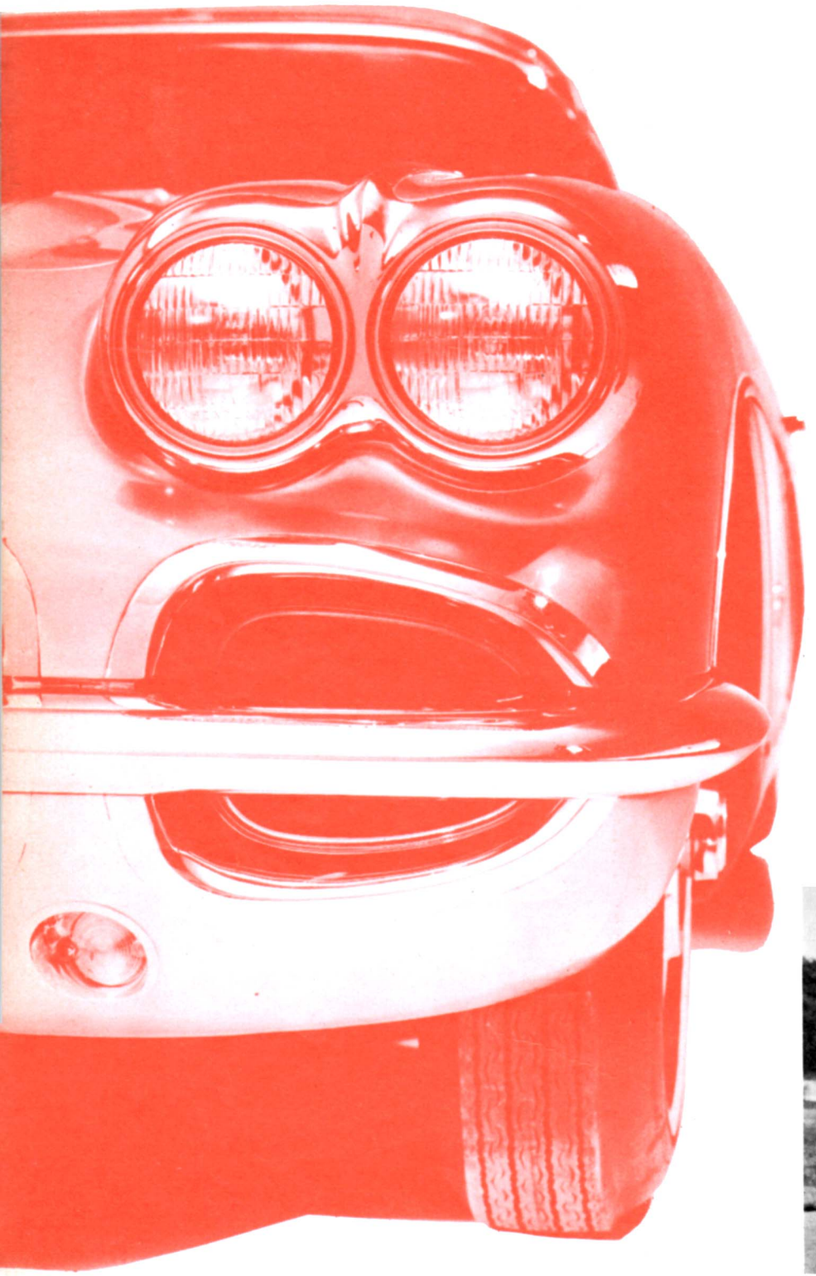


SCI ROAD TEST:

THE '58 CORVETTE

TO mark the fourth birthday of the Corvette, its proud parents, the Chevrolet Motor Division, have announced the 1958 model which has undergone some extensive but not too important changes on the surface and a few rather interesting ones underneath. Starting right at the plastic body, the use of aluminum reinforcements in the cowl structure, inaugurated in mid-'57, has been extended to include the so-called "rocker panels" under the door openings. Bumpers are now bracketed to the frame in conventional American style, relieving the front and rear body panels of loads that are not rightfully theirs. These two items raise the weight "less than 100 pounds", but for racing, most of it can be unbolted and left in the pits without the SCCA batting an eye.

Uncowled dual headlights show how attractive most American front ends would be if we'd get off this "I'm longer than you are" kick. Just below them are really large holes for blasting fresh air onto the brakes, but on our test car, alas, the "holes" were painted black! More on this later on.

Further production experience with the F.I. nozzles and metering controls permits closer control over the air-fuel ratio this year. The warm-up diaphragm is now more sensitive and the air filter is also changed. On all Corvettes, the generator is now on the right-hand side so that the fan-belt engages the water pump pulley over a far greater arc, reducing slippage at high revs. Common to all '58 Chevy's with the 283 cubic incher are a new distributor rotor and a cap with longer sides to help keep out moisture.

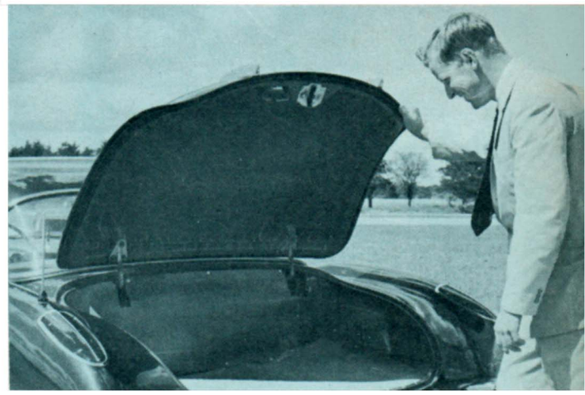
Like most manufacturers, Chevrolet is none too happy about some of the attempts made to bring "boulevard" engines up to all-out F.I. specs. More is required than just a

The cornering of the "boulevard" Corvette cannot be described as flat, but to the driver it certainly feels very secure.

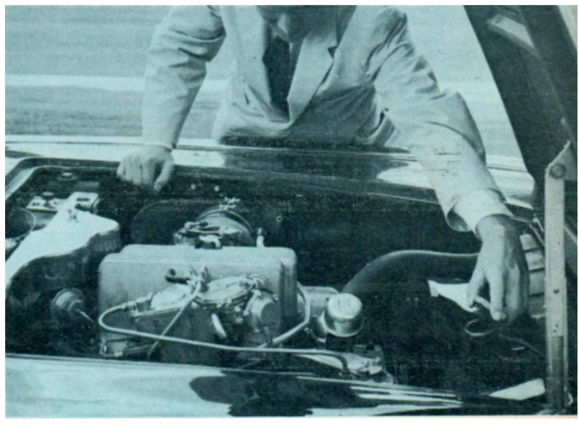
Duntov high-lift cam and a handful of solid lifters, although the factory is not too specific as to what is. What they have done is clarify the picture of available options.

First of all, here is what an absolutely standard Corvette would have (later we will get into what else can be ordered on the car at the time of purchase): The 283 cubic inch V-8 with a normal camshaft and hydraulic tappets (limiting revs to about 5500, as on our test car), a single four barrel Carter carburetor (#3744925), the "close-ratio" three-speed transmission (also used on other Chevy's with the 283 inch engine), a 3.70/1 ring and pinion, 6.70x15 tires (tubeless

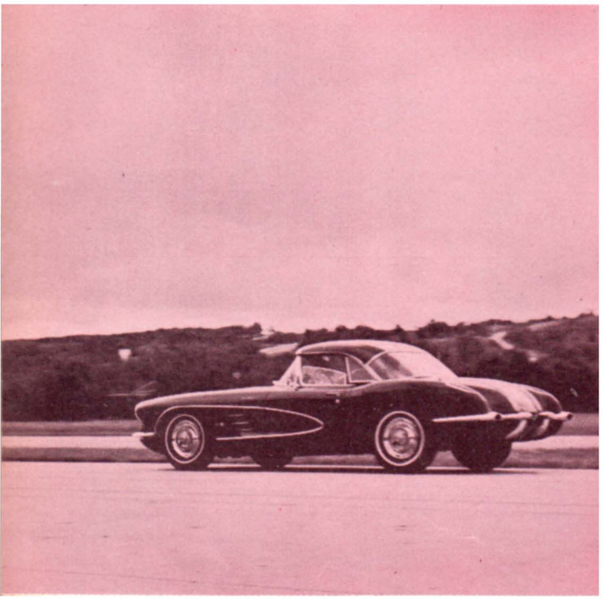
Centrally located, the tachometer may now be readily observed, though it suffers from unwanted reflections off the curved lens, as do the other instruments.



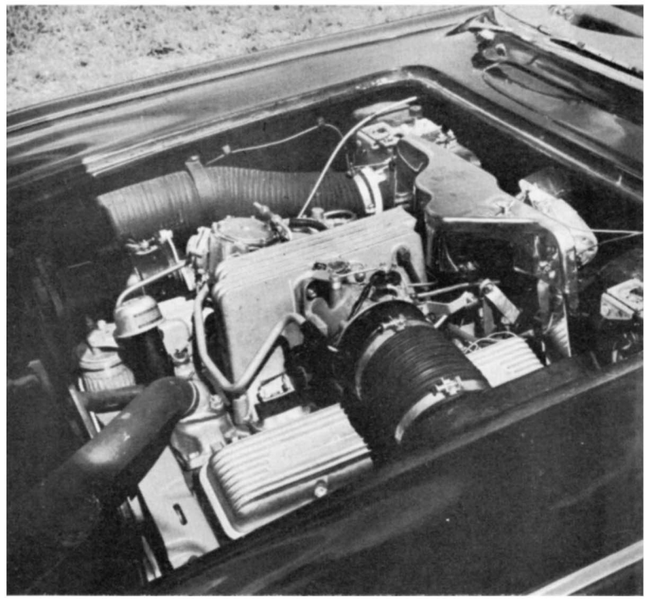
The trunk space shows the American influence on sports car design; observes the Technical Editor, it's huge.



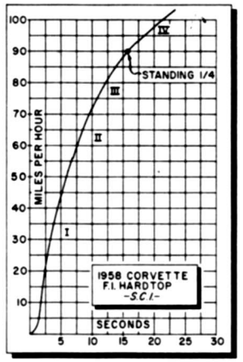
The louvers in the hood aren't real but everything underneath it is, and in a very big way.

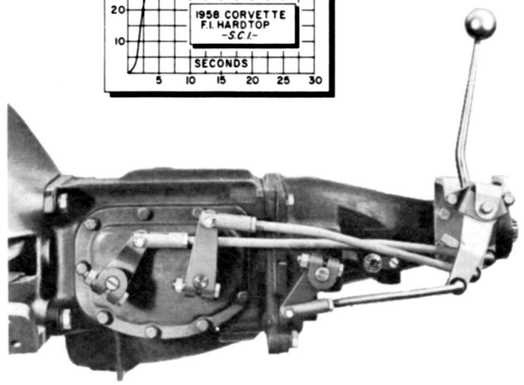


Fitted with prototype linings, the brakes stood up to SCI's severe brake test very well indeed, considering that full-size wheel discs were worn during the test.



Accessibility of the fuel injection "box of tricks" is really great. There are lots of little bits and pieces but unlike carbs, here they're on the outside.





One of the Corvette's secrets of success is this really splendid 4-speed all-synchromesh gearbox.

or not, to choice) on 5Kx15 disc wheels, and a choice of either the hardtop or the hand-operated folding one.

Options available that do not change the basic car's essentially boulevard character include: Powerglide transmission and with it, a 3.55 rear end; electric window equipment (which is no lighter than the hand-operated kind as reported elsewhere); a hydraulic mechanism for the folding top; and for the belt-and-suspenders types, both the hard and soft tops may be ordered on one car.

To improve performance, one can order either two Carter quads or fuel injection (we had the latter), the manifolds differing slightly between Powerglide and stick-shift cars. But for the most in "go", there is the 290 bhp @ 6200 rpm "D" fuel injection engine which features a 10.5/1 compression ratio, the high-lift cam, solid lifters, an air intake extension to bring in cool outside air, a reputedly "more efficient radiator", and a tachometer reading up to 8000 rpm. Especially designed for this engine, but definitely available on its own, as on our test car, is a really delightful, all-synchronized, four-speed gearbox.

In much the same category are the Positraction limited-slip differentials available with either the 3.70, 4.11, or the 4.56 ratios (and though you can't order it this way, the normal Chevy 3.89 gears will fit the carriers of either the 4.11 or the 4.56 Positraction diffs). To give slightly better side-load characteristics, wider (5½Kx15) rims are available for fitting 7.10 or 7.60x15 tires, racing or otherwise; the difference between the two enabling last minute "gear" swaps to be made at races.

For the guy who is really serious about his racing, a heavy-duty brake and suspension package is offered in an all or nothing deal. To get this package, you must also order the "D" engine and the Positraction differential. But what a package! Stiffer front coils give a spring rate 13½% higher. The anti-roll bar is 40% stiffer. The rear springs, with an extra leaf, have a 9½% higher rate. The shock absorbers, with 88% larger working area, have different valving and finally, the steering ratio is changed from 21/1 to 16.3/1 by lengthening the third arm idler.

The famous Cerametallic brakes are fitted and it is interesting to note that although the drum diameter remains at eleven inches and the shoes are a full half inch wider, the total braking area is actually reduced 20%, because the forward shoes are lined over only half their length. To reduce the amount of braking done by the rear wheels, the brake cylinders there are only 0.875 inch diameter instead of one inch, whereas the front ones remain at 1.125. The drums have cooling fins cast on the rim, and as a further option, vented backing plates with air scoops are available. Those large holes up front that we mentioned before may then be opened up and a duct will carry air back, not just to the front brakes, but under the door sills all the way to the rear ones, too.

The Cerametallic brakes are definitely not intended for all types of driving. Corvettes so equipped are delivered to the customer with a placard on the windshield which reads, "This car is not for street use". Until warmed up, they are quite apt to pull strongly to one side or the other; not just the thing for Grandma on her jaunts to the grocery store!

Faced with the realities of the American scene, Chevrolet now follows tradition in marketing two apparently similar, yet actually quite different sports cars, one for the every day sort of user who might occasionally go racing, and another for the serious competitor in the Production category. However, in this case, the engine mods from the racing model are readily available without the HD brake and suspension kit, which may seem rather the wrong way around. But at least you can't get the "D" engine with the Powerglide transmission! That *would* be too much!

One of the pleasanter aspects of this test was that, being in the nature of a sneak preview, the entire operation was conducted on GM's Proving Grounds at Warren, Michigan. After the brake fade and acceleration tests were completed on a 1½ mile level straight, we turned the Corvette loose on a sample road circuit that rather resembled Torrey Pines with its multiplicity of turns of varying radius, camber, and even surface texture. A visitor is said to have remarked naively that GM, with all its money, certainly could have afforded to build better roads than these. Be that as it may, we were able, in a very short time, to discover how the '58 Corvette behaves in nearly every conceivable road situation. Briefly, it may be summed up as "very well indeed."

There are no tricks at all to the steering, which is amazingly light at all times. We went through a series of ess-bends at speeds ranging from 40 to 70 mph. The only time the car felt at all uncertain was on a special piece of pavement featuring ridges running parallel to our direction of travel. The reaction here was pretty typical, the back end wanted to walk out somewhat when we crossed them on a diagonal. Elsewhere on the track, when we abruptly crested a sharp rise in the middle of a seventy miles an hour bend, the front of the car moved out only slightly, a tribute to a well-arranged front suspension and the high polar moment of inertia. On really tight hairpins, tighter ones than you have any right to be going that fast on, the steering is still light, though the steering lock seems to call for rubber arms. (The HD kit reduces the 3.7 turns lock to lock to under 3.)

Whether on fast bends or slow, when you reach the limits of adhesion, the back starts to come around in a calm, unhurried manner that leaves you plenty of time to get off

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1958 CHEVROLET CORVETTE F.I. HARDTOP

PERFORMANCE

TOP SPEED:

Est. 125 mph ..... (see text)

ACCELERATION:

From zero to			
30 mph	3.3 sec.	80 mph	12.2
40 mph	4.5	90 mph	15.7
50 mph	5.8	100 mph	21.4
60 mph	7.6	Standing ¼ mile	15.7
70 mph	9.5	Speed at end of quarter	90 mph

SPEED RANGES IN GEARS:

Corresponding to 750-5500 rpm

I	0-56 mph	III	13-93
II	10-72	IV	17-top

FUEL CONSUMPTION:

	Test Car	Competition
Racing	15 mpg	est. 8 mpg
Average driving (under 60 mph)	18.5 mpg	

BRAKING EFFICIENCY:

(12 successive emergency stops from 60 mph, just short of locking wheels):

1st stop	60	
2nd	60	
3rd	63	
4th	63	
5th	59	(rear wheel locked momentarily)
6th	63	
7th	63	
8th	60	
9th	59	(rear wheel locked momentarily)
10th	62	
11th	59	
12th	54	

SPECIFICATIONS

POWER UNIT:

Type	V-8
Valve Arrangement	Pushrod, in-line ohv
Bore & Stroke	3.875 x 3.00 in (98.4 x 76.2 mm)
Stroke/Bore Ratio	0.774/1
Displacement	283 cu in (4640 cc)
Compression Ratio	9.5/1 (10.5/1 with optional camshaft)
Carburetion by	Rochester constant flow fuel injection (one or two Carter quads optional)
Max. Power	250 bhp @ 5000 rpm
Max. Torque	305 lb-ft @ 3800 rpm
Idle Speed	750 rpm

DRIVE TRAIN:

Transmission ratios		Test Car	Optional
Stick shift:	I	2.20	2.21 (non-synchro)
	II	1.66	1.32
	III	1.31	1.00
	IV	1.00	–
	Rev.	2.25	2.21
Powerglide Low		3.82-1.82	
High		1.82-1.00	
Rev.		1.82	

Final drive ratio (test car) ..... 3.70 (hypoid)
Other available final drive ratios.. 3.55 (std for Powerglide), 4.11, 4.56
Limited slip "Positraction" differential available with the 3.70, 4.11, and 4.56 ratios.
Axle torque taken by ..... Leaf springs

CHASSIS:

Wheelbase	102 in
Front Tread	57 in
Rear Tread	59 in
Suspension, front	Unitized, independent, unequal length wishbones, coil springs, 11/16" dia anti-roll bar (13/16" optional)
Suspension, rear	Semi-elliptic leaf springs
Shock absorbers	Tubular hydraulic, 1" piston diameter (1⅜" optional)
Steering type	Semi-reversible, recirculating ball, center-point linkage
Steering wheel turns L to L	3.7
Turning diameter	38½ ft right, 39 ft left
Brake lining area	157 sq in (121 sq in optional—see text)
Tire size	6.70 x 15 (7.10/7.60 x 15 optional)
Rim size	5K x 15 (5½K x 15 optional)

GENERAL:

Length	177 in
Width	73 in
Height	51 in
Ground clearance	6 in
Curb weight, factory data	2912 lbs
Weight distribution, F/R	52½/47½
Fuel capacity	16.4 U.S. gallons

RATING FACTORS:

	Test Car	Competition model with 4.11/1 gears and 7.10 x 15 tires
Bhp per cu in	0.88	1.02
Bhp per sq in piston area	2.65	3.07
Torque lb-ft per cu in	1.08	1.02
Pounds per bhp	11.6	est. 10.3
Piston speed @ 60 mph	1420 fpm	1550 fpm
Piston speed @ max bhp	2500 fpm	3100 fpm
Brake lining area per ton	108 sq in/ton	83 sq in/ton
Speed in IVth gear @ 1000 rpm	21.4 mph	19.4 mph

'58 Corvette

(Continued from page 21)

the throttle a bit. On a really rough surface, the manner would be rather less unruffled, for the rear axle assembly is a heavy item of unsprung weight. After finishing the tests, we were told that the car we had been driving had not a one of the HD suspension options. We were suitably impressed.

The fact that acceleration times for this car differ somewhat from those of our previous Corvette tests is more likely due to the easy-going driving technique used than anything else. Our test driver, Mr. Rose, who was provided by GM to do the driving while the Technical Editor did the timing, confessed that standing starts were not his specialty. As we have said before, they were not the Corvette's most polished maneuver either. It is a crying shame that the new "four-link" rear suspension on the regular Chevy's is not used here, where its ability to completely eliminate axle wind-up would be most appreciated. Parenthetically, this major advance in rear suspension (for American cars, that is) comes about as an incidental result of the switch to air suspension and the attendant loss of a means of location (provided formerly by the leaf springs).

Once under way, the Positraction differential really earns its keep and the acceleration is quite breath-taking. The gear ratios in the four speed gearbox (at last!) are marvelously spaced — the ratio step between gears ranges from 1.265 to 1.325— and *all* gears are synchronized (will wonders never cease?). It is at least the equal of any gear box we've ever tried, not only with respect to the suitability of the ratios to the engine performance, but the smoothness of the synchromesh brings to mind the old metaphor about a hot knife and butter.

One fault which did show up toward the end of our acceleration runs was a trace of clutch slip when rushing the shift. When you consider that for the previous ten days this same car had been subjected to the machinations of various and sundry road-testing "experts" from all sorts of publications, then this is perhaps understandable.

Because our tests were made on a regular working day at the Proving Grounds, the normal "traffic" on the high speed straight (2½ miles of level, three-lane road in each direction with a banked turnaround at each end) prevented the Test Manager, Mr. Caswell, from allowing us to exceed 110 mph. With the same final drive ratio and engine as last year's F.I. test car, the top speed should be about the same, namely 125 mph, as the frontal aspect is not changed all that much.

As before, the throttle linkage seems a bit quicker than we would prefer, and with the faster bends requiring careful feathering, it is necessary to brace the edge of your right foot against the transmission bulge, pivoting it from there to

(Continued on page 52)

'58 Corvette

(Continued from page 51)

operate the throttle. The steering wheel, in typical Chevrolet fashion, is right under the driver's chin. Even so, the Corvette is very easily controlled, the brake and clutch pedals are both well placed and smooth in operation, and there is plenty of room to stretch your left foot — or brace it, on sharp right turns. And brace it you must, because the Corvette's bucket-style seats are the best argument for seat belts we've seen. At the risk of repeating last year's criticisms all over again, you sit *on* them, not *in* them, and there is virtually no lateral support whatsoever. Seat belts will be standard equipment this year, which is admirable indeed; but better contoured seats would be another big step ahead, too.

The brakes were so good that we kept up our punishing test for twelve stops instead of the usual ten, and it was only in the last two that a slight but definite weakening showed up. We were therefore quite disappointed to find that these were experimental linings only. Still, it's encouraging, as it shows that Chevrolet's been doing a lot of work to provide the average Joe with significantly better brakes, without his being subjected to the drawbacks of the HD kit's Cerametallics — and with a fair amount of success.

For the price of the Corvette, check with your Chevrolet dealer; GM says they're all independent businessmen who are free to set their own prices. Especially on the options, we might add. Without quoting any figures, we'd say that on the basis of local (N.Y.) prices the Corvette ranks as a Best Buy, both as a boulevard sports car and as a competition model.

Stephen F. Wilder

MG Record Run

(Continued from page 23)

this car. You sit in the nose and have no view of the car at all. When I drifted away from the black line once, the car squirmed a few times on the damp salt and the feeling was as though you were sitting on a platform six feet ahead of the front wheels, with the car wagging behind you."

Moss' comments after his official record runs were cool and casual. "It's the fastest I've ever driven," he said, "but it really was a pleasant, uneventful ride. When accelerating, even in third gear I had to be careful to avoid snaking. You're not really in control in this sort of car . . . you just sort of guide it along. Gyroscopic wheel hop is pronounced at these speeds and you musn't fight the wheel; a light touch is OK, but to grip the wheel is to get into trouble. Steering a car like this is like keeping your balance while walking on a railroad rail — not terribly difficult, just tricky."

MG's decision to build the EX 181

(Continued on page 53)