PERFORMANCE: SCOOPS D'JOUR

PONTIAC AND Oldsmobile now offer dealer-installed kits to feed cold air to the triple carburetion systems of GTO and 4-4-2 models. Ford was also to offer this feature as standard equipment on a new 427 Fairlane package this spring, but the project was cancelled when drag race officials put the Dodge-Plymouth Street Hemi in the same class. The GTO installation takes the air in through a special nose for the dummy hood scoop, and has an air box around the carburetors that is sealed against the hood with foam plastic. The 4-4-2 setup takes in air behind the grille and pipes it to the air box through large flexible hoses.

The systems make sense for the street as well as the strip. An engine sacrifices a great deal of power and torque by breathing hot underhood air. This generally will run 40° to 60° F above the outside air temperature. Hot air is less dense than cool air, so the engine draws in a lower weight of fuel/air mixture on each intake stroke. The engine's volumetric efficiency is reduced. It's easy to pinpoint the effect on the slide rule. Assume the scoop system reduced the temperature of the air fed to the carburetors from, say, 130° to 80° F. This would increase the air density by 9%. The percentage increases in engine power would not be quite this much because engine friction losses are more or less independent of load, but a solid 7–8% boost would result. This is nothing to sneeze at when it's free. Because dragstrip trap speeds and e.t.s vary roughly as the cube root of engine power, an improvement of 2 mph and 0.3 sec. or so for the average stock car can be expected.

The effect of the car's forward velocity in providing a slight positive ram pressure at the carburetors is probably not significant. This theoretical ram pressure at 100 mph would be only about 0.17 lb. per sq. in. and this might be reduced 50% by turbulence and friction losses in the ducting and air box. And, the scoop opening must be carefully positioned to produce the full theoretical dynamic pressure of the air as it flows over the car body.

It's a cinch there will be much more interest throughout the industry in these "cool air" systems for high-performance cars.

PERFORMANCE FANS will welcome Dodge's new "D/Dart" package for drag racing in the D/Stock class under current NHRA, AHRA and NASCAR rules. It's essentially an extended hop-up of the 273-cu. in. V-8 engine in a package that includes heavy-duty suspension, 6.95-14 black tires, big Dodge rear axle with 4.86 gears and Sure-Grip differential, 4-speed transmission and steel-tubing exhaust headers by Doug of California. Also standard is a special heavy-duty Weber racing clutch with 2400 lb. of spring pressure.

New engine equipment includes a solid-lifter camshaft with 284° duration and 0.5 in. lift, Racer Brown valve springs with 310 lb. of pressure at the valve-open point, new large port intake manifold mounting a huge Holley 4-barrel carburetor with 1.687-in. primary and secondary throttle bores, and a Prestolite coil ignition system. Dodge rates the new D-Dart engine 275 bhp at 6000 rpm which is realistic and puts the combination in D/S with the listed shipping weight of 2946 lb. It appears potent on paper.

That 275 bhp will be just a starting point for the speed tuners and those super-stiff valve springs should easily permit 8000-rpm shift points. This rpm potential is doubly important in this case because the Chrysler 4-speed has relatively wide ratios, so it pays to wind far above the power peak. Also the package is being offered with heavy-duty TorqueFlite transmission, for racing in the D/SA Class. These wide ratios also require plenty of rpm, too.

Big things can be expected of the D-Dart, though current NHRA records in D/S are in the high 12s on e.t., at 110 mph!

SPEAKING OF this new package suggests the Chrysler 273 V-8 should be added to the list of small, lightweight American V-8 production engines with outstanding performance potential or at least outstanding performance in relation to size and weight. Until now the 283/327 Chevrolet and 289 Ford engines have been getting the most attention from racing people. The 1961–63 Buick-Oldsmobile aluminum engine is in the picture more for its light weight than for its performance potential. But, the little 273 Chrysler has been coming on strong. The 235-bhp power pack has been mopping up the F and G/Stock classes on the dragstrips. Now, if the new 275-bhp version starts clicking in D/S, the engine should be on its way in the hot rod business.

Is there a slight trend away from brute cubic inches as the answer to every performance problem in the American auto sport?

CHRYSLER IS nearing a decision on whether to go full speed ahead with a gas turbine engine program, or drop it. The company's 2-year program to lend 50 gas turbine prototypes to selected citizens for on-the-street evaluation has been completed. Results are being analyzed. The next step is to build a new improved engine that incorporates all the lessons learned through the test program. Chrysler officials say this "new generation" turbine will run on a dynamometer this summer. After the initial lab tests will come a long road test program in standard-appearing Chrysler cars.

SCOOPED fiberglass hood will be part of an A/Stock Fairlane powered by Ford's 427-cu. in. wedge-head engine.

Next will come the tough decision whether to tool up or shelve the entire project. This could go either way. The gas turbine concept always has seemed a very practical passenger car engine in many respects, but that sluggish throttle response in all probability can't be solved. Can Americans weaned on lightning-quick 400-cu. in. piston engines ever become accustomed to the slow acceleration of the turbine?

FUEL DRAGSTER man Connie Kalitta recently hit a 7.32 e.t. at 221 mph on a Maryland dragstrip with his ohc-Ford-powered rail. This is the first time this engine has shown any identifiable edge in performance over the Chrysler pushrod Hemi, at least in supercharged form, operating on nitro fuel.

—Roger Huntington