

This exciting, new, high-performance package comes right off the assembly line stuffed with enough goodies to put the Dodge name right up among the front runners.

Package also includes heavy-duty suspension and power train components designed to take excessive stresses of competition. Good stock handling is much improved.

410-HP

RAMCHARGER



First report on the Plymouth-Dodge Super Stock engine, tested here in Dart version

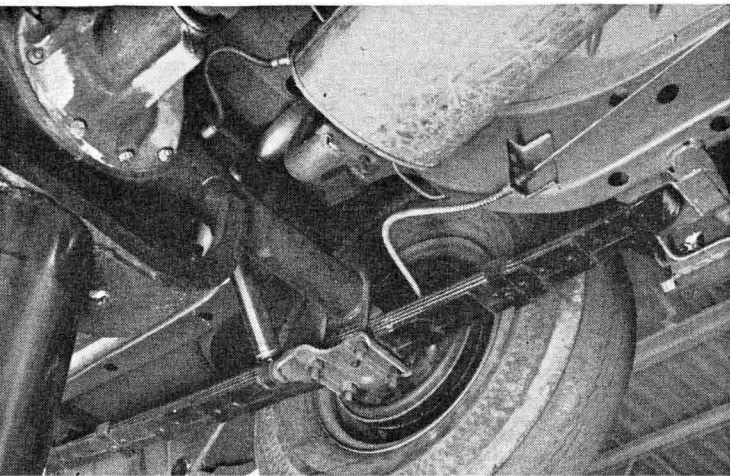
by Roger Huntington

DODGE'S NEW "RAMCHARGER 413" package gives more performance per dollar than any other factory-assembled car in America. And, if present trends continue, by the end of the summer it will be right at the top of the stock car heap—*regardless of price*. It's an awful bomb. And you don't need time, money and know-how to do the careful "tuning" and setup necessary to get optimum performance out of most factory-produced high-performance cars.

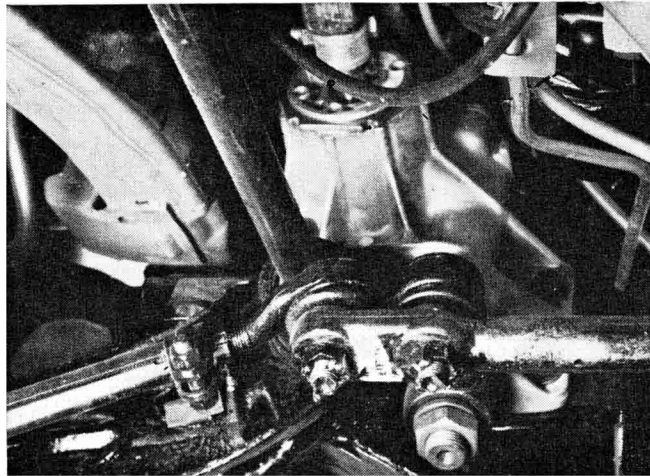
We took a strictly-standard Ramcharger off the Dodge assembly line, put a few miles on it, set the valve lash and spark advance to factory figures, pulled off the exhaust caps, threw on a set of 9.00 x 14 Bucron tires—and proceeded to turn 13.84 e.t. and 108.21 mph first time down the drag strip! We bettered those times to 13.44 and 109.76 mph later in the day by experimenting with driving techniques and shift points. And this was an automatic transmission!

This is probably the wildest performance package Detroit has ever offered. And you can get it for only \$374.40 over the





Stiffer spring rates help to absorb the added torque of the big mill. Sure-Grip axle is needed to insure bite.



Steering box is made of die-cast aluminum for greater weight saving. Torque converter cover is aluminum too.

410-HP Ramcharger *continued*

price of a regular 1962 Dart with standard 230-hp V-8 and Torqueflite.

The car Dodge loaned me was about as close to an out-and-out production *racing car* as you can come. It was completely stripped of all fancies and accessories—didn't even have a heater. It was the strictly-standard Ramcharger-Torqueflite package. In addition to the engine and special heavy-duty transmission, this includes a heavy-duty driveshaft, six-leaf police springs in the rear to control wheel-hop, and 3.91-to-1 rear end gears with Sure-Grip differential. Standard tires are 7.50 x 14.

By now most of you are familiar with the new Ramcharger engine package. It's based on the big 413-cubic-inch Chrysler "B" block. New cylinder head castings have 1.88-inch exhaust valves (up from 1.60) and much larger ports. A new aluminum intake manifold carries large Carter AFB four-barrel carbs at diagonal corners of the engine, with short ram tubes going from a "plenum" chamber under each carb to head ports on the opposite side of the engine. This gives a "tuned" length of about 15 inches from plenum to valve—to prevent the usual swift power drop-off in the 5500-6500 rpm range—and yet the whole layout is very compact to fit under the low '62 Dodge hood. (The old long ram tubes wouldn't fit without considerable cobbling.) Heavy-duty forged pistons are domed for 11-to-1 compression ratio (13.5-to-1 pistons are optional).

The new Ramcharger camshaft is a modification of last year's RC-92—has approximately 300 degrees open duration and a lift of just over .500-inch. It's hairy. Light solid lifters and heavy-duty oval springs and keepers are included. The valve gear is rated "stable" to 6500 rpm. The lower end is beefed up with big piston and bearing clearances for racing, hardened crankshaft, heavy-duty tri-metal bearings, Magnafluxed con rods, and special baffles in the oil pan to prevent starving the pump on very hard acceleration. The special ignition distributor has dual points for maximum coil saturation at high rpm, with centrifugal advance only. The factory recommends an initial advance of 10 degrees (crankshaft) at 800 rpm. The engine idles at about 1000 rpm with only 10 inch vacuum!

The new exhaust system is a work of art—far and away the most efficient ever put on an American factory car. The new cast-iron "headers" sweep up and back over the fender wells, downward to huge three-inch openings at the headpipes. The headpipes themselves are three-inch, and sweep back in a gentle curve to bolt-on caps under the rear of the front door. When these caps are removed, the exhaust has a straight, unrestricted shot. When the exhaust is capped we have smaller tailpipes coming off at right angles, just behind the cap openings, leading back to dual low-restriction, reverse-flow mufflers. And just ahead of the tailpipes we have a small cross-over pipe between

the two individual headpipes to act as a sort of "balance tube" to reduce the usual blatting noise when the exhausts are capped. (A dual exhaust system on a V-8 engine is much louder without some sort of cross-over connection, even with mufflers.)

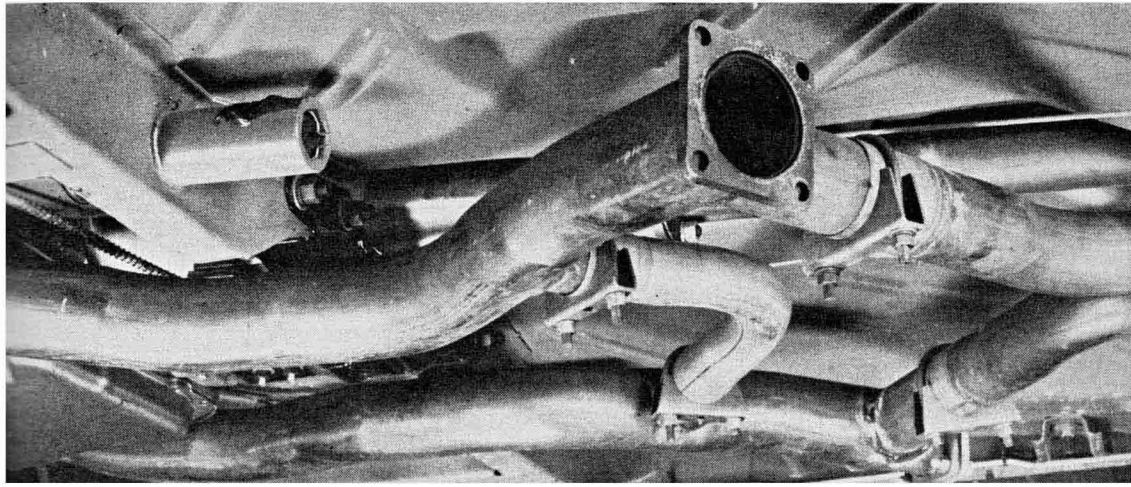
It's a beautiful system—and all fabricated of steel tubing. If you're wondering about splitting the exhaust flow between the two rear cylinders on the left bank (which fire successively in the firing order), Dodge engineers note that these header passages are separated for about 10 inches—then they merge at a very narrow angle. Tests show there is no appreciable added restriction, and this layout gives much lighter and more compact header castings.

Then there's the matter of car weight. Our test car weighed 3440 pounds with a half-tank of gas—and yet this same model lists in the NADA book at only 3160 pounds. (This is the standard Dart two-door coupe with V-8 engine.) Why the big difference? The official factory shipping weights have given the fellows the idea that these '62 Dodges and Plymouths with the 116-inch wheelbase are almost as light as the compacts. Not quite. Nobody can satisfactorily explain the discrepancy. Perhaps the production cars have been beefed up here and there, in comparison with early prototypes that were weighed for spec sheet figures. Maybe the published figures are *estimated* weights. Maybe the figures are fudged a little to save shipping costs (as the shippers charge on a basis of published shipping weight). Anyway, these cars are a little heavier than we thought. They're still 300-400 pounds lighter than your lighter Fords and Chevs and Pontiacs... but they're not 3200-3300-pound cars as we thought.

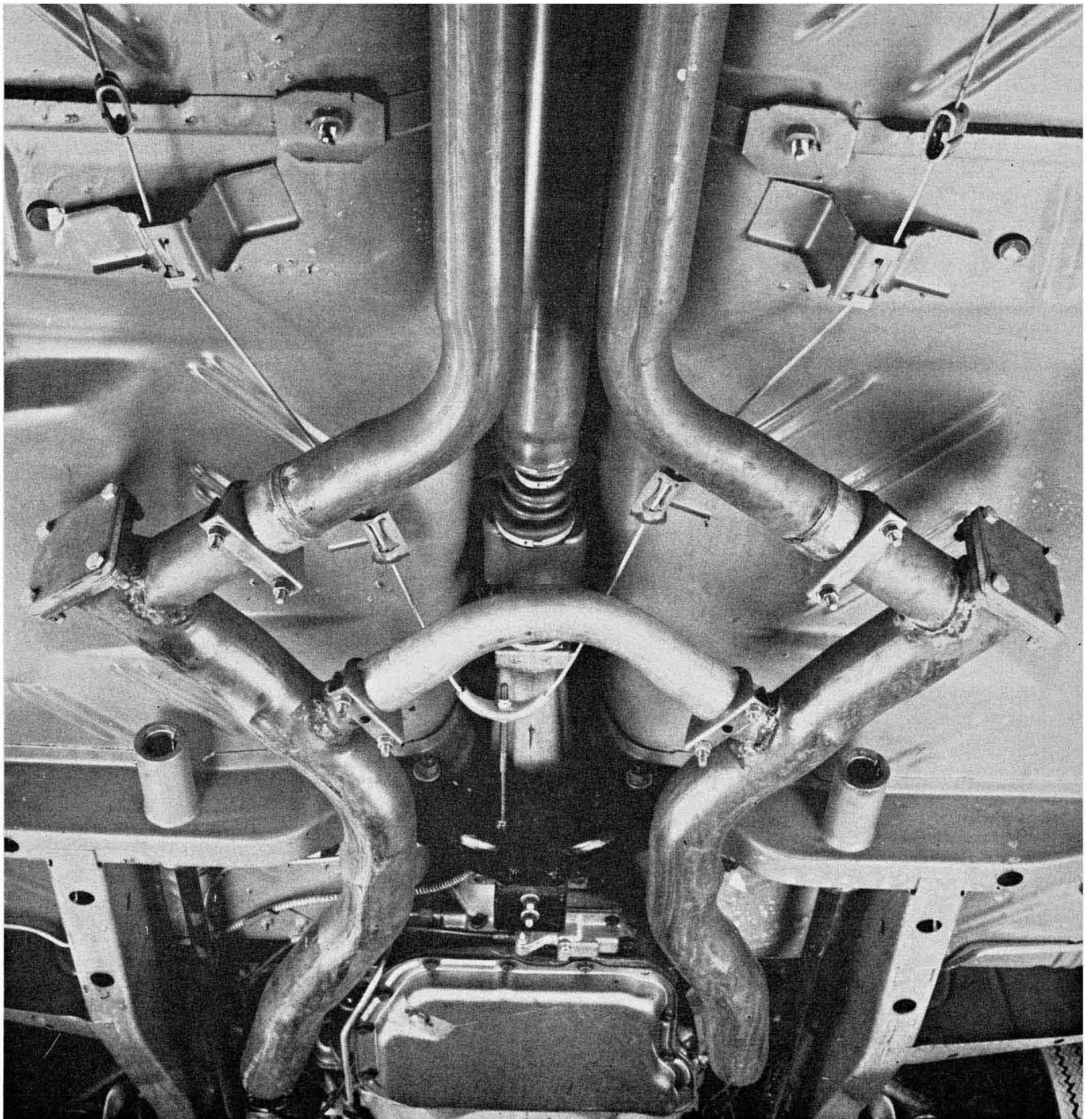
We ran our usual acceleration tests in our usual test area on public roads, with standard tires and capped exhaust, so these figures represent about what this car will do on the street and highway. Here's what we got, with a 320-pound load:

0-30 mph	2.7 secs.
0-45 mph.....	4.3
0-60 mph.....	5.8
Standing 1/4-mile.....	14.4 and 101 mph

Needless to say, wheelspin was a problem when taking off from a standing start, even with the automatic transmission. The best procedure seemed to be to apply a little static thrust on the line with the foot on the brake (maybe part throttle at 2000 rpm), then get on the throttle gradually over a period of one or two seconds after the brake was released. We could get 0-30-mph times of 2.6 to 2.8 seconds consistently on concrete pavement with this technique, without excessive wheelspin. With the big Atlas Bucrons, mounted on the optional 6½-inch rims, of course you could get on the throttle sooner and harder on the drag strip. I imagine the equivalent 0-30 and 0-60 times on



Exhaust system on the Ram-charger is the most efficient and beautiful ever put on an American car. Headpipes are three inches and engine will produce 70 hp more with caps removed. Small-diameter cross-over pipe ahead of tailpipes acts as balance tube to reduce loudness of dual system.



410-HP Ramcharger *continued*

the strip might figure out to around 2.2 and possibly even in the *high 4's* for the 0-60! You generally can't duplicate drag strip performance on the street and highway. But there's no question that you can get off the line more quickly and consistently with this torque converter than you can with a friction clutch and stick. Apply a little static thrust with the brakes on, and the car literally leaps forward when you release them. This model should be a shoo-in in the S/S Automatic class.

The acceleration figures were highly affected by shift points. This heavy-duty Torqueflite (three-speed) is supposed to up-shift automatically at 5600 rpm with full throttle, when all the production tolerances are "stacked" just right. Ours must not have been stacked right — as it shifted between 4600 and 4800 rpm. This cut down the times tremendously. You might as well plan on doing all your shifting on the strip with the push-buttons. The "First" and "Second" buttons will hold these gears indefinitely. And the transmission shifts quick as a wink, with a solid "thud," when you push the next button. There's none of the usual hesitation and slip you get when you shift most automatics manually. This is probably the finest high-performance automatic in the industry today.

Specifically, we found 5800-6000 rpm a good shift point with the exhaust capped — and 6200-6500 on the strip with exhausts open. (Our test car didn't actually have a tachometer. These rpm's are calculated from speedometer readings. But most serious drag racing devotees will want to invest in a good tach right away.)

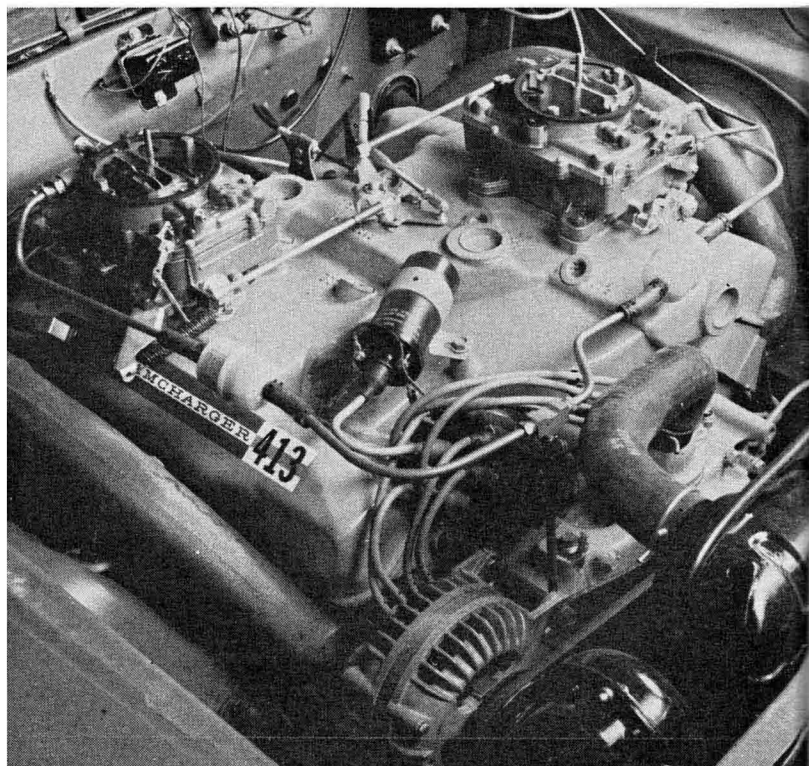
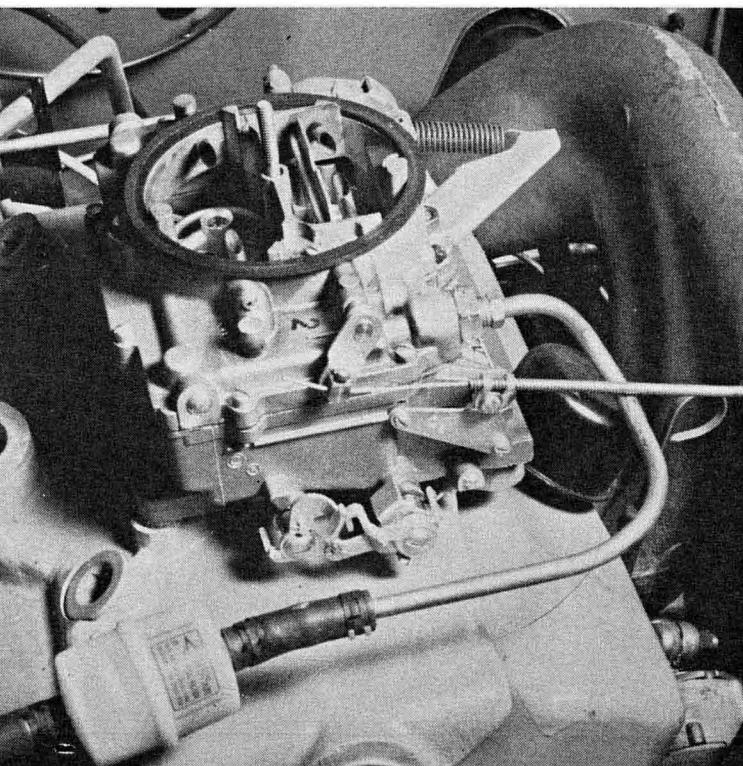
The power output characteristics of the engine are interesting. With the exhausts capped the exhaust gas has to make a sharp right-angle turn into the tailpipe, against the backwash from the capped section. This cuts down the power considerably. Calculations from my accelerometer readings indicated a maximum output on the road of between 320 and 325 hp at about 5100 rpm. This had dropped off to 275 hp at 6000. It was another story on the strip with exhausts open. A flash accelerometer reading under these conditions showed about 390 hp at 5500 rpm — with only a gradual drop-off at 6200. And this

is in excellent agreement with Dodge engineers' statements that the open exhausts add about 70 hp. They also say that a good engine, with everything just right, will show a minimum of 410 hp at 5600 on the dyno. Everything seems to add up.

The "Ramchargers" are a club of young Chrysler Corporation engineers who have been active in the drag racing field for several years. Last summer they set up a '61 Dodge (sponsored by Taylor Motor Sales in Detroit) that turned on awfully strong in the new SS/S class at the NHRA Nationals in Indianapolis. This 400+-hp, 413-cubic-inch engine was the first step in the evolution of the current Dodge Ramcharger package. The new camshaft, exhaust headers, etc. are direct developments from those experiments.

I was fortunate in having the cooperation of the Ramchargers in running my drag strip tests. They brought two of Taylor's stick-shift 410-hp Dodges up to the Central Michigan Dragway at Stanton, Michigan — along with Detroit attorney Elton Eckstrand with his screaming Ramcharger 413 automatic. We all met up there and had an awful blast. The runs were especially enlightening because three of the four cars were practically production-line machines, with no extra internal engine work or special tuning. The Ramcharger I machine (driven by Jim Thornton) had 4.56 rear end gears, Chrysler three-speed with Hurst floorshift linkage, extra stiffness in the right rear spring to reduce lateral weight transfer, and the same engine the Ramchargers used at Indianapolis last fall — but with the new ram manifold and big-port heads. The exhaust headers were fabricated from steel tubing, and saved about 40 pounds of weight. (This is the same car that beat Don Nicholson's 409 Chevy on two straight runs at Detroit Dragway in April.)

The other three cars — our MT test car, Eckstrand's automatic and Mike Buckel's "Ramcharger Too" — were pretty much showroom stock. The latter two both had 4.30 gears, M&H Super Stock street-strip tires on 6½-inch rims, and Ramcharger Too had the latest assembly-line setup using the Warner T-85 heavy-duty three-speed transmission with Hurst linkage. (Dodge has decided to use the Warner gearbox on production Ramchargers, as they haven't been able to get the new Chrysler heavy-duty three-speed to shift fast and positive enough for



SHORT-RAM INTAKE MANIFOLD MOUNTS TWO HUGE FOUR-THROATS. RAM TUBES ARE DESIGNED FOR MAXIMUM PERFORMANCE ABOVE 4000 RPM.

drag strip use.) Our MT test car, of course, was fully stock with standard 3.91 rear end gears. We used the Bucron tires.

It's interesting to compare the best times turned by the four cars:

CAR	DRIVERS	E.T.	SPEED
Ramcharger I	Jim Thornton	12.97	113.92
Ramcharger Too	Mike Buckel,		
	Tom Hoover	13.30	112.51
Ramch. Automatic	Elton Eckstrand	13.12	111.11
MT test car	Warren Tanzola,		
	Wally Chandler	13.44	109.76

These figures would seem to indicate that the standard 3.91 gears in the Ramcharger don't compromise the drag strip performance too much — (though any serious drag racer would want to go up to 4.30 or 4.56). The 3.91's are not at all hard to live with on the highway. In fact, they seem to be an ideal compromise between highway cruising and brute acceleration. I know on the last run of the day El Eckstrand ran a grudge with the MT test car against Jim Thornton's Ramcharger I. El beat Jim out of the chute, and lost by only two car lengths at the finish. When you can come that close to a 114-mph, 12-second car with a car you just drove off the assembly line — you've got a package!

In closing I'd like to emphasize that this new Ramcharger 413 package is not something I can recommend for everyday street use. It's awfully hairy — and nothing but a pain in the neck on the street (though it's not bad on the highway). The idle speed is so high that you have to hold the brake hard at a traffic light to prevent creeping. Or if you shift into neutral the car will lurch forward when you shift back to DRIVE. It takes some getting used to. A stick shift would be more practical from this standpoint. Also there's no heat on the intake manifold, and passages are huge — so things get awfully rough when air temp goes below 45° F. The lack of vacuum spark advance and high valve overlap combine to drink gas like crazy on the street and highway. The loose piston clearances guzzle a quart of oil every hundred miles or so. This is a *racing* car — not a street car.

But *what* a racing car . . . and what a car *for the money!* /MT

DODGE "RAMCHARGER 413"

2-door, 5-passenger coupe

OPTIONS ON CAR TESTED: Torqueflite 3-speed automatic transmission
ODOMETER READING AT START OF TEST: 462 miles
RECOMMENDED ENGINE RED LINE: 6500 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	2.7 secs.
0-45 mph	4.3
0-60 mph	5.8

Standing start ¼-mile 14.4 secs. and 101 mph

Speeds in gears @ 6000 rpm

1st	49 mph	3rd	119
2nd	82		

Speedometer Error on Test Car

Car's speedometer reading	32	48	53	64	76	87
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear19.8 mph

Stopping Distances — from 30 mph, 39 ft.; from 60 mph, 172 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
 Bore: 4.19 ins.
 Stroke: 3.75 ins.
 Displacement: 413 cubic inches
 Compression ratio: 11.0:1
 Horsepower: 410 @ 5400 rpm
 Ignition: 12-volt coil

Rear: Non-independent;
 semi-elliptic leaf springs
 (heavy-duty); Hotchkiss drive;
 tubular shocks

Wheels and Tires

Steel disc wheels;
 14 x 5.50 rims
 7.50 x 14 Goodyear tires

Gearbox

Torqueflite 3-speed torque
 converter, beefed up;
 pushbuttons on dash

Brakes

Non-power, total-contact
 shoes; 10-in. drums
 Front and rear: 11-in.
 dia. x 2.5 in. wide
 Effective lining area:
 195.2 sq. ins.

Driveshaft

One-piece, anti-friction U-joint

Differential

Hypoid, semi-floating;
 Sure-Grip limited-slip
 Standard ratio: 3.91:1

Body and Frame

Unit-type body, with anti-
 corrosion treatment
 Wheelbase: 116 ins.
 Track: front, 59.4 ins.,
 rear, 57.5 ins.
 Overall length: 202 ins.
 Curb weight: 3440 lbs.
 (half-tank of gas)

Suspension

Front: Longitudinal torsion bar
 springs; independent non-
 parallel control arms, trailing
 torque strut; tubular shocks



WITH THE FULL PACKAGE INSTALLED, THE DODGE RAMCHARGER IS THE CLOSEST THING TO A RACE CAR TO EVER ROLL OFF AN ASSEMBLY LINE.