

Rund for the money

Old pros try for the big bucks
by turning the heat on with their
cold-air 4-4-2 and creating a
very dense situation

BY ROGER HUNTINGTON

THE OLDSMOBILE 4-4-2 has been getting tougher and tougher to beat in the C/Stock class on drag strips all over the country this last season. The GTO's and 406 Fords that used to rule this class have been falling back. The triple carburetion system (Tri-Carb) and new high-lift cam that were introduced early in the '66 model run gave a big boost. Then in August NHRA officials approved the new "cold air" package as stock equipment after 50 units had been installed on the assembly line. This package included a stronger cam and stiffer valve springs, good for 6000 rpm, plus the unique duct-and-air-box system to bring cold outside air (at a slight ram pressure) to the three carbs. This stuff gave another fat boost—and could be installed in a few hours by any 4-4-2 owner. More trophies!

So the Rund Oldsmobile agency people in Detroit are thinking seriously of running their 1966 4-4-2 in C/Stock next season, if NHRA rules are not changed radically. They've got good reasons. For one, the 1967 4-4-2's are limited to one four-barrel by GM corporation policy. This is a big Rochester Quadrajets with 9.4 square inches of venturi area—but it gives between 5 and 10 hp less than the '66 Tri-Carb system which will still be legal on '66 models. And no other significant engine changes have been made on the '67 4-4-2's to make up the difference.

Meanwhile Rund's racing team of Vance Brady, chief mechanic, and Jack Young have got the '66 really running now. Driver John Molnar recently cut an et of 12.42 at 111.34 mph, which was well under the NHRA C/S record at the time. The car will run consistently in the 12.50's without exceeding 5400 rpm! That's a lot of potential. If the performance can be improved even a little—which it usually can be—they should be in good shape with this '66 in C/S next season.

I think this car warrants a more careful study . . .

Actually there's nothing very special to report in the engine room. The engine has had the usual blueprinting, balancing, head cc'ing, cam indexing, valve job, etc. This work was all done by George Delorean, proprietor of Wynn Engineering in Detroit. They've done some impressive engine work on a number of strong competition cars in that area, and are fast gaining a wide reputation. I might mention that the block was *not* bored the maximum legal oversize of .030-inch. Mechanic Vance Brady has had much trouble in the past getting good alignment and

accuracy on non-factory bore jobs. They run stock bore, with Jahn's forged pistons at .008 skirt clearance. Stock bearings run with the crank ground down for .002-.003 clearance. Brady feels that forged pistons give slightly less friction because they don't distort quite as much under high heat and pressure loads. But he doesn't go wild with skirt clearance because of blow-by at high rpm that robs power. He thinks the right clearances, with a good balance job, are the secret.

The new camshaft that comes with the "W-30" cold air package contributes a lot to the performance. It has a whopping 308-degree duration and 82-degree overlap, with a valve lift of .474-inch. These are strong specs by any standards. The long duration and overlap really pull above 4500 rpm, right where the extra carburetion comes into its own. It's a beautiful combination, especially when you're feeding cold air under ram pressure to the carburetors. But it would all be for nothing if they didn't have valve springs that would keep the valves from floating in the operating rev range. This was a big problem with the early '66 high-lift cam used with Tri-Carb. You don't need more than 200 pounds valve spring pressure at the valve-open position to let this engine wind to 6000 rpm with hydraulic lifters. But the early springs would lose 20 or 30 pounds of tension after maybe a dozen runs, due to metal fatigue. Before you knew it your maximum useable rpm was down to 5200. Eventually mechanic Brady gave up on it—and they just did all their shifting at 5200. This cost them precious horsepower. But now Olds is supplying new heat-treated springs with the W-30 cam. They give 195 pounds of pressure at .474 lift—and they will hold this for many runs without any appreciable drop. The boys can now shift in the 5800-6000 rpm range, and chop another tenth or so off the et. It's the little things that count.

Most of you are familiar with Olds' new W-30 cold air package. It's essentially a big chrome housing that fits air-tight around the three carburetors, and is fed by large flexible rubber tubes from small scoops in the front bumper. The scoops are located in the position of the stock parking lights to give the tubes a straight, clean shot to the carbs. (The lights are moved inboard). This is an excellent place to put the scoop openings because there is a high ram pressure in the bumper area at high speeds, whereas there is actually a vacuum on the top of the hood at some points. It would appear that the Olds cold-air system

is more efficient than the GTO setup, which uses a scoop on the hood. This is substantiated by tests with the scoops positioned in a non-ram area behind the grille (but still getting cold air). They gain about .05 seconds on et and 1 to 2 mph with the ram pressure! This shows a highly efficient setup. And we all know that feeding cold air to an engine raises the power by getting a higher *weight* of fuel-air mixture on each suction stroke (because cold air weighs more per-cubic-foot). Any kind of air system like this can reduce carb air temperatures 40 or 50 degrees Fahrenheit, which is good for 15 or 20 horses in this power range.

This is how they're running up to 110 mph in the traps with these new W-30 4-4-2's!

But horsepower doesn't always mean et's. And if there is any real speed secret on this Rund car, it must be in the chassis. The thing gets tremendous bite for a car of this type. There are several tricks that help. The front end is raised an inch by reversing the upper ball joints and shimming them. The front shocks are 10/90's to allow the front end to raise easily, and thus transfer more weight to the back. Rear shocks are standard heavy-duty. A very important feature is the use of Air-Lift bags inside the rear coil springs. By inflating the right bag about 10 pounds per-square-inch above the left bag, they can pre-load the right rear wheel when the car is standing still. Then when engine torque tries to lift the right rear in low gear, the loads on the two wheels even up—for ultimate traction. This

trick doesn't sound like much, but it changes the entire characteristic of the car coming off the line. It just burns without the differential pressures in the Air-Lifts. More and more guys are using the Air-Lift trick in *all* the stock classes these days. They've been doing it for years on the Super/Stocks.

The tires are a story in themselves. Vance Brady has found that it is possible to have *too much traction*, even in the lower stock classes. Most cars get off the line quickest when you can break the tires and burn them *just a little* on the initial take-off. The trick is to "tune" the tires for just the right coefficient of friction so you can do this on strips with varying amounts of bite without getting either too much or too little traction.

Brady carries three different types of tires on three sets of wheels with him all the time. All of them are M&H Super Stocks, which he swears by. For strips with very good traction he uses a big 9.20/15 on a '55 Chevrolet 5-inch wheel, which fits the Olds bolt pattern. These tires have M&H's new "A-160" rubber compound that is intended for a little less initial bite off the line, but quick recovery after the initial burn. With the large 30-inch diameter they get a bit less "gearing" off the line, but the rpm in the traps is down around 5500, where the engine pulls a little more horsepower and gives more speed.

For medium-traction strips Brady uses a 9.50/14 on a 6-inch Cutlass rim, with the A-160 rubber compound, inflated to around 18 pounds. This is a medium-traction combina-

tion that gives a little initial burn off the line, and around 5800 rpm engine speed in the lights. (This is using 4.56 Perfection gears in the rear end. They had to use 4.33 gears with the early valve springs, because the engine wouldn't pull beyond 5300 rpm after a dozen runs). For poor-traction strips Brady has still another ace: a set of M&H 9.50/14's mounted on 5-inch F-85 wheels, inflated to 10 pounds and running the A-150 rubber compound. This compound has higher initial traction for the getaway, but slower recovery if you burn hard. You can't let these break loose too much—which they won't do on the narrow rims with the very low pressures.

It's the very clever tire-wheel setup that has given excellent results on this car on a wide variety of strips. These things wouldn't be necessary if all drag strips were the same. But they aren't—and this is how the champs win their trophies. The little things.

Another of the "little things" that deserve attention are the front tires. Most strips now use flashing lights to start the cars, with a foul light that comes on if the car jumps. This is done by having the front tire cover the first light beam when it is staged and ready to go. If the car moves forward and uncovers this beam *before* the green light comes on, the red light comes on and the car is disqualified. So it is obvious that we should use the *largest possible* front tire so the car will be able to move farther before it uncovers the beam. If the driver stops his car the instant the staging light comes on, he can have a distance of 10 or 12 inches to "jump" before a large 30-inch tire uncovers that beam. This can be an advantage *if the driver knows how to use it*. Vance Brady uses large 8.20/15 front tires on '55 Chevy rims, which have a diameter of over 29 inches and are the largest tires that are readily available in two-ply and four-ply sizes. And driver John Molnar knows how to use them. He will get the jump four times out of five.

The team credits these large front tires with a big part of their recent success in class eliminations on mid-west drag strips. They're hard to beat, even if your car is just as fast.

There are a few other interesting features on this Rund 4-4-2; for instance, they use stock jets in the carburetors. They haven't found anything better yet. They use a Schiefer aluminum flywheel and heavy-duty clutch assembly. They feel the light wheel gives better acceleration in low gear where rotating inertia will hurt you. (This is only true when you have a car that can (Continued on page 78)



John Molnar lines up the Rund Olds for a blast down the Martin 131 Dragway tarmac. Best time to date is 111 mph in 12.40 secs. Hurst shifter with modified detents controls all-synchro four-speed. Rare factory-optional cold-air intake system tops off the Rochester tri-power intake system. Air intake is through front bumper vents. Setup is not listed for 1967 models.

OLDS 4-4-2 continued

readily break loose without using fly-wheel momentum. The Muncia four-speed transmission has the shift detents reworked by Hurst for smoother, more positive shifts. They never miss one, especially with that magnificent Hurst Custom floor linkage (with cross hand lever). The trans uses the close ratios with 2.20 low gear, in conjunction with Perfection 4.56 gears in the rear end. (The factories don't supply gear ratios stiffer than 4.33 for the GM A-body compacts, so you have to go to the specialty market—Getz and Perfection—to get higher ratios for drag racing.)

It was a simple job to modify the valve gear to allow 6000 rpm with hydraulic lifters. All Brady did was slip .070 shims between the rocker arm spherical joints and their mounting studs. This allowed the lifter plungers to pump out to the end of their travel, giving the effect of virtually solid lifters. (Just like the trick of adjusting Chevrolet ball-joint rockers out to the end of the lifter plunger travel). When this is done, your rpm is limited pretty much by the ability of the valve springs to make the valve gear mass follow the cam motion. This limit, as we said, is now about 6000 rpm on the latest W-30 package for the 4-4-2. And it's all a matter of simple .070 shims under the rocker joints.

So now let's sit back and see if the 4-4-2's can hold off the new big-valve GTO's and Fairlanes and new-engined Gran Sports and 406 Fords and stuff *next* season.