time, the tank was usually filled and we would pay the tab, crawl behind the wheel, nonchalantly buckle the seat belt, start the engine and pull away from the station smoothly while fighting back an overpowering urge to "stand on it" and let the boys back there see this baby go. Through the rear view mirror, we could watch the attendants and they never turned to the next customer until they heard our shift into fourth.

We borrowed the '62 Corvette for this test from our

friends at Harry Mann Chevrolet again this year. This agency specializes in Corvettes and always has several hot models in stock. Excluding some optional chassis extras, the car we borrowed was the hottest version of America's only sports car. It was a hardtop model with the 360 horsepower fuel-injected engine, close-ratio four-speed transmission, limited-slip differential and 4.11 rear axle ratio.

Chassis and body specifications for the '62 Corvette are identical to those of the '61 Corvette with wheelbase 102 inches; tread 57 inches, front, 59 inches, rear; overall length, 14 feet, nine inches; width, 70½ inches; and height, 52 inches. The frame is unchanged from '61, consisting of fully boxed side rails with an I-beam X-member beneath the passenger compartment to resist frame twist.

A single change has been made in the suspension department for 1962; the front spring rates have been increased from 110 to 115 pounds per inch at the wheel to compensate for the slight increase in engine weight which accompanied the increased displacement. The unequal length front A-arms anchor to the front crossmember which in turn bolts to the frame side rails. Caster adjustment for the front wheels is by means of shims between the front crossmember

and the frame. Rear spring rates are unchanged for '62. Semi-elliptical leaf springs mounted outboard of the frame rails give excellent stability to the car, and radius rods above the rear axle housing bracket to the frame on each side to resist torque and braking forces.

Big news for the '62 Corvette is mainly concentrated in the engine compartment. The engine has been enlarged from 283 to 327 cubic inches but for reasons that are not commonly known. The extra 44 cubic inches for the Corvette came about because of an economy move by the larger Chevrolet passenger cars.

In 1961, Chevrolet passenger cars had V8 engines with three different displacements; 283, 348 and 409. The 283 engine was the economy version for passenger cars and because of its light weight and small physical dimensions, the standard engine for all Corvettes. The 348 option filled the needs for a more powerful engine than the 283 but one that would still be docile enough for an automatic transmission. The 409, which has reached national fame in less

(Continued on following page)

than a year thanks to its drag strip prowess, was strictly a high performance version for the speed enthusiast.

The medium-sized 348-inch V8 never was the "natural" that the smaller 283 had been when it came to performance in relation to size and it cost quite a bit more to make than the 283. The very fact that the 348 engine outweighed the 283 by approximately 115 pounds represented a higher cost for materials alone. Machining and other costs were also higher. Experimentation with the 283-inch V8 disclosed that an increase in bore of 1/8-inch and 1/4-inch increase in stroke would give an engine of 327 inches displacement which had more power than the standard 348 engine, was cheaper to build, was lighter in weight and with smaller displacement produced better mileage than the 348. So, the 348-inch engine was dropped from the '62 Chevrolet line and a 327-incher announced to fit between the economy model 283 and the high performance 409.

Naturally, with this extra 44 cubic inches available in the same size package as before, the engineers were quick to drop it in the Corvette chassis so that America's answer to the Ferraris, E-Jaguars and Mercedes 300's would have even better performance than before.

Block patterns were reworked to accept the larger bore and longer stroke but to the unsuspecting eye, the 327's appear pretty much the same as the 283 blocks. Recoring of water jackets gives

cylinder wall thickness to take the extra 1/8-inch bore. Although crankshaft journal spacing and sizes remain the same for the 327 as for the 283, extra strength was added to the main bearing web regions in the bottom of the block to resist the higher pressures of increased displacement. Extra material was added to the main webs and then the bottom of the block machined for crankshaft counterweight clearance. A slight bit of beefing was also done in the floor of the tappet chamber to increase upper block rigidity. Everything about the 327 block looks the same as the 283 and except for the larger bore, you'd expect everything from the 283 engine to bolt right in place. Not so!

The crankshaft for the 327 engine is new and many changes were made to compensate for the extra 1/4-inch stroke. Crankshafts are forged steel and larger, reshaped counterweights were designed to take care of the new 3 1/4-inch stroke, heavier pistons and heavier rods. Journal sizes and lengths for both main and rod bearings are the same as the 283, 2.3 and 2 inches respectively. In 1961, premium grade steel-backed aluminum bearing inserts were used only on the high performance Corvette engines but for 1962, aluminum bearings are standard for all passenger car and Corvette 327-inch engines.

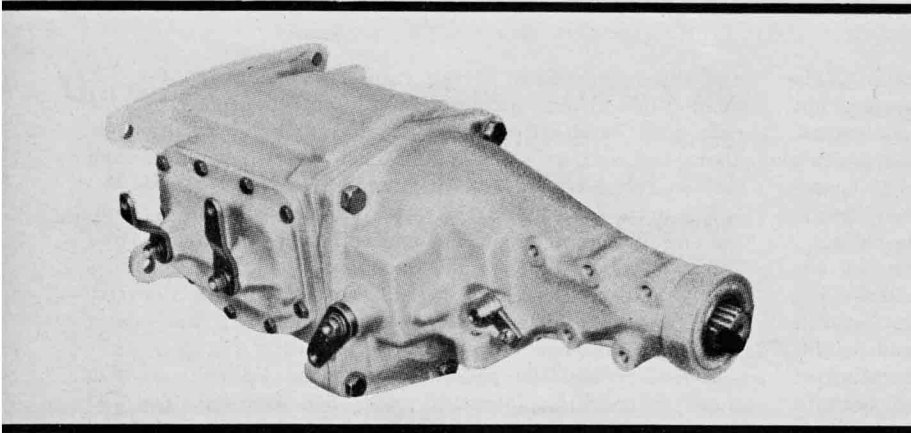
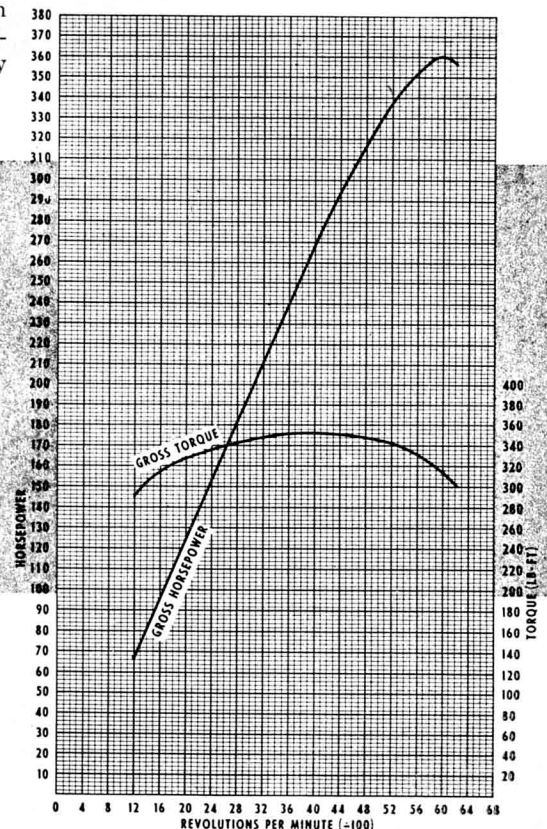
Connecting rods for the 327 are the same length and have the same bores as the 283 rods but extra material has been added to the beam section of the forged steel rod to give added strength. This extra material increases the weight of each rod by slightly less than one ounce. Incidentally, for those readers who are using 265 or 283 Chevy

engines in competition machines, especially with blowers, the stronger 327 rods would be a valuable and thrifty addition next time the engine is apart. Chevrolet still favors an interference fit between rod and piston pin. Engineers from Chevrolet as well as other companies tell us the pressed-in pin is best for high performance engines although somewhat awkward for the average home mechanic to take apart or assemble.

Pistons for the 327 are new to take care of the larger bore and higher pin location. For the 250 and 300 horsepower Corvette engine, a flattop cast aluminum piston with machined reliefs for valve clearance gives a compression ratio of 10.5 to 1. The 340 and 360 hp engines use a pop-up type piston which gives a compression ratio of 11.25:1 and these pistons are aluminum forgings for increased strength. The forged pistons also have valve reliefs machined in the top. To compensate for the longer stroke, pin hole height in both pistons is 1/8-inch nearer the top than on the 283 pistons and skirts are shorter to clear the crankshaft counterweights at the bottom of travel. Cast 327 pistons are 1.6 ounces heavier than the 283's; the forged pistons 1.5 ounces.

For those of you who own 283 engines and have already started wondering which of the 327 parts will fit your block, here's the answer. Only the rods. The pistons won't work with the 283

360 HP CORVETTE V-8



ABOVE — Optional four-speed transmission for the Corvette has all aluminum case and two selections of ratios. For lower horsepower engines, forward ratios are 2.54, 1.92, 1.51 and 1:1. Higher horsepower engines use a four-speed with ratios of 2.20, 1.66, 1.31 and 1:1. Clutch used is same for all transmissions. **RIGHT** — 1962's hottest engine option gains 45 horsepower from '61 with extra 44 inches displacement and the flat torque curve shows broad effective range.

stroke because of higher pin location. The 327 crank has larger counterweights which strike the bottom of 283 blocks. Grinding the block for clearance would be tough because the counterweights interfere by almost 1/4-inch. A better solution would be to turn counterweights down and add steel plates to balance. The best solution would be to buy a 327 short block assembly with all needed pieces. They list for less than \$300.

Two types of cylinder heads are used on '62 Corvette engines but neither is new for this year. The base Corvette engine rated at 250 horsepower is identical to the 250 hp 327-inch engine used in '62 passenger cars and the cylinder heads used are a carry-over from last year's four-barrel carbureted 283 engine. These heads are fitted with 1.719-inch intake valves and 1.50-inch exhaust valves. The three optional Corvette engines for '62 are rated 300, 340, and 360 horsepower and use the cylinder head carried over from 1961's 315 hp performance Corvette engine. These heads have larger ports and use 1.938-inch exhausts.

Valve timing and actuation is also a carry-over from last year with the 250 and 300 hp engines for both the passenger cars and Corvettes equipped with the same camshaft, hydraulic lifters, pushrods, 1.5:1 stamped rocker arms and valve springs as last year's 283-inch engine. The 340 and 360 hp engines which use a high performance camshaft and mechanical lifters are fitted with components from 1961's 315 horsepower V8. The hot cam has durations of 287° for both intake and exhaust with valve lift of .400-inch. Valve lash

is .008 intake and .018 exhaust, hot.

The intake manifold used on the 250 and 300 horsepower engines has a new part number for '62 although the only real change was to enlarge the riser tubes to match larger throttle bores in a pair of new four-barrel carburetors. Both carburetors are made by Carter and the one used for the 250 hp base Corvette engine has 1.438-inch throttle bores for both primary and secondary barrels. The 300 and 340 horsepower engines are fitted with a carburetor that has a much higher air flow capacity through 1.5625-inch primary and 1.6875-inch secondary barrels. Automatic chokes are used on each carburetor with oil-wetted polyurethane air cleaners.

Rochester's fuel injection unit which has been successfully used on high performance Corvettes for several years is again fitted to the top engine option in the line rated at 360 horsepower. Minor changes have been made for the '62 injection unit, mostly to improve cold-weather starting and warmup. The cast

celeration. For '62, all Corvette engines will use distributor tachometer drives. The 360 hp model also has an additional distributor drive to turn the high pressure fuel injection pump.

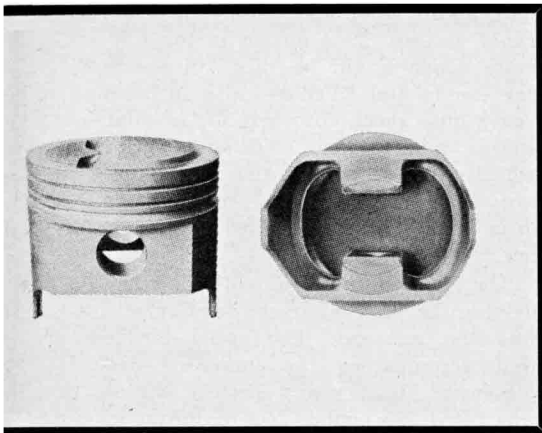
Advance curves have been completely retailored to fit the larger engines for '62. The two milder engines with hydraulic camshafts and 10.5:1 compression use a distributor with maximum centrifugal advance of 24° @ 4600 rpm and also are fitted with vacuum advance which gives a maximum of 15° @ 15 1/2 inches of manifold vacuum. Initial lead is recommended at 8°. For operation above 4600 rpm and with low manifold vacuum so that vacuum advance does not function, maximum spark advance would be 32° crankshaft before top dead center. Single points are used for the distributors on 250 and 300 hp engines.

The two higher horsepower engines use dual-point distributors and have no vacuum advance mechanism. They also have 24° centrifugal advance at 4600

1962 CORVETTE ENGINES

ENGINES	HORSEPOWER (@ rpm)	GROSS TORQUE lbs/ft @ rpm)	COMPRESSION RATIO	EQUIPMENT
Standard	250 @ 4400	350 @ 2800	10.5:1	Four-barrel carburetor Hydraulic camshaft
RPO 583	300 @ 5000	360 @ 3200	10.5:1	Large four-barrel Hydraulic camshaft
RPO 396	340 @ 6000	344 @ 4000	11.25:1	Large four-barrel Special camshaft
RPO 582	360 @ 6000	352 @ 4000	11.25:1	Fuel injection Special camshaft

All engines have 4" bore, 3 1/4" stroke and 327 cubic inches displacement.



Pistons for the 340 and 360 horsepower engines with 11.25 compression have a raised top and milled reliefs for valve clearance. They are forged from aluminum extrusions. Pistons for 10.5 compression engines are cast, have flat tops.

aluminum intake manifold has a high box-like exterior appearance but inside, eight tuned ram passages feed a cylinder each. These cast tubes form passages 12 inches long from their top end to the center of the cylinder and are slightly larger in area at the top than the bottom to aid air flow. With a constant flow nozzle in each tube just above the intake valve, fuel metering is very equal and even with the hot camshaft, low speed operation is smooth.

There has been a distributor change for all of the '62 Corvette engines. First of all, in previous years, only the high performance fuel-injected engines were equipped with a tachometer drive on the distributor housing. Other engines picked up their tach drive from the rear of the generator. A slightly loose fan belt meant slippage and incorrect tach readings, especially on rapid engine ac-

celeration. For '62, all Corvette engines will use distributor tachometer drives. The 360 hp model also has an additional distributor drive to turn the high pressure fuel injection pump.

AC 44 spark plugs with 3/8-inch reach are used in the 250 and 300 hp engines and their equivalent in Champion is J7, A5 for Autolite. The high performance 340 and 360 hp engines are factory equipped with AC 44FF which is equal to L7, L10S or L85 Champions and AE4 Autolites. These plugs have 1/2-inch reach.

The viscous coupling five-bladed fan used in '61 for high performance engines only is standard for all '62 Cor-

(Continued on following page)



Corvette interior is beautifully styled and well-fitted. Seat belts are standard and each of the bucket seats is adjustable. Steering wheel is nearly vertical and feels awkward at first. Shift lever for the 4-speed is conveniently placed.

BIG 'VETTE continued

vettes. This fan is controlled by engine temperature so that it free-wheels when the engine is cold but operates in a progressively more direct hookup as the engine temperature rises. The fan will not exceed 3100 rpm even though the engine speed might be 6000, so high speed fan losses are reduced. The aluminum cross-flow radiator is retained for '62 but changed slightly in core thickness to increase cooling ability. The radiator is also painted black to conform with the black anodized grille.

Transmission selection is the same as in previous years with a three-speed manual transmission standard equipment for all engines and either automatic or four-speed optional. A new lightweight Powerglide is offered this year for use with either the 250 or 300 hp engines. The unit is "beefed" to take the increased horsepower and is air cooled. Lining with increased wear-resistance is used on the clutches, high temperature resistant seals are used and the governor pressure is higher to increase shift points. The low and reverse ratios are 1.76:1 and drive is direct with a stall ratio of 2.10:1 in the torque converter.

Three-speed manual ratios are the same as for '61 with a low gear ratio of 2.47, 1.53 in second, 1:1 in third and 2.80 in reverse. The four-speed selection is double what it was last year as two sets of ratios are available. For the 250 and 300 hp engines, four-speed ratios of 2.54 first, 1.92 second, 1.51 third, 1:1 fourth and 2.61 reverse are used. The four-speed used with high performance 340 and 360 hp engines has ratios of 2.20 first, 1.66 second, 1.31 third, 1:1 fourth and 2.26 reverse. On special order, either of the four-speeds can be specified despite engine rating. Four-speed transmission cases are aluminum for all models.

The clutch used for all standard transmission models is a Borg and Beck unit with coil springs in the pressure plate and a 10-inch disc. Despite spring pressure of 2000 pounds, the action is smooth and pedal pressure required is nominal. The bell housing for all models is aluminum.

Standard rear axle ratios vary according to engine and transmission. For the three-speed transmission, an axle ratio of 3.36:1 is standard with all engines. With four-speed, the stand-

ard ratio is 3.36:1 for the 250 and 300 engines using the low ratio transmission, 3.70:1 for the high performance 340 and 360 engines using the high ratio transmission. The Powerglide ratio is 3.36:1 for both the 250 and 300 engines. A 3.08 optional ratio is available for the 250 or 300 engines with four-speed. Another option for use with all engines and transmissions is a limited-slip differential, Positraction. Ratios available with Positraction are: 3.08, 3.36, 3.55, 3.70, 4.11, 4.88, 5.14, and 5.43.

Brakes for the '62 Corvette are unchanged from last year. Standard service brakes use 11-inch drums 2 inches wide at the front and 1.75 inches at the rear. Conventional organic lining material is used with a total area of 157 square inches for the four wheels. These brakes are adequate for average operation but for severe use, two heavy-duty options are available. Regular Production Option 686 uses the regular 11-inch drums 2 inches wide front and rear and a sintered iron lining replaces the organic material. This lining is composed of tiny granules of cast iron and graphite which is unaffected by heat or water. Instead of strips of lining the full length of the shoes, small blocks of sintered iron are welded to the shoes. These blocks, six for each primary shoe and secondary shoe, give a total effective area of 114 square inches. Brake fade is virtually eliminated with this lining and repeated stops can be made from high speeds safely.

A second brake option, RPO 687, also uses sintered iron lining material but has more total lining area, 124 square inches and the cast iron brake drums are finned for maximum heat dissipation. Stamped steel fans fasten between the drum and wheel to aid air circulation and each backing plate is equipped with an air scoop and vents to promote rapid cooling. This option is for Corvette which might be raced in sports car events and RPO 687 also includes heavy-duty shock absorbers for all four wheels and a fast steering adaptor which quickens the ratio from a standard 21:1 to 16.3:1. For highway or drag strip use, the RPO 687 option is not recommended.

The first thing we noticed when driving the '62 360 horsepower Corvette was the increased low speed torque that accompanied the increased displacement. Last year's hottest engine was rated 295 pounds feet of torque at 4700 rpm while the big engine for '62 has a torque rating of 352 lbs/ft at 4000 rpm. Note that the 327-inch engine not only has almost 20% more torque but it reaches its maximum at 700 rpm lower engine speed. An even higher torque rating of 360 lbs/ft is given the 300 hp engine that uses a hydraulic camshaft.

We went through the same familiarization period that seems to be needed when driving a Corvette for the first time in several months. The vertical steering wheel close to the driver and little room between lap and wheel always gives us fits for the first few days. We asked several people to slip behind the wheel of our test car and they too had the same complaints. One fellow who measures less than 5'6" really had problems. By the time he got the seat far enough forward to reach the pedals, he was in danger of getting his nose caught in the spokes of the steering wheel. Although thousands of Corvettes are being driven on the roads every day without undue difficulty by the drivers, we would guess that there might be even more Corvettes sold if the first impression behind the wheel weren't so awkward. It would appear that the best solution to the problem would be to re-style the instrument cluster into a flat panel so that the wheel could be pushed forward a couple of inches and then perhaps a slightly smaller diameter wheel used.

The vinyl-covered bucket seats are very comfortable and seat adjustment is ample for even the driver with very long legs. Clutch, brake and throttle action is smooth and the shift lever for the four-speed transmission in our test car was in a perfect position. On tight, narrow mountain roads, one of the differences we noted was that not as much gear changing was needed to maintain a fast pace in the '62 as it had been in the '61. With the larger engine, corners that required a downshift to second last year could be taken in third with smoother handling also resulting.

The '62 Corvette does not lean on corners but maintains very good balance up to the point where the wheels start to slide. With the limited-slip differential, medium speeds through tight corners produced heavy steering and the front end "pushed" but if enough power was used to get the rear wheels "loose," front wheels tracked much better and the car could be directed through a corner by the throttle. Acceleration off the corners was a real thrill and plenty of speed could be attained in a short stretch before braking and downshifting for the next corner.

When we borrowed the Corvette from Harry Mann, less than 500 miles had been registered on the odometer but we were assured that everything was in good shape and to drive it as we wished. Standard 6.70 x 15 tires were fitted to the car and although these were not ideal for traction in drag strip operation, we decided to try the car out anyway. We learned that Mickey Thompson planned to do some mid-week tests with a dragster at the Lion's strip in

Long Beach so we made arrangements to run the Corvette at the same time.

We made no special preparations but ran the car exactly as it had come from the dealer. Tire pressures were standard 24 pounds front and rear, spare tire was in place, fan belt was tight and the fuel tank was more than half full. The first start immediately confirmed our suspicions; the stock tires had very poor traction. Our first run registered 102.97 mph and an elapsed time of 14.22 seconds. A half dozen runs later, we had only managed to raise the speed to 103.98 mph and lower the e.t. to 14.12. We asked Mickey what the average '62 Corvette had been turning during recent weeks at the Long Beach strip and he told us that 104 was about tops for cars right off the showroom floor.

We then asked Mickey to try his luck and after a trial run, he turned in a speed of 105.14 mph in 13.89 seconds. The difference between our times and Mickey's was his shifting speed. Mickey used full throttle "power shifts" while we released the throttle slightly between shifts. Power shifts give better results but unless you are experienced, you'd better stay away from them. Mickey confessed that he had scattered a few transmissions before getting the knack. We were reluctant to try.

At the time we made our drag strip runs, there was a steady head wind of approximately 15 mph so chances are both speed and elapsed time would be slightly better on a calm day. We did notice however, that the 327-inch engine did not seem to accelerate as rapidly from 5500 to 6000 rpm as the smaller 283 engine in last year's test Corvette. Perhaps a bit of super-tuning in timing and mixture departments could improve performance.

As the only sports car manufactured in volume in this country, the Corvette is a tremendous package. It costs much less than foreign cars of comparable performance, is a snap to service, and is not temperamental in traffic. If you wish, you can order options to go racing or if you are a little old lady from Pasadena, you can order one with Powerglide to get you to and from the knitting shop. If you want to have fun while driving, take a look at the Corvette, there just might be a model for you.

TOP — Most of the '62 changes can be seen here. Recessed cove in body has a new grille design, new emblems behind front wheel cutout and a broad strip of chrome has been added beneath doors.

RIGHT — Fast downhill tests on twisting roads taxed the standard brakes but did not cause excessive fade. Metallic heavy-duty linings can be ordered extra.



Photos by Chevrolet, Eric Rickman

