



THE BEST OF ALL POSSIBLE CORVETTES

Forget the LS-7. Don't wait for the mid-engine prototype. The LT-1 is here, and it's ready.

PHOTOS BY DARRYL NORENBURG

HOW PLEASANT it would be, once every year, to be a sports car magazine, just for the excuse to say something like: This, chaps, is what motoring is all about. As an annual event, it would be appropriate, because once every year we test Corvettes. Sometimes one, sometimes two. For this year's explanation of what sports car motoring is all about, we have a wild one-car Corvette test, of the LT-1.

This is not the come-down you might suppose, even when you know that we had planned to have two

Corvettes, the wildest small-block and the wildest big-block. But Chevrolet Division is once again moving in mysterious ways, and there are no test cars being made with the 460-bhp 454. Nor will dealers accept orders for them. Chevrolet doesn't announce these things, but the 460-bhp Corvette engine seems to have been killed.

Never mind. We have the LT-1, which, was last year's stillborn engine and is also this year's Z/28 engine. Some engine, too. It's the 350-cid with all the strong internal parts, and the wild cam, the big Holley carburetor,

the 11:1 compression ratio, so much engine, in fact, that it needs an air pump to get past the emissions testers.

What the LT-1 isn't means just as much as what it is. When you order the engine, you get a firmer suspension, and a choice of three transmissions — the wide-ratio four-speed manual, the close-ratio four-speed manual or the heavy-duty close-ratio four-speed manual.

Chevrolet is telling you something. You cannot get an automatic transmission, air conditioning or power-assisted steering. It's hard to find

mechanical reasons for all of these exclusions. The same engine comes with an automatic in the Z/28, and the bigger Corvettes turn 6500 rpm and come with the Corvette-only power steering. Our suspicion is that the keen types at Chevrolet just don't want to waste all their engine and chassis work on somebody who drives with his fingertips.

The test LT-1 came with the all-out gearing; the heavy-duty close ratio transmission and 4.11:1 final drive. We would not do this in any other car. Close ratio sounds racy, but the 2.20:1 first gear makes traffic starts tough on

the clutch unless you have a low final drive, and the low final drive increases noise and limits cruising speed. For the 300/350 or the 390-bhp 454, the 2.52:1 first gear in the wide-ratio transmissions, and a 3.08:1 rear axle would make more sense.

The LT-1 is a sports car, so we have the sporting gears. Everything else in the car is aimed at performance, so we'll go the full route.

The LT-1 trades comfort and convenience for speed, right? Double right. With 5000 test miles on it, the LT-1 covers the quarter-mile in 14.17

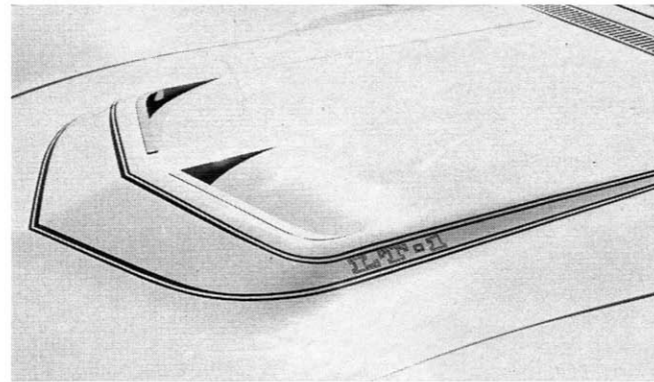
sec. The standard F70x15 bias/belted tires didn't have enough traction off the line or we'd be in the 13s.

As it is an E.T. of 14.17 is merely astonishing. And the trap speed of 102.15 mph allows us to make up for an earlier error.

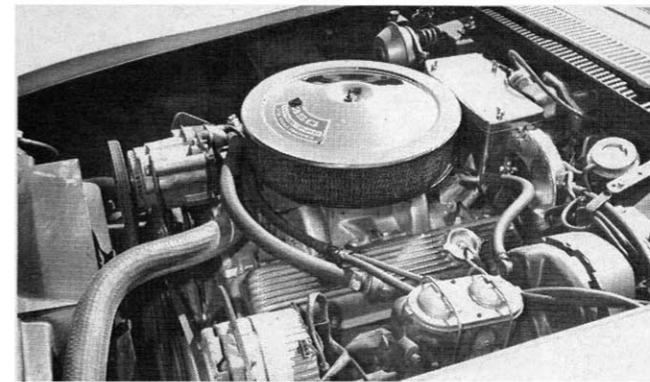
The LT-1 is advertised at 360 bhp in the Z/28, and 370 here. Our Z/28 test contained a slur, to the effect that the engine really only gets 320 bhp. With the LT-1's test weight of 3710 lb., and that trap speed, and the editor (who made the original misread of the chart) told to leave the room and go



CONTORED seats are little changed from last year. They're as comfortable as they look. Seats and steering wheel can be adjusted.



DECAL is the only sign that this is not an ordinary Corvette. The sculptured hood is, alas, mainly a nice shape. There is no working vent.



LT-1 ENGINE is the wildest 350 Chevrolet offers. It's highly tuned, with enough torque to live in town and it produces an honest 360 bhp.



STOCK TIRES do not impress us. They aren't wide enough for the stock rims. An F60x15 tire will give more traction without creating a clearance problem. We know; we tried it.

write headlines or something, we find the LT-1 developing near as dammit to 360 bhp. So let the ad men have their 10 horsepower. They were closer than the experts, anyway.

Impressive though they are, the figures don't tell it all. This engine is more than powerful. The added displacement has made the originally temperamental Z/28 into a useful

engine, even at low rpm, while the longer stroke hasn't hurt its willingness to rev high. Starting from rest is easy. And there's enough torque below 2000 rpm to allow you to shift only when you feel like it.

Another good point: You will feel like shifting. Corvette shift linkage, like Corvette power steering, is different. The lever is short and shifts are

quick and light. The average four-speed may be worth having for practical reasons, that is, more acceleration or more control over which gear you are in, but few of the domestics are really entertaining to shift. The LT-1 is. With any four-speed, you get mastery of the engine. With the Corvette, you get a feeling of mastery, which is not the same thing and is

more fun, too. Even the pedal placement is sporting. One of the few things we didn't like about the Slalom Project Camaro on page 14 is that it's hard to downshift and brake at the same time. With the Corvette, it's easy. The pedals are located close together and in the same plane. This is no accident. The Corvette was designed by drivers, for drivers.

Braking performance was perhaps not as good as the rest of the car. It was only excellent. Big discs at each wheel perform admirably, bringing the car to a stop from 80 mph in 246 feet. And with the brakes heated to the point of dissolve on many cars, the eighth stop took 271 feet. The discs and power boost combine well, to give you stopping power without undue

effort, and control when you're stopping at the maximum.

Good, because you need that control. The problem with the Corvette brakes is proportioning. The rear brakes get too much of the effort, and as the weight shifts toward the front, they try to lock. You can control this at the pedal, but the deceleration rate won't hold at more than 27 ft./sec./

1970 CORVETTE LT-1



DIMENSIONS

Wheelbase, in.	98
Track, f/r, in.	58.7/59.4
Overall length, in.	182.5
width	69
height	47.4
Front seat hip room, in.	20 x 2
shoulder room	46.9
head room	37.2
pedal-seatback, max.	40
Door opening width, in.	40

PRICES

List, FOB factory	\$5192
Equipped as tested	\$6316
Standard equipment included:	4-speed transmission, Positraction rear axle.

Options included: LT-1 engine, \$448; performance axle, \$13; power brakes, \$47; power windows, \$63; AM/FM radio, \$278; tilt telescopic steering wheel, \$84; custom trim, \$158; white letter tires, \$33.

CHASSIS/SUSPENSION

Frame type: Ladder.
Front suspension type: Independent by s.l.a., coil springs, telescopic shock absorbers, anti-roll bar.
ride rate at wheel, lb./in. . . . 89
anti-roll bar dia., in. . . . 0.75
Rear suspension type: Independent by lower control arms and fixed length axle shafts, transverse multileaf springs, 2 trailing arms.
ride rate at wheel, lb./in. . . . 121
Steering system: Semi-reversible recirculating ball nut.
overall ratio 20.2:1
turns, lock to lock 3.4
turning circle, ft. curb-to-curb 37
Curb weight, lb. 3335
Test weight 3710
distribution (driver)
% f/r 50/50

INSTRUMENTATION

Gauges: 0-160 mph speedometer, 0-7000 rpm tach, oil pressure, water temperature, fuel level, battery, clock.
Warning lights: Brakes, high beam, seat belts, door ajar.

WHEELS/TIRES

Wheel rim size 15 x 8JJ
opt. size none
bolt no./circle dia. in. . . . 5/4.75
Tires: Goodyear wide tread Polyglas.
type . . . fiberglass bias belted
size F70 x 15
opt. size none
Test inflation 32/32

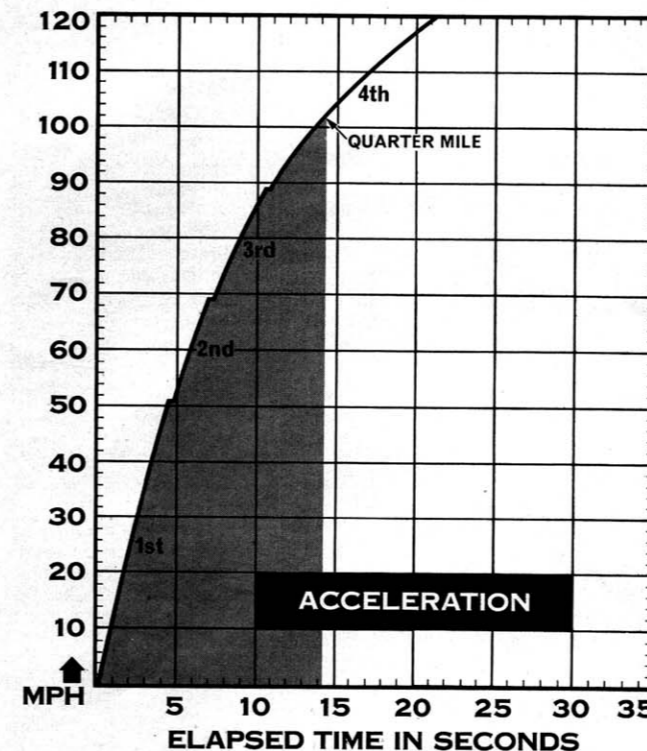
ENGINE

Type, no. of cyl. V-8
Bore x stroke, in. 4.0 x 3.48
Displacement, cu. in. 350
Compression ratio 11.0:1
Fuel required premium
Rated bhp @ rpm 370 @ 6000
equivalent mph 113
Rated torque @ rpm 380 @ 4000
equivalent mph 75
Carburetion: Holley 1-4V.
throttle dia.
pri./sec. 1.69/1.69
Valve train: Overhead valves, rocker arms, pushrods, mechanical lifters.
valve dia., in.
int./exh. 2.02/1.60
lift, in. int./exh. 0.459/0.485
Cam timing
deg., int./
exh. 42.7-94.3/112.9-53.4
duration, int./exh. 317/346.2
Exhaust system: Dual, two reverse flow mufflers.
pipe dia., exh./tail 2.5/2.0

DRIVE TRAIN

Clutch type: Single dry disc semi-centrifugal.
dia., in. 11.0
Transmission type: 4-speed manual.
Gear ratio
4th (1.00:1) overall 4.11:1
3rd (1.27:1) 5.22:1
2nd (1.64:1) 6.74:1
1st (2.20:1) 9.04:1
Shift lever location: Floor.
Differential type: Hypoid.
axle ratio 4.11

CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight)	10.0
Mph/1000 rpm (high gear)	18.8
Engine revs/mi. (60 mph)	3200
Piston travel, ft./mi.	1858
CAR LIFE wear index	59.5

SPEEDOMETER ERROR

Indicated	Actual
30 mph	28
40 mph	38
50 mph	49
60 mph	58
70 mph	68
80 mph	78
90 mph	88

CAPACITIES

No. of passengers	2
Luggage space, cu. ft.	6.1
Fuel tank, gal.	20
Fuel consumption, mpg	11.0

MAINTENANCE

Engine oil, miles/days	6000/120
oil filter, miles/days	12,000/240
Chassis lubrication, mi.	6000
Antismog servicing: 12/12,000 replace PCV valve; tune engine, 4/6000	
Warranty period, mo./mi	12/12,000
entire car, 60/50,000 driveline	
Spark plugs: AC R43.	
gap, in.	0.033-0.038
Basic timing, deg./rpm	8 BTDC/900
Ignition point gap, in.	magnetic pulse amplifier
cam dwell angle, deg.	
Tappet clearance, int./exh.	0.02/0.025

PERFORMANCE

Top speed (6500), mph	122
Test shift point (rpm) @ mph	
3rd to 4th (6000)	89
2nd to 3rd (6000)	69
1st to 2nd (6000)	51

ACCELERATION

0-30 mph, sec.	2.5
0-40 mph	3.4
0-50 mph	4.4
0-60 mph	5.7
0-70 mph	7.3
0-80 mph	8.8
0-90 mph	11.0
0-100 mph	13.5
Standing 1/4-mile, sec.	14.17
speed at end, mph	102.15
Passing, 30-70 mph, sec.	4.8

BRAKING

Type: Power assisted discs, front and rear.
Front rotor, dia. x width, in. 11.75 x 1.25
Rear rotor, dia. x width 11.75 x 1.25
total swept area, sq. in. 461.2
Max deceleration rate and stopping distance from 80 mph:
ft./sec./sec. 27
distance, ft. 246
Rate and distance after six 1/2-G stops from 80 mph:
rate, ft./sec./sec. 27
distance, ft. 271
Control loss? None.
Overall brake performance excellent

CORVETTE LT-1

continued

sec. A car with this weight and brakes and tires should be able to pull one G.

The tires. For another of those unexplained things, Chevrolet insists on odd tires for the Corvette. They're bias/belted, a plus, but an F70x15 is not wide enough for the stock 8-in. rims. If there is a good reason for this, we don't know what it is.

Wider tires will fit. Take it from us. We had a set of F60x15 Goodyear Polyglas tires in the garage at Corvette test time, and we installed them on the LT-1. They look good, they don't hit anything, and they have more traction; starting, stopping or cornering. As they are not stock, we didn't take any times with them, but when the factory skinnies wear out, better tires are as close as your nearest tire store.

(As another tip radials work, too. Again, no times, but 205x15s in front and 215x15s behind also have no clearance problem.)

Corvette handling is superior, with any engine, and the LT-1 is the best of the bunch. To begin, there's the independent suspension keeping the wheels in place no matter what the surface. The weight balance is a perfect 50/50 with the small block engine. The 454 Corvette uses a rear anti-roll bar, to compensate for the weight balance. The 350 Corvettes don't need it, because there is no problem for which to compensate.

Handling characteristics couldn't be better. There is initial understeer, so that when you move the steering

wheel to the right, the car's front wheels move right, rather than the rear wheels moving left. This holds true all the way up the speed range and the cornering load. The Corvette doesn't change from initial plow to final oversteer. The driver can do it, by varying power. With foot down, the rear wheels can be hung out, and kept at really incredible angles.

This initial desire to go where the front wheels point helps at speed in a straight line. Like an arrow, as they say. This particular car was limited in speed by the gearing, but we have been in 150-mph Corvettes and enjoyed it.

The LT-1 steering violates another CAR LIFE rule. We have no patience with those purists who are opposed on principle to power assist. The boosted systems are quicker. They reduce road feel, but for almost every car on the market, the loss in road feel is slight. If your car is bigger than a breadbox, power steering is good for it.

The LT-1 is the exception. The car is very responsive at speed, which makes steering feel especially important. Guiding the car in and out of parking places is a struggle, but as speed goes up, the steering lightens. We wouldn't put up with non-boost steering on a 300/350 Corvette, and a 454 would be even worse, but for the LT-1, it's fine.

There has been no mention until now of the styling, or even the model year. Only a knowledgeable few will be able to remember in years to come, that the side vents have been changed and the grille altered.

The same goes for the interior. Inside or out, there aren't many changes

because few were needed.

For normal use, the interior is tailor-made for everybody. The seat, raked, sloped and curled just right, slides until the pedals are where you want them. Then, the steering column moves back and forth, for the perfect arm's length away. Then, the steering wheel is raised or lowered, to taste.

Outside, the world waits to be conquered. Inside, every instrument you could ask for is there, in plain sight. The ventilation works, and the roof panels and rear window can be removed, bringing enough open sky for anybody except the freakier roadster freaks. And there is a convertible for them.

Rapture. Does the LT-1 have faults? You will have a service struggle, sure. Corvette quality varies with the day of the week, true, although this particular car was solid and free of squeaks and quirks.

The LT-1 is not everybody's car. Steering effort is high in town. With the gearing, there was mechanical noise, all the time. The ride is choppy. The wheels are on the ground over the rough stuff, but you know it when the pavement goes to pieces. You have to drive the car, all the time.

But that's what sports cars are all about.

Too bad about the 454. And while we're told the reason for the secrecy surrounding the mid-engine prototype is that it will in fact become the next Corvette, we're also sure it won't be for at least another year.

Take consolation in the LT-1. It is, at this writing, the best of all possible Corvettes. ■

