

MANUAL TRANSMISSION Ramcharger charges off in a match race against . . . .

. . . AUTOMATIC TRANSMISSION Ramcharger. Winner? The automatic, driven by Bill Golden.

# DODGE Ramcharger 426 Super/Stock Automatic

*Consistent and dependable, the push-button transmission is finding its place in the sun*



**C** LIMB INTO THE driver's seat, settle back, punch the "D" button and stab the throttle. Presto, a 13-sec. standing 1/4-mile with a trap speed of 110 mph!

Unbelievable? Not really, when you consider the package—426-cu. in. engine, 3200-lb. car, 4.56:1 rear axle and drag (slick) tires; almost any well-tuned 400-bhp manual shift Super Stock could equal or beat it on a good day. But when it's done with an automatic-transmission car—selecting its own shift points at that—the feat becomes almost incredible.

Such is the new Dodge Ramcharger package, a potent base for any drag strip enthusiast who wants to compete for Stock Eliminator trophies. Although the buyer has the option of heavy duty manual or automatic transmissions, the latter will undoubtedly prove the more popular. In the hot-and-heavy, run-after-run pressure of big meets, the automatic has emerged as a dependable, consistent component highly respected by the "stick" boys.

Automatics were once the bane of the performance-minded buyer. Their sluggish acceleration represented the very antithesis of what he expected from his car. Reaction to these "slush pumps" probably provided added im-

petus to the 4-speed, floor-shift movement now at the height of popularity.

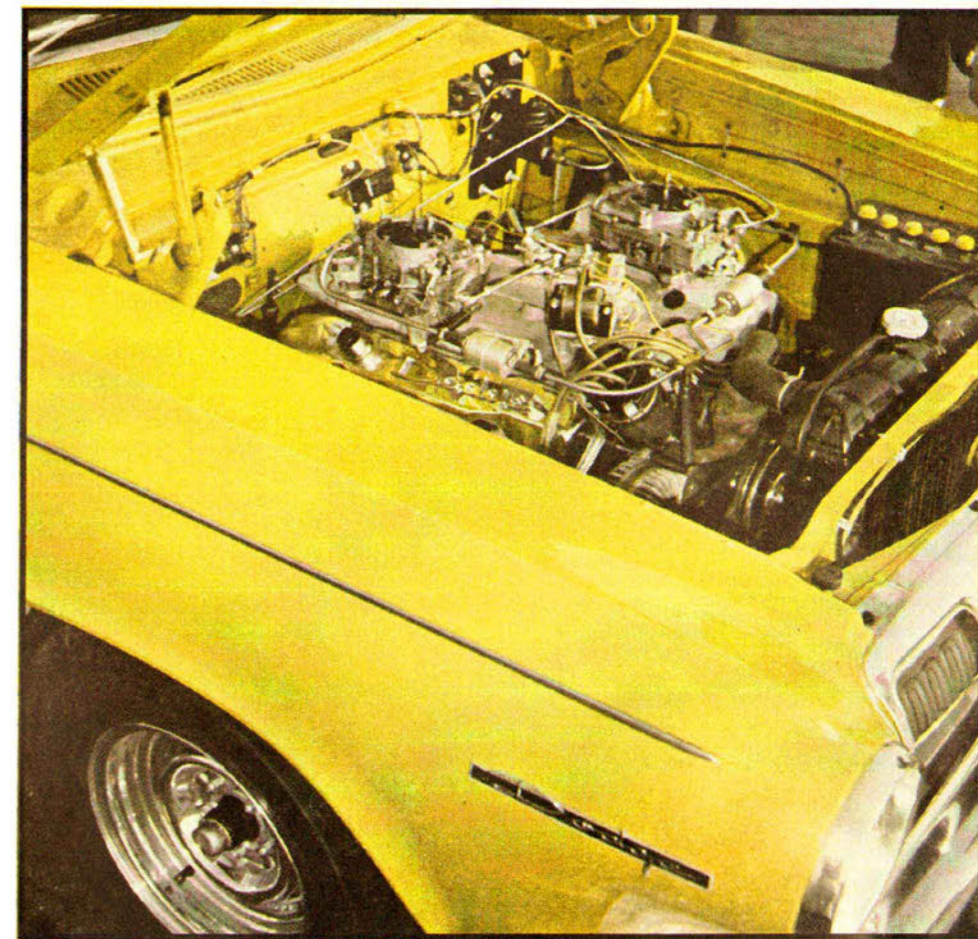
Indeed, early automatics were wasteful of power and dull in performance. The search by automotive engineers for better performance carried many auto makers into the manufacture of some pretty exotic and complicated units (see Transmission Controversy, page 18). Continuing development by virtually all manufacturers of automatics, however, has brought them to a considerably higher level of performance.

The Chrysler Corporation has been a leader in this development and its automatic transmissions have come a long way from the original Fluid Drive (a fluid clutch between the engine and a 3-speed transmission) of 1938. The current TorqueFlite is considered among the best transmissions on the market today but has been around since 1956 when Chrysler introduced it for its big V-8s and found it strong enough even for the hot 300-series.

When the Chrysler-Plymouth and Dodge divisions designed their compact cars for introduction in 1959, they also redesigned their automatics to get more satisfactory performance from the smaller engines. Identical in many ways to the big TorqueFlite, these featured a torque converter plus

PUSH-BUTTON racing requires watchful eye on tachometer and a steady finger on the buttons.

RAMCHARGER ENGINE is 426-cu. in. variation of Dodge V-8, produces 425 bhp at 5600 rpm.





## DODGE Ramcharger Automatic

3-speed planetary transmission in a die-cast aluminum case. In 1960, Chrysler Corporation completely replaced the PowerFlite with the redesigned TorqueFlite. The new 8-cyl. model followed the same pattern, utilized the

same elements and many of the same components and fit every engine from 318 to 413 cu. in. With its die-cast aluminum casing (adopted in 1962), it now weighs 170 lb., some 60 lb. less than its predecessor.

A further variation of this "Torque-Flite Eight" was consigned for truck use, and this "beefed up" unit is the one utilized for the Dodge Ramcharger and Plymouth Super Stock packages, along with the 300-J Chrysler. Although pretty much the same as the standard, it has a different governor to give shifts at a much higher rpm (5600 vs. 4200 normally) under wide-open throttle conditions, a higher stall speed (1900 rpm) of the converter to better match the engine characteristics. All transmissions have the same gear ratios: 2.45—1st, 1.45—2nd, with a

2.2:1 maximum torque multiplication.

This transmission has worked out so well behind the big Chrysler Corporation engines that it has revitalized the heretofore neglected automatic class of drag racing, and provided some unexpectedly hot competition for the reigning kingpins of the drag strips, the Pontiacs and Chevrolets.

In fact, Super/Stock Automatic (S/SA, to use the new National Hot Rod Association classification) performance has increased so rapidly that these cars are now within fractions of seconds of the best times posted by manual transmission cars. On many drag strips the S/SAs are turning out to be Stock Eliminators because of their consistently strong and trouble-free performance.

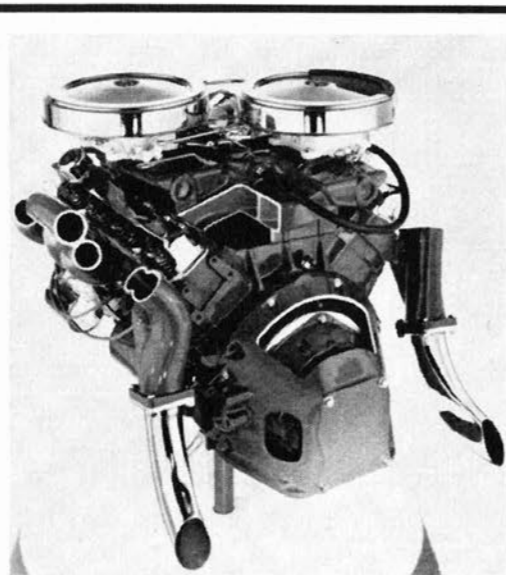
The automatic, of course, is less at-

tractive for other forms of automotive competition—maximum acceleration and quick gear changing being of much less import for round-track racing, which is pretty much a high-gear-only proposition.

To sample the performance available in one of these hot automatics, we spent an afternoon at a drag strip with a pair of Dodge Ramchargers, one equipped with manual and the other with TorqueFlite. Both cars were in process of being prepared for the Winternationals drag racing championship meeting by the Dragmaster Company of Carlsbad, Calif. Although obviously better than just-out-of-the-showroom, the cars were not yet at the peak expected by Jim Nelson and Bill "Maverick" Golden, as readying a racing car is a long, evolutionary sort of business.

Nelson's car was equipped with the Chrysler Corporation's Heavy Duty manual transmission (ratios 2.10—1st, 1.45—2nd), Golden's the HD automatic. Both had 4.56:1 rear axles and 9.00-14 "drag slick" tires. Nelson and Golden were frankly seeking the answer to "which is quicker—manual or automatic?"

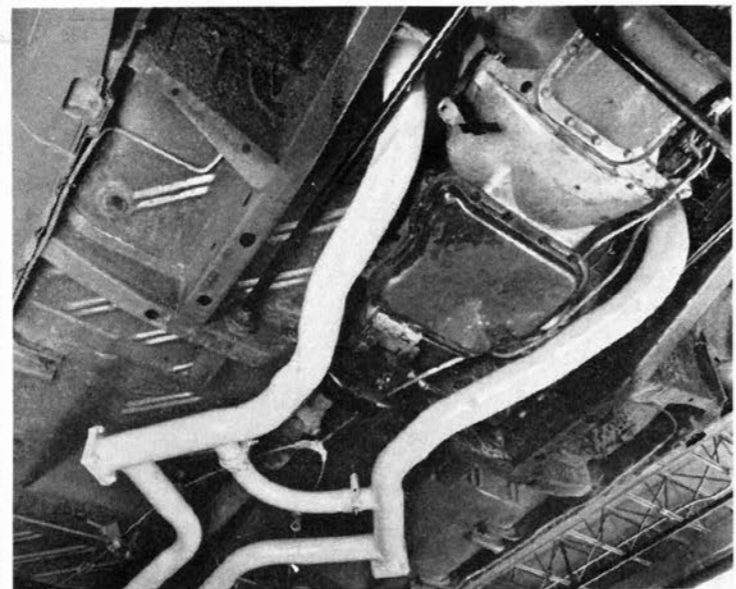
Golden, who likes to go by the racing nickname of "Maverick," had gone furthest with preparation of his car. His engine, virtually untouched from its factory state, had outwardly been equipped with Mallory Mini-Mag ignition for hotter, better sparks at high rpm, and a set of Horse Power Engineering headers, which, although they pretty much follow the factory design, are considerably lighter, being fabricated of tubing rather than cast



EXTRA INSTRUMENTS and foot-fitting throttle pedal were added to Golden's car. Instruments are tachometer, oil pressure and water temperature.

DISPLAY ENGINE shows size of manifolding; note generous dimension of stock headers and intake.

MODIFIED HEADERS vs. factory system: modified (left, below) dump out behind front wheel, factory type extend back under car.





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iron, and have much shorter dump pipes—they emerge behind the front wheels rather than midway under the

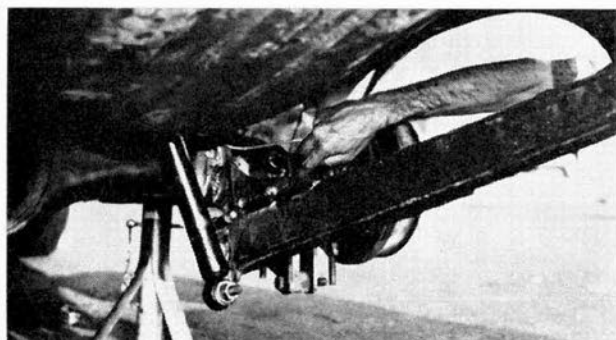
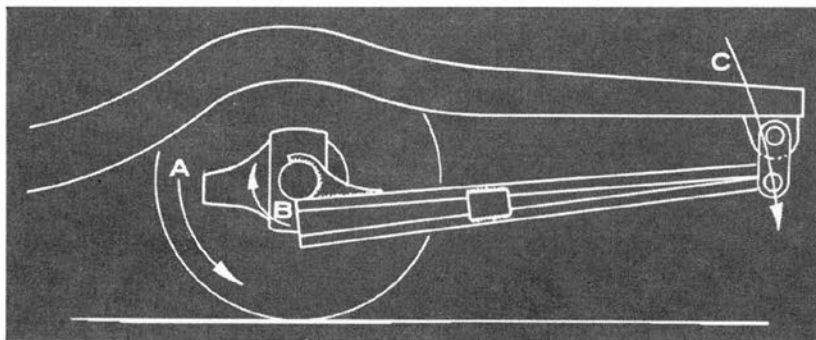
car. (For a complete rundown on the Chrysler Corporation 426-cu. in. engine, refer to *Car Life*, January.)

Also, in the interest of lightening the Maverick car, Golden has removed all insulation, asphalt deadener and padding. His car, the cheapest, lightest model in the big Dodge lineup, weighs a maximum of 3218 lb., with the minimum amount of fuel in the tank. This, with the rated 425 bhp, figures out to a spectacular 7.6 lb. per bhp (without driver) as compared with the 8.55 lb./bhp of the Chevrolet 409 SS/S *Car Life* tested (September, 1962).

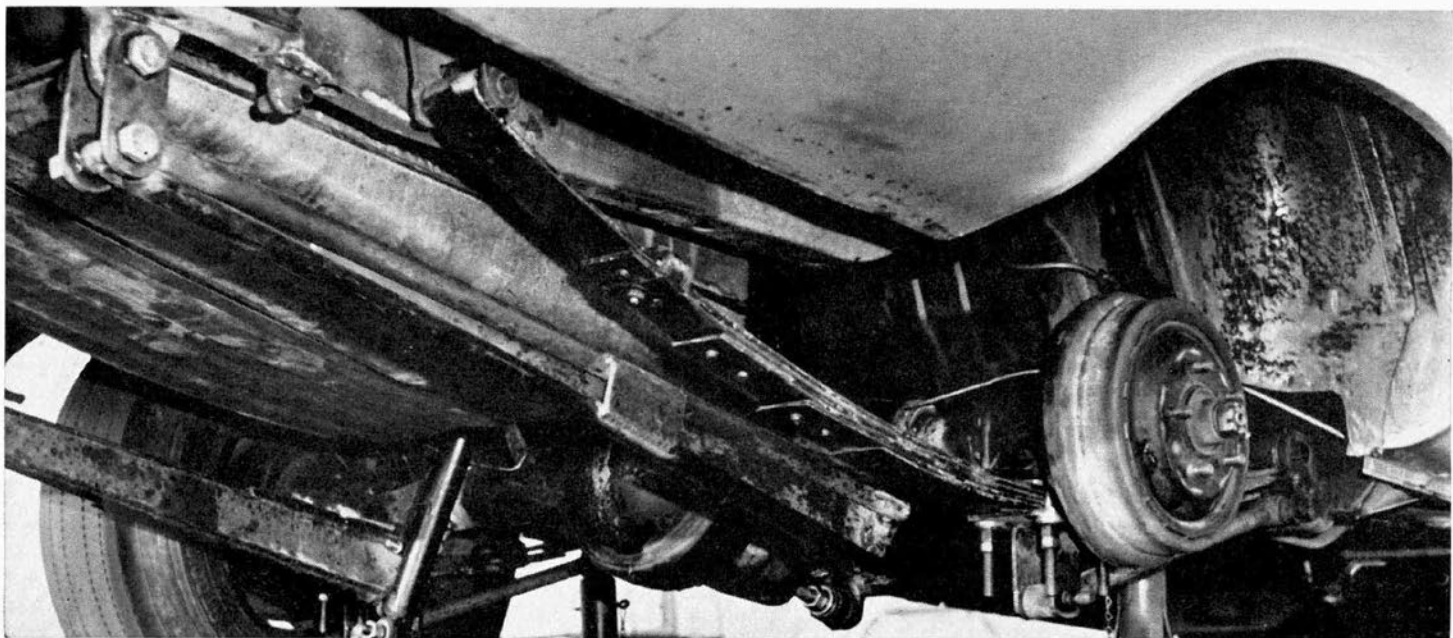
Although not quite as fast as that 409, Maverick's Ramcharger has yet to reach its level of refinement. How-

ever, Golden holds the national record (elapsed time) for S/SA at 12.5 sec. and at the Nationals at Indianapolis last summer, with a 413-cu. in. Ramcharger, posted the fastest trap speed (114.9 mph) for the class so there is reasonable certainty that this new, more powerful package will eclipse these marks. Already, in unofficially timed practices, he has turned better than 115 mph and 12.4 sec.

Rather than let the transmission shift itself under racing conditions, Golden prefers to select his own up-shift points. The all-automatic system shifts when the engine reaches 5300 to 5600 rpm, which drops engine speed back down to 3300 rpm in 2nd, and to



DRIVING TORQUE (A) causes reaction on axle housing (B) which is utilized by special arms to pull down rear of car (C) to achieve "weight transfer."



## TORQUE & TRANSFER

IN THE INTEREST of improved traction, Golden has considerably altered the rear suspension. Leaf springs, which provide both springing and a means of rear axle location on the stock Dodge, are relieved of all duties but springing. The usual torque-reaction links trail back to the spring/axle mounting, but these appear to be redundant, as Golden has added long, trailing reaction arms that really do all of the work. These arms are welded to the axle tubes, and when the axle housing rotates backward, in reaction to the torque that drives the wheels, the ends of Golden's reaction arms

pull down on shackles at the ends of the frame rails and drop the back of the car. The theory is that this transfers a part of the car's weight to the rear and improves traction. To get the maximum down-pull, the axle tubes are clamped in spring hangers that allow the tubes to rotate freely without having to wind-up the leaf springs. This is accomplished by machine-turning the ends of the axle tubes clean, and then holding the axles in split collars, which are clamped on the axle tubes by the standard inverted U-bolts. Golden's car did have much better than usual "bite."

3800 in 3rd. With the torque peak at 4400, it is advisable to have somewhat higher-rpm shifts; therefore Golden waits until the tachometer indicates at least 5800 before he pushes the button for the next gear. Thus the engine is turning 6000 or slightly more by the time the shift is completed and there is less power dropoff (at 6000, the drop would be to 3600 in 2nd and to 4100 in 3rd; at 6500 rpm, to 3800 rpm in 2nd and 4500 in 3rd). With the 4.56:1 final gearing, the engine is turning 6500 rpm at 115 mph, which would seem to be just about right. There are both 4.89 and 4.10 axle ratios available, from Dodge, if desired.

Performance of the manual shift car was virtually the same as that of the automatic, except in the all-important first few yards of the drag strip. Here, the automatic could edge ahead nine starts out of 10.

The reason, of course, is that the automatic acts virtually like a 4-speed. It has a starting ratio of 24.6:1 (axle x gears, x torque converter) which diminishes to 11.2 as converter speed climbs and locks into a virtually solid coupling. The manual's starting ratio was 9.65:1 (axle x gears) but its 2nd gear ratio of 6.61:1 was the same as the automatic's 2nd. Providing traction can be maintained, the automatic obviously gets the jump on the 3-speed manual transmission.

Traction is the big "if" however, and despite a lot of experimentation by many drag racers, it remains an unsolved problem. Golden had added long links between rear axle and chassis (see diagram) in addition to the more usual Traction Master-type torque arms and his car did have a much better than usual "bite."

In match races, which literally prove

matters one way or the other, this particular automatic was more often than not the winner. Occasionally Nelson, driving the manual, could catch a start just a split-second before Golden because of slightly better throttle-to-rear wheel response. As drag racing devotees know, this jump spells the difference at the finish line. But most of the time the automatic could beat the 3-speed manual. (What would happen if Dodge used the Borg-Warner 4-speed? We're not sure but what it would even things up.) Even when Nelson and Golden traded cars, the situation persisted.

Our test runs turned up a best run for the automatic of 12.5 sec. and 114.35 mph (Golden driving) and a best for the manual of 12.75 and 114.79 (Nelson driving). Nelson, a "sticker" from the Year One, is just about convinced. ■

## CAR LIFE ROAD TEST



### 1963 DODGE Ramcharger 2-door sedan

#### SPECIFICATIONS

|                            |              |
|----------------------------|--------------|
| List price                 | \$2352       |
| Price, as tested           | 3037         |
| Curb weight, lb.           | 3218         |
| Test weight                | 3368         |
| distribution, %            | 51/49        |
| Tire size                  | 7.50/9.00-14 |
| Tire capacity, lb @ 24 psi | 4880         |
| Brake swept area           | 314.2        |
| Engine type                | V-8, ohv     |
| Bore & stroke              | 4.25 x 3.75  |
| Displacement, cu in.       | 426          |
| Compression ratio          | 13.5         |
| Carburetion                | 2 x 4        |
| Bhp @ rpm                  | 425 @ 5600   |
| equivalent mph             | 99           |
| Torque, lb-ft.             | 480 @ 4400   |
| equivalent mph             | 78           |

#### EXTRA-COST OPTIONS

Ramcharger package, seat belts, deluxe steering wheel, glareproof mirror, tinted windshield, windshield washer, antifreeze.

#### DIMENSIONS

|                          |           |
|--------------------------|-----------|
| Wheelbase, in.           | 119.0     |
| Tread, f and r           | 59.5/57.5 |
| Over-all length, in.     | 208.1     |
| width                    | 76.5      |
| height                   | 54.1      |
| equivalent vol, cu ft.   | 500       |
| Frontal area, sq ft.     | 23.0      |
| Ground clearance, in.    | 5.3       |
| Steering ratio, o/a      | 28.7      |
| turns, lock to lock      | 5.3       |
| turning circle, ft.      | 41.7      |
| Hip room, front          | 60.8      |
| Hip room, rear           | 61.0      |
| Pedal to seat back, max. | 41.0      |
| Floor to ground          | 12.0      |
| Luggage vol, cu ft.      | 16.1      |
| Fuel tank capacity, gal. | 20.0      |

#### GEAR RATIOS

|                     |      |
|---------------------|------|
| 3rd (1.00), overall | 4.56 |
| 2nd (1.45)          | 6.51 |
| 1st (2.45)          | 11.2 |
| 1st (2.45 x 2.20)   | 24.6 |

#### PERFORMANCE

|                          |     |
|--------------------------|-----|
| Top speed (6500), mph    | 115 |
| Shifts, rpm-mph (forced) |     |
| 3rd ( )                  |     |
| 2nd (6000)               | 73  |
| 1st (6000)               | 43  |

#### ACCELERATION

|                   |      |
|-------------------|------|
| 0-30 mph, sec.    | 1.7  |
| 0-40              | 2.4  |
| 0-50              | 3.3  |
| 0-60              | 4.2  |
| 0-70              | 5.2  |
| 0-80              | 6.7  |
| 0-100             | 9.8  |
| Standing 1/4 mile | 12.5 |
| speed at end      | 114  |

#### FUEL CONSUMPTION

|                   |      |
|-------------------|------|
| Normal range, mpg | n.a. |
|-------------------|------|

#### SPEEDOMETER ERROR

|                |      |
|----------------|------|
| 30 mph, actual | 30.0 |
| 60 mph         | 60.0 |
| 90 mph         | 88.5 |

#### CALCULATED DATA

|                        |       |
|------------------------|-------|
| Lb/hp (test wt)        | 7.9   |
| Cu ft/ton mile         | 249.3 |
| Mph/1000 rpm           | 17.7  |
| Engine revs/mile       | 3400  |
| Piston travel, ft/mile | 2125  |
| Car Life wear index    | 72.3  |

#### PULLING POWER

|                                       |           |
|---------------------------------------|-----------|
| 70 mph, maximum gradient, % off scale |           |
| 50                                    | off scale |
| 30                                    | off scale |
| Total drag at 60 mph, lb.             | 140       |

