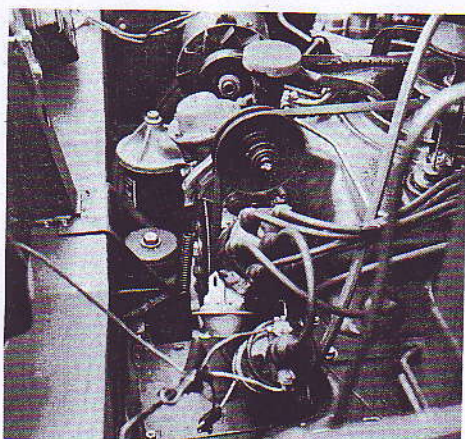


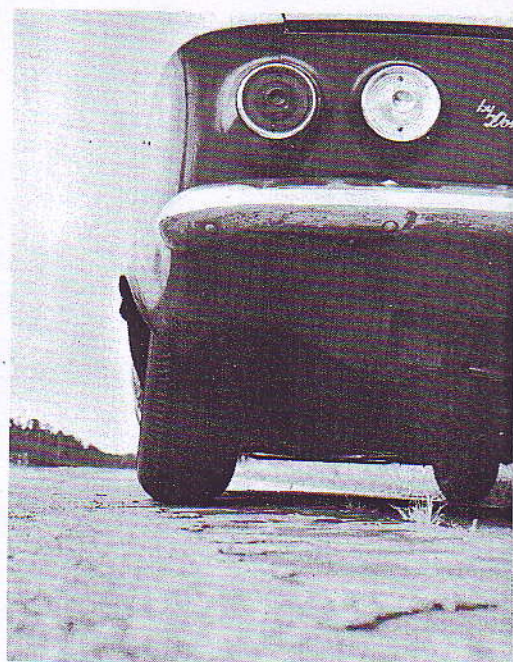
## SCI DRIVES THE RACING CORVAIR . . . by Bill Carroll



A Corvair all set to go Falcon hunting. Rear-engined compacts did not prove troublesome in the handling department, but they were down on power compared to the Valiants.



To prevent cooling fan belt whip at high revs a spring tensioner was used. Belts have been tested up to 7000 rpm.



Corvairs handled best with two degrees of negative camber in rear wheels.

► Voted "Most Likely to Succeed" when announced, Corvair was something less than a smashing success at Daytona. Out-powered by Valiant's Hyper Pack, and surprisingly out-handled by Falcon's nimbleness, Corvairs at Daytona showed only one thing for sure: They are much better cars than those announced just a few months ago.

There is no way to know who deserves a pat on the back for giving the order, but someone realized that win, lose or draw, Corvairs must be safe and look good in competition. Handling and stability became The Grails at Chevrolet Engineering. By January the public was aware that a more powerful engine could be obtained. But it's an Automobile Manufacturers Association specification sheet, dated December first, that shows the changes: Horsepower upped from 80 at 4400 rpm to 95 at 4800 rpm. Torque remained constant at 126 lb. ft. with its peak point changing from 2400 to 2800 rpm. As can be guessed, the improvements resulted from a new camshaft. All valve springs were given about 15 percent more closing power to cope with increases in lift and open duration.

Other changes in the announced "Special Camshaft" package were nominal. Rochester carburetors (No. 7015319) were specified to provide more fuel at high speeds, and tail pipe diameter was increased from 1½ to 2 inches. The standard ignition was replaced with a Delco-Remy unit (No. 1110260) which offers 24 degrees of centrifugal advance and 15 degrees vacuum advance in a flatter curve than the standard engines use. Crankshaft timing for the 95-horsepower engine is 16 degrees BTDC at idle, as compared to an 80-horsepower engine setting of 4 degrees BTDC at idle.

At the same time a four-speed stick shift was announced, as an option separate from the 95-horsepower engine. The new box has all four forward speeds synchronized, with ratios being: First 3.65 to 1; Second, 2.35; Third, 1.44 and Fourth, 1.00 to 1. Reverse is 3.66 to 1. Standard differential ratio with the four-speed is 3.55 to 1; an optional ratio of 3.89 will provide more low-speed snap. With addition of axle rebound straps, not on the spec sheets, this is all that shows for the performance package.

A number of high-performance Corvairs were on hand for Daytona. In trials for Compact Car races they qualified at an average of 81 miles per hour, five miles slower than Valiant's qualifying average of 86 mph. Nor did they make much of a showing at the finish line. The Corvairs at Daytona had no bumpers or spare tires in front, which further complicated the weight distribution problem. But they handled. Perhaps some 50 psi in tires helped, plus chassis modifications made on an experimental basis. First tests of these Corvairs found them using warm spark plugs, but a few hot laps showed the wisdom of moving into colder ranges. Carburetors were richened by changing jetting. Pure Economy Trials found Corvairs averaging some five miles per gallon less than Falcons and over ten miles per gallon less than a winning Rambler.

One of the Don Allen Corvairs, which ran in the Compact Car Race, was loaned SPORTS CARS ILLUSTRATED for driving after it turned in 34.798 miles per gallon in the Economy Trials. The engine was retuned and away we went for a close inspection of the car. In addition to the

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previously-listed 95-horsepower, four-speed transmission options, there were a number of interesting improvements. The fan belt idler pulley opposite the generator was no longer solidly mounted. The arm now pivots, with coil spring loading, to make sure the belt will not jump.

On the subject of belts, we noticed Corvairs were running two types. One was the usual "V" belt, with notches in the narrow side, in which the bottom of the "V" has been squared off. The other belt, an experimental nylon unit, had no notches on the narrow (bottom) side. The "V" was rounded somewhat like the bottom of a "U". According to Corvair mechanics at the track, there was no great difference in belt performance. They all stayed on in practice, and came off some cars in racing. Chevrolet service representatives claim that belts have been run up to 7000 rpm on solid-tappet experimental engines without trouble.

Back to the test car. There were sintered metallic brakes all around, inside 9-inch production Corvair drums (two pads on primary shoes, six on the secondaries). Most braking effort was on the rear wheels, which slid happily on wet pavement. We never could manage to lock the front

brakes. It was interesting to find that sintered-metallic brakes on a Corvair produce a firm pedal which feels just about right, compared to most passenger-car applications in which you have to stand on the "metals" to stop. Suspension of the test car had been well done. High-rate springs lowered standing height of the sedan, with driver, to that of a production Corvair loaded with six people. Rear wheels had a negative camber of some two degrees. We're not certain how shocks were changed, though a shock absorber engineer believed they were the new Delco units filled under pressure. This is similar to Cadillac's shock, with a plastic bag to prevent fluid aeration.

Driving the little bucket was a real treat. It cornered very well. There was little body sway, wheels remained on the ground, and steering was light and responsive. Of course the rear end would break suddenly, as usual, but once you found the groove it was no trouble remaining on the safe side. Recovery was direct and solid.

The four-speed transmission seemed as good as any we've tried recently, except that Reverse was most difficult to find. Nine times out of ten we'd be in First, and lurch forward a few feet before cussing the stick into its proper Reverse slot. There seemed to be only a short distance between the two gears, and when pulling the stick left before pushing it forward into Reverse, it would hang up and refuse to move far enough left into the back-up slot. On the plus side, the four forward gears, all of which are synchronized, were easy to find and butter-smooth shifting was the rule.

Light spring-loading of the stick made fast shifts from Second to Third a "hand is faster than the eye" trick. It seemed that all one had to do was flip the knob in the proper direction and it would find its own way. Mighty fine for such a low-cost option, but one that must have cost Chevrolet a fortune to engineer for this one car. Unless GM happens to have plans for more small sports-type cars which might use the same transmission in a trans-axle installation.

Acceleration was soft near the bottom (The test car was running Rochester 7015311's which are listed as Production Standard) but became mighty stout over the 45 mile per hour mark. In the 65 to 80 bracket, acceleration in Fourth was outstanding. From 0 to 60, using First and Second, average times were 11.7 seconds. Traffic passing from 40 to 60 in Fourth averaged 9.0 seconds. The same runs in Third chopped passing time to 6.8 seconds. Full-throttle acceleration from 40 to 80 took an average of 19.8 seconds in Fourth gear. A tachometer indicated an 800 rpm idle. At 60 miles per hour, in Fourth, the tach was indicating 2900 rpm, which is close to Falcon's 3000 and the 3000 rpm we estimate for Valiant at 60 miles per hour.

The future for Corvair's "Special Camshaft" kit is clouded by GM's reluctance to talk about horsepower and performance. We asked Zora Arkus-Duntov about Corvair's plans for the future. He laughed and replied, "You don't really expect me to tell you, do you? But one thing I can say. We will continue to make progress."

-BC

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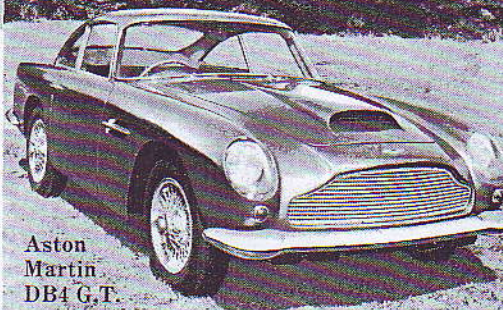


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