

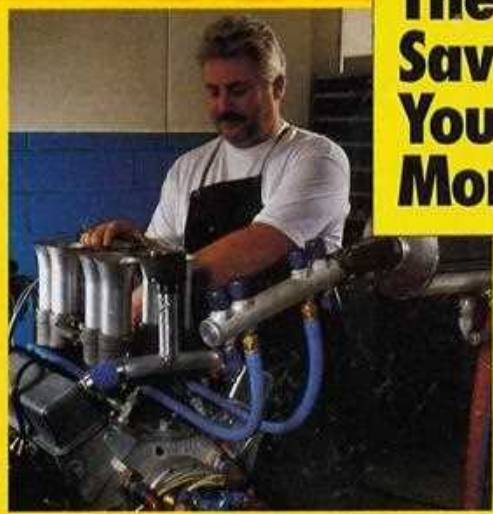
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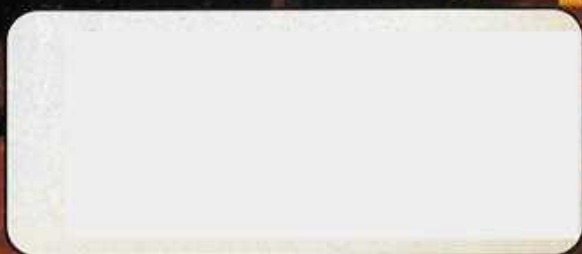
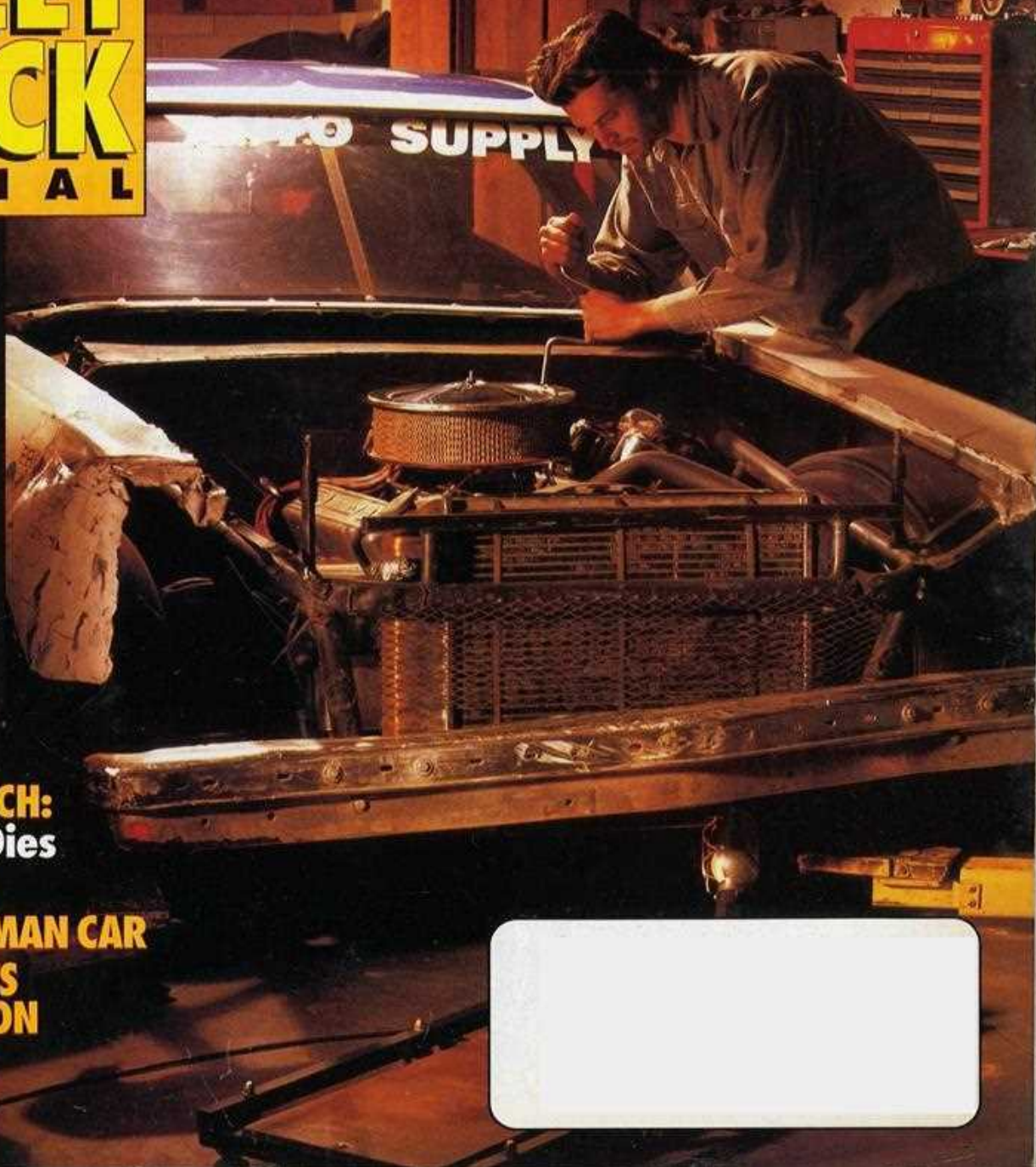
April 1992
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EVERY RACER'S DREAM

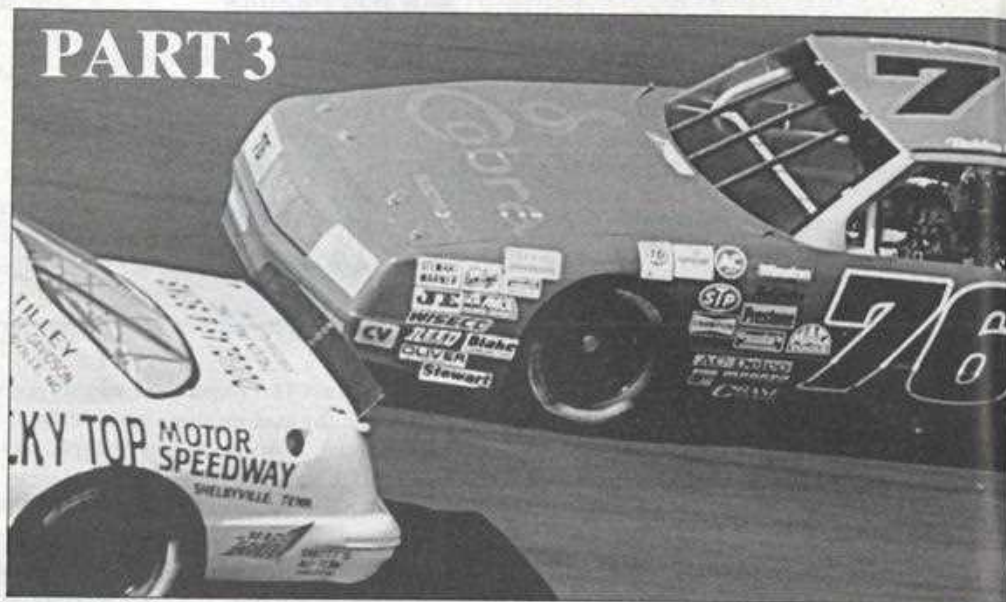
The drivetrain for the Cobra Electronics NASCAR Sportsman car goes together.

By **WILL HANDZEL**

Fulfilling a dream takes time and effort. Building a car to race on big tracks like Charlotte, Pocono, and Richmond is what almost every local racer daydreams about as he watches professional racing on TV. In previous issues, we have explained how to do just that. We have shown how to build a NASCAR Sportsman car, starting with the interior and suspension. The drivetrain will be discussed in this issue.

Eight tireless students in a 20-day advanced fabrication class at the Motor Sports Training Center in Mooresville, North Carolina, have been hard at work assembling this car. These classes are an excellent opportunity to learn fabrication methods from people who

PART 3



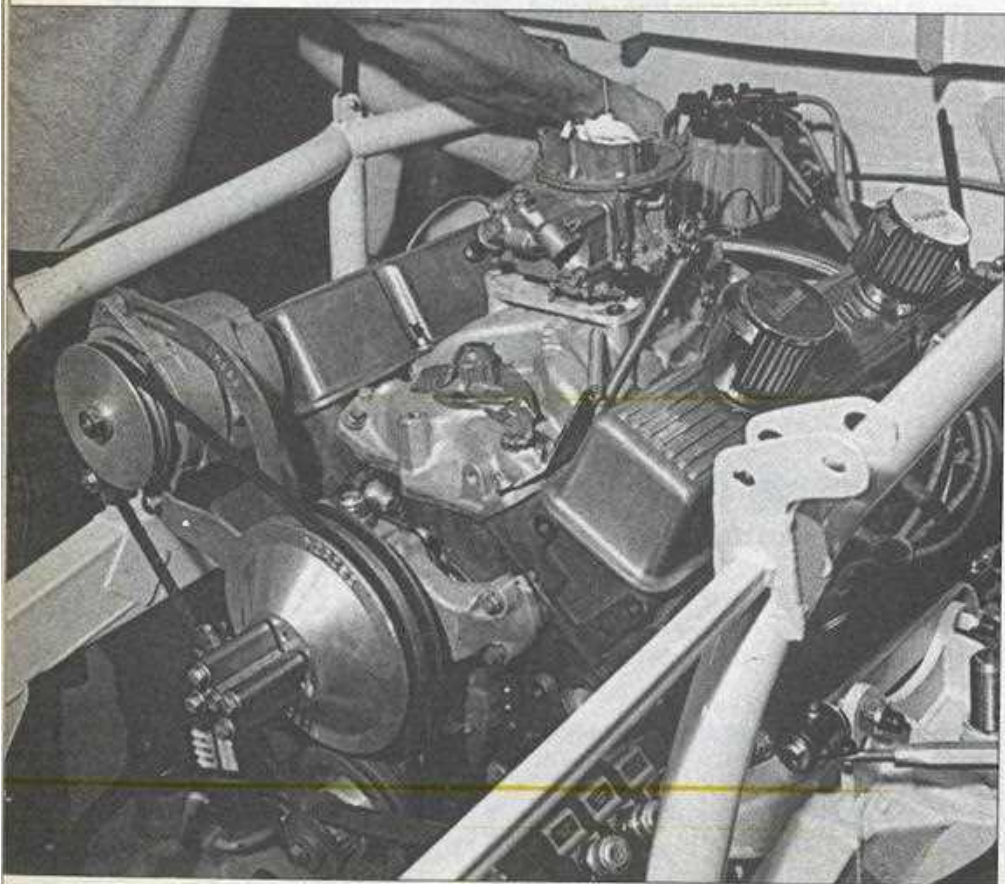
do it for a living in big-time racing.

■ DRIVETRAIN RULES

As with the body, there are many rules that dictate what components can be used in the drivetrain of a Sportsman car and where they can be placed on the cars. The rules governing the drivetrain cover about eight pages in the NASCAR rulebook so we don't have space to explain them here. Suffice it to say that the rules are designed to ensure a high amount of safety, simplicity, and a minimum of cost to the racer.

To keep the cost down, cast-iron blocks and heads must be used with flat-top pistons, Holley two-barrel carbs, flat-tappet cams, steel connecting rods, stock-type steel clutch bell-housings, stock-type manual transmissions, and a steel one-piece driveshaft. No porting or polishing of the engine

JAE Racing Engines of Bessemer City, North Carolina, built the two-barrel, flat-top piston engine with a host of top-quality parts. This engine will be the subject of an in-depth story in next month's issue of CIRCLE TRACK.



internals is allowed. A quick-change rearend is required because it allows easy gear changes. The combustion chambers must be no smaller than 62cc and must run a head gasket of 0.117 inches maximum thickness.

Most competitors in this class believe the rules are good at keeping the racing cost down and safety the best it can be. This is good because the class gives rookies seat time on the big tracks and keeps them out of trouble while they are doing it.



■ WHAT THIS CAR USES

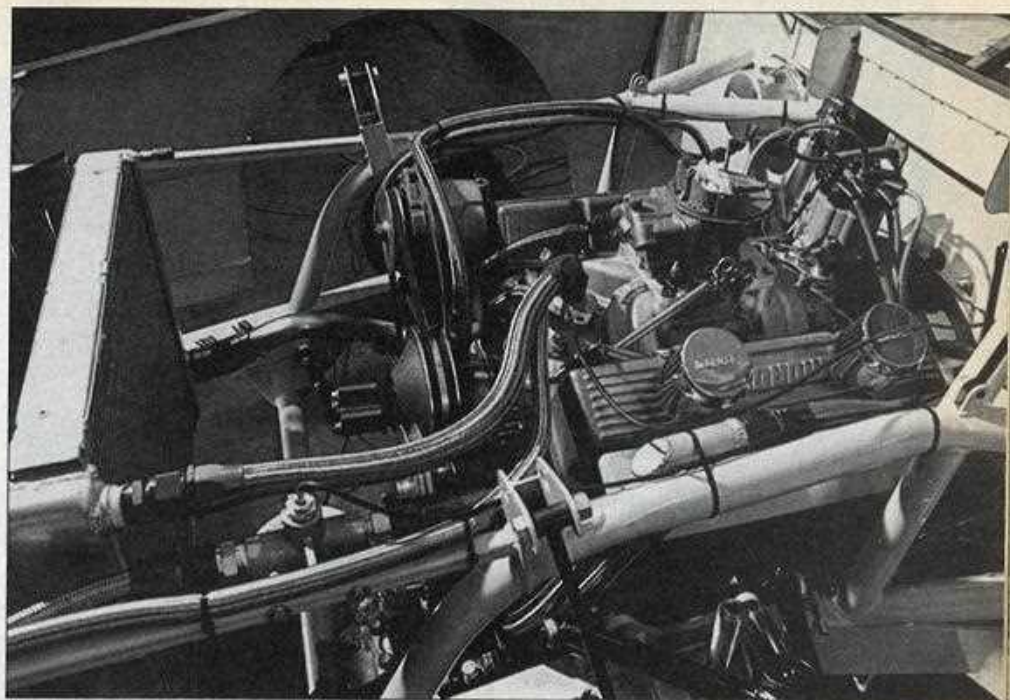
The rearend on the Cobra Electronics Sportsman is from Speedway Engineering in Sylmar, California. Extra gear sets were ordered so that the car could be completely dialed in once we got to the track.

Connecting the rearend to the transmission is a driveshaft constructed at Tex Racing Enterprises out of 3/4-inch-diameter thin-wall steel tubing. A large diameter tube like this has good torsional strength and also resists deflecting along its length under use.

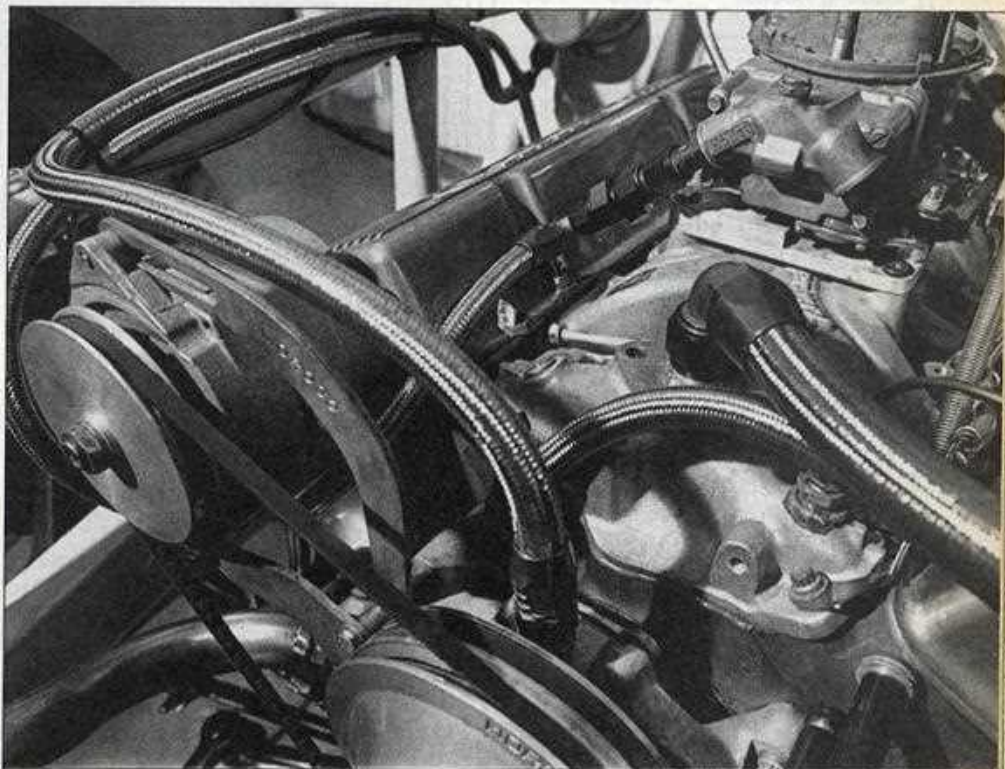
The yoke for the four-speed transmission, and the transmission itself, are also Tex Racing pieces. The transmission, which is supported by a mount that came from Moroso, bolts to a steel bellhousing.

A Hurst shifter selects the gears while the power is delivered from the engine to the trans through a Quarter Master small-diameter, three-disc clutch that's engaged or disengaged by one of their hydraulic throwout bearings. A stock-diameter flywheel is spun by a starter from Phil's Starter & Alternator in Cherryville, North Carolina.

The 358-cubic-inch Chevy engine in this car was assembled by JAE Racing



A Griffin radiator is attached to the 358 Chevy with a Stewart Stage III water pump pushing the water. Aeroquip hose connects the dry-sump oiling, cooling, and the fuel systems, and it's also used to hook up the Auto Meter gauges to monitor the pulse of the engine.



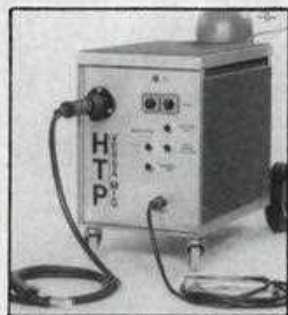
Moroso and Del West pulleys were used to get the alternator, water pump, and crank spinning together. Moroso equipment, such as the alternator bracket, throttle spring bracket, and other important, yet small pieces, were used throughout the engine bay.

Engines in Bessemer City, North Carolina, with components from CV Products, Chevrolet (through Richard Childress Racing), Horacio Ferrea, Reed, RACE Engineering, Oliver, Crane, LA Billet, Hedman Hedders, Stewart, Edelbrock, MSD, Holley (prepped by Blake Fuel Systems), Moroso, K & N, Champion, Vandervell, and American Precision Industries. The engine setup will be fully covered in an upcoming

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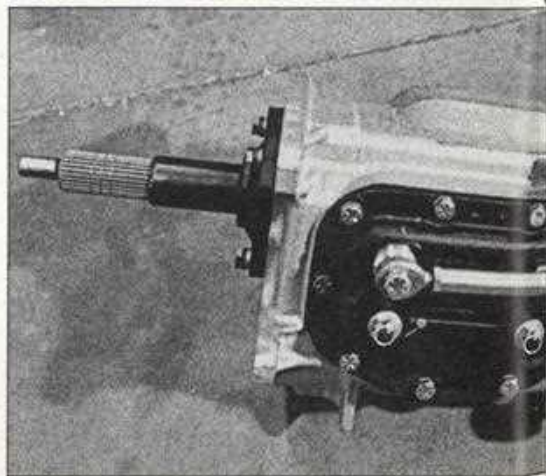


To protect the driver, a fuel gauge isolator from Auto Meter was installed in the engine bay. This way, pressurized fuel is not routed all the way to the gauge (in the driver's compartment), reducing the chance of the driver getting hurt in a fire.

story so we won't get into the particulars here.

To get the dry-sump, cooling system, and fuel system plumbed, Aeroquip braided-steel hose and fittings were used. Anybody who has plumbed a car knows how difficult it is to determine what adapters, size and length of hose, and fittings are needed. The students did such a good job putting all the fluid systems together on this car that Aeroquip has decided to display it at their home facility for a while! An oil cooler was plumbed into the dry-sump system to maintain oil temperature at 240°F. A Stock Car Products dry-sump pump sucked and pumped the oil through the engine and combination Oberg/Butler-Built oil reservoir.

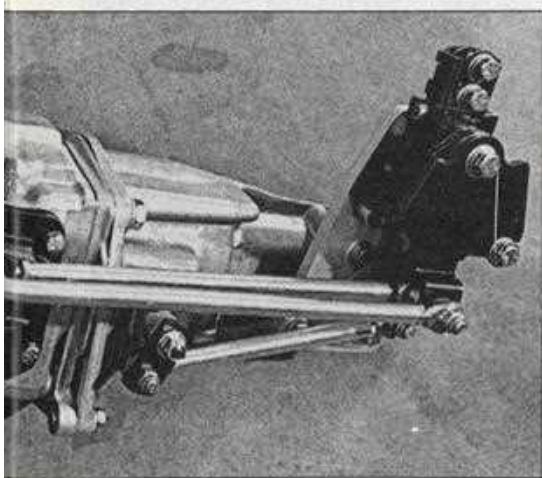
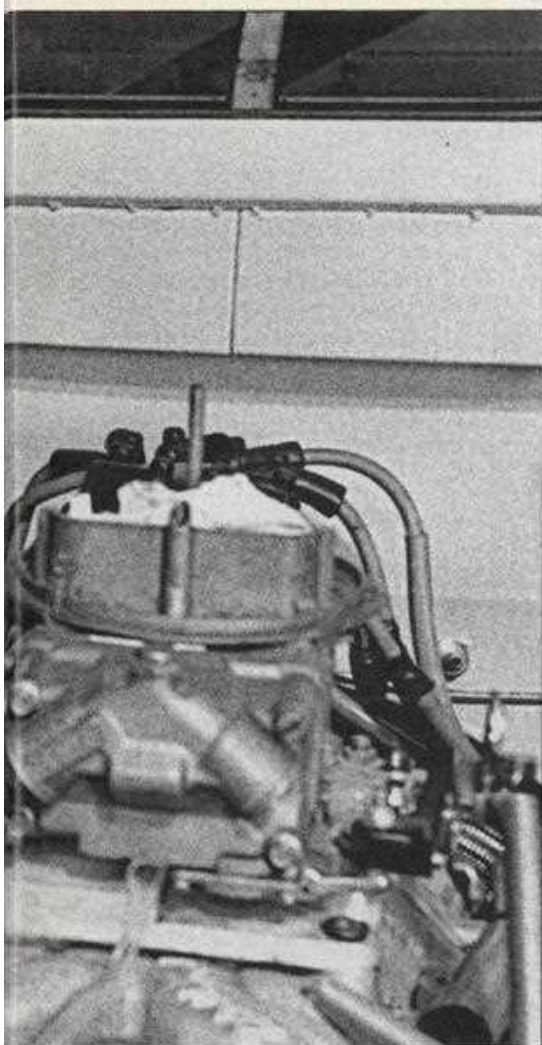
A Griffin four-core aluminum radiator helps keep everything cool and a ButlerBuilt power steering pump



makes turning easy through the CJR steering box. The alternator is a Phil's Starter & Alternator piece that was wired into the electrical system with QuickCar products.

■ HANDS ON EXPERIENCE

The students are intimately involved in every facet of assembling this car. They assembled the quick-change



Accepting power from a Quarter Master 5-inch diameter, three-disc clutch was a Tex Racing-prepared four-speed transmission with a Hurst Competition Plus shifter bolted up. This trans is connected to a Speedway Engineering quick-change through a thin-wall, large-diameter driveshaft constructed by Tex Racing.

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3.10	391.84	3.89	181.60	5.29	250.40
3.15	250.40	4.00	250.40	5.43	181.60
3.25	250.40	4.11	181.60	5.50	250.40
3.33	250.40	4.22	250.40	5.67	181.60
3.40	250.40	4.30	391.84	5.83	192.00
3.50	181.60	4.33	181.60	6.00	192.00
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EVERY RACER'S DREAM

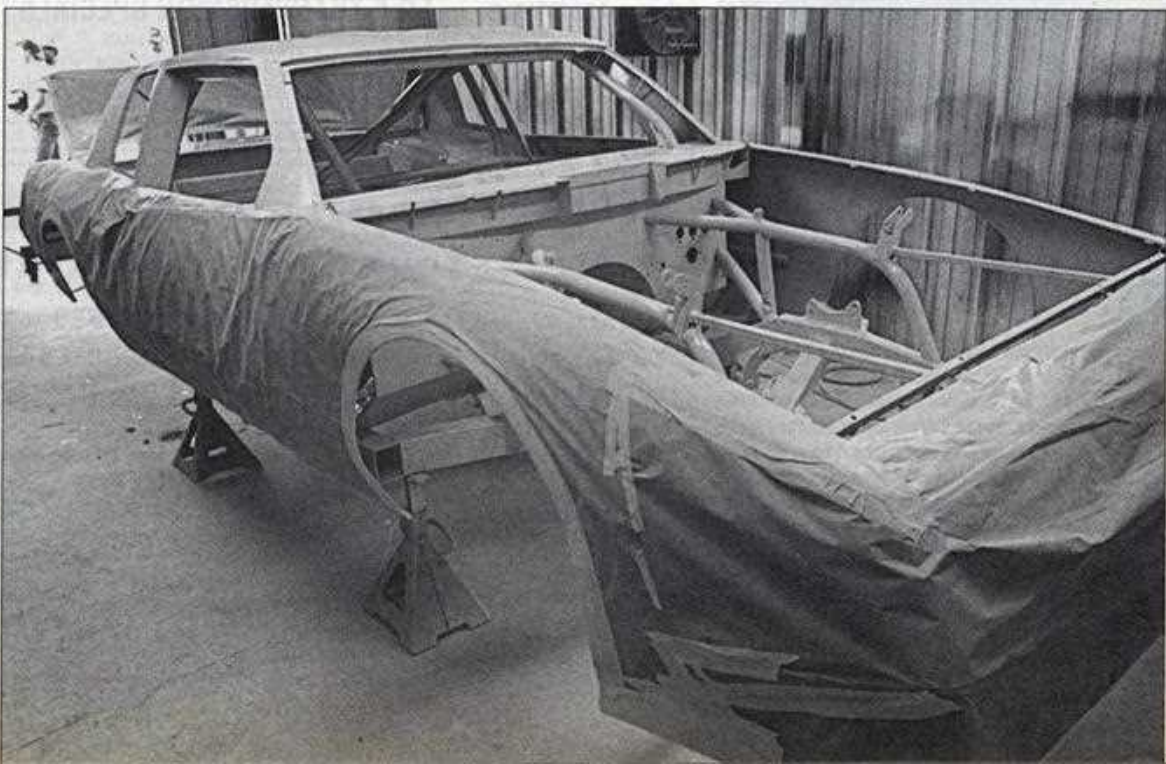
(when it showed up), bolted the clutch, bellhousing, and trans to the engine, trial-fitted the pieces in the car, and constructed the mounting points. All the pieces in the drivetrain were put together and installed by the students—who had almost no prior experience!

Aided by excellent instructors and industry experts, these students learned every facet of assembling a competitive race car. Next month, the car will be finish-assembled and tested at the track, so don't miss it! **O**



Speedway Engineering, of Sylmar, California, supplied one of its quick-change rear ends that's equipped with a Wilwood disc brake system.

With the interior, suspension, and drivetrain initially fitted, the car was dismantled completely, and the interior, trunk, underside, and engine bay were painted silver. The paper is covering beautifully massaged body panels that have very little body filler in them. Sheetmetal manipulation is one of MSTC's specialties and the finished product will show it.



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