PACKAGED POWER

Part II: Development of the American High-Performance Automobile

BY ROGER HUNTINGTON

THIS IS THE day of the high-performance "package," a package of special high-performance engine, chassis equipment and body trim—installed on a more or less standard production model. The Pontiac GTO is a prime example.

The package is something new in American car merchandising. In the early days, high-performance cars were designed from the ground up, with few components interchangeable with standard models. In the 1950s, in the lush days of the horsepower race and a growing youth market, enthusiasts designed their own high-performance cars by selecting from long lists of optional engines and equipment. The Thunderbird and Corvette engines were available, respectively, for 1957 Fords and Chevrolets. This was the beginning for optional 4-speed transmissions, heavy-duty suspension systems, special brakes and bucket seat interiors.

Today Detroit engineers design the high-performance packages for the customers. This probably is a better way because it eliminates the occasional monstrosity that results from a radical mismatch of equipment. And, the customer now receives special identifying body trim with his package that lets the world know he has something special. Image, as well as performance, is on the market today. In the 1950s only a tiny fender emblem indicated a big engine. Finally, a modern high-performance package includes chassis, brake and tire equipment to better match the performance potential of the engine. This is more nearly true in 1967 than ever before. The days of ordering a 400-bhp engine with a standard chassis are gone for good.

Things are much better for the high-performance car fan today than ever before. The 1967 model crop has much more to offer than ever before seen. The traffic safety controversy today probably has pushed more safety equipment into cars than they might have had, but they still go well.

Rumors have said for months that GM divisions would de-tune their high-performance options slightly for '67, in line with the recent heavy pressure from Washington for safer cars and in anticipation of new laws within the next two years that will restrict horsepower. The rumors were true. No GM 1967 passenger models, except the Corvette, offer multiple carburetion, solid-lifter camshafts or weight/-power ratios below 10 lb./bhp.

These new front-office restrictions have taken some interesting high-performance combinations out of the 1967 GM catalogs, including the 425-bhp/427-cu. in. engine in the big Chevrolet, the 375-bhp/396-cu. in. engine in the Chevelle, the 350-bhp Corvette 327-cu. in. engine option for the Chevy II, and the triple carburetion options for Pontiac GTOs and Oldsmobile 4-4-2s. These engine options that previously used the triples now use the Rochester Quadrajet, with 9.4 sq. in., which results in a reduction of 5-10 bhp. The top 427 and 396 engine options for the big Chevrolets and Chevelles, respectively, now use the small-valve heads, hydraulic cams and small-port intake manifolds with smaller 4-barrel carburetors. Top ratings are 390 and 350 bhp, respectively. The 275-bhp 327 engine now is the top option in the Chevy II.

On the other hand, in GM's '67 Supercar camp, Chevelle SS 396, Buick Gran Sport 400, Pontiac GTO and Olds 4-4-2 offer front power disc brakes this year. They are of either Kelsey-Hayes or Delco Moraine manufacture and feature the usual four hydraulic pistons, ventilated discs and vacuum boosters. The disc option was badly needed for these cars, as the original 9.5-in. drum brakes on the GM A-body compacts were barely up to the job with 350-bhp engines. Early road tests show excellent stopping and fade performance with these new GM disc brakes.

All GM Supercars now are available with the long-needed 3-speed Turbo Hydra-Matic transmission, with special strengthening, high shift points and stall speed, and optional console shift lever. The GM divisions have been trying to foist off the puny Buick-built 2-speed torque converter on Supercar buyers who want 2-pedal driving. The 2-speed unit did nothing more than choke off the performance of the free-breathing 400-cu. in. engines. The new 3-speed Turbo Hydra-Matic solves all that. In fact, it is becoming clear that today's Supercar, with a good 3-speed converter, actually is quicker off the line, up to 40-50 mph, than a comparable model with foot operated clutch and 4-speed manual gearbox. The automatic has more initial breakaway thrust and the fluid-cushioned application of power to the rear wheels prevents bogging and tire burning. Anyone can be consistent with an automatic, a very important factor at the "Stoplight Grand Prix."

GM also is doing something about tires for high-performance cars. In the past GM engineers have been satisfied with tires that were safe for sustained speeds of 125 mph, but gave no better cornering response than standard tires. For 1967, all GM Supercars offer Firestone Super Sport Wide Oval tires as factory-installed optional equipment. These tires have a very stiff, low-profile casing that gives nearly 2 in. more tread width and 23% more rubber area on the road. They provide much better traction, cornering ability, response and high-speed stability than other conventional American tires. They improve the handling of any car, as compared with standard tires. GM should have made Wide Ovals standard equipment on its 1967 Supercars—as Ford has done.

THE INDIVIDUAL GM Supercar models offer some interesting new performance equipment for 1967. The Buick GS 400 has a new 400-cu. in. engine that features latest GM know-how. Most important, it has much larger ports and valves than had the old "pentroof" V-8, so the high-rpm performance should be noticeably better. Buick rates it at 340 bhp. Pontiac also has some new cylinder heads for its 12-year-old 400-cu. in. block. These have much bigger ports and valves, with a steeper valve angle for a more streamlined port shape. Engineers say the heads alone are good for a 30-bhp increase. Of course, the Pontiac people aren't re-rating their engines accordingly, as that would violate the front-office 10-lb./bhp policy. Enthusiasts, however, can get the extra breathing as a bonus. The new heads are standard on all 1967 GTOs and 428-cu. in. engines in the big cars.

Pontiac and Olds offer factory-installed ram-air installations for 1967

OLDSMOBILE'S 4-4-2 is the embodiment of the automotive package comprised of high-performance engine, special transmission, to-order rear axle gearing and heavy-duty suspension attractively wrapped in special trim.

THIS POWERFUL packet is based on a standard production Dodge Coronet 2-door hardtop. Underneath is a 426-cu. in. hemispherical combustion chambered engine, TorqueFlite transmission and heavy-duty suspension for the enthusiast.

GTOs and 4-4-2s, hopefully for delivery by December or January. These duct installations bring cold ram air into the carburetor to increase bhp by 5-6% through delivery of a denser charge into the cylinders. The GTO system takes in air directly through a sealed hood scoop. The 4-4-2 setup rams the air in from forward grille openings through large flexible tubes to an air box around the carburetor. Both kits are intended mainly for drag racing and include special camshafts for hydraulic lifters and stiffer valve springs for 6000-rpm shift points. There's an abundance of horsepower here and the principle is just as effective on the street as on the strip. Both divisions rate the special ram-air engines at 360 bhp.

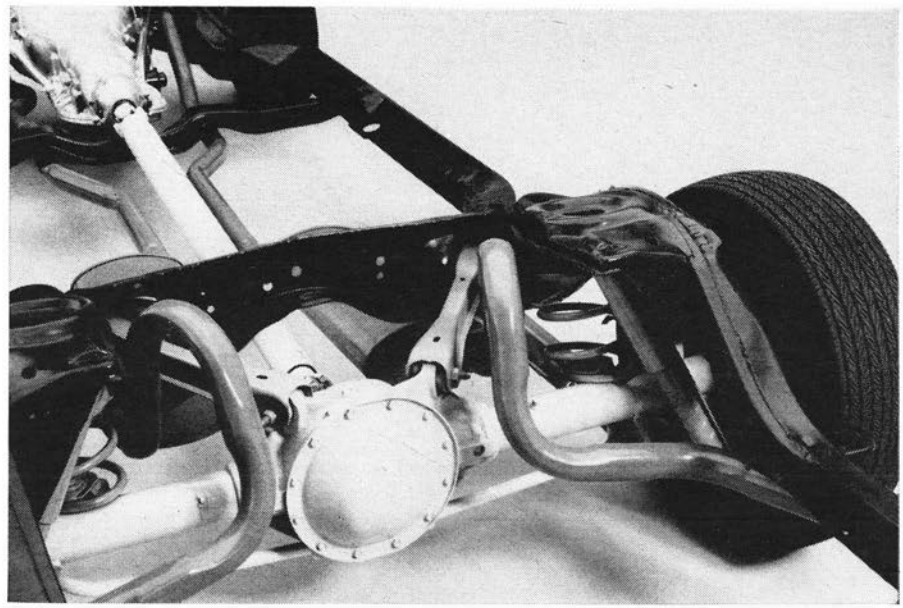
The various GM divisions offer a fair selection of optional gear ratios for their Supercars. The Buick GS 400, GTO and Olds 4-4-2 use axle ratios of 3.36 or 3.55 as standard, on various models, with 3.90 optional and 4.33 gearsets available for dealer installation. The GTO ram-air package offers the 4.33 gears as standard. The buyer can go a step farther with the Chevelle SS 396. Optional factory-installed ratios up to 4.88 are offered. All of the cars offer a choice of wide or close-ratio gears in Muncie 4-speed transmissions. Safety-minded GM remains in the Supercar picture.

FORD SUPERCARS are available in the Fairlane GT and Comet Cyclone GT lines and a high-performance 427 engine can be ordered with a Galaxie. However, the performance emphasis today has definitely shifted to the intermediate-size cars. The intermediates now have everything the big cars have, so why lug the extra 400 lb. of dead weight in a big car?

The news in the Ford Supercar picture for 1967 is that 425-bhp/427-cu. in. high-performance wedge engines are available as a regular production option. The 335-bhp/390-cu. in. engine was the strongest available in 1966. This gives Ford a model competitive with the fantastic Chrysler Corp. Street Hemi cars for the small market segment that insists on the very ultimate in performance for everyday street machines. Ford expects to sell approximately 5000 of this combination per year.

For the larger market segment that desires a little more than the 335-bhp 390 engine, but without the fussy, temperamental, fuel-devouring high-performance 427, a new "street 427" was scheduled for the option list. This has a slightly cooler camshaft for its hydraulic lifters and compression ratio of 10:1. It is said to be rated at 400 bhp with dual 4-barrel carburetors. It probably won't perform with the all-out Chrysler Street Hemis, but it should be strong enough to keep the Fairlanes and Comets ahead of the various GM Supercars. The rpm-limiting effect of the special camshaft for hydraulic lifters will make it possible to offer the engine with an automatic transmission and to offer it to the buyer under warranty. The 425-bhp solid-lifter 427s are sold only with 4-speed transmissions and the buyer is strictly on his own. No one is happy with this arrangement.

The high-performance 427 now is available in the Comet Cyclone GT and in standard Fairlanes, but not the GT. It is expected that the coming street 427 will be optional in all lines. The standard engine in the 1967 Fairlane GT now is the 289-cu. in./200-bhp, single 2-barrel carburetored en- ▶



THIS REAR axle, with higher capacity differential side bearings and larger diameter shafts for increased torque, is a 4-4-2 package part.

gine, instead of the 335-bhp 390 as in the past. Purchasers must now pay extra for the 390.

As this is written, front power disc brakes and Firestone Wide Oval tires are coming through as standard equipment on early 1967 Fairlane and Comet GTs. Ford is to be commended for taking the step to install special equipment to make these cars safer. Whether cost accountants will permit this to continue without raising prices remains to be seen. At any rate, Ford seems to be more aggressive with special chassis equipment for high-performance cars than either GM or Chrysler.

Ford is a bit parsimonious with gear ratios. Axle ratios of 3.00, 3.25 and 3.50 are available for factory installation on GT cars, though many dealer-installed gearsets up to 4.89 are available. Transmission options include the standard 3-speed all-synchromesh unit, 4-speed manual and the 3-speed Cruise-O-Matic with console control lever for all three gears. This is a reliable, athletic automatic that is gaining a reputation among automobile enthusiasts.

DODGE AND PLYMOUTH haven't offered true Supercars prior to the 1967 model year. Both offered wide varieties of engine and chassis options, but special equipment combinations weren't integrated into packages and offered with identifying body trim.

Now the Dodge R/T and Plymouth GTX lines are offered as true Supercars. They're built on intermediate Coronet and Belvedere chassis, to minimize weight and size. They have the usual heavy-duty suspension and brakes as standard equipment. Included in these packages are special identifying body trim, bucket seats, special wheels, Goodyear Red Streak high-performance tires and special instrument clusters.

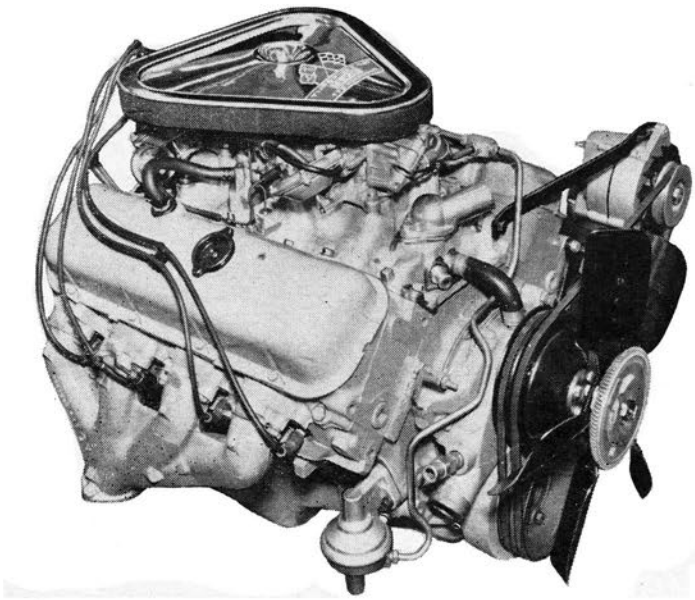
And, R/T and GTX are offered with special engines. This is possibly the key to the success of this line of cars. The engine must fit the package exactly to create the desired image. Chrysler developed a special free-breathing version of the 440-cu. in. unit. These engines have new cylinder heads with larger ports and valves, a new intake manifold with larger passages, a larger Carter AFB carburetor, a long-duration, high-lift camshaft for hydraulic lifters and new streamlined cast iron exhaust headers. Dodge and Plymouth rate this engine at 375 bhp at 4600 rpm, with 480 lb.-ft. of torque. Just how strong this new engine will be on the street remains to be seen. The word is that it's almost as strong as a Street Hemi up to 70 mph.

Of course if the 440 isn't enough, the Street Hemi can be ordered with an R/T or GTX. This engine is unchanged for 1967, still rated 425 bhp with solid lifter camshaft and dual 4-barrel carburetion. Chrysler engineers have achieved a brilliant compromise between brute performance and street flexibility, response, fuel consumption and reliability. It is sold under warranty. It once appeared that the Chrysler Street Hemi might have to take a back seat when Ford released a street version of its overhead-camshaft 427 competition engine, but it doesn't appear that way now. Ford is building the sohc 427 engine in reasonable volume to sell to racing people for approximately $2000, but a street version remains in the future.

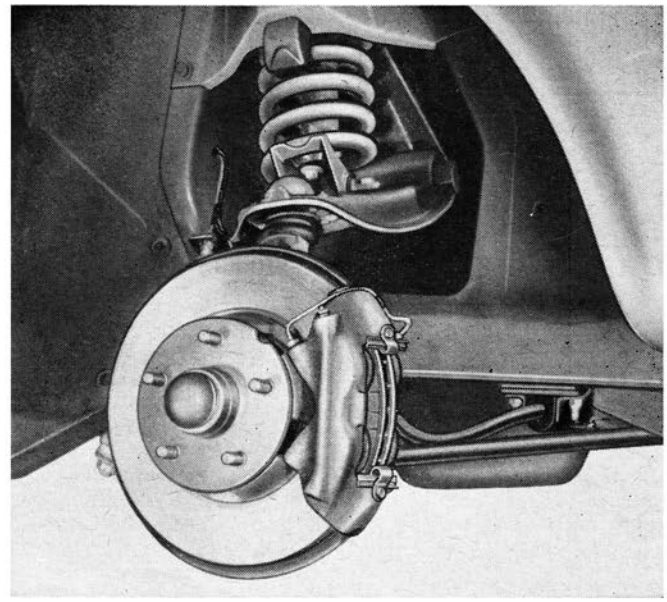
Transmissions in Chrysler Supercars are little different from usual. The 3-speed TorqueFlite converter is a tremendous transmission and has gained a reputation on the dragstrip in cars with up to 1000 bhp. It actually has more of an image in the youth market than a 4-speed manual. Dodge and Plymouth salesmen report that over 80% of their high-performance models, including the '66 Street Hemis, are ordered with the TorqueFlite transmission. Unlike GM and Ford, Chrysler engineers are not afraid to put this transmission, coupled to a solid-lifter engine that can turn 7000 rpm, in the hands of the public. In performance, the TorqueFlite is quicker off the line, surer and more reliable than a 4-speed. The enthusiast may order a 3-speed or 4-speed manual on his new R/T or GTX, but the majority will take TorqueFlites. Factory-installed axle ratios range up to 3.54, but there is a wide choice of over-the-counter gearsets for racing.

THE NEW LOW-PRICED Ponycars in the 1967 market definitely offer a serious challenge to established Supercars. This field includes Chevrolet's Camaro, the Mercury Cougar, the established Mustang, definitely a new Camaro-based model from Pontiac by early spring and the Plymouth Barracuda. When Ford people dreamed up the Mustang three years ago it was to be an economy sports/personal car to appeal to a very broad market segment. Proponents of this type of car still desire to sell to the young career girl, the retired couple and the young family man who desires a second car. There also exists a vast segment of the youth market that will buy this type of car if extra image and performance are offered. Ford attempted little along this line with early Mustangs. The early Ponycars sold so well Ford didn't need to. However, the 1967 Ponycar market has expanded to the degree that makes for fierce competition. Manufacturers are exploring every avenue of buyer appeal. Performance and the youth market are receiving a great deal of attention.

For example, new Mustangs and Cougars, from the same basic chassis and body offer the 335-bhp version of the 390 Ford engine as an option. Mercury rates it at 320 bhp for the Cougar. Widening the front tread and considerable re-tooling of the front spring towers were required to make room for the hefty engine in the compact Mustang chassis. Ford accom-



SOME CORVETTE packages include this 427-cu. in./435-bhp triple 2-barrel carburetored, solid lifter V-8 engine.



FORD'S PACKAGES often include Kelsey-Hayes disc brakes with four pistons per caliper and ventilated rotors.

plishes this simultaneously with tooling for new body sheet metal and the Cougar version for 1967. Obviously with this 390-cu. in., 4-barrel carburetored engine and a car weight of approximately 3300 lb., Ford offers some strong performers. It's risky to predict, but on paper these 390 4-barrel Mustangs and Cougars should be as quick as the average Supercar, which has 350 bhp for 3600 lb.

Chevrolet's Camaro is somewhat shackled in this respect by the GM 10 lb./bhp policy. It weighs approximately 3000 lb. with a small V-8 engine, so theoretically would be limited to 300 bhp. But Chevrolet engineers have taken full advantage of this by stroking the 327 block to 350 cu. in., a 0.23 inch longer stroke, and rating the new combination at 295 bhp at 4600 rpm, using the small-valve heads, mild hydraulic lifter camshaft and moderate-sized 4-barrel carburetor. The extra mid-range torque with the larger displacement is welcome, and the acceleration of this engine pulling 3000 lb. should be only slightly less than the brisk, very healthy 390 Mustangs and Cougars.

Chevrolet will offer the 325-bhp/396-cu. in. engine and 3-speed Turbo Hydra-Matic transmission in the Camaro early this year. The extra weight would allow use of the 325-bhp version of this engine without exceeding the weight/power limit and get that much more mid-range torque for lively street performance. If the GM front office decides to consider the Camaro not a "passenger car," but a "sports car," as it has the Corvette, the sky would be the limit on horsepower and performance. Examine the 1967 Corvette. Here Chevrolet engineers fly in the face of all the rules and develop a new triple 2-throat carburetion system that yields 435 bhp on the solid-lifter 427 engine! In the light 3300-lb. Corvette, this in all respects is the highest performance 1967 American street machine. It is almost a foregone conclusion that the Camaro will travel in the same direction.

TO THIS POINT, only Ponycar performance has been discussed. What about the "package" concept? This is receiving a good bit of attention, too. All three lines offer well defined and integrated high-performance packages with strong engines, heavy-duty chassis and special identifying body trim. The Camaro Super Sports 350 is supplied with the 350-cu. in./295-bhp engine, body trim that includes side striping, a "bumblebee" stripe around the grille, disappearing headlights, emblems, special wheels, plus heavy-duty springs and shock absorbers, larger diameter anti-roll bar and Firestone Super Sports Wide Oval tires. Front disc brakes are optional. The new Mustang and Cougar GT go one better by including disc brakes, stronger springs, shock absorbers and anti-roll bars in the package. In fact Mustang goes still one better by offering a limited-production Competition Handling package on the GT option. This uses yet stiffer springs and anti-roll bar, Koni racing shock absorbers and Firestone Super Sports racing tires. It's obvious that Ford is serious about penetrating the youth market with its Ponycars.

In regard to engines, the Cougar GT package includes the 390 engine. The Mustang counterpart is standard with the 289 4-barrel engine, rated at 225 bhp. Buyers must pay extra for 2- or 4-barrel 390 engines. Special identifying body trim and something special in the way of handling are provided in the package.

Plymouth's Barracuda is an interesting hybrid in the Ponycar picture. The new 1967 Barracuda bodies are sure to attract a broader segment of the specialty car market. An inducement is the addition of the 383-cu. in./280-bhp engine to the line. This engine provides the neck-snapping performance so dear to the enthusiast's heart. In Barracuda Formula S packages are a full complement of suspension options, special tires, disc brakes and transmissions. It's not established what engines other than the 383, the 273 V-8 or 2- or 4-barrel form or the standard 225-cu. in. Six will be available in this line, though the new chassis offers more than a modicum of designed-in space for larger engines, as well as passengers, cargo and driver.

And then there's American Motors' sassy Rambler American to be included. AM recently announced that a 280-bhp version of the new 343-cu. in. engine would be available in this line. With a weight close to 3000 lb., this could be an exciting performer. AM officials are serious about attracting at least a small part of the youth market. They've known for a long time that the old Rambler economy theme wasn't selling in today's market, but they were trapped by their own reputation for stodginess.

They seem to be gradually breaking away from this. The American could someday be an important model on the American performance scene. AM engineers are talking about a 412-cu. in. version of the new engine, and new president Robert Evans indicates an AMX-type sports coupe with fiberglass body will be seen, in all probability, within a year. ■