CHAN BUSH

CAMARO FOR CURVES

A Chevrolet on a Crooked Path to Slalom Victory

BY WAYNE THOMS

IT SEEMS REASONABLY clear in this early stage of the Camaro's yet-to-be-determined life cycle that it is destined to pass through independently inspired performance/handling development stages that should suit the requirements of just about any driver-enthusiast.

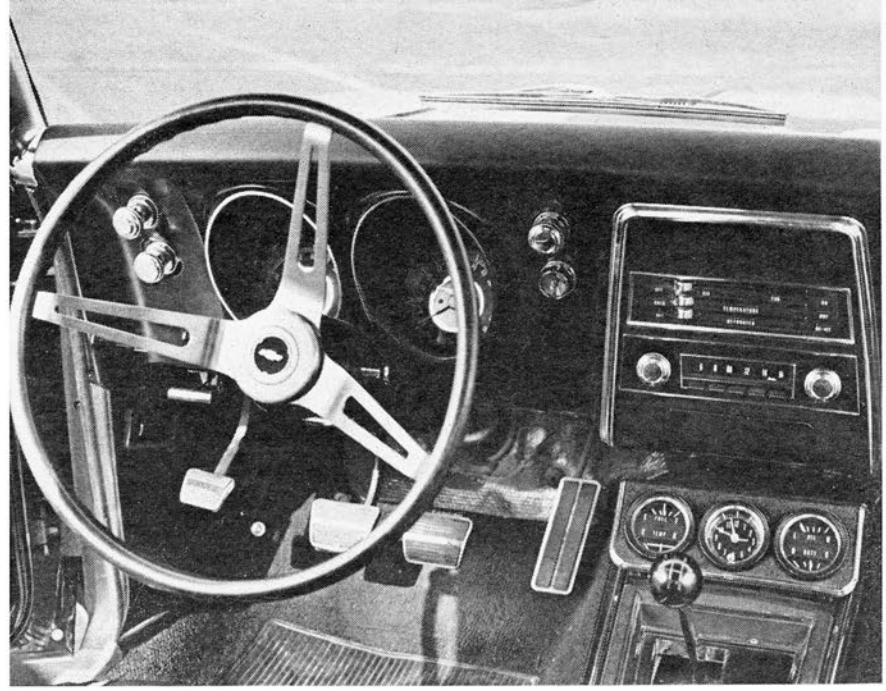
At the top of the scale, versions of the 427 Camaro (*CL*, April '67) are making a strong case to stay with, or perhaps exceed, any of Carroll Shelby's Mustang GT offerings which are, at the moment, the only basis of comparison. Indications are that there will be a range of modifications. At a level slightly below the all-out 427 there is a distinctive 350 SS Camaro offered with some specialized changes by Allen Gwynn Chevrolet of Glendale, Calif.

Purpose of the Gwynn-backed development is slalom competition. A car prepared for this narrow band of the motorsports spectrum (which is growing in popularity for a variety of reasons) isn't required to be as single-purpose as, for example, a stock vehicle made ready for serious drag racing. A competitive slalom car necessarily handles exceptionally well, but in almost all cases it is street-capable. Indeed, scratch most of the entries at a slalom meet and underneath each circus-type paint job, there's daily transportation.

The Gwynn Camaro is termed an experiment because that is essentially what it is. Early results—the point at which *CL* was able to sample the machine—appear to be quite satisfactory, and replicas are available for purchase. ▶

But that doesn't mean development work has stopped or that the "perfect" combination ever will be attained.

It came about this way: Tom Dittus, a salesman for Gwynn, happens to enjoy auto competition. He became active with the local Vikings Corvette Club, with which he received a taste of slaloms. In February of this year he approached his management for permission to start a high-performance Camaro club and simultaneously to prepare a Camaro that would win slaloms and be salable. Response was a qualified go-ahead, which meant that positive results were required without needless delay.



OPTIONAL INSTRUMENTATION in console highlights otherwise standard Camaro interior. Seat cushion has additional padding for comfort.

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THE MODIFICATIONS Dittus worked out in conjunction with a handful of performance specialists are relatively simple in concept and modest in price. In the first place the Camaro needs suspension help if it is to be effective on a tightly serpentined slalom course. Here Dittus turned to a Glendale firm, R/T Engineering, operated by Howard Mariner and Jeff Harris, who also happen to be president and vice president of the Vikings Corvette Club. They determined that the single-leaf rear springs were inadequate under severe braking and maximum acceleration. Their solution was to reinforce them by adding two additional leaves on each spring plus a set of traction bars, thereby eliminating spring wind-up and wheelhop.

It was generally agreed that a low-to-the-ground Camaro was desirable. To achieve this, R/T de-arced the springs, dropping the rear end slightly more than 2.5 in. on this car. Dittus said that it is possible to drop the car as much as 4 in., but that 3 in. is about maximum for adequate tire clearance. The new spring rate (stock is 131 lb./in. at the wheel) was not obtainable, but what is apparent in the seat of the slalom drivers pants is an almost total lack of travel.

After a set of Koni heavy-duty shock absorbers all around came a set of new front coils, which Dittus said are 3000-lb. station wagon springs (from Chevrolet stock) appropriately cut to lower the front end. On the initial installation a bit too much was removed from the springs, requiring some shims for proper height adjustment. Dittus noted that the next step will be to substitute a set of coils available on 2850-lb. International Harvester vehicles which need not be shortened.

During some hard running around a short oval banked track this writer commented that among other potential improvements a front antiroll bar larger than the standard 0.6875-in. diameter unit might be desirable. This, too, is slated for change, said Dittus. The plan is for a truly massive bar, 1.5-in. in diameter.

One of the simplest ways to improve road holding is to put maximum tire width on the ground. On a set of American Racing 15-in. magnesium wheels (7-in. rims) Dittus had installed 9.95-15 Goodyear Blue Streaks. These bite with fierce tenacity, but Dittus reported that the best slalom tire he has encountered is the 9.50W-15 Blue Streak, which provides an extra inch of rubber contact width. They are as yet difficult to find, the reason they had not been installed on this Camaro.

The consensus about performance was to go for a modest increase, holding expense to a minimum. Resulting performance should give the 350-cu. in. engine good low-end torque, permit it to rev freely in the indirect gears (where most slalom driving is done) and be suitable for the street. Part of the answer was to install Chevrolet's optional camshaft which is intended for the 327 Corvette engine, in which it raises the rating to 350 bhp. It is, says Dittus, a relatively simple job to install. Both are hydraulic lifter camshafts and both use the same 1.5:1 rocker arm ratio. A comparison of their timing reveals why the Corvette camshaft offers better performance. Figures for the mild Camaro camshaft are: Intake timing, 38-92°, exhaust timing, 88-52°; duration, intake/exhaust, 310/320°; overlap, 90°; and lift, 0.3900 in. Figures for the warmer Corvette camshaft are: Intake timing, 54-108°, exhaust timing, 102-60°; duration, intake and exhaust, 342°; overlap, 114°; and lift, 0.4472 in.

With these simple changes the engine is capable of 6800 rpm without significant hydraulic lifter pump-up, and idles smoothly at 600 on the tachometer.

A slight change to the exhaust system consisted of removal of stock mufflers in favor of a pair of 26-in. Mitchells, plus addition of "lakes plugs" for straight through, unmuffled competition running.

Although the modifications noted could be applied to any 350-cu. in. Camaro, Dittus' car has other elements bearing on its intended dual role in slaloms and streets. Among these are a 4.10:1 Positraction rear axle, 4-speed Muncie close-ratio gearbox and optional front disc brakes. All are logical choices and in particular the 4.10:1 axle seems to be a good compromise, although fuel economy would suffer should one undertake a long trip.

STEERING ON this Camaro was as delivered—non-power, an overall ratio of 28:1 with 4 steering wheel turns lock-to-lock. This writer criticized it as being too slow for the quick reversals required in a slalom, and Dittus concurred, saying that it will be quickened.

Another feature subject to adverse comment was the relationship of brake pedal to accelerator. In stock trim it is virtually impossible to perform a

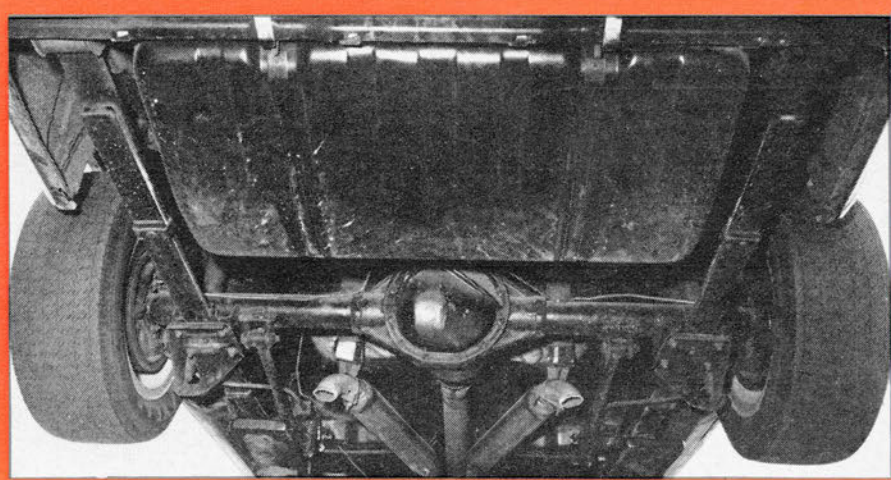
proper heel-and-toe downshift—the full application of brakes while blipping the throttle with the heel to bring the engine up to speed to match the downshift. It is true that the majority of slalom courses are short and tight enough to drive in one gear, but inevitably there will be one requiring the use of at least two gears and subsequent instant smoothly coordinated downshift. A modification of the accelerator pedal would be simple and highly desirable. Dittus agreed that it would be a worthwhile addition to his package.

What sort of a car is it to drive? Exciting . . . and rough. Push firmly downward on front or rear fender and one gets some idea of how stiffly the car is sprung; there is very little give. This is reflected in the street ride—very firm. It was so firm that Dittus had the driver's seat reupholstered with additional foam to cushion the paving bumps somewhat. In this regard the car must be considered most suitable for an enthusiast who is willing to compromise, willing to give up some street comforts in favor of responsive flat handling.

Unlike the 427 Camaro described in April, this version does not generate excessive wheelspin. In fact, it is quite civilized, yet gives the impression of having plenty of horsepower. *CL* took the car for an afternoon's demonstration around Whiteman Stadium in Pacoima, Calif., a 5/8-mile oval with a steep bank on one end that connects with a sharply perceptible bump at the transition to the short straight. At the other end the banking is minimal.

WITHOUT MAKING serious efforts at competitive lap speeds by braking and downshifting the car was bent through the turns in both directions. The faster it was driven the more fun it became. It seemed impossible to break the rear end loose and push the car through in a power slide. Speed through the near-flat turn was increased to an impossible level, and still the tires clung to the asphalt without protest or slide. It felt very unsporting, but the idea was to steer with the wheel through the corner, crowding on about 30% more speed than physical senses relayed the car would handle, and wait for the rear end to come unstuck. It would not. At one point where tail breakaway was achieved, with the help of some loose stones slightly off the best line, correction was not difficult, and would have been made faster with a quicker steering ratio.

After enough laps to produce a lasting impression of how very well the car corners, it was turned over to Gary Whiteman, who expressed an interest in giving it a try. Gary, whose father owns the track, is an accomplished oval track driver who holds several track records and wins more than his share of races on this circuit. Obviously, he knows the course better than most. After a couple of easy laps he poured on the power, bringing the car within a couple of seconds of the track record for its class. Admittedly the car was not set up for oval track racing, but Whiteman came away impressed with how well it held through the turns. His offhand comments paralleled those of the *CL* crew: The Camaro showed plenty of horsepower, good throttle response; fine brakes; easy to operate 4-speed transmission; a solid suspension system; and steering ▶



TWO ADDITIONAL leaves in rear springs transmit cornering forces from ultra-wide Goodyear sports racing tires to standard spring mountings.

HIGH-RATE front coil springs of station wagon origin are incorporated into Camaro's handling option system. Exhaust can readily be opened.

DOUBLE trailing arms are used to eliminate axle torque windup. Abbreviated exhaust system minimizes ground clearance problems of standard system.

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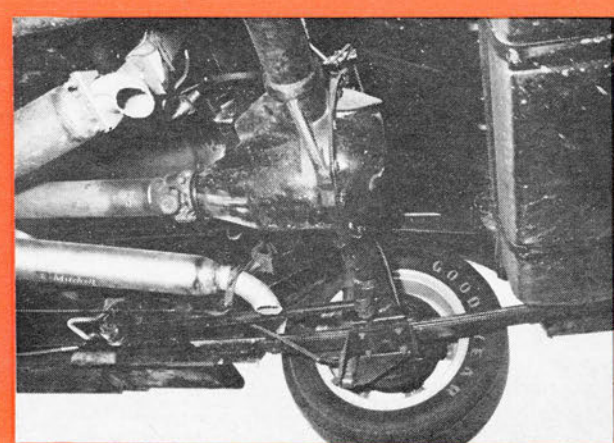

EXTREMELY LOW silhouette exemplifies speed and stability. Brilliant purple and gold paint distinguish slalom racer from other Camaros.

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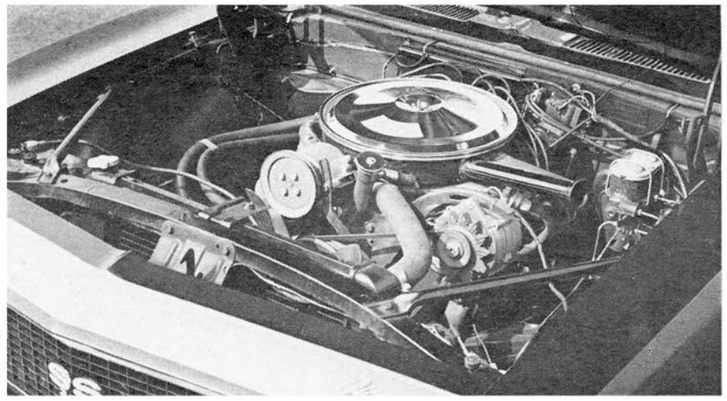
ratio too slow for instantaneous corrections.

If one were to order such a Camaro from Gwynn, the cost would break down as follows: A basic Camaro V-8 ($2706.75) with SS 350 package ($210.65), 4-speed close-ratio gearbox ($184.35), Positraction rear axle ($42.15), Rally Sport option ($105.35), special instrumentation ($79), disc brakes ($79), Comfortilt wheel ($42.15), walnut-grained steering wheel ($31.60), tinted glass ($30.55), plus radios from $57 to $147 and $50 for smog devices will carry a price sticker somewhere around $3700 plus local sales tax and license.

TO THIS MUST be added $425 for the special magnesium wheels and tires, and about $2.50 more per wheel for static and dynamic balancing. Dittus says that the special suspension components—springs, shock absorbers, sway bar—are about $300 installed. For the engine, the camshaft is priced at $24.80 plus about $60 labor for installing. Modifying the carburetor, adjusting it and re-timing the engine costs an additional $27. Exhaust modification can be left to the owner, but comparable work is readily available at any muffler or header shop. Thus, for $876 above the cost of a standard Camaro, it is possible to drive away a car with exceptional overall performance. Someone inclined to budget his performance could reduce costs by cutting a few of the non-performance show goodies from the car.

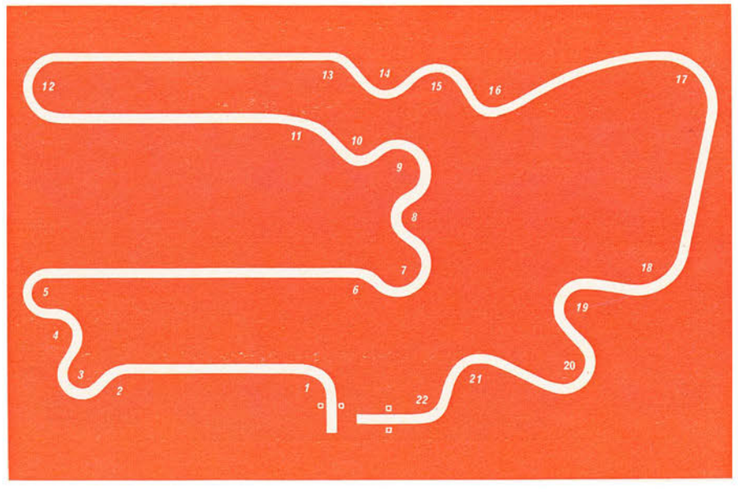
Speculating, it must be said that it won't be long before Chevrolet dealers in many parts of the country will make available similar packages. There is no mystery about the techniques and whether others copy this Camaro is really not important. Every performance modifier has his own pet methods for making a car handle and go.

In a way, these modifications to the 350-cu. in. engine and its chassis seem more satisfactory than the ultra-powerful muscle which appears when a 427 is dropped into the Camaro. For one thing, the power is more readily usable without worry over wheelspin at every first gear start. And there is acceleration which should be ample to brighten the day of any traffic-signal GP champion. Finally, there is stable handling. It's quite a package as is, but additional refinement is sure to come. ■



SLALOM POWER requirements are met by Camaro SS 350-cu. in. engine with 1966 Chevrolet high-performance camshaft, richer carburetor jetting.

ANYONE FOR SLALOMS?



Progress With Utmost Rapidity, But Don't Call it Racing, Please!

PLEASE CALL it 'slaloming,' " said the event chairman, "because if you say 'slalom racing' the people who control the areas where we can hold events get very nervous. They don't want sports car races held on their parking lots, but a sports car slalom is okay."

Slaloming it is, then, but a cursory observation of a typical course has an appearance suspiciously like a miniature road racing circuit. The differences, however, are vital. Though drivers go all out, courses are so tight that rarely do speeds exceed 50-60 mph. With cars running individually against a clock, the worst thing that can happen is a rollover, a happenstance considered such a minor hazard that the majority of slalom organizations do not bother to engage a standby ambulance. In surveying the Southern California slalom scene *CL* learned that there had not been a serious injury in three years. This record was set in the face of several slaloms in the area each weekend.

According to the Southern California Council of Sports Car Clubs (SCCSCC) Slalom Code for 1967, slalom is "a general term meaning a non-racing time and maneuverability event." More specifically, the event of interest here is a tralom, defined as "a slalom in which the contestants are not required to stop or reverse (except that a standing finish may be used) and the course does not cross itself." Others under the code include the autocross in which the course "is longer and faster than the usual course"; the gymkhana which is "a slalom in which contestants must stop and/or reverse"; and a hillclimb, simply "a time trial in which the course is uphill."

Slaloming has been around in varying degrees since the early 1950s, but it has enjoyed a particular boom in the past two years, showing signs of additional future growth. There are some fairly obvious reasons, not the least of which is the informal, amateur atmosphere that surrounds even the more important events. (It reminds one somewhat of the days when road race meant a bunch of MG TCs with windshields folded and headlights reversed for competition.)

It is one of the few events in which specialized preparation can be kept to a minimum, though some contestants go to serious lengths to ready their cars. Within SCCSCC, for example, there are safety regulations and required technical inspections, but any vehicle between 66- and 109-in. wheelbase may compete if it has a driver's seat belt, tube-type tires, 4-wheel brakes which operate from one pedal and if the car is "safe." Main emphasis in inspections *CL* observed seemed to be on wheel bearings obviously loose and adequate throttle return springs. Rollover bars aren't required, but drivers must wear helmets.

According to SCCSCC president Bob Roach, emphasis is on amateur competition, kept fair by realistic class breakdowns. Cars are classified not so much by displacement, but by actual performance in the production categories. He said SCCSCC has 72 member clubs, and counted more than 1400 different entries during last year. His group, of course, is only one sanctioning body. Various independent groups in the area also sponsor slaloms. The advantage of running with the major group is standardization of rules, and the opportunity to run for championship points.

Unlike road race courses, on which many drivers become masters, each slalom circuit is different, even when laid out on the same area as a previous event. The man in charge of course design rolls on the chalk line markings, sets out the cones (3-sec. penalty for displacing one) and the event is on. No practice runs are permitted unless all contestants receive the same number of runs. This places considerable emphasis on driver skill and ability to react to unfamiliar conditions. Each driver usually is given at least three times through and uses his best time of at least two runs.

INTERESTINGLY, NO effort is made to measure the circuit. The time through is what counts. One course *CL* examined was made up of at least 14 turns, including a sharp hairpin, a dogleg, a short straight, a sweeping turn and esses. Mini-Coopers and Corvettes seemed to be lapping at about the same time—60 sec.—but no one had the slightest idea of how far it was around the course.

Best place to lay out a slalom is on a flat, unobstructed, paved area, the larger the better. The cars should be given plenty of room to spin out without endangering spectators. A particular favorite in the Los Angeles area is a paved lot of 640,000 sq. ft. Adjacent are another lot for pits and quiet streets for spectator parking. Of great importance is the fact that no houses are nearby, hence no residents to complain of noisy cars. Generally, slalom cars run with mufflers, but high whining engines and screeching tires set up a high noise level.

SCCSCC officials said that the cost to stage an event includes course rental (sometimes it's free), insurance (SCCSCC carries $1 million liability), rental of portable sanitary facilities, cost of an off-duty police officer and timing equipment. It can cost about $300 to stage a meet, not counting trophies. However, entry fees, generally pegged at $3.50, cover expenses nicely. Good weather can bring out 250 to 400 entries.

In contrast to strict rules at road races, there usually is an open period for "fun runs" in which a driver pays an extra 50¢ per run and can carry a passenger. To attract more people into slaloming, events are conducted from time to time as practice/training sessions. It is, after all, a bit much to expect a novice to go directly into competition on his first event and do well with only the chance for a handful of timed runs.

There are no national statistics available on the number of events or sponsoring clubs, but slaloms are popular nationally. In California, member clubs of the Northern California Council compete with SCCSCC annually in the Golden State Grand Prix for a 2-day state championship.

But one needn't aim for a state championship to slalom. All that's required is a car, quick reflexes, and the strong desire to have fun by driving harder and faster than laws allow. It's also highly recommended for working off the frustrations brought on by rush-hour traffic. —*Wayne Thoms*