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THE CORVETTE FROM HELL

PART 2

Chevrolet's ZR-1...
So good it's scary.

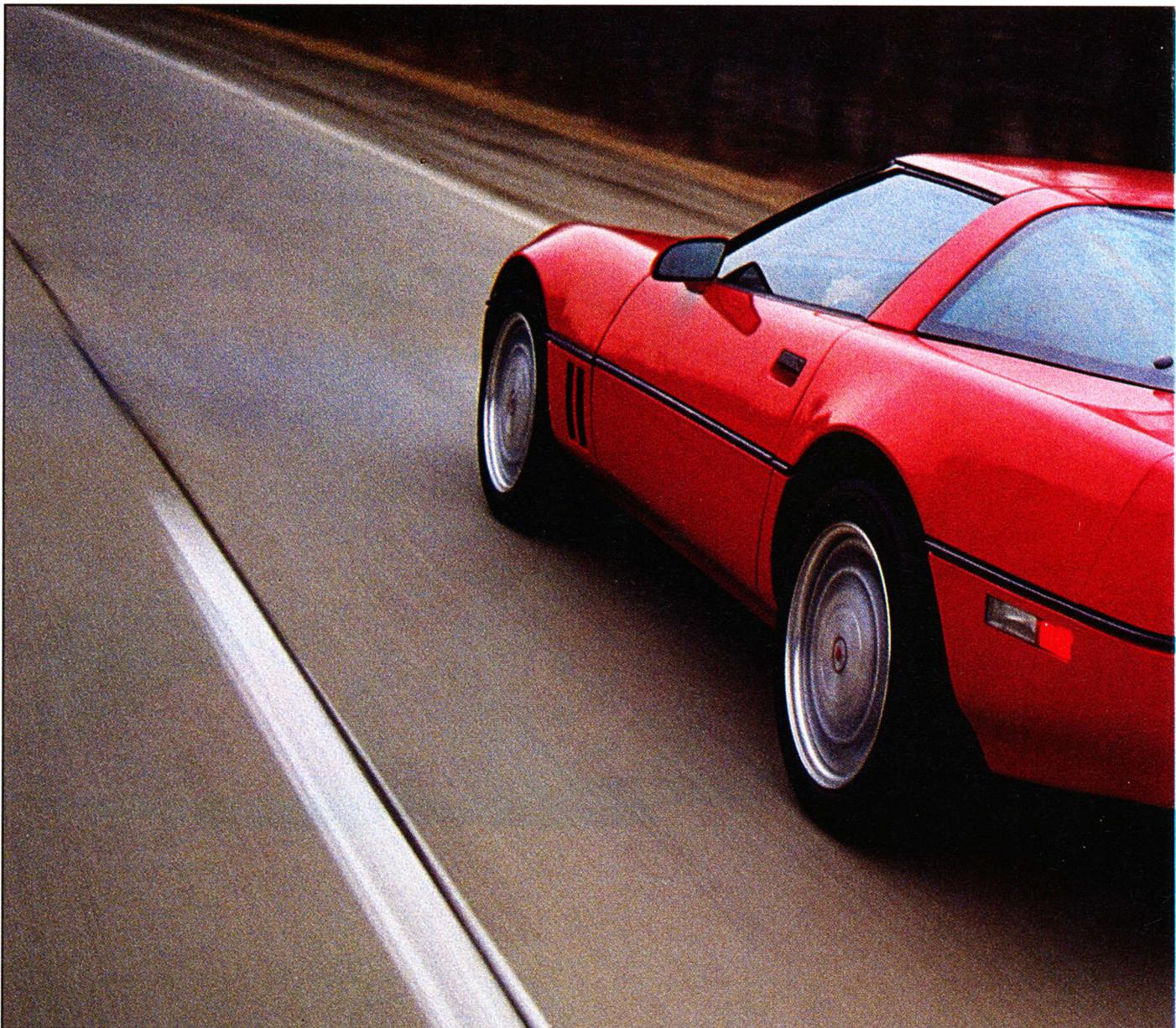


Preview: all-new 1990 Acura Integra GS.
4wd Mudslingers...Isuzu Amigo, Laforza, and
Range Rover. Ten terrifyingly ugly cars.

Chevrolet Corvette ZR-1

*It's out of the park, over the center-field stands.
The fans are chanting, "Chev-ee, Chev-ee, Chev-ee!"*

BY WILLIAM JEANES



• The Chevrolet Corvette ZR-1, unless we miss our guess, is going to cost some people at General Motors their jobs.

You ask, how can that be? After all, is this not the Corvette from hell? The King of the Hill? The Ferrari-fighting world-class two-seater from the Motor City? A legend-to-be? Yes, it is that and more. But it may still cause heads to roll.

To anyone who's ever been a part of the corporate world, such a situation is familiar. In all corporations, only one person can do *no* wrong. That person is the boss—the chairman or president or chief executive officer or maximum lead-

er or whatever the top man is called. A second group, friends of the boss, can do *some* wrong. A third contingent, those not a part of the power structure, can quite easily commit perceived transgressions against the entrenched moguls. In short, everyone but the boss is at some risk.

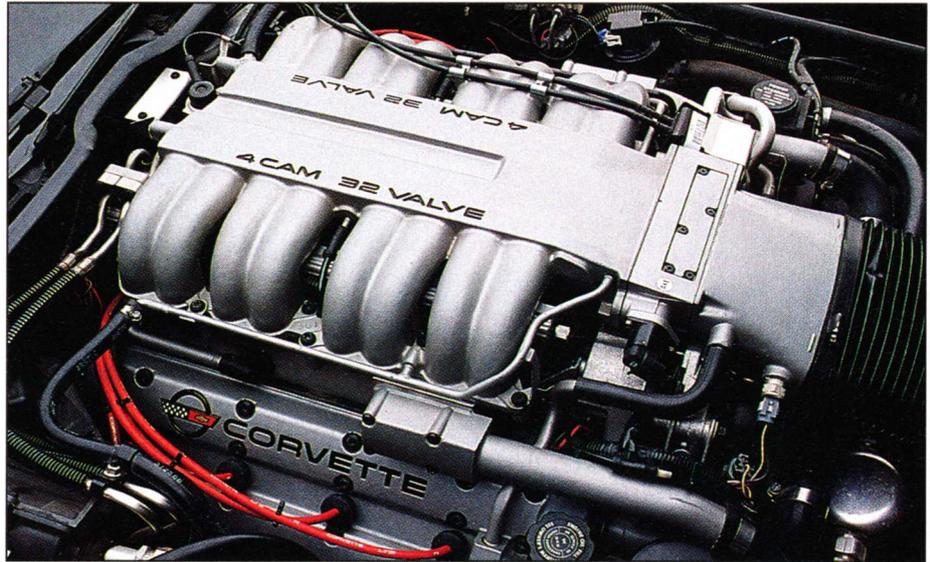
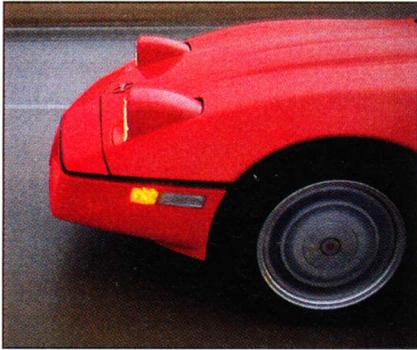
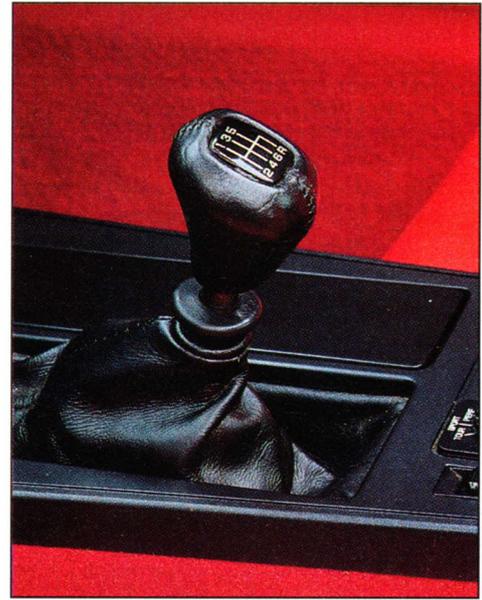
Friends of the boss get in trouble by doing something that doesn't work out. The Outs, those not basking in the shared glow of power, get in trouble by doing something that turns out so outrageously well that the Ins become jealous. Once that happens, the Ins will be out for some heads, determined that no one will

make *them* look bad ever again.

The whole process of carrying any project—a car, for example—to its conclusion has been reduced to a six-step progression that, once set in motion, is as inexorable as the sunrise: (1) unbridled enthusiasm, (2) sudden disillusionment, (3) total confusion, (4) the search for the guilty, (5) punishment of the innocent, and (6) rewarding of nonparticipants.

But what has all this to do with the ZR-1? Just this: the car is so good that those who didn't want it to happen and those who made it happen anyway have both put their livelihoods on the line. Nothing





this good can come out of a large American corporation without causing shock waves. And we all know what some companies—GM, in particular, has been publicly vocal on the issue—think about anything that rocks the boat. Well, the folks up there on the fourteenth floor had best plan on getting wet feet, because if any car can slosh saltwater over the gunwales of the corporate lifeboat, it's this one.

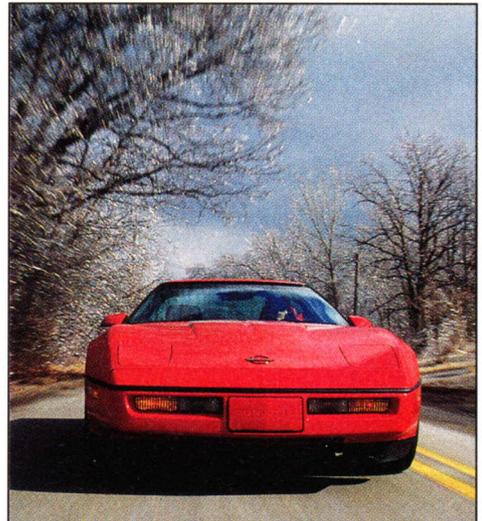
"If you don't keep pushing the envelope, the limits of what's technically feasible," Chevy's chief engineer Fred Schaafsma told us, "you're going to fall behind." Hear, hear. If General Motors engineering could—or would—improve upon a basic sedan to the extent that the Corvette engineering team improved upon the existing Corvette, the crowds at GM dealerships would cause a nationwide traffic jam.

Dave McLellan, Corvette chief engineer, says, "The ZR-1 makes the statement that we can do things today that no one even dreamed could be done ten or twenty years ago. We've achieved a spectacular level of performance and are still able to meet or exceed all government

standards for fuel economy, safety, noise, emissions, and so on." The ZR-1 engineering team has done nothing less than prove that Detroit can indeed run with the big dogs. The car is, and deserves to be, a source of pride to U.S. enthusiasts.

The new ZR-1 can provide the best driver in the world with all the slam-bam power that he could ask for, yet its personality and demeanor are such that drivers who are less than world-class—a group that, by our observation, includes a great many owners of high-performance cars—are remarkably well protected from themselves.

Does this mean you can't get yourself in trouble behind the wheel of a ZR-1? No. Does it mean that you have to be suicidal to fall victim to its power and speed?





Yes. Left to its own devices, the ZR-1 is at once the most exciting and responsible high-performance car ever conceived in Detroit, let alone ever built. It feels glued to the pavement, and it goes as if it were powered by equal parts lightning and solid rocket fuel. It even looks tough, if you stand behind it so you get the prime view of the rear tires—tires so fat that only the differential housing seems to

prevent their meeting in the middle. The ZR-1 is the kind of machine that will send the safety Nazis to their daybeds with the vapors, even as it brings car lovers to their feet clapping and cheering.

The last of the ZR-1's umpteen auto-show introductions (Los Angeles, Detroit, Chicago) took place in Geneva, Switzerland, of all places, and—at long last—involved a long-distance drive in

the car we had only driven for a limited distance on the test track. The choice of Europe as an introductory venue permitted us to experience the Corvette in the arena dominated by Ferraris, BMWs, and big, whistling Mercedes sedans—an arena otherwise populated by small, nimble cars that run fast on the autobahns and autoroutes and almost as fast on the twisting, sometimes rough secondary roads. Would this American beast still pound its chest after such an encounter?

Certainly it has the equipment, on paper and in fact, to compete anywhere. To review, the Corvette ZR-1 is a rear-drive sports car powered by a 32-valve, 5.7-liter, port-fuel-injected V-8 engine with an aluminum block and aluminum heads. The engine was designed by GM's Group Lotus Division, was further developed by GM, and is built under contract by Mercury Marine in Oklahoma, a facility with more than a passing familiarity with high-muscle aluminum engines.

The 32-valve V-8 engine, "LT5" on the options sheet, has two camshafts on each of its aluminum heads. Maximum horsepower—achieved at 6200 rpm—is 380. The torque curve shows a maximum of 370 pound-feet at 4200 rpm, and the band feels about as wide as, say, Utah.

The engine's performance is best described as otherworldly. Its power just

plain warps the mind. The ZR-1 has the ability to take you from 0 to 60 mph in 4.5 seconds and from a stop to 100 in 10.4 seconds. We also recorded a 0-to-150-mph time of a tick under half a minute. Top speed, for the adventurous, is a sizzling 175 miles per hour.

Behind the engine is a six-speed manual transmission that's as sweet as anything mechanical you're likely to lay a hand on. Capable of withstanding 425 pound-feet of torque, the six-shifter is the same manual gearbox used in all 1989 Corvettes, but it's heaven sent for the Corvette from hell.

Zahnradfabrik Friedrichshafen AG, usually referred to simply as ZF, designed the six-speed transmission especially for the Corvette. The fully synchronized unit derives much of its slick operation from an internal-rail shift mechanism and a hydraulically actuated, 280mm-diameter pull-type clutch. Because GM has a severe allergy to seeing the gas-guzzler tax applied to any of its cars, the Corvette team softened the fuel gluttony by installing a system known as computer-aided gear selection. Rich Ceppos explains the system's intricacies in his accompanying Corvette convertible review; we'll just add that the CAGS-equipped six-speed transmission is infinitely more pleasurable to use than the old Doug Nash 4+3 manual overdrive transmission.

Transmission particulars aside, you should know that shifting could not be easier. The clutch-pedal effort is mild, and the gearbox is as at home under city driving conditions as it is on mountain roads taken at speed.

Though the driveline comes from across the water, the exterior remains pure American. There are no significant differences between the standard L98-powered Corvette and the LT5-powered ZR-1. But a close examination of the rear reveals that the ZR-1 is some three inches wider in the fanny, with the smooth flaring-out process beginning at the front edge of the doors and ending in a square-lensed taillamp fascia. The ZR-1 distances itself from its lesser compadres with the kind of subtlety dear to the hearts of Q-ship lovers.

The added width is there for a purpose: to provide shelter for a pair of tires that the word "humongous" was surely coined to describe. The ZR-1 carries 315/35ZR-17 Goodyear Eagle unidirectional gatorbacks in the rear and 275/40ZR-17 Eagles up front. Wheel width is 9.5 inches in front and 11.0 inches in the back.

The only drawback we found with the

tires, which are loosely based on Goodyear's Formula 1 rain tires, was an oversupply of road noise. Their benefits, which come in the form of limpetlike adhesion to the earth's paved surfaces, go far toward minimizing the negative effects of the noise. As big as these tires are, we may see bigger yet. Goodyear says that size-405 tires are now practical to build—for the next Corvette, perhaps. Meanwhile, the current tires are protected and monitored by low-tire-pressure warning sensors that light up an alert on the dash whenever any tire's pressure falls below a preset level. The result of a ten-year, ten-million-mile testing program, the low-tire-pressure warning system (option-code "UJ6") can sense variations of plus or minus 1 psi.

Behind the wheels are vented disc brakes developed by PBR Automotive, an arm of Brake and Clutch Industries Australia Pty, Ltd.—yet another group of outlanders. The big 13.0-inch front discs (the rears are an inch smaller in diameter) reflect lessons learned during Corvette Showroom Stock endurance racing and are as good to the touch as any we've set a toe to. The brakes will haul the ZR-1 to a stop from 70 mph in an impressive 170 feet, and fade is not a part of the ZR-1 braking equation.

The suspension is the same sporting combination of Z51 heavy-duty suspension and FX3 selective ride control that can be ordered on garden-variety Vettes. That is, moderately stiff transverse fiberglass springs, thick anti-roll bars, and adjustable Delco/Bilstein gas-filled shock absorbers. The only departure from the standard setup is a thicker rear anti-roll bar, which is needed to cope with the ZR-1's added weight and power and larger rear tires.

Inside all is reasonably familiar, but if you scrutinize the console between the seats you'll see two unfamiliar objects: a lock with a key in it and a three-position switch.

First, the lock, or kiddie key. This gives the operator a choice of full or reduced engine power, sealing off the high-rpm end of the induction system and reducing peak output by about 150 hp. This means that young drivers can be sent to play in traffic with at least some comfort to a parent. The switch has been incorrectly called the valet key—incorrect because any parking-lot attendant unable to cause an owner grief with the 230 or so remaining horses just isn't trying.

The other switch, which operates the FX3 Selective Ride Control system, makes a real difference in the ZR-1—and, indeed, in all Corvettes so equipped. Its

three settings—Touring, Sport, and Performance—allow the driver to tailor the suspension to meet variations in road conditions, levels of driver aggression, and comfort requirements. Within each mode, there are six gradations of shock-absorber damping; they vary with speed to maintain a constant level of ride control. The Performance setting will rattle your fillings over rough roads, but the other two are useful in adapting the car to differing roads and driving styles. A rough road can be tamed by switching to the Touring setting, and the Sport setting can draw real cornering performance—and surprising comfort—from the ZR-1 on a smooth, twisting surface. Without the FX3 system, the ZR-1 would not be the grand tourer it is.

We drove the ZR-1 first from Geneva to southwestern France and later from Montpelier to the principality of Andorra, a tiny dot in the Pyrenees Mountains. Altogether, we spent somewhere between 700 and 800 miles in the car. A number of observations resulted. First, the ZR-1 makes every previous Corvette seem antediluvian. It also makes you wonder why anyone would spend more than \$50,000 on a two-seater—given that the ZR-1 will be available for about that. But the best news of all is that the Corvette standard-bearer is not some overpowered, noisy (well, not *too* noisy) rattler that feels as if its engine were trying to escape its body.

Driving the ZR-1 reminds you that it is possible to create a car that is bewilderingly fast but that maintains an air of civilization about it. Unlike previous Corvettes, the ZR-1 doesn't subject its driver to corporal punishment in the form of a head-rattling ride quality. Quite the opposite, in fact. Twice, after driving hard all day on French roads that ranged from challenging to hostile, we emerged unscathed and unbrutalized by the ZR-1. This feeling of freshness after a long and difficult drive is stuff of which great grand-touring cars are made.

Twice, once through poor planning on our part, we were forced to stand hard on the brakes. They stopped us short of disaster with the sureness of a racing car. Innumerable times we called on the engine for extra effort in passing situations. The effort was given freely and without incident. Despite the constant stream of brute strength that surges through the seat and into your body, we never had the feeling that we were in anything but a finely tuned example of true automotive craftsmanship.

The car takes mountain turns—*hard* mountain turns—with a neutrality that

would do credit to the Swiss banking industry. The clutch action and the shifter throw make power application pleasurable smooth, and the amount of power available, as we've noted, simply exceeds the expectations of sane persons.

Were there complaints? A few. The road noise has already been mentioned, and some of the test cars we drove had considerable wind whistle at both the A-pillars and the C-pillars. After the hard run to Andorra, we finally coaxed some familiar squeaks from the fiberglass body, but nothing that would ruin your day. The garish electronic dash neither pleases nor works properly. Time after time we came to a full stop and waited for the electronic speedometer to catch up—or, more properly, wind down. There seems little excuse for that.

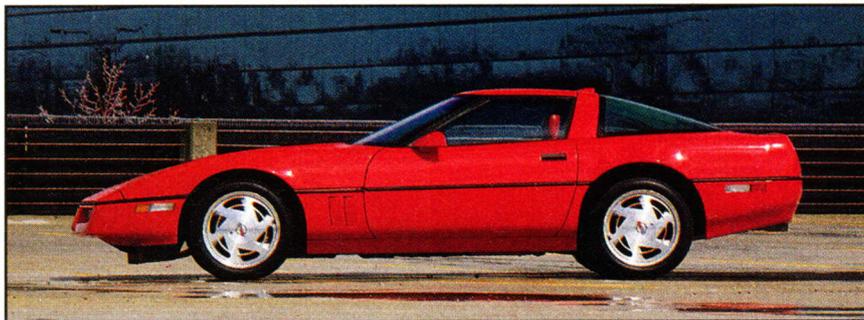
The seats are just fine and can be adjusted to an almost limitless number of driving positions. Even the seat wings and lumbar supports are power controlled. The overall look of the dash and other plastic-clad surfaces stops short of being cheap, but it stops even further from richness. A redo of the interior is due for the 1990 model year, however, so we'll hope for improvement.

Meanwhile, we will lust after the ZR-1. Only a few hundred will be built during 1989, and production—which is limited by engine availability—will likely not exceed 4000 units annually.

Persistent rumors of engine problems, primarily overheating and oil-system malfunctions, dogged the ZR-1 during the first quarter of 1989. Chevrolet denies them categorically, and, indeed, we watched a dozen journalists and engineers flog thirteen ZR-1s for three solid days in France—including time on Goodyear's Mireval test track—with nary a misfire. We're therefore willing to believe that the rumors stemmed from normal developmental teething pains and not from product irregularities.

We're also willing to hope (we'll believe it when we see it) that the ZR-1 will spark other units of General Motors to produce cars equal in their class to the ZR-1. The single-minded effort toward a common goal—performance excellence—put forth by the Corvette engineering team should be an example to the entire American industry. Will the industry follow? We'll see.

Meanwhile, we'll look forward hungrily to more time in the car that, for now, is the best thing yet seen from an American manufacturer... and we'll hope that the wrong people at Chevrolet don't lose their jobs because the ZR-1 they created is so good at its job.



Vehicle type: front-engine, rear-wheel-drive, 2-passenger, 2-door sedan

Price as tested: \$51,500

Options on test car: tinted-glass lift-out roof panel

Standard accessories: power steering, windows, seats, and locks, A/C, cruise control, tilt steering, rear defroster

Sound system: Delco-GM/Bose AM/FM-stereo radio/cassette, 4 speakers

ENGINE

Type V-8, aluminum block and heads
 Bore x stroke 3.90 x 3.66 in, 99.0 x 93.0mm
 Displacement 349 cu in, 5727cc
 Compression ratio 11.0:1
 Engine-control system GM electronic with port fuel injection
 Emissions controls 3-way catalytic converter, feedback fuel-air-ratio control, EGR, electric auxiliary air pump
 Valve gear chain-driven double overhead cams, 4 valves per cylinder, hydraulic lifters
 Power (SAE net) 380 bhp @ 6200 rpm
 Torque (SAE net) 370 lb-ft @ 4200 rpm
 Redline 7200 rpm

DRIVETRAIN

Transmission 6-speed
 Final-drive ratio 3.54:1, limited slip
 Gear Ratio Mph/1000 rpm Max. test speed
 I 2.68 7.8 56 mph (7200 rpm)
 II 1.80 11.6 83 mph (7200 rpm)
 III 1.31 15.9 114 mph (7200 rpm)
 IV 1.00 20.8 150 mph (7200 rpm)
 V 0.75 27.8 175 mph (6300 rpm)
 VI 0.50 41.6 152 mph (3650 rpm)

DIMENSIONS AND CAPACITIES

Wheelbase 96.2 in
 Track, F/R 59.6/61.9 in
 Length 177.4 in
 Width 74.0 in
 Height 46.7 in
 Frontal area 19.4 sq ft
 Ground clearance 4.7 in

Curb weight 3440 lb
 Weight distribution, F/R 52.4/47.6%
 Fuel capacity 20.0 gal
 Oil capacity 12.0 qt
 Water capacity 16.7 qt

CHASSIS/BODY

Type full-length frame integral with body
 Body material fiberglass-reinforced plastic

INTERIOR

SAE volume, front seat 49 cu ft
 trunk space 18 cu ft
 Front seats bucket
 Seat adjustments fore and aft, seatback angle, front height, rear height, lumbar support, upper side bolsters
 General comfort poor fair good **excellent**
 Fore-and-aft support poor fair good **excellent**
 Lateral support poor fair good **excellent**

SUSPENSION

F: ind, unequal-length control arms, plastic leaf spring, 3-position cockpit-adjustable electronically controlled shock absorbers, anti-roll bar
 R: ind; fixed-length half-shaft, 2 lateral links, and 2 trailing links per side; plastic leaf spring; 3-position cockpit-adjustable electronically controlled shock absorbers, anti-roll bar

STEERING

Type rack-and-pinion, power-assisted
 Turns lock-to-lock 2.3
 Turning circle curb-to-curb 40.0 ft

BRAKES

F: 13.0 x 1.1-in vented disc
 R: 12.0 x 1.1-in vented disc
 Power assist vacuum with anti-lock control

WHEELS AND TIRES

Wheel size F: 9.5 x 17 in; R: 11.0 x 17 in
 Wheel type cast aluminum
 Tires Goodyear Eagle ZR, F: P275/40ZR-17; R: P315/35ZR-17
 Test inflation pressures, F/R 35/35 psi

CAR AND DRIVER TEST RESULTS

ACCELERATION

Seconds
 Zero to 30 mph 1.9
 40 mph 2.6
 50 mph 3.5
 60 mph 4.5
 70 mph 5.7
 80 mph 7.2
 90 mph 8.6
 100 mph 10.4
 110 mph 12.5
 120 mph 15.0
 130 mph 18.4
 140 mph 23.2
 150 mph 29.6
 Top-gear passing time, 30-50 mph 11.5
 50-70 mph 11.7
 Standing 1/4-mile 12.8 sec @ 111 mph
 Top speed 175 mph

BRAKING

70-0 mph @ impending lockup 170 ft

Fade none moderate heavy

HANDLING

Roadholding, 300-ft-dia skidpad 0.89 g
 Understeer minimal moderate excessive

COAST-DOWN MEASUREMENTS

Road horsepower @ 30 mph 5 hp
 50 mph 13 hp
 70 mph 29 hp

PROJECTED FUEL ECONOMY

EPA city driving 16 mpg
 EPA highway driving 25 mpg

INTERIOR SOUND LEVEL

Idle 55 dBA
 Full-throttle acceleration 89 dBA
 70-mph cruising 74 dBA
 70-mph coasting 74 dBA