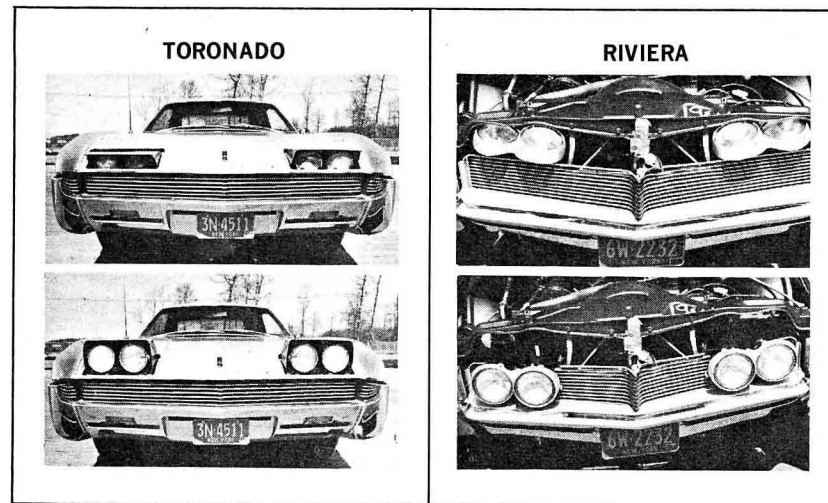


# Toronado vs Riviera



Both cars feature now-you-see-them-now-you-don't blinkers. Toro's rest under faired-in, lift-up eyebrows, while Riviera sports drop-down units. Exposed units ruin the frontal appearance of the Toro. Test car's blinkers were slightly out of sync. Both cars rest on 119-inch frames, with the Riviera's being the sturdier of the two.



IT ALL STARTED like this: "C'mon chief, you must be kidding! Spend two weeks testing what? A Toronado and a Gran Sport Riviera? Like we have a Plymouth street hemi with Stahl "tubes", 4.10's, Goodyear "cheaters" and a lot of trick stuff between the rails, and a new factory built D/Stock Dodge Dart just waiting for us. Charlie and George at Pacers are just about finished with both of them and the weather looks real good for strip stompin'. What do you want with reports on those flakey *plushmobiles*? Man, barges are out, supercars are in!"

Since the guy at the other end of the horn has some influence on the writing of checks each Friday and touring around the countryside isn't really that bad, we stashed out street hemi and D/Dart plans for another time and packed up all necessary test goodies.

Test plans called for one week with a Toronado and the following one with a Riviera. Since there are no performance options listed for the Toronado we settled for a stocker from the local zone office pool.

GM's Grandest Touring Rigs battle it out for the Number One spot in the Heavyweight Division of the Musclicar Sweepstakes



## 1966 OLDSMOBILE TORONADO SPECIFICATIONS

### ENGINE

Type.....	OHV V-8
Displacement.....	425 cubic inches
Compression Ratio.....	10.5 to 1
Carburetion.....	Single Rochester Quadrajet
Camshaft.....	Hydraulic, .431/.433 inches lift
Horsepower.....	385 @ 4800 rpm
Torque.....	475 foot/pounds @ 3200 rpm
Exhaust.....	Dual pipes, resonators & mufflers
Ignition.....	Single point

### TRANSMISSION

Make.....	Turbo Hydra-Matic
Control.....	Column shift lever

### REAR END

Type.....	Beam axle, front wheel drive
Ratio.....	Drive planetary 3.21-to-1

### BRAKES

Front.....	11 x 2.75-inch drums, power assisted
Rear.....	11 x 2-inch drums, power assisted

### SUSPENSION

Front.....	Independent, ball joints, torsion springs, stabilizer links
Rear.....	Solid axle, four shocks, single leaf springs
Steering.....	Power-assisted
Overall Ratio.....	17.8-to-1

### GENERAL

List Price.....	\$4800
Price As Tested.....	\$5900
Weight.....	5000 pounds
Wheelbase.....	119 inches
Overall Length.....	211 inches
Tire Size.....	8.85 x 15 US Royal Laredo

### PERFORMANCE

0 to 30 mph.....	3.3 seconds
0 to 60 mph.....	9.0 seconds
Standing ¼ mile mph.....	85 mph
Elapsed Time.....	17.9 seconds
Top Speed.....	125 mph
Economy.....	10 mpg

We were much more fortunate, when we went to pick out a Riviera. We lucked out and located a dual quad-equipped full Gran Sport model, which also carried a full array of power and luxury options.

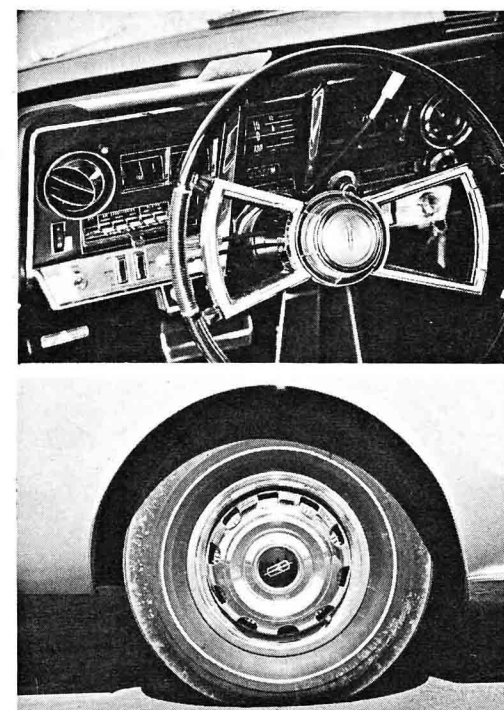
Upon completion of the two week test we had racked up approximately 600 miles on each car's odometer. This included stop and go city traffic, high speed Thruway hauling, hill climbing in the Catskills and a few passes through the traps. Since we were deprived of our MoPar toys for two weeks, we managed to take in a couple of days of local drag racing. We ran the Riviera through the eyes at New York National Speedway, without any fanfare on a busy Saturday night, and repeated the play on Sunday at the Madison Township track in English-town, New Jersey. Since these cars were not designed for quarter mile charging and performance packages are a rarity, we will not go into detail on their quarter-mile potential. The results of our trips to the track can be found in the specification charts.

By the time we were finished testing our respect for these heavyweight GT fastbacks skyrocketed. Handling and performance proved to be on par with lighter, smaller musclecars and the appointments and overall appearance of the Toro and Riviera are obviously far superior.

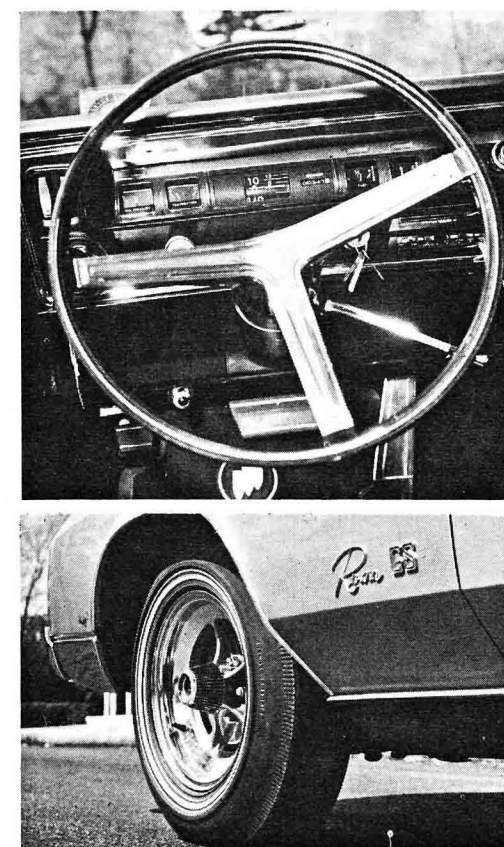
In every sense of the word the Toronado and Riviera Gran Sport are genuine high performance cars. They were not designed for brute force acceleration, unreal top end or road racing handling. They are in truth, genuine high performance grand touring machines. They're capable of scuttling away from a traffic light ahead of most of the average stop light Grand Prix machines, cruising all day at speeds 30-40 over the legal limit and lapping a sports car handling course a shade slower than the all-out musclecars. Besides all the performance plus-features, both cars boast the sexiest styling to hit the domestic market since the 810 Cord and the plushiest interiors this side of Cadillac. When you wrap all the above mentioned

Both cars boast fully-instrumented clusters with roller ribbon speedos, integrated air conditioning vents and aircraft-type rocker safety switches. Riviera, however, boasted sportier all-vinyl interior, while Toro was adorned with fabric & vinyl. Slotted wheels on Toro aid brake cooling, no options are available. Steel styled wheels are optional at extra cost on Riviera and add that "supercar" touch.

TORONADO



RIVIERA



## 1966 BUICK RIVIERA GRAN SPORT SPECIFICATIONS

### ENGINE

Type.....	OHV V-8
Displacement.....	425 cubic inches
Compression Ratio.....	10.25 to 1
Carburetion.....	Dual Carter AFB quads
Camshaft.....	Hydraulic, .439/.441 inches lift
Horsepower.....	360 @ 4400 rpm
Torque.....	465 foot/pounds @ 2800 rpm
Exhaust.....	Dual pipes, reverse flow mufflers
Ignition.....	Single point

### TRANSMISSION

Make.....	Torque Converter, three-speed
Control.....	Column shift lever
Ratios.....	Salisbury, limited slip 3.42-to-1

### BRAKES

Front.....	12 x 2.25-inch finned aluminum drums
Rear.....	12 x 2.00-inch cast drums, power assisted

### SUSPENSION

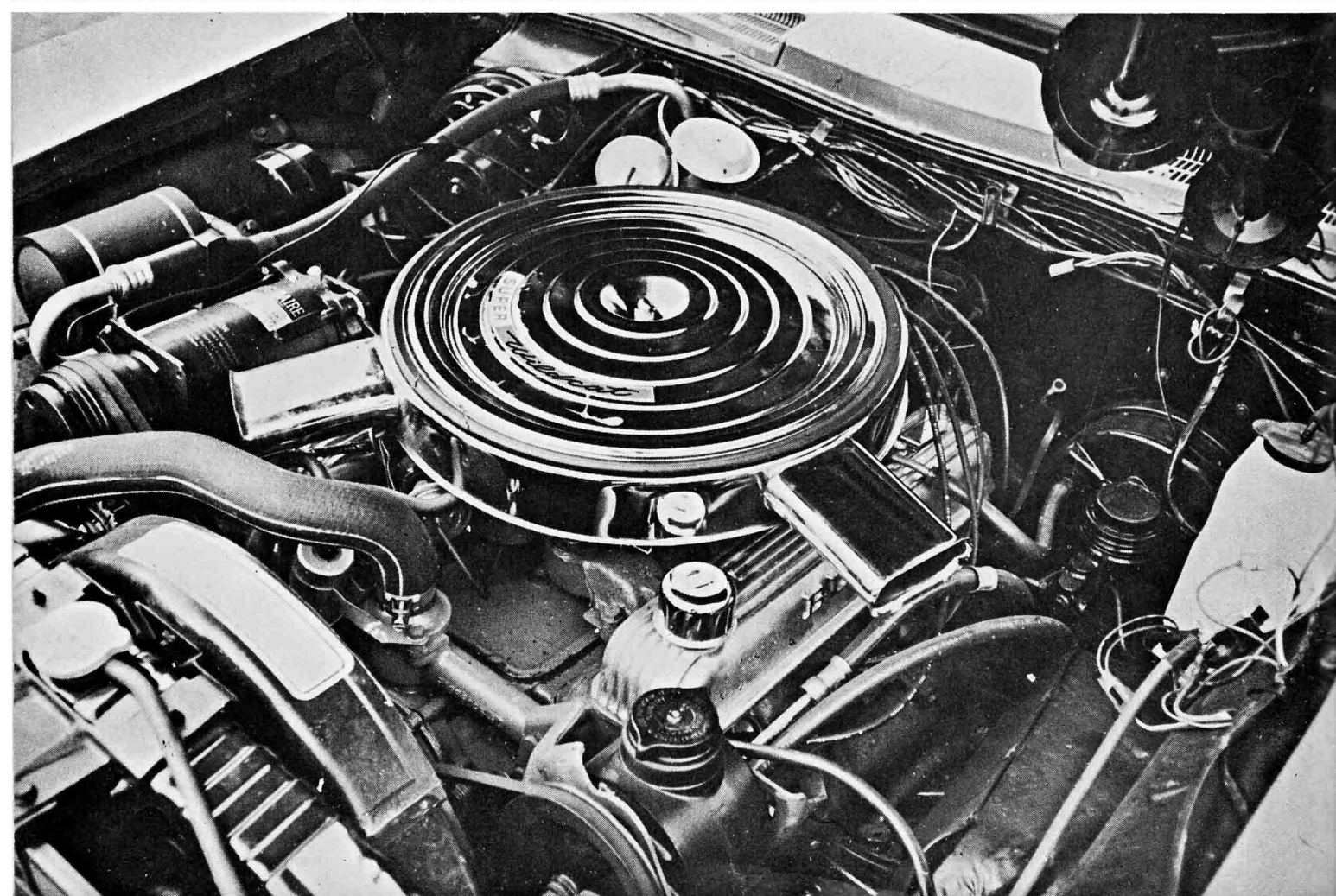
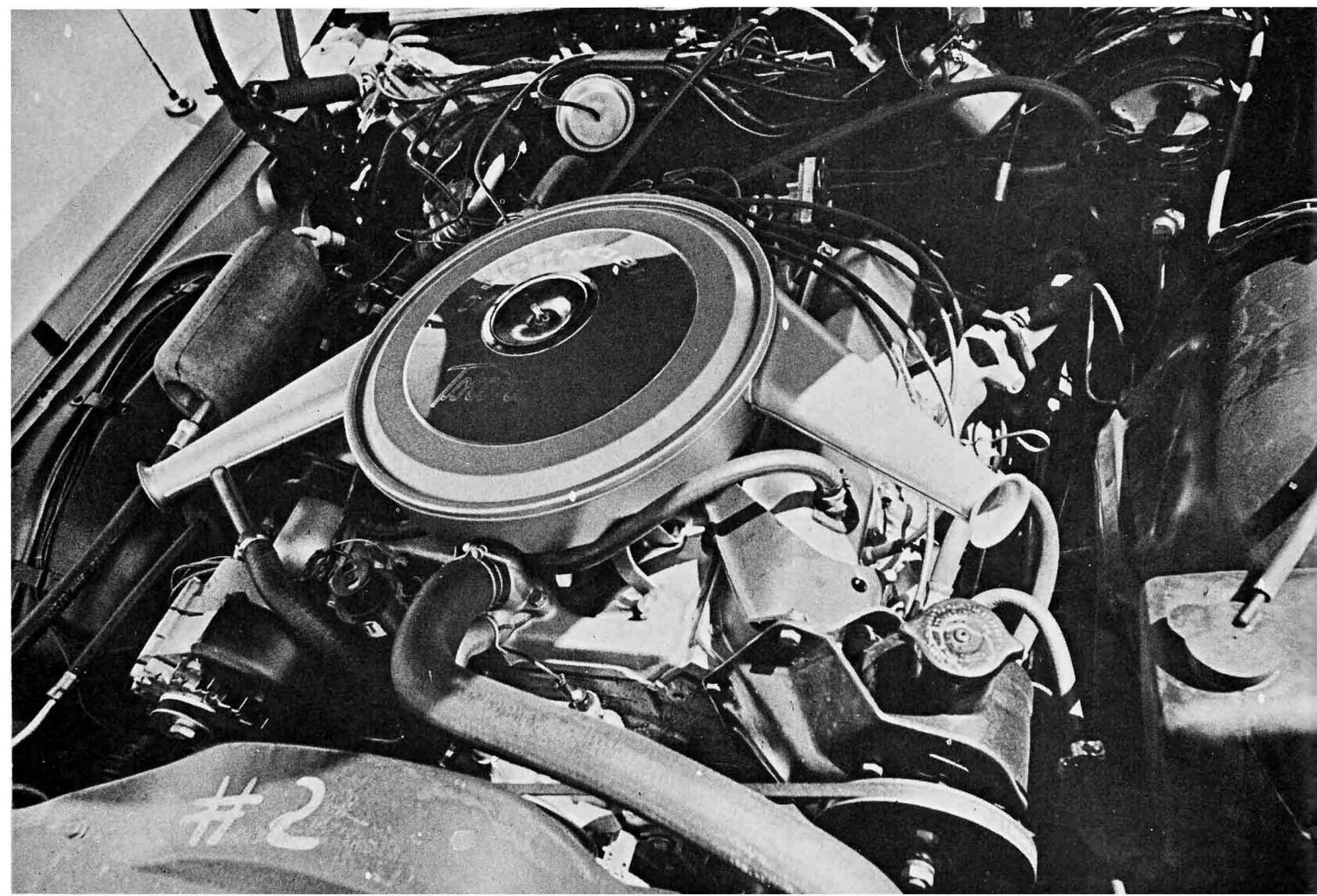
Front.....	Independent, HD coil springs, HD shocks, sway bar
Rear.....	HD coil springs, HD shocks
Steering.....	Power assisted
Overall Ratio.....	16.6-to-1

### GENERAL

List Price.....	\$4400
Price As Tested.....	\$5900
Weight.....	4700 pounds
Wheelbase.....	119 inches
Overall Length.....	211 inches
Tire Size.....	8.45 x 15 Firestone Deluxe Champion

### PERFORMANCE

0 to 30 mph.....	3.0 seconds
0 to 60 mph.....	8.3 seconds
Standing ¼ mile mph.....	86 mph
Elapsed Time.....	16.8 seconds
Top Speed.....	125 mph
Economy.....	9.5 mpg



features into two sleek shells you have GM's grandest touring rigs, the Toronado and Riviera GS.

In the power department both cars are as evenly matched as possible. The Gran Sport has the edge as far as options go, as the Toro is available in standard engine trim only. On paper the Toro seems to have the edge with 25 extra horses and ten extra foot pounds of torque. In the final analysis, however, the Riviera outshines the Toro. It's our guess that the front wheel drive drain might be responsible for a more than average horsepower drain.

Both engines displace 425 cubes and feature single point ignition systems, dual exhausts and basic wedge-shaped combustion chambers. The main differences lie in the carburetion and camming departments. Intake on the GS mill is ably handled by a matched pair of Carter AFB quads (dealer installed) which boast approximately 7 square inches more throttle bore area than the single Rochester Quadrajet fitted on the Toro. The dual quad engine really comes alive at mid-range and wails clear up to valve float which pops up just under the 5000 rpm marker. The GS mill also sports a slight camming advantage with a hydraulic stick rated at .439/ .441

inches lift. The Toro's hydraulic cam checks out at .431/ .433 inches lift. Both engines start to float the "pop-pers" at approximately 5000 rpm.

The engine used in the Toro is slightly different than the versions that appear in the more utilitarian Rockets. It features a superior porting layout, different heads and a new manifold. These heads are also utilized on the high performance 442 400 cubic inch engines. There are no options listed for the Toro's 425. However, a few Toro's have been spotted (George Hurst drives one) with tri-power manifolds. You can recognize these cars immediately as the air cleaners extend through the low hood!

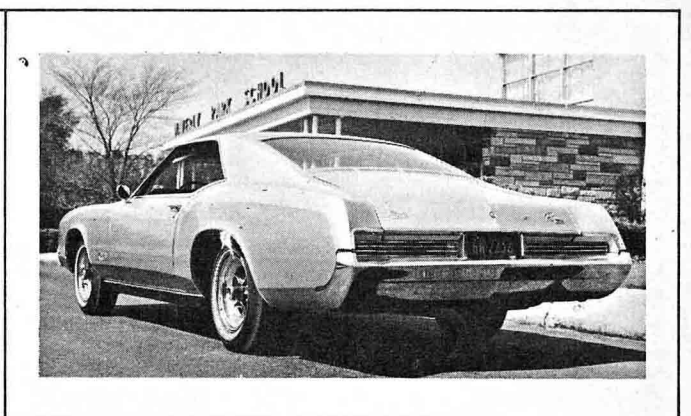
Performance-wise the Riviera GS seems to have a slight edge over the Toro. This showed up both in the quarter-mile tests and the accepted standard 0-60 mph bash. The GS's superior performance can be directly attributed to its 300-pound weight advantage and slightly lower gearing. Buick lists options for its Riviera (3.42 vs 3.21) while the Toro buyer must settle for 3.21's only at this time. In the near future I'm sure Olds will iron out the gear ratio problem. Acceleration and performance in general is ultra smooth in both cars. Flooring the go pedal in

either car produced a minimum of noise and roughness and a maximum of power transfer. The Toro rates slightly higher in engine noise level as the dual quads make a little music when all eight barrels are opened at once.

Both cars are available in automatic transmission trim only for obvious reasons. It would be just about insane to saddle the driver of an air conditioned Toro or Riviera with four-on-the-floor, as both engines were not designed for high revving and each car weighs in at approximately 5000 pounds. Today's automatics, even the two-speeds, are quite adequate for all but the highest performance engines available.

All it takes is a trip through the mountains or a few laps around a handling course to realize that GM has done a fantastic job designing suspensions for the GS and the Toro. One is a front-engined, front wheel drive car, while the other reflects the more accepted front engine, rear wheel drive engineering. There's no point in ranting and raving about the Toro's drive assembly, as it is no longer considered news-worthy. Basically it works like this. A torque converter bolted to the engine's flywheel flows power through a silent chain drive to a three-speed

(Continued on page 78)



Riviera offers dual quads, finned aluminum valve covers and chrome air cleaner with GS package. No power options are available on the Toro. Both engines displace 425 cubes and utilize Rochester quadrajet carbs and auto shifters in standard trim.

shaft are cracked; and this is a source of clutch problems and also causes jumping out of high gear. The bell housing can be shimmed out to remedy this. A bell housing can also be repositioned and the dowel holes redrilled and re-reamed. It doesn't happen often but when it does, that's what to do.

#### **TURBO-DART** continued

tem"! The Turbonics' turbo features a well shaped (for maximum air flow) tuned inlet section which brings fresh air into the compressor. The compressor in turn dumps the air (under pressure) through a rubber composition hose to a finned aluminum box mounted atop the carburetor. The air box is a rather well finished item and is finned and finished in black crackle. This setup is very similar to the one used on the now defunct Stude-powered Avanti and the new Granatelli-modified blown GT-350 Mustangs.

When we drove the car it was equipped with a Rochester 4GC quad that was sealed and installed by Pacers Auto. As Dodge uses a very universal cable throttle linkage it was no problem to adapt the *foreign* Rochester quad. Turbonics, however, is still running carburetion experiments on its street setups and may switch to sealed Carter AFB quads that were originally made up for the Avanti.

Delivering an adequate amount of fuel to a carburetor which has been pressurized and fitted with a blower has always been a problem. Instead of boosting the pressure on the stock vacuum pump, Turbonics removed the stocker, installed a block-off plate and added a battery of three Bendix electric fuel pumps at the tank to insure against performance-robbing fuel starvation.

For maximum durability and efficiency Turbonics makes sure that their turbos are well lubricated during operation. Lube in the form of engine oil is tapped from the engine's oil supply at a point between the engine and the stock psi sending unit and directed to the center section via a 1/4-inch line. A larger 5/8-inch line is used to return the oil to the engine through the fuel pump block-off plate.

Once you realize the actual potential of a turbocharger, such as the one marketed by Turbonics (Post Office Box 452-Z, Smithtown, Long Island, New York) you have to admit it's senseless to go any other souping route. The Turbonics unit on the Dart we tested was redlined at 7-8 psi boost which is maximum for a production line engine. The units can

be adjusted to put out up to 25 psi without running into any turbo problems. A pop-off valve is built into the unit for added protection. Once the boost is greater than the pre-set redline, the valve opens up and lets out the excess. There's no need to go to radical cams, multi carbs or even high compression (forged blower pistons are recommended for big boosts and dragging) to make more horsepower. The turbo takes care of all that for you!

Just knowing that the more boost delivered to the cylinders means that more exhaust gases will be available to drive the turbine makes turbocharging the only sane way to obtain total performance. Turbo boost must actually be limited as it can always produce more power than is required to drive the blower. It's our guess that it's only a matter of time before all-out competition cars and Super Stockers go to the turbocharger's. So hop on the bandwagon and be a leader not a follower. 'Nuff said!

#### **EDITOR'S CORNER**

*four-barrel engine option as the ideal option for the street is the 440 four-barrel Polara-Fury-Chrysler powerplant. This will put the Belvedeer and Coronet into the supercar race, as the street hemi proved to be too much for the average high performance street car buyer. Watch out for those 440 middle-weights in B and C/Stock next year.*

*Our own Charlie Dodge, George Snizek and the Cars Magazine Racing Team crew have done it again! They went out with the old (and we do mean old) Tasmanian Devil roadster (AA/Altered NHRA record holder) powered by a fuel version of the record holding Chrysler hemi gas engine and broke the new "Funnycar" CC/Fuel Dragster record wide open. This was at Island Dragway Great Meadows, New Jersey. Five weeks later at Sanford, Maine, George busted his own record, and won the Super Eliminator bash. It looks like the "funny car" boys are being knocked out of their own class by a roadster that has been on the strip for the past six years. It's also running a rather antique '57 Chrysler mill on small doses of nitro. Just wait until Nationals time when the big load goes into the tank!*

#### **OLDS-RIVIERA** continued

Turbo Hydro and then to a spiral bevel gearset. The gearset in turn transfers power to an all-spur geared differential. Axle movement is insured by ball-splined inboard joints. All this

adds to up pull not push, a flat floor and a rather unique handling automobile.

The Riviera is not as fortunate as its new brother. It can't boast of such engineering innovations as front wheel drive, just superb handling, super superb braking and one of the finest compromise rides on the market. It makes you sort of wonder if all that engineering is really necessary!

Backing up the Toro's unique front boiler room is a rather utilitarian rear end which looks as though it belongs on the front of an early Ford product! Supporting the rear tires is a I-beam straight steel axle, two standard slightly sea-legged shocks and two extra shocks mounted parallel to the single leaf springs. These shocks are insurance against braking windup because of the front wheel drive location.

On the flat open road or when negotiating Hollywood Boulevard it's almost impossible to detect the Toro's front wheel drive. It's smooth, quiet and not unlike the ride of most 5000-pound luxury cars. On mountain roads or when winding a series of bends you notice immediately that the Toro handles like no other 5000-pound plushmobile, except, of course, for the Riviera GS. Since 60 percent of the Toro's weight rests forward of the cowl, there's an obvious understeering quality about the car. Cornering at high speed requires a complete re-education in handling and steering control. The car tends to pull itself through the wildest of bends and corners by simply getting off the go-pedal when the sleek ferocious front end starts to make tracks for the outermost arc of the bend and then back on it when the car falls back into your plotted course. The rear end, which comes along just for the ride, follows orders from the front drive. Thus you can't rely on the tried and true technique of powering the rear wheels around the corner, as those rear wheels just don't think for themselves. Super accurate steering control is a must when pushing the Toro over the ragged edge.

The Riviera GS is nowhere near as romantic as the Toro, suspensionwise but it gets the job done. At the rear of the GS is a typical live axle Salisbury-type rear axle with four locating links and coil springs. The GS option indicates that stiffer shocks replace the boulevard jobs and the coil springs are much beefier than the stockers. Stock ride rates are 130/110 lb./in. while GS rates are 180/160 lb. in. In the GS's favor is an ultra-study, rigid, self-supporting frame which is used in

*(Continued on page 80)*

the GM kingdom only by Riviera and Caddy (Limousine). Between the semi-unit body construction and the archaic rigid frame, the Riviera rates as one of the beefiest automobiles on the market. The stock Riviera outhandles most of its competition and the GS is an equal match for the finest handling Detroit products.

Another plus feature is the GS's quick steering ratio. With 15-to-1 at the box and 16.6-to-1 overall, the GS is second in line to the Sting Ray as far as quick, positive steering goes. Gilding the lily is three turns lock-to-lock.

Fitted with the standard GS suspension package and 8.45 x 15-inch wide shoes our test machine cornered flat, steering where it was pointed and took any and all bends in stride. It also understeers and always seems like it's going off the outward arc of each wild bend. It doesn't take very long to learn and master the understeering qualities of both the Toro and the Gran Sport. Except for the stiffer shocks and springs the Gran Sport handled and rode as well as the Toro.

When you pack enough power and sporty handling qualities in a 5000-pound car to qualify it as a genuine Grand Touring car you must also upgrade the brakes. The Riviera excels in this department. All Rivieras are factory-fitted with 12-inch drums and 15-inch wheels. Up front the drums are cast of aluminum for maximum heat dissipation and at the rear they are of cast steel. All drums are finned and the aluminum ones are fitted with iron liners for a friction surface. Fitted with wide footprint tires the GS tested stopped better than any other GM car except for the four-wheel, disc-braked Sting Ray. As far as we are concerned there's no need to fit the GS with discs as the aluminum-iron wide drum combo affords more brake power than the average driver could ever use. Repeated stops from legal highway speeds produced next to no brake fade and ruled out the need for discs. If the car was to be used for road racing, mountain climbing or other fun and games activities disc brakes would be a welcomed addition.

Our test Toro did not stop as well as the Gran Sport did during the panic stop fade tests. It seemed that we were running out of boost after a few stops and brake-ability simmered down. The Toro utilizes smaller 11-inch brakes, which seem inadequate by Riviera standards, considering the ready to roll weight of the Toro. The factory has remedied this for '67 with a new

disc brake package available on more than one Olds product.

It was almost impossible to pick a winner during this runoff for top dog spot in the Heavyweight Division of the Musclecar Sweepstakes. Both cars are sexy, both cars perform and both offer the ultimate in luxury. We find the Riviera to be a better assembled, quieter and better performing car as compared to the Toro. The Toro has a slight edge in the sex department and far more HTP (Head Turning Power) than the Riviera.

Since we found it almost impossible to pick an eliminator, we decided to pick the best parts from each car, combine them and have GM build the ultimate GT car. The ideal body would have a Riviera front end and a Toronado rear end. Under the hood would be a Gran Sport dual quad mill coupled to the Toro front wheel drive assembly. We would retain the Toro suspension and add the Buick 12-inch drums or if available the '67 disc brake package. Either interior would do. We're taking orders for '67 delivery, so air mail deposits and orders now and avoid the rush!

#### **CAPITOL** continued

otherwise keeping basically stock. The same car in straight NHRA classes would have to compete in the Modified or Gas class ranks where it would probably be wiped out. An alternative would be to become a "cheater" and run in the Stock classes. (How many times have you spotted an Isky decal on a car running in the lower stock classes where a switch isn't allowed?)

Irwindale has come up with what amounts to a transition class from "pure" NHRA stock to "slightly modified" or Street Stock class. The success of their innovation is seen in Irwindale's average of over 315 entries a week in the Stock classes.

What they have actually added is a maximum of 16 Stock classes. It works out to about six extra classes per meet, since the majority of entries fall into the popular C/S through J/S brackets.

The third unit at Irwindale includes the money brackets, of which there are usually five. The strip's buck division is its largest, and here's the way it works.

Time brackets are posted before eliminations and the driver must "dial-in" a time slot within one of the brackets before he races. He usually figures his dial-in time by running before eliminations and calculating his best time for the day. When he races, the driver cannot better his

dial-in time by more than half a second or he will be disqualified. If the car is pitted against one with a lower dial-in time, its light will go on first. With that advantage the slower car must hold off its faster rival through the quarter without beating the dialed-in time by more than .05 seconds.

The buck hound at Irwindale must therefore know his own machine's capability. Brackets and time slots are chosen before the start of elimination and cannot be changed during the day. But take heart, Irwindale's brackets reach all the way down to 18 seconds, giving even the VW's a chance at winning some cash.

The strip keeps first-place money brackets down to a minimum so that it can put up second-place money as well. Irwindale has a place for everyone and they are drawing the cars and crowds to prove it. All this and paved pits too!

#### **WORLD 600** continued

Pearson was running strong and built up a two-lap lead by lap 120, but misfortune dogged him. In lap 170, his right rear wheel broke and his '65 Dodge fishtailed into the wall on the fourth turn. Displaying masterful control, he dropped off the high grove and steered the car into the pits to get a new rear wheel.

When the yellow caution light went out, it was Goldsmith in the lead for the next 50 laps. Petty worked his way through the field and at the half-way mark was in third place and still charging. But it wasn't Richard's day he lost oil pressure and headed for the pits in lap 236.

Then in seven wild laps, three of the fastest cars went out. In lap 295, Pearson's front wheel broke and the car dropped. Again Pearson managed to guide his Dodge into the pits with a great display of driving. But other damage—a punctured oil pan—was just too much to fix in the pits.

Goldsmith, who was having ignition trouble and had lost valuable time in the pits, went out in lap 302 with a blown engine, and Balmer headed for the sidelines with a blown engine in lap 301. Paschal had retired in lap 240.

With the faster cars out, Panch was firmly in control with Jarrett and G. C. Spencer running second and third.

Panch asked for relief in lap 320 and Petty took over the Plymouth, coasting in with no trouble. Jarrett, who had driven a strong race in his hastily-prepared car, blew the engine with only 50 laps remaining.