PERFORMANCE: INCH FOR INCH

CHEVROLET WILL drop the elderly 283-cu. in. piston displacement engine at the end of the 1967 model run in favor of a 307-cu. in. unit, using the 327 crankshaft with the original 3.875 bore. This saves money through standardization on two crankshafts for the three displacements, 307, 327 and 350 cu. in. in the small engine series. Added torque also will be welcome in cars that seem to grow heavier each model year. Perhaps the most pressing reason behind the change is that an engine with a higher stroke/bore ratio (longer stroke in relation to bore diameter) produces fewer unburned hydrocarbons and less carbon monoxide in the exhaust. Such an engine can more easily meet future anti-smog emission requirements. It's a matter of the ratio of cylinder volume to surface area.

SOME OF THE GM divisions circumvent the front-office limitation of 10 lb./bhp on all '67 passenger models by offering various performance equipment for dealer installation, rather than as assembly-line options. One example is the Chevrolet 396 engine in the Camaro, to be available after Jan. 1. This engine is available in ratings up to 375 bhp, which would be well below the 10 lb./bhp limit in the light Camaro. The swap could be made in a dealer's shop, using a fairly simple kit, including engine mounts, wiring and controls. This would make the package admissible, because it wouldn't be built on a factory assembly line.

Will this plan really accomplish any worthwhile goal in maintaining the GM performance image? Swapping complete engines is an expensive and bothersome procedure. Few buyers ever go through it; certainly not enough will do so to enhance the GM image. It has been Detroit's experience that special equipment never dents the market until it can be ordered factory installed. Dealers don't make money on custom installations, so salesmen don't push dealer-installed equipment. There'll be very few 396/375 Camaros around a year from now, but the 325-bhp version might just make it under the wire.

Sales figures for 1967 should present a good picture of the influence of performance on total sales. Chrysler and Ford are pushing performance, GM is backing away from it.

FUNNYCARS CAN jump off the line more quickly than all-out fuel dragsters though the dragsters have every theoretical design advantage, including greater rubber area in relation to weight, lighter weight and better weight distribution. Perhaps a clue to the mystery is in the study of tires used by either type of car: The quickest cars in each class use identical 11.00-16s, with 11-in. tread width. However, this is the only similarity between the two tires. The funnycars use a very soft tread compound with high traction, very flexible 4-ply casings, inflation pressures at approximately 8 psi, and the tire is mounted on a narrow 8-in. rim that cancels much of the stabilizing effect of the sidewalls and makes the tire even more flabby and flexible. The tread lies loosely against the ground, creating a huge footprint area. The casing is so flexible that engine torque hurls the car off the line something like a rock from a slingshot, hardly breaking the contact area loose!

Dragster people say they could never keep the car on the strip at 200 mph with this tire combination. These competitors use a much harder tread compound that doesn't lose traction with heat. The casing is a stiff 6-ply. And, the dragster people run 14–20 psi inflation on a wide 11-in. rim. There is no appreciable casing deflection except an inch or so diametral growth as the result of centrifugal force at high speed. The dragsters literally explode off the line, with the tires spinning wildly in clouds of white smoke. At the top end, the tires are quite stable.

It's obvious that the funnycars are pulling higher initial traction coefficients. Funnycars produce greater forward thrust in relation to the weight pressing down on the tire. This is what determines the acceleration rate in the initial lunge off the line. A fast-spinning tire does not develop as much traction as one that is biting solidly, just on the verge of breaking loose. This object lesson also seems to teach that a very flexible casing that can absorb some of the initial torque shock is a good thing. Soft compounds are good. Lots of rubber area against the pavement is good.

The logical questions are: Why doesn't somebody design a dragster that attempts to utilize funnycar traction and layout principles? Who will be first to build a 1500-lb. funnycar without a body? —*Roger Huntington*