

*Bringing the name Oldsmobile into the performance car ranks is the 4-4-2 — a car that is loaded with performance surprises!*

By George Elliott

After several years of not being the "king" among performance cars, Oldsmobile would like to see a strong comeback. It looks as if 1966 could be their year to do it. The car to make the comeback is the 4-4-2 Oldsmobile.

Since the production of 4-4-2's started, there has been a new challenge imposed upon Chevy, Ford and MoPar racers who have dominated the stock classes. Of course, the 4-4-2 challenge is not a dominator as yet, but what cars are participating are a threat to their competitors. After all, the owners

who modify the 4-4-2 are starting with a car that will turn over 100 mph right from the factory production line!

POP ROD tested two 4-4-2's. Each was set-up with different drive train combinations and brakes. Both were Holiday Cutlass hardtop coupes. Many of the accessories that equipped our cars would not normally be found on the devoted drag racer's car. Things like power antennas, power steering and brakes and a vacuum mileage instrument. The performance options included: four-speed transmission,

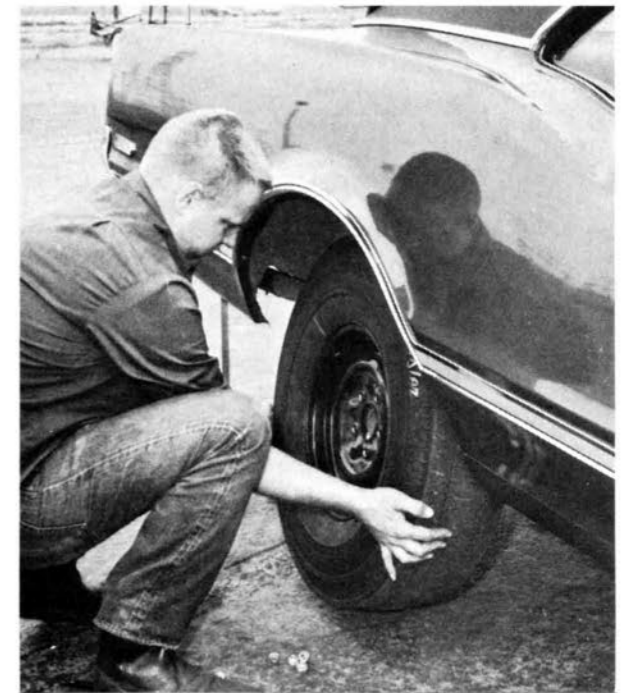
anti-spin rear-end differentials, tri-carb induction and additional instruments to monitor the engine's performance.

We decided to drag test the cars at the Lions strip in Long Beach, Calif., and the Famosa strip, (better known as Bakersfield), located in Bakersfield, Calif. The two strips gave us an opportunity to see whatever difference there might be from humidity and altitude. As it ended up, there was so little variation that we would have had to use special instrumentation to evaluate it.

## *Performance Testing the*

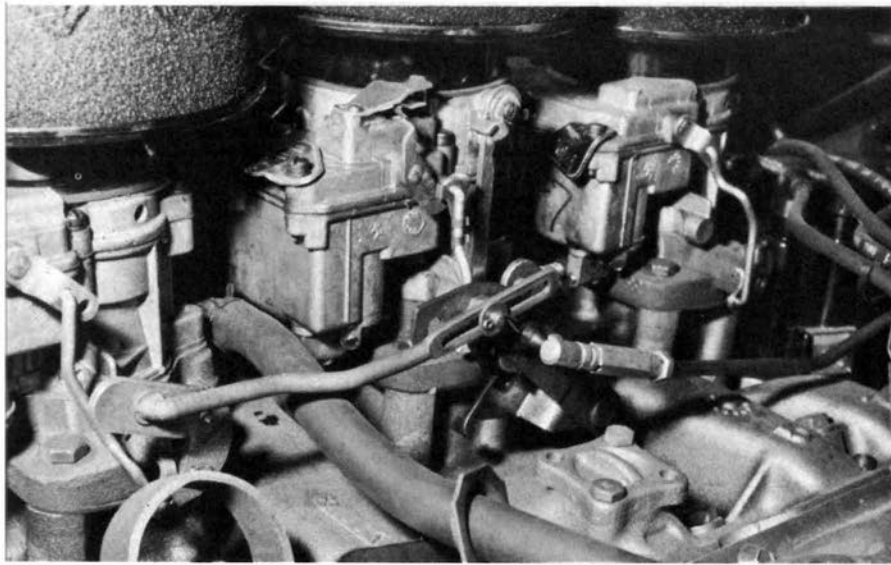


# 4-4-2 OLDSMOBILE



*Slicks were mounted for a comparison of times against street tires. We made our starts at 3500 rpm with the big slicks.*

*Optional rear-end ratios provide good dragging characteristics. Standard ratio is 3.55:1.*



*Timing and dwell was checked by Dan Horan, who drives the Allen Paul Oldsmobile 4-4-2. Best timing was slightly advanced from stock setting. Three carbs are of Rochester make and listed as optional equipment.*

After we drove the car locally, we set out to Bakersfield. The roads are good between Los Angeles and Bakersfield — they sport many curves, upgrades, downgrades and go up in elevation to 5,000 feet.

After making the drive over the mountain pass, we did not notice any ill handling characteristics about the car, with the exception of gas mileage. However, there are very few cars that will get exceptional mileage with three carburetors. The suspension system for the rear of the car is coil springs with control arms to reduce any rear-end squat. The front also has coil springs with a built-in anti-dive device to reduce braking dive. A wheelbase of 115 inches gave us the "big car" feeling when driving on the open road.

Body appearance of the hardtop coupe is enhanced by mild chrome trim. There is no cluttered appearance about it.



Taking a look at what's beneath the hood, we find three Rochester carbs operated by manual linkage. Chrome air cleaners give a custom touch. The three-carb manifold is an option. The 4-4-2 is stock with a four-barrel carb. Under the manifold sits 400 cubic inches of engine that produce 350 horsepower at 5,000 RPM. At 3600 RPM the engine produces 440 LBS. FT. torque.

Camshaft timing varies by the type of transmission used. For manual shift transmissions, the cam timing is as follows: intake valves open at 30 degrees BTC and close at 76 degrees ABC. The exhaust valves open at 78 degrees BBC and close at 286 degrees ATC. The duration is 286 degrees with a 58-degree overlap period. The milder automatic transmission cam timing is 282 degrees duration and a 52-degree overlap. High lift is not uncommon in late model powerplants.

The Olds camshafts have a lift of .472 inch for manual transmissions and .430 inch for the automatic grids.

Cylinder heads on the 4-4-2 are of cast iron. The valve seat angle for the intake valves are 30 degrees and the exhaust valves are seated at 46 degrees. Size of the valve heads could be considered large. They are: 2.067 inches for intakes and 1.619 inches for the exhaust valves. The valve springs are depressed under 194 LBS. of pressure. The all out performance seeker could beef the valve spring system with a stronger set of inner-and-outer units. Occasionally, the lifters will pump-up over 5800 RPM.

The ignition system has a Delco-Remy distributor. At 4,000 RPM it produces 24 degrees advance. During the drag tests we tried several initial settings.

The drive train offers two types of transmissions and rear-end ratios. The

standard rear-end ratio is 3.55:1. Available as the optional ratio is a 3.90:1 differential. Both are the anti-spin units. In other words, limited slip.

We compared the RPM difference between each gear of the wide ratio transmission at 40 MPH. Showing the ratio of each gear first, the RPM was: first 2.52:1/4400 RPM; second, 1.88:1/3250 RPM; third, 1.46:1/2625 RPM; fourth, 1.00:1/2000 RPM. Although the ratio and RPM drop shows a wide span between the gears, the car pulls strong until fourth. Until the engine turns 3800 RPM in fourth, the car won't pull its hardest. This did not hold true in both cars as the 4-4-2 with the 3.90:1 differential and close ratio four-speed did much better as far as quarter mile dragging is concerned. The close ratio four-speed transmission is listed as optional to the wide ratio transmission.

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*The anti-spin rear-end kept traction on both tires equal. Here car is using a set of slicks for bite.*



*Tachometer location is good as eye distraction from the course is slight. A Hurst shifter is used to handle powershifts or normal shifting techniques.*



*C. J. "Pappy" Hart, a top handler way back to the beginning days of drag racing, prepares to exhibit his driving ability in the 4-4-2. He still has the "master's" touch!*



## 4-4-2 OLDSMOBILE *continued from page 31*

The clutch is a Borg and Beck unit that engages with 2,450 pounds pressure. The disc is 11 inches and displaces 123 inches of effective surface. Depressing the clutch pedal was effortless.

We took our first test car to the Famosa strip. This was the 4-4-2 with the close ratio trans and 3.90 gears. The strip's surface is considered to be a "biting" one. We can accept the opinion of other racers as we had problems with the car bogging. We made our first starts at 2500 RPM. When the clutch was released, the RPM dropped causing us to momentarily bog the engine. The engine was cleaned out by clutching the car. After all this, we still turned a 99 MPH speed with a 14.61 ET. We should point out that this car was not altered in any way. The air cleaners, timing and other stock components were connected and operating in the stock condition. Street tires were used, too.

At the Lion's strip, we did do some experimenting with the tires, timing and tune. We also had three drivers to give us an overall average of the cars performance. One of our test drivers was the well known C. J. "Pappy" Hart. Hart is the manager of Lions, although, the older drag racers remember him from the Santa Ana, Calif., drag strip days. One of the first strips on the West Coast.

One week prior to our test at Lions, the strip surface was completely re-finished. Again we would have a "biting" surface. While the officials were setting up the clocks, we put the 4-4-2 on the strip scales. To our amazement, the scales balanced at 3625 LBS. The way the car handles is more like a 4,000 LB. car.

At Lions, the car with the wide ratio trans and 3.55:1 rear-end was used. Our first run was with all equipment in stock order. We pulled to the line and used 2200 RPM as our initial starting technique. The clutch was released in a rapid manner. The result was a momentary bogging, again. Once the momentum of the car was regained, the 4-4-2 raced through each gear, hard. The end result was 97 MPH with an ET of 14.80. The immediate difference that we noticed was the top speed between the low geared 4-4-2 and the higher geared one. It was two MPH to be exact and the difference seemed to be made in fourth gear.

We removed the air cleaners and made another run. The improvement this time was over 1½ MPH. Some of the increase could be attributed to the fact that the air cleaners have a sponge filter. As dirt and oil is filtered through them, they tend to clog the unit.

On the next run we advanced the timing at the distributor seven degrees. Assisting us in the setting was Dan Horan who drives the Allen Paul Oldsmobile Special of Inglewood, Calif. After the timing light showed a 14-degree total advance, we pulled the car up for another run. After

completing the run we noticed that it was possible to rev the engine above 5800 RPM through each gear and without the engine hitting a flat point at 5500 RPM, which was happening on the previous runs. The latter run was made with the start RPM of 2500 and shifting points were at 5800 RPM. We crossed the finish line indicating 4700 RPM. The trap time was 101 MPH and 14.30 ET. With the close ratio and 3.90 geared car we were turning 5000 RPM through the end of the quarter with a top speed of 99 MPH.

Dan Horan was anxious to try a set of slicks which he had on hand for his 4-4-2. Of course, this sounded like a good idea to us so the car was jacked up and the stock tires removed. Once the lugs were secured the car was lowered to the ground. The car was now sitting higher in the rear-end since the slicks were much larger than the stock tires. We also discovered a way to reduce approximately 60 LBS. dead weight from the 4-4-2. Remove all the hub caps. Each one weighs in the area of 15 LBS.

The timing was retarded two degrees to eliminate a slight misfire which was encountered at high RPM on the previous run. Back to the starting line for another run. With the slicks, the starting RPM we used was 3500. When the green light flashed the clutch was released with the simultaneous application of full throttle. We broke the tires loose for about 25 feet and then the engine loaded-up with full traction gained. Going through each gear we noticed that the car was not pulling as hard with the bigger tires. After 5,000 RPM there was no pull. We still managed to cut the ET to 14.23; however, the top speed dropped to 98 MPH. Discussing the situation with Dan Horan we determined the high gear and big tires would not be the answer to maximum performance. If a person was to use a low rear-end gear ratio with slicks he would consistently turn over 100 MPH with 13 second ETs.

The Allen Paul 4-4-2 Special has one four-barrel with extensive tuning, headers and chassis set-up. The car's performance is above 110 MPH with low 12 second ETs.

Bringing a car of the 4-4-2's weight to a halt without brake fade is important. The 1966 models have an optional brake lining that is beneficial to stopping, especially when you are doing a lot of drag racing. The lining is a sintered metallic lining which is welded to the brake shoe. Brake diameter and width are 9½ inches by 2½ inches in the front lining and 9½ inches by 2 inches in the rear. The measurements are the same for the standard lining and the optional combination. The actual lining area is somewhat less than the stock area since the metallic lining is segmented.

It won't be long before the Olds 4-4-2 will be a standard sight at drag strips, if it is not already. The car has much to offer the performance minded enthusiast.

