HOW TO

DRAG ON A BUDGET AND WIN

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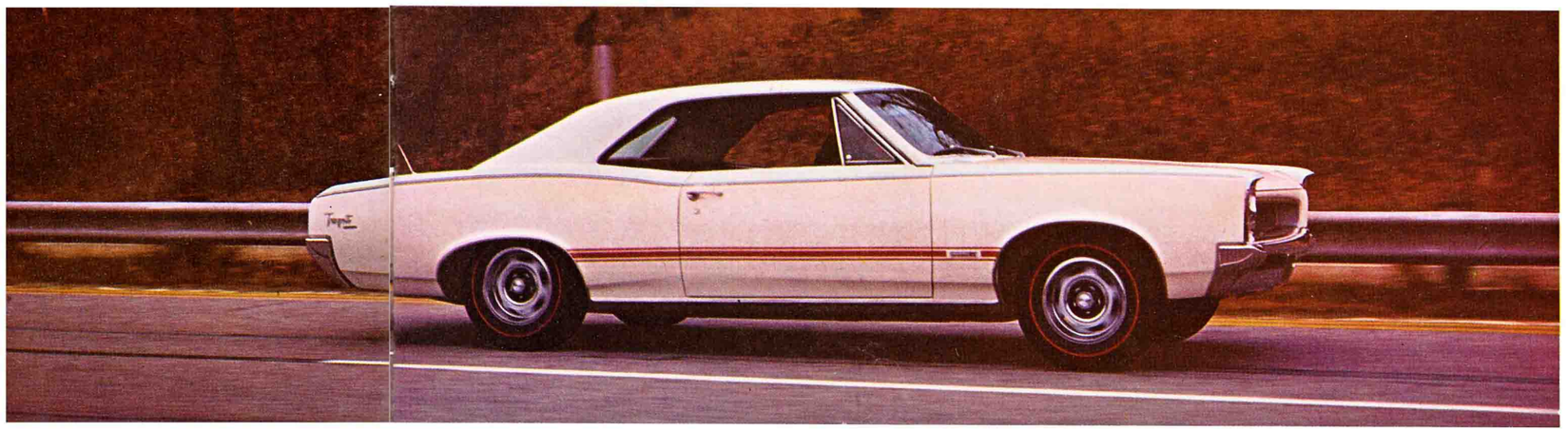

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The reason for the new trend is obvious: racing in the top stock classes is becoming too expensive. By the time you buy a factory-built S/S model, blueprint the engine and do all the other complex things necessary to make it competitive, $6000 or $7000 has been spent. With the usual breakage of highly-stressed parts, the cars cost a lot just to maintain. Fewer and fewer rodders are able to afford this kind of fun. Even dealer sponsors are getting scarce. There will be less and less activity in the top stock classes at the big NHRA and AHRA meets this summer.

Meanwhile the lower classes are booming. The speeds aren't the same, but the fun is. And it's much, much cheaper to compete. More big car dealers are sponsoring these lower-class cars. They're finding that a trophy for a lower class from the big regional and national meets is just as effective for publicity, and these lower-class cars are directly related to street products the customer can buy. This wasn't true of the Super/Stocks. New dealer interest in the lower stock classes is bound to liven the strip scene.

Money doesn't necessarily buy wins and lots of guys are putting up minimum cash for maximum dragging

Here now are a few hints on selecting specific car models that might be especially promising in the lower stock classes. Wise model selection is one of the most important keys to success in this area.

In the first place, how are stock cars classified on the NHRA and AHRA strips these days? (We will confine the discussion to these two classifications systems because almost all our strips use these rules, or minor variations of them.)

Actually, the two systems are very different. The NHRA classifies stock cars on a basis of the published shipping weight and advertised HP, with simple pounds-per-horsepower divisions between classes. For instance, their D/Stock (D/S) class runs from 10.60 to 11.29 pounds per hp. In other words a car that is advertised at, say, 300 hp could not weigh less than 300 x 10.60 pounds or 3180 lbs. in this class. This is a good classification system because the acceleration of a car is close function of its weight/horsepower ratio, and it is very easy for the propective racer to figure his class from the published horsepower and weight figures.

The AHRA rulemakers see it differently. They think there are too many inflated horsepower ratings to make the advertised horsepower a good classification factor. They base their classes on more basic engine performance parameters: cubic inches, amount of carburetion (multiple, 4-barrel or 2-barrel), type of lifters, and number of cylinders. Instead of using the car weight factor the AHRA uses wheelbase divisions to separate the compacts from the mediums and full-size cars. This system makes a lot more classes than the NHRA pounds-per-horsepower concept: actually 166 in all, but AHRA officials say they have more even racing. Another important factor is that AHRA rules allow a lot of freedom in internal engine modification. Any type of cam, high-compression pistons, big valves, matched ports are allowed. AHRA officials say this reduces cheating, since so many of the fellows running on the NHRA strips are making these modifications anyway and hoping they don't get caught.

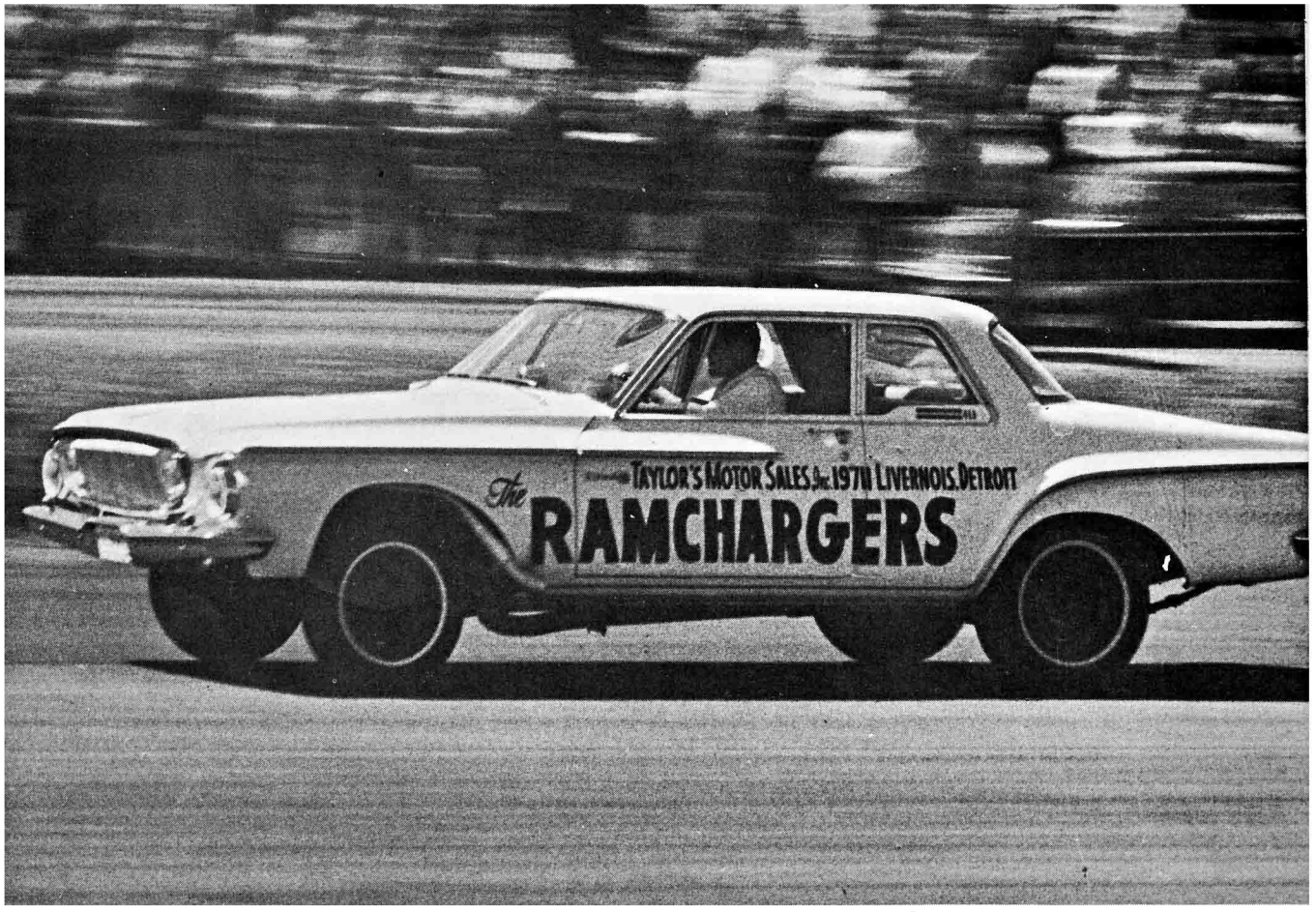
Here are two widely different stock car classifying concepts. What principles do we use in selecting specific stock car models that will be promising in a specific class?

Actually the question isn't as complicated as it seems. Experience has proved that specific car models that are relatively successful under NHRA rules also tend to be strong in the AHRA classes. Look at it this way: Under NHRA rules it is obvious that the most successful cars will be ones that have conservative horsepower ratings. That is, since the car is classified on the advertised horspower rating, it is important that the true horsepower output is as close as possible to the advertised figure. Different cars vary widely in this area. Take two cars, both advertised at 250 hp. One might put out an honest 220 horsepower at the flywheel off the showroom floor; the other might put out 180 horses. And yet if they both weighed the same they would run in the same class under NHRA rules. Which one would win every time? Of course, the 180-horsepower engine could be blueprinted and worked over to bring it up to 250 horsepower. But the same work on the engine that started at 220 horsepower would probably boost its power well over 250 horses. It would still win.

This stronger 220 horsepower engine should also do well under AHRA rules. That is, it will likely have very similar carburetion, cubic inches, etc., as the weaker 180 horsepower engine. The big differences in performance potential generally lie in more subtle areas—like combustion chamber design, port and valves sizes, cam design, and manifold design. The AHRA classification factors of cubic inches, carburetion and lifters can be identical on two fully stock engines, while their actual horsepower output at the flywheel might be a lot different. Of course, their rules allowing deep internal hopping (hot cams, big valves, compression, etc.) help to level out this difference, but it's still there.

So if you select a strong car model for NHRA rules, chances are it will work out fine in the AHRA arena. For NHRA competition you have to consider car weight, too. (The official factory shipping weight figure used can usually be found in the NADA Used Car Guide under the body and engine combination used.) Obviously in this case it will pay you to select a model with a weight that falls very near the minimum allowed in a given class for the specified horsepower. Take the example of the D/S class with a 300-hp engine. The minimum weight here is 3180 pounds. Let's say you have the choice of a hardtop coupe at 3320 pounds or a two-door sedan at 3230 pounds. Obviously the sedan is the better bet. But let's say the convertible model has a shipping weight of 3410 pounds. This might be the best bet. Reason: you could jump into the top of the E/Stock class. In other words, the NHRA E/S class starts at 11.30 pounds per horsepower, or a minimum car weight of 300 x 11.30= 3390 pounds with the 300-hp engine. The convertible is only 20 pounds from the minimum weight in E/S; the two-door coupe is 50 pounds from the minimum in D/S.

Car model selection under NHRA rules, is not a simple matter. You have to do a lot of figuring. What the top boys generally do is first select an engine model with a low horsepower rating. (In other words its true stock output seems to be close to its advertised rating.) Then they comb down through the body models that this engine is available with to find the one that falls closest to an NHRA class dividing line. It's possible to come within 5 or 10 pounds of the minimum weight in the class (for the horsepower rating you have selected). Obviously *(Continued on page 72)*



Above, yesterday's Super/Stocks are today's A/S and B/S class cars. This '62 Super/Stock Dodge sports a 413-cube block with special large-port heads and dual quads. It's rated 410 hp at 5400 rpm and has turned 115. Today it runs in A/S class.

Above, '64 Fairlane Thunderbolt is equipped with 427 high-riser and runs A/S.

Above, older 409 Chevys and 406 Fords are being replaced by GTOs.

Above, medium size musclecars like the GTO compete in the C/S class.

Above, light Chevys of the '55-'57 era have come to dominate lower stock.

Above, 235-hp Barracudas with the power-pack 273s are strong in F/S.

Above, early Oldsmobile Rockets are favorites in M/S, N/S, and O/S.

lot. The difference will be probably at least $200, but persevere. This is a big investment. Do it right. Another thing, don't trust the salesman to quote you all the available performance options. Chances are he doesn't know them all. Insist on seeing a complete order blank for all RPO and LPO (limited production option) equipment. There may be stuff there you never heard of which would enhance your package. And many times the cost is only a few dollars when installed on a new car being custom built at the factory. It's much cheaper than deciding you want the stuff after you get the car, and having the dealer install it. This is especially true of axle gears, heavy-duty brakes, and the like. Make sure you know what's available before you order.

Good hunting!

COMET TEST continued

Once underway on the open road we found the Cyclone to be a rather stable car even at speeds over 100 mph. The compromise suspension worked well and the tires, Firestone 500's, seemed to hold up even though we were averaging well over normal highway speeds. We felt that power steering was not really needed in this car, as we missed the normal feel of the road afforded by the manual setup. One thing that really impressed us, however, was the head-turning ability of our test car. The combination of bright red paint, rallye stripes, chrome wheel covers and the purr of the dual pipes, attracted young and old alike. The clean, sleek lines and the massive forward styling tie all the goodies into one neat image car package.

Equipped with 335 horses under the hood and a close ratio four-speed and 3.90-to-1 limited slip cogs between the rails, the GT proved to be an excellent performer. Even with the good gears it did not pack the punch of a tri-carbed GTO or a "semi-hemi" Chevelle. We were, however, able to walk away from most of the average stoplight drag racers. Shifting was exceptionally smooth except for the small uncomfortable-shaped shift knob. Running around town upshifts were made around 3000-3500 rpm, which coincidentally is when maximum torque comes in with the hot hydraulic lifter cam. Engine flexability rates high, as no trouble was encounted lugging the engine down to 1000 rpm in top cog or winding past the 5500 rpm mark.

In the past we have had very few kind things to say about Detroit brakes in general and supercar brakes in particular. Most of the manufacturers use one set of brakes for six, standard eight, and ultra quick supercars. Some list optional linings and drums, but dealers knew little or nothing about their whereabouts. Our test Comet was fitted with 10-inch finned drums and metallic linings to cope with the extra horses up front. Heat dissipation is good with the finned drums and the metallic linings help combat against fade during repeated panic stops. They are not as good as drums in the fade department, but discs will not be available on the Comet until 1967 so there is little choice. Five or six panic stops from 85 mph managed to fade the binders, but they would not fade under average or above average stopping conditions.

As far as all-out performance went we were a bit disappointed with the GT. The compromise suspension worked out just fine on the street and road, but left a lot to be desired for maximum strip performance. We were plagued with wheel hop and axle windup throughout our quarter mile testing, even though the car was factory fitted with the special suspension. Our best run through the eyes netted us with a 98 mph, 14.95-second time slip—and that was after 12 attempts. Most runs were well into the 15's. Performance could be improved by the simple addition of adjustable Air Lifts (C60Z-5A589-A, $49.50) available through any FoMoCo dealer. With the air bags in place the chassis can be properly preloaded to compensate for track conditions, engine tune or various suspension settings. For more serious competition good lift or tractions bars would be a wise investment.

After adding 500 miles to the already racked up 8000-plus miles we felt that the Cyclone GT is a very competitive package in the supercar sweepstakes. It may not be as quick as a good running tri-carb GTO or handle as well as an Olds 442, but it sure has a lot going for it. It has image written all over it, lots of performance packed under the hood and between the rails, and man, is it ever durable. And just think next year limited models will be available with the 427 wedge, disc brakes and a maximum performance suspension that allows you to use all of those 425 ponies.

LOWER STOCK continued

you're going to have an advantage over the guy with the same engine who weighs 100 pounds over his class minimum. Keep in mind also that it is legal in the stock classes to trim the weight of the particular model to the *(Continued on page 74)*

published shipping weight. This is not easy. Most cars will come off the showroom floor at least 150 pounds above shipping weight because options like radios, power steering, power windows, etc., are not generally included in the weight figures. It takes a lot of time and work to trim a car's weight to its published shipping figure. You may have to pull out body insulation, radios, sound deadener material, etc. But these are the little things the big boys do to win trophies consistently.

Many who use their drag cars for everyday street transportation won't want to buy any body style just to gain a few pounds of class advantage. In this case you may still be in good position in your class—or you may not be. At any rate don't give up. If you do a good job of engine tuning with a sharp, alert job of driving, maybe those extra pounds won't be decisive. Fortunately the NHRA class divisions have been quite close together in recent years; there's not usually more than 300 pounds difference in the weight of car models of the same horsepower.

Here's an example of wise engine model selection.

It is well known that the small 283-327 Chevrolet V-8 engine, in all its many forms, is conservatively rated. But some models are more than others. Here's where the wise selection comes in. For instance, the 1965 4-barrel 327 version rated at 250 horsepower used the late big-port Corvette heads (1.94-inch intake valves), where the 1964 version of the same engine had smaller ports and 1.72 valves, yet it carried the same rating of 250 hp. Obviously the '65 version is more promising, as it would still run in the same class as the '64. But there's still more to the story. In 1966 they put a bigger Holley or Quadrajet carburetor on this engine and raised the rating to 275 hp. It is unlikely that the additional carburetion actually added 25 hp to the true output. So the '65 version is still the best bet. But the 300-hp Corvette version of this engine, used in the '62-'65 period, was the worst bet of all. It had the big-port heads and a big 4-barrel carburetor on a big-port manifold; but it is no stronger than the '66 version rated at 275 hp. This 300-hp engine is a good bet to race against other 327 combinations. Get the idea?

Now let's look at some specific car models that are doing well in these lower stock classes, under both NHRA and AHRA rules. The top A/S and B/S classes are pretty much dominated by late model all-out street engines with radical cams, solid lifters, multiple carburetion and horsepower ratings above 375. This would be like the '66 Dodge-Plymouth street hemi 426, late 427 and 406 Ford Galaxies, late 427 Mk. IV Chevrolets and earlier 409's, etc. These are actually all-out racing engines that have been de-tuned slightly for the street. They can all be easily tuned to develop well over their advertised HP ratings, that are not over 425 hp. There is little question that the strongest combination here is the '66 street hemis in A/S and the '66 427 Chevys in B/S. The older cars, especially late 427 Fords with the 7000-rpm valve gear, have plenty of potential; but their breathing probably isn't as strong as the new hemi-type engines.

Don't forget also that it's more expensive to race in these two top stock classes. One reason is that you break more parts on these hotter semi-racing engines, and parts are more expensive to replace.

The C/S class is the big battleground for the new medium-size "muscle cars": (GTO, Olds 4-4-2, Buick Skylark Gran Sport, Fairlane GT, Chevelle 396, etc.) plus the older 406 Fords and 409 Chevs with single 4-barrel carbs. Up until the end of last season the 406 Fords and 409 Chevs, being basic competition engines with solid lifters, seemed to have the edge here. But this year the GTO's and 4-4-2's are coming on much stronger, and have gone out ahead. They are turning E T's in the 12.7's at 110 mph. Right now I would say the 4-4-2's have the most potential in C/S, or certainly when they get the new cold air package and cam in mid-summer.

In D/S and E/S the old Super/Stock Pontiacs of the '60-'62 period have been holding out for a long time. They had 389 cubes and official HP ratings around 360, which were very conservative. I recall the Royal Pontiac that won top stock at the 1960 NHRA Nationals in Detroit actually developed about 400 hp at the clutch! They're doing better with these same engines today. The secret, of course, is the low HP ratings. They're pretty much out-and-out racing engines, with big-port heads, hot solid cams, and triple carburetion. Parts for these early S/S Pontiacs are getting scarce today; but fellows who have the pipelines are making out pretty good in D/S and E/S classes.

It will be interesting to see how the new Dodge Dart package does in D/S. This uses the basic 273-cubic inch V-8, but hopped up to 275 hp at 6000 rpm. The package is also available with heavy-duty Torqueflite to run in D/SA. It looks like a lot of potential on paper, as the weight is less than 3000 pounds. This basic engine has proved that it has a lot of beans.

From F/S on down to about M/S your classes are heavily dominated by the small Chevrolet V-8 (265, 283 and 327 cubic inch), 389 cubic inch Pontiacs from about '59 and up, and the late '65-'66 power pack Dart-Valiant 273, at 235 hp advertised. All three of these basic engines are very conservatively rated and this is the secret. Whether the factory engineers did this intentionally to make their products more competitive on the drag strip, I don't know. I doubt it. I think it's just company policy to go easy on the HP ratings. And of course it's also true that these basic engine designs just seem to respond more readily to the speed-tuners' touch. A good example is the 1956 Corvette 265 cubic inch engine, rated 225 hp with dual 4-barrel carburetion and solid-lifter cam. This developed over 210 hp off the showroom floor 10 years ago. Today, with the big-port replacements heads and hotter replacement cam, they're pulling upwards of 275 hp in competition—with all legal stock equipment. And of course the potential is considerably

higher with the special internal modifications allowed under AHRA rules. We could say these same things about the late Pontiac 389 engines (in the dozens of versions available) and this new 273 Dart-Valiant power packed engine. Conservative rating is the key.

Keep in mind here that you can find some very economical drag racing in these lower stock classes. Older models have just as much potential as the new ones. You can buy a good '56 Chev and build up the 265 V-8 engine to '56 Corvette specs (225 hp) for less than $500. Or this is true of many other Chev and Pontiac models of the late '50s and early '60s. There are dozens of possibilities; do a little studying.

If you want to go even farther down in the NHRA stock classes there are many possibilities in M, N and O/S. These classes take in the older, pre-1955 cars with really low HP ratings. But you still have to select your models carefully here. It is true that the Detroit companies used to rate their engines more honestly in those days; however now it's a problem selecting the basic design that can be tuned to give as much as possible above the advertised rating.

The most popular models in this area are the Olds 88 Rockets of the early '50s (around 150 hp), the early Studebaker OHV V-8's of the '50-'52 period with the 120-hp rating, and the famous '52-'54 Hudson Hornets with dual carburetion. These engines can be easily made to far exceed their advertised HP with a little sharp tuning. There were other "modern" short-stroke OHV V-8 engines available during the period-Chrysler, Cadillac, Buick, DeSoto, etc., but the three engines above are the ones most conservatively rated in terms of what can actually be gotten out of them.

The cost of racing in these bottom classes is rock bottom, too. Cars this old sell at junk prices, usually under $75, and the major cost comes in rebuilding the engine and bringing the chassis up to snuff-(plus the cost of special gears, exhaust headers, tires, etc.). Over all, you should be able to get running for a little less than you could in the middle classes from E/S to L/S. It can cost as much to set up a '52 engine as a '57, and the difference of maybe $50 in the first cost of the two cars would be relatively insignificant. If you're after the highest possible acceleration performance for the least money, you're better off in the middle stock classes. The bottom classes are for the guys, who enjoy racing the oddball stuff, and facing the challenge of making an old engine design go like a modern engine. To some buffs, this is all the fun.

That's the story, gang. There's a lot of fun to be had dragging in the lower stock classes. And, if present trends continue, there's going to be more interest and prestige in these classes in the next three years. No telling where the whole game will go. You might be smart to get in on the ground floor.

HURST 442 continued

performance mill. To install these studs perfectly straight, the corresponding holes were drilled and tapped on a Bridgeport mill, rather than by hand. As a further precaution the threaded portion of the studs are coated with Loctite to prevent them from working loose.

In a stock Olds, each pair of rocker arm barrel pivots is aligned by a steel stamping. With the rocker arms guided, no provision needs to be made in the cylinder heads for guiding the pushrods. Here, the pushrods are guided by notched steel plates which are retained by the hex head on the Ford studs. As a final precaution, the rocker arm adjustment is locked by a recessed Allen screw that threads into the adjustment nut and bears against the stud.

Mating the 6-71 blower to the Oldsmobile engine involved a special Gragar drive and a manifold designed by Sharp Engineering. Both engines use 4-port Hilborn bug catcher injections together with port needles. The front bug catcher faces forward in a conventional fashion while the rear one is turned around to protect the driver against spit backs and also to get the air inlet out of a low pressure area inside the car. Separate fuel tanks are used at the front and rear, with a Milodon shut-off valve at each location.

To save weight, the "Doc" discarded the idea of using stock radiators. He could have added some conventional coolant tanks, but went one step further and converted the two by four-inch main frame rail sections into a pair of 6 1/2 gallon water tanks. Stock water pumps were replaced by a pair of Jabsco units, saving more weight.

The engine installation details include a host of small but essential items. Doug Headers made up an impressive set of exhaust stacks of 1 3/4 inch diameter and 32 inch length, which are aimed to clear smoke away from the slicks. Adapters hogged out of aluminum blocks allow remote mountings for the AC oil filters. Ignition includes a Schiefer mag, Auto-