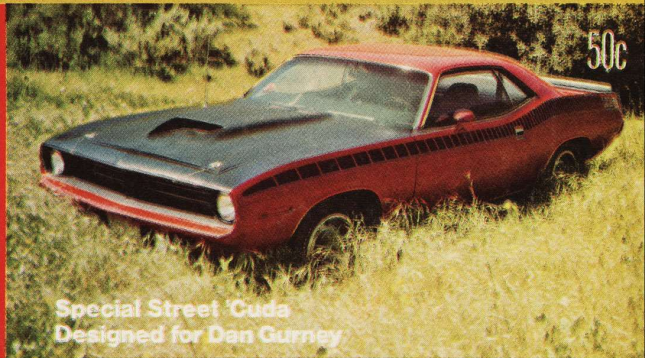


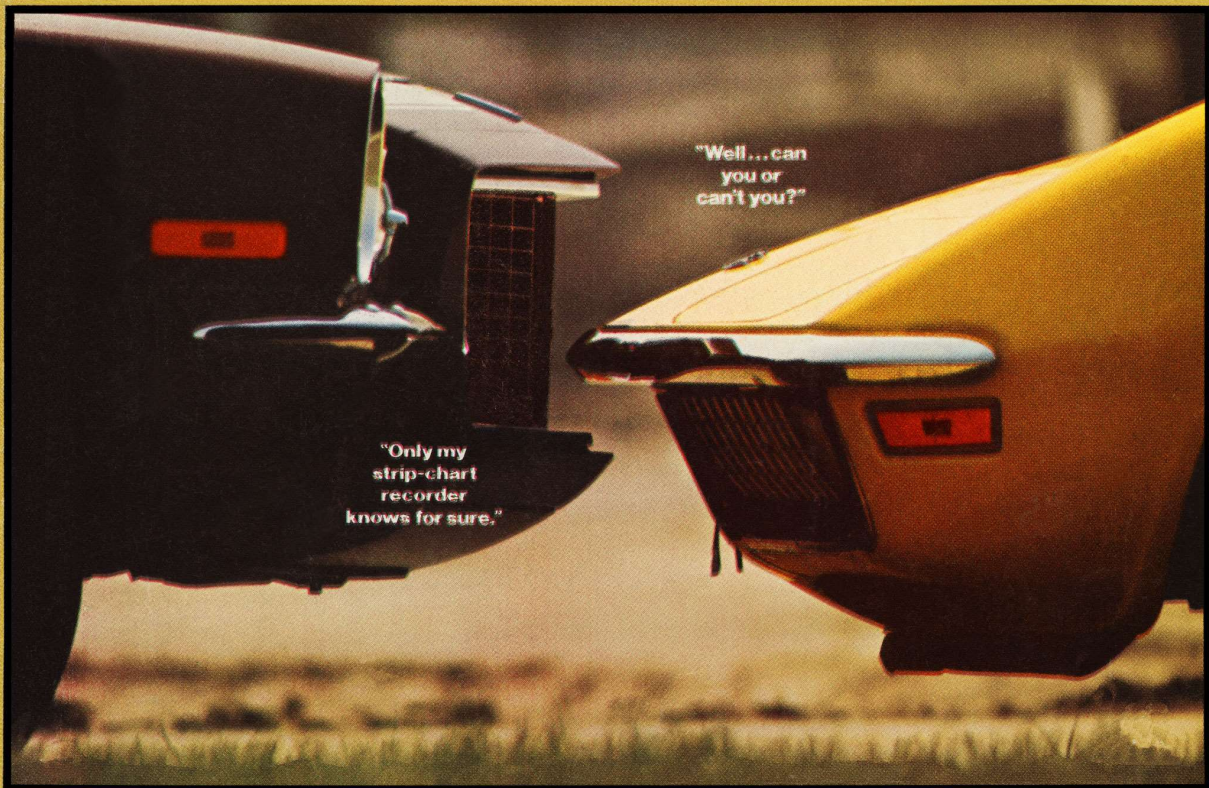
PREPARE TO WIN! / PART 1

SPORTS CAR GRAPHIC JUNE 1970



Special Street Cuda
Designed for Dan Gurney

Camaro Z/28 *vs.* **Corvette LT-1**



"Only my
strip-chart
recorder
knows for sure."

"Well... can
you or
can't you?"

Corvette/Z/28 Camaro

WE HUFFED AND WE PUFFED, WENT THROUGH ALL MANNER OF GYRATIONS, EVEN LOOKED INTO THE "SOUL" OF THE MATTER, AND GUESS WHAT...? / PAUL VAN VALKENBURGH

They really are all the same in the dark!



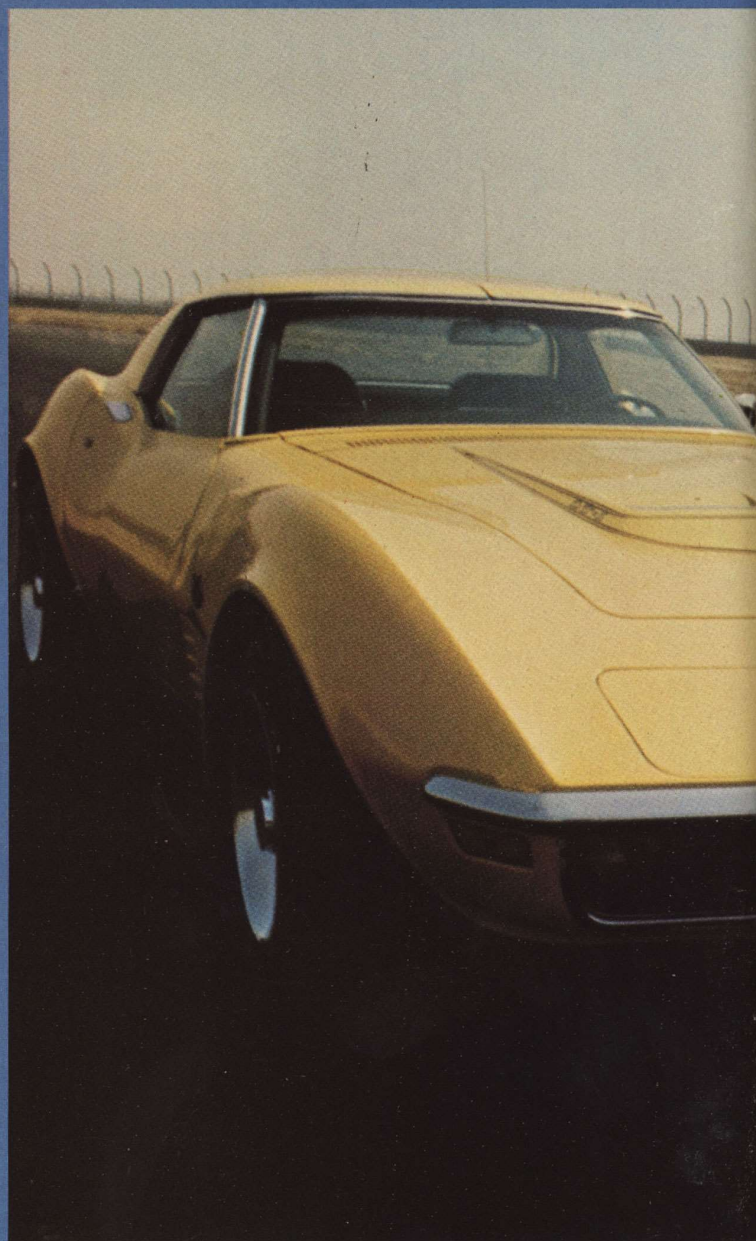
SCG ROAD TEST

CORVETTE... EVERYMAN'S DREAM. Corvette

... status and prestige. Corvette ... symbol of all that's grand and glorious. Corvette ... icon of virility and the romance of every aware woman. Why? Most of them won't out-perform a well-setup pony car, and in racing trim your best 327 Corvettes can't beat a good 302 Trans-Am Camaro. Outside of being America's only real sports car, it's hard to say just what the Corvette really is, so we had it's nearest relative, the Z/28, set up as identical as possible to give us a reference point.

Four of the most important criteria in the performance of a car are engine, gears, tires and brakes, points which we were able to nearly equalize in the comparison of our two cars. The engine is identical in both — the 350-cubic-inch LT-1, which is simply a stroked version of the Z/28 (the racy Camaro retains this designation from it's now defunct old engine option). The rating, however, is upped 10 hp in the Vette ... a flyspeck in the compie of prevarication that is power ratings. The transmissions were the same close-ratio 4-speed, and the tires weren't merely equivalent, but the same on both to eliminate any variance from such an influential triviality. Inexplicably, the Corvette comes with mere F70 x 15 Goodyears (6.2-inch wide tread) and the instruction book says that's what it was designed for and it's a sacrilege — perhaps even *unsafe* — for it to wear anything larger. Meanwhile, the Z/28 comes in F60 x 15 Goodyears (7.7-inch wide tread) that self-inflict tread-cuts on fender edges and bolts. We know, tho, that the wider the grippier, so we used the same F60 tires during testing on both cars, and there was more clearance on the Vette. As for the rest of the significant distinctions, rear wheel disc brakes are nearly unavailable on the Z/28, and it was also disadvantaged by a nose-heavy 250 pounds.

Leaving the line in acceleration, however, both cars were nearly equal because the Camaro's higher center of gravity permits greater weight transfer, and the same tires have the same traction on the same day. Our exclusive "acceleration in g's" curves showed practically no difference, with 0.5 g at wheel-spin off the line growing to 0.7 g as the tires heated up, and dropping to 0.4 g when the tires "caught" at 30 mph. Granted, the best Camaro elapsed time was only 14.6 seconds compared to 14.5, but at that, 0.1 second is





barely within repeatability from run to run, and for being a Hurst, the Camaro's shifter was not as precise and quick as the Vette's.

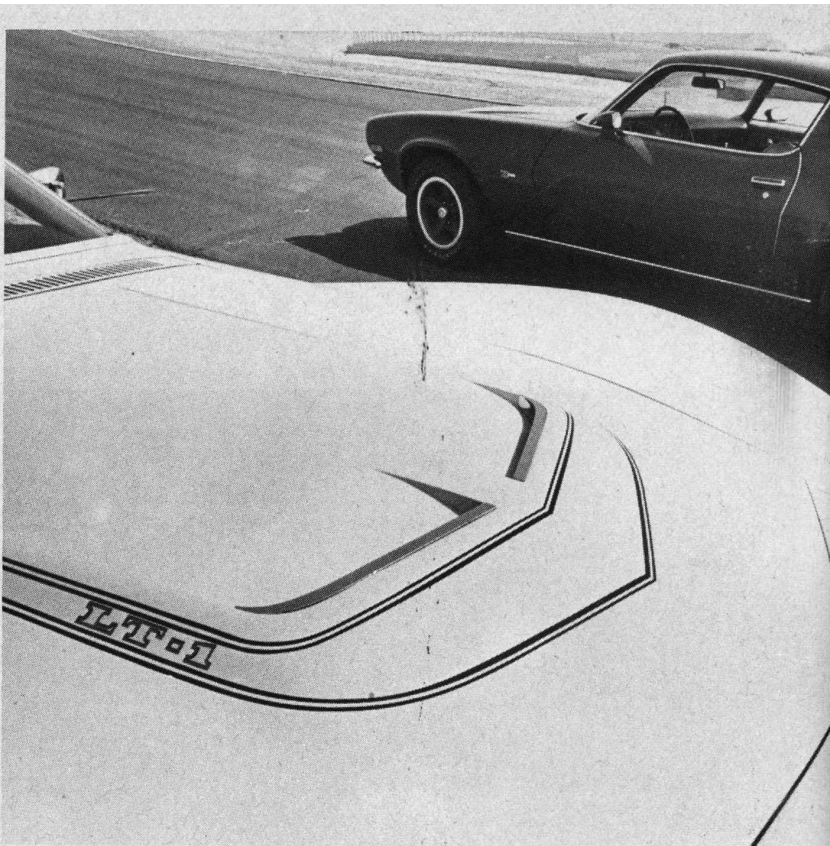
Top speed in the quarter is more repeatable because there is less driver influence (starting and shifting technique) and here the 250-pound weight and higher air drag showed the Z/28 to be all of 1.2 mph slower at 98.3, but still a few mph faster than the old 302.

We were particularly interested in the aerodynamic forces on the Camaro, for use in understanding differences in this year's Trans-Am cars. The drag figure of 350 pounds at 100 mph wasn't all that different from the Challenger at 340 pounds and the Firebird at 320 pounds. Air lift, of course, was not nearly as good as the Firebird Trans-Am with all its flaps and rudders, but then the racing versions will be considerably modified with allowable front appendages to keep their noses on the grindstone. The Camaro rear spoiler is tolerably effective, creating 70 pounds of downforce at 100 mph, but by race time there is sure to be a homologated option to improve that. By comparison, the Stingray has a drag of 280 pounds, which is good for a sports car of that bulk, and the lift is 230 and 55 pounds front to rear. Very respectable considering that the shape was dictated by GM Styling, and Chevrolet engineers had to sweat acid trying to keep the nose on the ground at speeds over 150, finally half-succeeding with spoilers and vents.

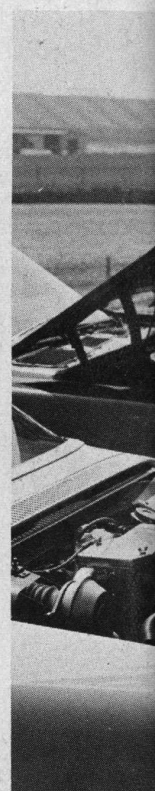
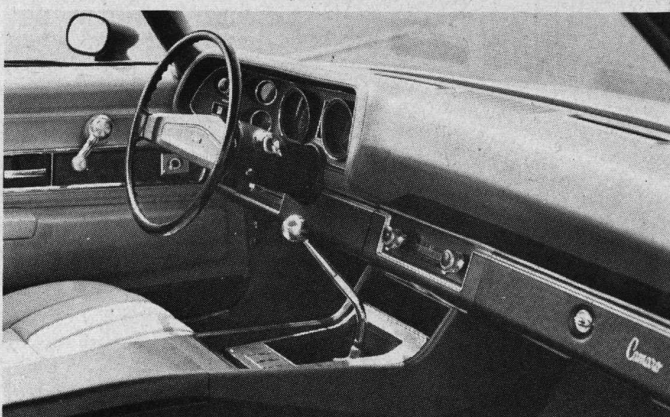
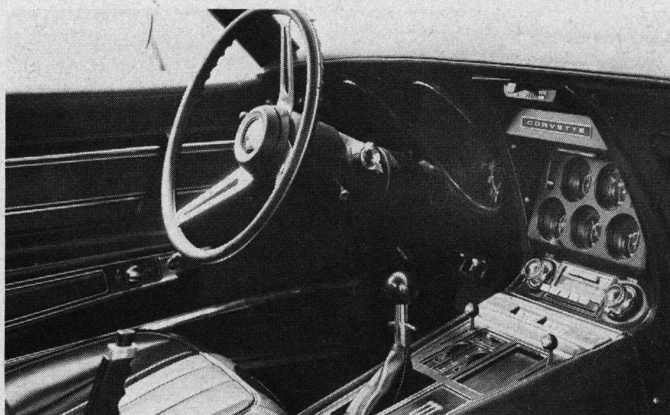
If you are gauche enough to be curious about top speed, it's "adequate" at 120 mph each — obviously so, since both had the same tires, same engine redline, about the same differential gears, and both were limited by rpm. Properly geared, the Stingray would walk away, with 20-percent less drag, but . . . really now . . . who cares. The reduced drag didn't even make up for the heavy-footedness a Corvette inspires, and both cars ended up with practically the same mileage.

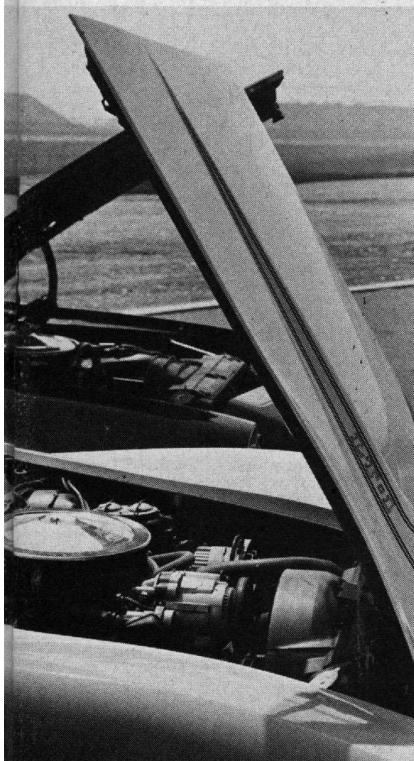
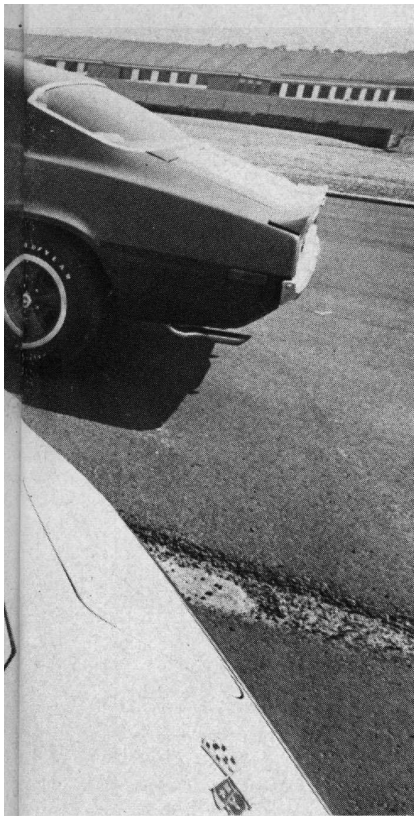
Funny thing, they both ended up with the same braking performance, also. Not that we haven't been telling you all along that tires (along with proper front/rear force distribution) are the most important determinant in stopping distance. With the narrower F70s, our Corvette pulled up at 0.85 g's, but when tested with the Z/28 tires, it had identical and extremely repeatable stops of 140 feet from 60 mph, or up to 0.86 g. Looking back, I discovered that two other cars I tested with the same size and make tires produced effectively the same result: the Mach 1 Ford at 0.86 g, and the Pontiac Firebird at 0.87 g — and each of those were on different test track surfaces. It starts to look like tire makers rather than auto manufacturers ought to be required to publish stopping distances.

There were some idiosyncrasies in the Camaro brakes, however. Like, for example, the first few stops were outa sight — 170 feet and up — because it takes time to get used to a vacuum booster with a time delay. The ideal technique seems to be: jam the pedal as hard as possible in the first instant and then rapidly — over no more than a second or two — ease up slightly as the boost comes in. Practice it before you really need it. Also, at the very limit of braking traction, the rear axle tends



TRY TO IDENTIFY THE TWO INTERIORS BELOW. A HINT: THEY'RE BOTH AMERICAN. NEITHER IS AN AIRCRAFT COCKPIT. ONE IS COMFORTABLE BUT EXTREMELY BUSY, THE OTHER IS TOLERABLE.





TWO IDENTICAL ENGINES. OBVIOUSLY. THE PHOTOS DON'T INDICATE IT—OR ANYTHING—BUT THE ART DIRECTOR THOUGHT THEY WERE ARTY, AND WANTED A CAPTION.

to hop around. Still. Been doing it for years, and only the road racers seem inclined or able to stop it.

Corvette brakes are indubitably the best on any American car ever. Take the qualification for what it's worth.

Now, in our A-A comparison, we come to what you would expect to be the significant difference—handling. Naturally the Stingray handles better, after all, it's a sports car, while the Camaro is merely a car. But wait! What's this? With the same tires—again—the difference in handling is unmeasurable. On the Digitek skidpad, where we measure the maximum lateral cornering force, both had exactly the same average, 0.765 g, although the Corvette had the widest asymmetry with 0.75 right and 0.78 left. Predictably, it was also slower on the original equipment tires, but then the Z/28 tires gave it slightly more understeer, because that characteristic is amplified by a gain in traction. Speaking of understeer, the Z/28 could have used a little more in right turns, perhaps, since it was too close to neutral in steady-state cornering, or oversteerish accelerating out. Very controllable though, and very "catchable," if a little unstable. The most surprising oddity to us was the high roll on the Stingray, at 4.0 degrees to the Z/28's 2.8 degrees. Though not obvious inside, it shows up dramatically in our standard fore/aft cornering photos. Apparently stiffer anti-roll bars on the Z/28 make up for the more sophisticated Stingray suspension, and perhaps the stiffer bars available on the 454 Vette would be advantageous. On the 327 Stingray I raced, I had two heavy anti-roll bars on the front and one monster bar on the rear, and even with stock springs and rubber bushings, it caught Cobras in the corners.

But, getting back to the showroom stocks, there you have it—equality under the skin. We rather suspected what would happen, but the unbiased automatic electronic facts proved it. They really are all the same in the dark. On the other hand, factual performance figures probably make very little difference in the decision between a Z/28 and a Stingray, so let's look into the soul of the matter.

Image, man. That's the word. Half the people who buy a new car today are really buying an image, and there's no lying; for all the Stingray is (like perhaps the greatest sports car value in the world), it's still only half fact and half image. You've seen the numbers. Being low and sleek doesn't make it a curly hair better than an equivalent sedan, and yet it provides an ideal intimate relationship for your id while your ego grows up. But both the Camaro and the Corvette have split images. While the sedan doubles as a racer, the racer doubles as an...? Well... it's rather hard to say just *what* people expect a Corvette driver to be, but often it isn't what you would call laudable, especially in the insurance game. There's an axiom that if you have qualms about insurance—you can't afford a Vette. So, just out of curiosity, I called my agent and asked about the difference between the rates on these two cars. As it happens, I have a good enough record to be "preferred risk," which means that for a six-month period the quoted rates only added up to \$122 for the

Z/28, or \$193 for the Corvette. However, when I asked, "How much more would it be if I had an accident, or a few tick... CLICK... Hello? hello?" It gives you something to think about when running on the fine edge of the law—natural or political.

Look around, check out the people you know or see driving a Corvette, and decide if that's what you want to be. There's no denying that all the girls who've been picked up in Stingrays couldn't be laid end to end, but how often would you be saying, "My car my car that's all you care about is my car couldn't you just love me for my *body*?" To the purist, a Corvette is definitely "out," partly because of its prolificness—which is actually its biggest asset in value per dollar, partly because of its uncouth engine (yet has anyone in the world ever installed a "sophisticated" European ohc engine in it?) and partly because of its quality, which deserves at least a paragraph.

The most apt and oft-used word for both of these cars is... "refined." No bull. The Corvette may have a slight edge because it has been three years in the same shell, but we were really shocked at the '70 Camaro preview. We will *never* imply a car is perfect, or all-around best. However, seldom have we seen an all-new model with so few drawbacks. It's quiet, quick, beautiful and all the parts look and act as though they belong together. We aren't against mass production of a well-designed machine, because you get far more things per dollar. Cost cutting is not always a bad term, when a more inexpensive way can be found to produce the same result without affecting quality. For example, the Camaro front knuckle is now a single casting that includes the caliper mount and steering arm, eliminating about 14 separate pieces and a couple of assembly operations. Also, often a single plastic molding replaces a handful of trim and screws, and better ventilation has eliminated four movable side windows and their operating hardware that always rattles. Same result, less self-disassembly, more performance for the same depreciating dollar.

Corvette quality is another story. Because of the lower production (and naturally higher price), it takes longer to debug. Those who bought the new '63 model suffered through rain leaks, worn U-joints and unsoldered heater cores. Then they went out and bought a new '68 model and got engine heat, shakes, vibrations and headlights that wouldn't go up in the night. Buy right, buy experience, buy now after three years of unnoticeable design fixes. (See Paul Van Valkenburgh column.) Styling and Marketing groups tend to complicate the situation, however, because every year they overrule the engineers and Cost group, and add even more frills and crap such as bulb indicators, vacuum-operated headlights, wiper cover and removable rear window. Count on doubling the option cost of accessories like power steering, because that's what it's going to cost you again in labor, parts and inconvenience when the inevitable fails. Take out all the gimcrackery and they'd still sell every car made. We had loads of fun with the tilt-a-wheel, ranging through its impossible extremes, but for serious business it always came back to the same position as their non-

CHEVROLET CORVETTE

PRICE

Base\$5192
As tested\$6367
With optionsPower options, AM-FM stereo radio, LT1 engine option

ENGINE

TypeV-8, water-cooled, cast-iron block, cast-iron head
Displacement350 cu. in. (5740 cc)
Horsepower370 hp @ 6000 rpm
Torque380 lbs.-ft. @ 4000 rpm
Bore & stroke4.00 in. x 3.48 in. (102 mm x 88.5 mm)
Compression ratio11.0 to 1
Valve actuationOhv, rocker arms
Induction systemHolley 4V
Exhaust systemCast-iron headers, 4 into 1
Electrical system12-volt alternator, point distributor
FuelPremium
Recommended redline6500

DRIVE TRAIN

ClutchSingle dry disc
TransmissionGear Ratio Overall Ratio
1st Synchro2.209.05
2nd Synchro1.646.75
3rd Synchro1.275.22
4th Synchro1.004.11
DifferentialLimited-slip, 4.11 ratio

CHASSIS

FrameSteel ladder frame, front engine, rear drive
Front suspensionDouble A-frame, coil springs, concentric shock absorbers, anti-roll bar
Rear suspensionIndependent trailing arm, transverse leaf spring, tube shocks
SteeringManual, recirculating ball-nut, 3.4 turns, overall ratio 20.2 to 1, turning circle 39.0 feet
BrakesFour-wheel disc, dual independent systems, 11.7-in. dia. front, 11.7-in. dia. rear, swept area 461.2 sq. in.
Wheels15-in. dia.; 8-in. wide
TiresGoodyear Wide Tread F70-15 pressure F/R: 30/30 (rec.), 33/33 (test)

BODY

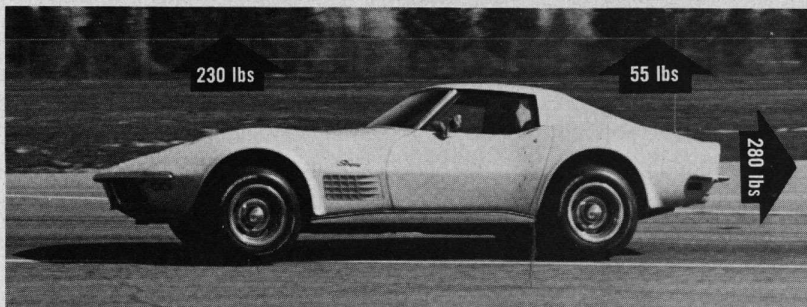
TypeFiberglass, 2-door, 2-passenger
SeatsFront bucket
Windows2 power, no vents
Luggage spaceRear trunk, 6.1 cu. ft.
Instruments160-mph speedo, 7000 rpm tach
Gaugesfuel, temp, oil pressure, amp
Lights:seatbelts, door ajar, brake

WEIGHTS AND MEASURES

Weight3330 lbs. (curb), 3555 lbs. (test)
Weight distribution F/R49%/51%
Wheelbase98.0 in.
Track F/R58.7 in./59.4 in.
Height47.4 in.
Width69.0 in.
Length182.5 in.
Ground clearance4.5 in.
Oil capacity5 qt.
Fuel capacity18 gal.
Coolant capacity18 qt.

MISCELLANEOUS

Weight/power ratio (curb/advertised)9.0 lbs. per hp
Advertised hp/cu. in.1.06
Speed per 1000 rpm (top gear)19.2 mph
Warranty12 months/12,000 miles



AERODYNAMIC FORCES AT 100 MPH



CORNERING CONDITIONS

PERFORMANCE

Acceleration0-30 (2.8 sec.), 0-60 (6.7 sec.), 0-100 (16.1 sec.)
0-quarter mile (14.5 sec., 99.5 mph)

Top speed120 mph (est.) at 6500 rpm (rpm limited)

BrakingDistance from 60 mph: 140 ft. (0.86 g av.)
Number of stops to fade: Not attainable
Stability: Excellent
Maximum pitch angle: 0.2°

HandlingMaximum lateral: 0.75 g right, 0.78 g left
Skidpad understeer: 3.7° right, 3.7° left
Maximum roll angle: 4.0°
Reaction to throttle, full: Oversteer; off: Less understeer

Speedometer30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0
Actual mph30.0 40.0 50.0 60.0 70.5 80.0 90.0 100.0

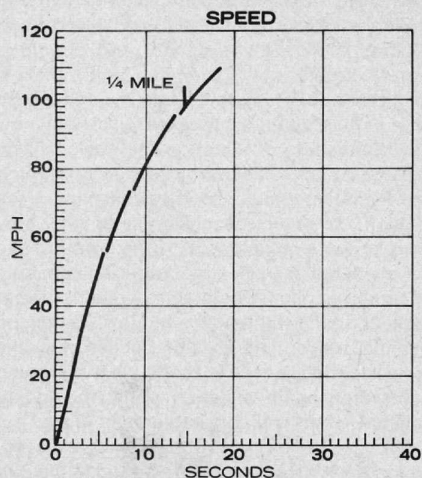
MileageAverage: 12.5 mph
Miles on car: 1600-2300

Aerodynamic forces at 100 mph:

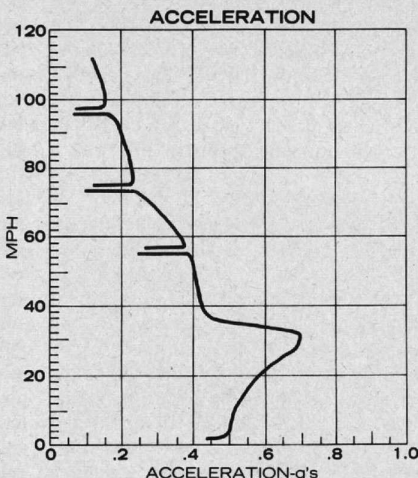
Drag280 lbs. (includes tire drag)
Lift F/R230 lbs./55 lbs.

TEST EXPLANATIONS

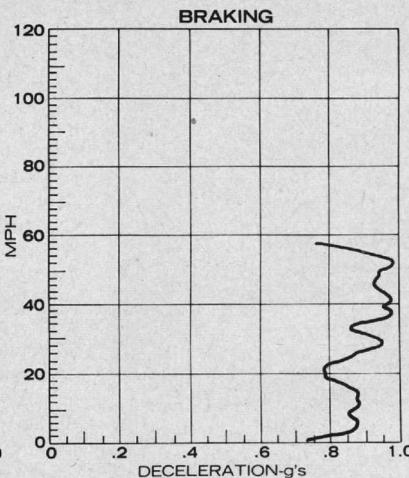
Fade test is successive maximum g stops from 60 mph each minute until wheels cannot be locked. Understeer is front minus rear tire slip angle at maximum lateral on 200-ft. dia. Digitek skidpad. Autocan chassis dynamometer supplied by Humble Oil.



Speed measured from standing start thru 1/4 mile to maximum shown. Shift points indicated by line breaks.



Acceleration measured in "g's" from standing start to speed shown. Shift points indicated by "spikes" on graph.



Brakes applied at 60 mph with maximum force, but using pedal "feathering" technique to prevent wheel lockup.

CHEVROLET Z/28 CAMARO

PRICE

Base\$2839
As tested\$4690
With optionsPower equipment, Console,
RS & Z-28 options, interior option

ENGINE

TypeV-8, water cooled,
cast-iron block, cast-iron head
Displacement350 cu. in. (5740 cc)
Horsepower360 hp @ 6000 rpm
Torque380 lbs.-ft. @ 4000 rpm
Bore & stroke4.00 in. x 3.48 in.
(102 mm x 88.5 mm)
Compression ratio11.0 to 1
Valve actuationOhv, rocker arms
Induction systemHolley 4-V
Exhaust systemCast-iron headers, 4 into 1
Electrical system12-volt alternator,
point distributor
FuelPremium
Recommended redline6500

DRIVE TRAIN

ClutchSingle dry disc
TransmissionGear Ratio Overall Ratio
1st Synchro2.209.03
2nd Synchro1.646.73
3rd Synchro1.275.21
4th Synchro1.004.10
DifferentialLimited-slip, 4.10 ratio

CHASSIS

FrameUnit steel, front subframe,
front engine, rear drive
Front suspensionDouble A-frame, coil
springs, concentric shock
absorbers, anti-roll bar
Rear suspensionLive axle, leaf springs,
tube shocks, anti-roll bar
SteeringVariable-ratio power, recirculating
ball, 2.29 turns,
overall ratio 14.3-10.9 to 1,
turning circle 41.1 feet
BrakesFront disc, rear drum,
dual independent systems,
11.0-in. dia. front,
9.5-in. dia. rear,
swept area 332.4 sq. in.
Wheels15-in. dia.; 7-in. wide
TiresGoodyear Polyglas F60 X 15
pressures F/R: 30/30 (rec.), 33/33 (test)

BODY

TypeIntegral steel, 2-door, 4-passenger
SeatsFront bucket, rear bucket
Windows2 manual, no vents
Luggage spaceRear trunk, 7.3 cu. ft.
Instruments150 mph speedo, 8000 rpm tach
Gauges:temp, fuel, amp
Lights:oil, brake

WEIGHTS AND MEASURES

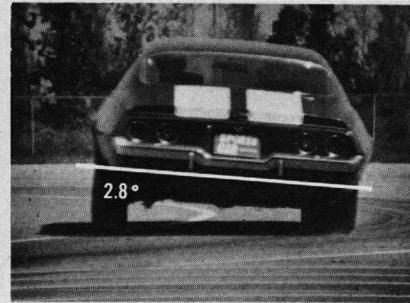
Weight3580 lbs. (curb), 3805 lbs. (test)
Weight distribution F/R55%/45%
Wheelbase108 in.
Track F/R61.3 in./60.0 in.
Height50.5 in.
Width74.4 in.
Length188.0 in.
Ground clearance4.5 in.
Oil capacity5 qt.
Fuel capacity18 gal.
Coolant capacity16 qt.

MISCELLANEOUS

Weight/power ratio
(curb/advertised)9.95 lbs. per hp
Advertised hp/cu. in.1.03
Speed per 1000 rpm (top gear)18.4 mph
Warranty12 months/12,000 miles



AERODYNAMIC FORCES AT 100 MPH



CORNERING CONDITIONS

PERFORMANCE

Acceleration0-30 (2.8 sec.), 0-60 (6.5 sec.), 0-100 (16.0 sec.)
O-quarter mile (14.6 sec., 98.3 mph)

Top speed120 mph (est.) at 6500 rpm (rpm limited)

BrakingDistance from 60 mph: 140 ft. (0.86 g av.)
Number of stops to fade: Not attainable

Stability: Excellent

Maximum pitch angle: 0.9°

HandlingMaximum lateral: 0.76 g right, 0.77 g left
Skidpad understeer: 2.2° right, 3.8° left

Maximum roll angle: 2.8°

Reaction to throttle, full: Oversteer; off: Less understeer

Speedometer	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Actual mph	26.0	35.5	44.5	54.0	63.0	72.5	81.5	90.5

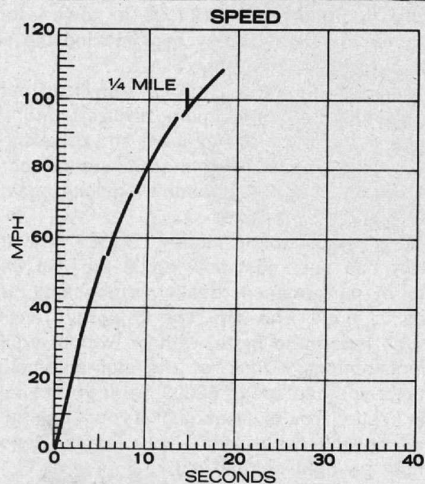
MileageAverage: 13 mpg
Miles on car: 3500-4300

Aerodynamic forces at 100 mph:

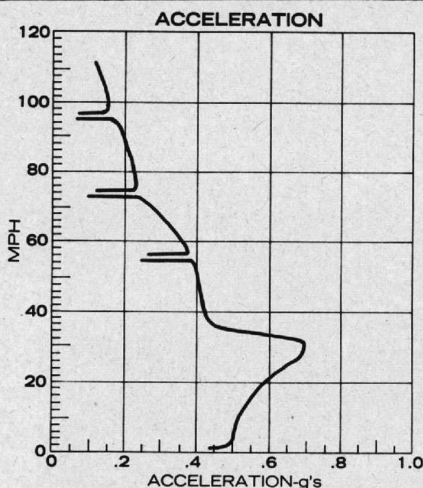
Drag350 lbs. (includes tire drag)
Lift F/R325 lbs./-40 lbs.

TEST EXPLANATIONS

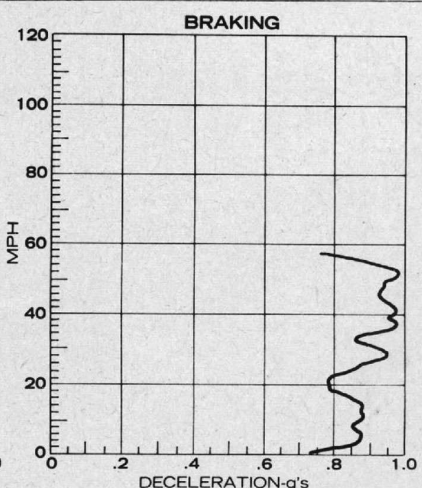
Fade test is successive maximum g stops from 60 mph each minute until wheels cannot be locked. Understeer is front minus rear tire slip angle at maximum lateral on 200-ft. dia. Digitek skidpad. Autoscan chassis dynamometer supplied by Humble Oil.



Speed measured from standing start thru 1/4 mile to maximum shown. Shift points indicated by line breaks.



Acceleration measured in "g's" from standing start to speed shown. Shift points indicated by "spikes" on graph.



Brakes applied at 60 mph with maximum force, but using pedal "feathering" technique to prevent wheel lockup.

adjustable wheel. You get too much stuff in too small a box and pretty soon no mechanic is going to touch it.

That takes care of (a) facts and (b) philosophy, maybe you are curious as to (c): what it's like to drive them.

The Z/28 handling performance may be degenerating toward better ride—at least compared to its sister Firebird Trans-Am—but it is still a reigning example of a new generation of nimblemobiles. The weight may be up by a couple of bodies, and handling *has* to be mushed up by added suspension compliance, which means that the front tires lay over more for cheap understeer. *But*, GM has learned that even the most hulking old barge can be given a good pseudo-nimbleness by simply adding the newest super tires and variable-ratio power steering. We won't argue. They cheated, but we still won. From way up in your well-glassed control tower you can get in and out of more trouble—with one finger and no sweat—than you ever imagined. It feels so lightweight that if we hadn't weighed it, we'd swear they imagined about a thousand extra pounds.

The best to be said about the Camaro's front buckets is *ungreat*...but better than last year's. With no lateral support, a board back and vinyl-covered brick for a head stopper (hardly a head *rest*), the most desirable option to be added would be the super clamshell buckets from the Stingray. A small request, really.

As said before, the Astro-ventilation actually works without vent windows, and at velocity you can get gobs of air with the windows up, resulting in really quiet cruising and no wind whistle. The only noise of any note is from the mechanical valves, but that seems to be our last general irreconcilable compromise. Seldom do you see an honest, no-sweat 6500-rpm redline on an American tach, but then seldom do you see 70 psi on the oil pressure gauge. The oil gauge is honest, with the high-performance oil pump, but the tach—she lies, oh, she lies. The last Z/28 we drove had a

pessimistic tachometer also, so we were *en garde*, and an uncommon feeling about the indicated 6500 rpm turned out to be justified by an actual 7300. Not terminal, but not healthy either. The speedo was weird too, with minimum increments of 10 mph—which was understandable considering it was that far off at a hundred. It's really rather dumb to have a speedo that registers to 150-160 since actual mph doesn't matter above legal speeds, and that's the *last* gauge you would ever put in a real racer. Error must have been the wrong drive gear, because the *odo* was off the same way, and our vette was *right on*. One small note, if the gas pedal falls off—leave it off. On Camaros it's as much a nuisance as an appendix.

Pretty tough pickin', to be critical of the Z/28. Maybe we should have compared it to a Maserati or Lamborghini because, really, if you didn't *know* of its plebian heritage, it doesn't look unlike a legitimate European GT. And if you don't want to settle for an American "next best," our Stingray is better in most ways than every Italian/British/German two-seat street GT available at thrice the price.

The Stingray's interior and exterior styling may be a bit gaudy in the American way, but it's built to fit real people. It isn't as low, and the driver doesn't lay out, but you can see over the hood and fenders and rear deck, which anyone who has driven a lot of expensive sports cars will admit is a very underrated problem. Chevrolet isn't in any hurry for a mid-engine V-8 Vette either, but with a lot of experience with Miura, Mangusta and Ford's GT 40, we don't see any significant reason for a mid-engine Vette that isn't raced.

Of course there are some points we can be critical of in the Stingray too. Noise is the worst. Unless you figure the noise is part of the image to be tolerated, some work ought to be done on the mufflers, wind boom and interior resonance. The radio was inaudible below our threshold of pain, and the echo lives on, long after the engine is shut down. The manual controls are heavy compared with a power Z/28, heavy enough to verify that it's a man's car in Hi-Per trim. The rest of the interior is a plush buggy, a glass and plastic womb with just barely too many gadgets. The shifter is almost superfluous in town—tons of smooth torque in any gear making the selection rather irrelevant.

Same in the Z/28. Both very civilized cars. Very refined. If only more civilized and refined persons would buy them and drive them in such a manner, so that insurance companies and the Feds couldn't legislate against the innocent machines.

The last chapter: money. Up to now the story has been just how equal the two cars are in performance, quality, practicality. But not in price—no sir! The Stingray runs a rough two grand more, with or without equivalent options. Think of the non-automotive things you can spend \$2000 on. If you choose the Vette, you're spending it on something that doesn't even exist—your image—and I might be right behind you.

For further reading on these two subjects, see "Driver's Reports" in March 1970 *Sports Car Graphic*.

UNLIKE THE CORVETTE, WHICH HAS ALWAYS HAD ITS DISTINCT "AMERICAN GARISH" STYLING, THE NEW CAMARO HAS...DARE WE SAY IT...A RESEMBLANCE, OR SIMILARITY, OR REMEMBRANCE, OF A GTO. NOT PONTIAC'S—THE ORIGINAL—THE '62 FERRARI COUPE.



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