

MARVIN LYONS PHOTOS

# EMPI-Equipped Corvair Monza

*Bolt-On Suspension and Engine Equipment  
Can Improve the Monza's "Fun Factor"*

## **CAR LIFE** ROAD TEST

THERE ARE SO many excellent qualities inherent in the Corvair that we often tend to completely overlook some of its less acceptable points. Fortunately, the Corvair enthusiasts and the performance accessory manufacturers haven't been so derelict in their attention.

The Corvair has become such a popular vehicle with the younger and sporting type of buyer that a large new accessory market has sprung up around it. The range of additional equipment and dress-up paraphernalia available is far greater than that for any other

single car on the U.S. market today.

This market burgeoned because of two factors: A) there were certain specific weaknesses to the Corvair's character, and B) the car's size, appearance and maneuverability have tremendous appeal to the enthusiastic sort of driver—so much appeal, in fact, he's willing to overlook or improve those traits which are displeasing to him.

Closely keeping pace with the trends in this market is EMPI, a Riverside, Calif.-based specialty house which manufactures and markets, both wholesale and retail, a wide variety of non-standard equipment for the Corvair. EMPI, which stands for Engineered Motor Parts Inc., actually got into busi-

ness by supplying just the same sort of product for the Volkswagen, now happily finds Corvair equipment sales surpassing those of the VW.

To improve the handling ability of the car, EMPI offers a "Camber Compensator" rear wheel stabilizer, an anti-roll bar to be added to the front suspension and replacement steering arms for quicker steering.

Powerplant improvements have been limited to the "bolt-on" variety, which still leaves a wide area of operation. EMPI has done a good deal of work with single-carburetor intake manifolds, replacing the stock units (two, single-barrel) with either 2- or 4-barrel instruments. Results are impressive. EMPI also sells mufflers and muffler systems, transistor ignitions and additional instrumentation.

What do these do for the automobile? Do they really work to improve

handling, performance and driver satisfaction? In most cases, either with the items evaluated separately or in confluence, the answer must be a qualified "yes."

Having already driven a large variety of Corvairs, mostly non-modified, the *Car Life* staff borrowed one of EMPI's demonstration vehicles for an examination of the other side of the coin. What a surprise! The EMPI-ized Corvair has a completely different character and displays vastly better manners on the highway. The flavor is far more sporting than before, and, in fact, it exudes more sportiveness than many so-called sports cars.

Perhaps the key to this improved handling is EMPI's own Camber Compensator, a transverse single-leaf spring which links together the independently sprung rear wheels. Pivoting at the differential housing, this spring acts just the opposite to the motion of an anti-roll bar.

Where an anti-roll bar tries to keep the front wheels in similar attitudes during cornering maneuvers, the Compensator tends to pull the inside, unloaded wheel toward the full rebound position, thereby lessening the body roll. This won't do a thing for solid-axle rear suspensions but it does wonders with the Corvair, where the inside rear wheel has a great tendency to "tuck under" during cornering. It also tends to lessen the effect of body roll on the angled trailing arm pivots, which normally causes the inside wheel to assume an understeering, and the outside wheel an oversteering, attitude. The roll oversteer of this vehicle has been one of its most criticized points, so EMPI's device is a real improvement.



TWIN TAILPIPES of EMPI's Bestone system project from under Monza's rear.

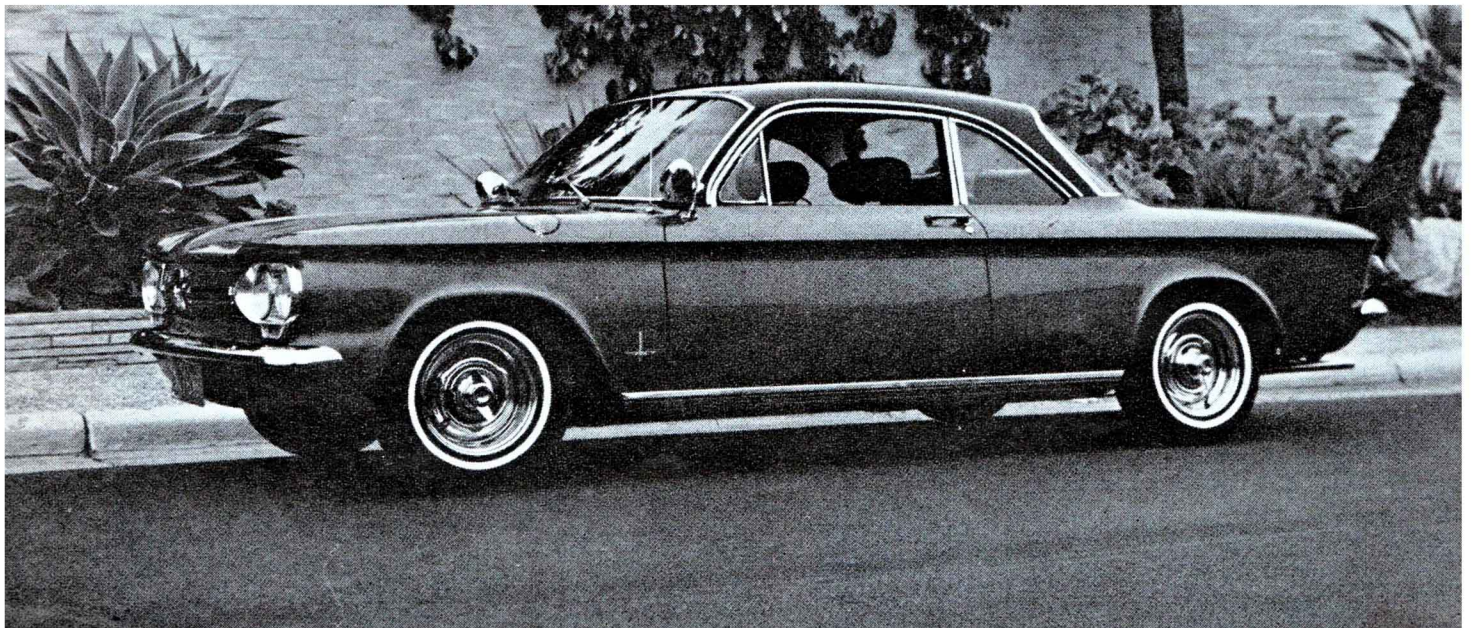
In conjunction with this, EMPI's front anti-roll bar works nicely, stiffening up the front roll-resistance to the point where the car appears to corner in a virtually flat attitude. This is the usual type of bar (commonly referred to as a "sway bar" although it has nothing to do with controlling "sway" or "yaw") similar to the one Chevrolet recommends with its Heavy-Duty suspension options. Cost of the bar is \$19.95, where the Compensator kit is \$24.95, you-install-it.

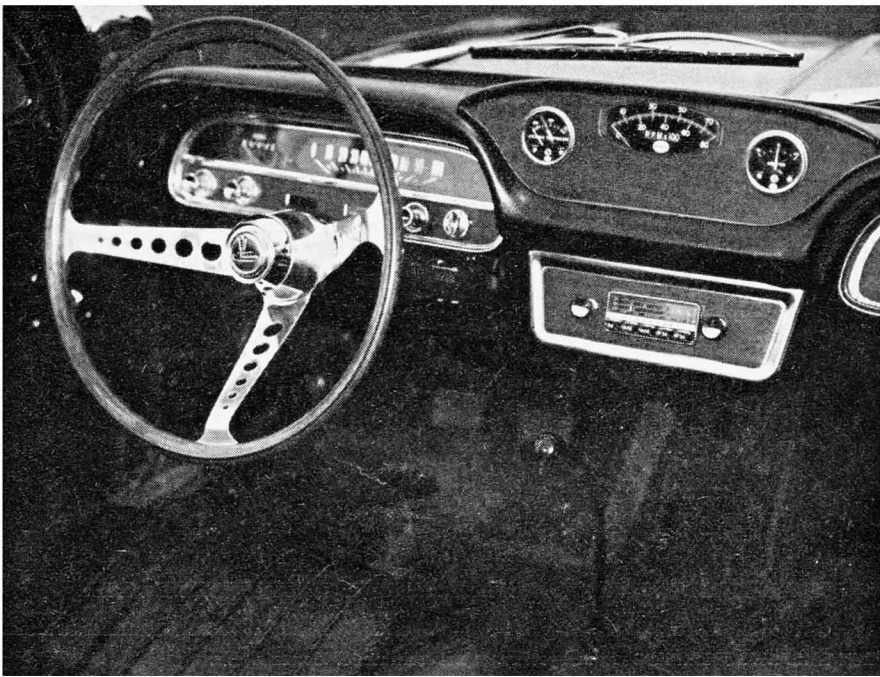
Our test car also had quick-steering arms and these imparted a much more suitable reaction to steering wheel movement. Slow steering has also been a Corvair complaint and the EMPI

arms reduce the number of turns required to turn the wheel from lock to lock from 4.8 to 3.3 turns. This accessory, however, has certain drawbacks: increased turning radius and heavier steering, equivalent to about that of a light front-engined car without power steering. The turning radius reduction manifests itself in slightly lessened maneuverability, particularly noticeable during parking and parking lot activities. Still, at \$19.95, a worthwhile addition.

Putting the steering and handling characteristics together, we found excellent compatibility. On dry pavement the car could be whipped around corners without the wheel hop character-

CHROMED, REVERSED wheels and knockoff-type caps add a custom touch; spotlights are dummies, strictly for show.





WOOD-RIMMED steering wheel, console panel are expensive but usable accessories.

## EMPI-Equipped Corvair Monza

istic of the standard Corvair's rear suspension. The lack of body roll was especially noticeable. The car seemed quicker through every conceivable cornering condition. In the wet, however, we found that the greater "flatness" lessened the warning of impending rear-end breakaway, which seemed to occur at approximately the same speed as with a normal Corvair. Thus, while the threshold of breakaway has been moved notably upward with the EMPI kits, it would seem that ultimate

cornering force is still determined by the slip angles of the tires.

What effect the reversed (and chrome-plated) wheels had on the cornering power would be difficult to judge. Reversing the wheels gives them more leverage on the springs, thus reducing (softening) the spring action; also, the increased track tends to magnify oversteer (with wider front track) and understeer (wider rear track) effects. Theoretically, the wider the track is in relation to the wheelbase, the more

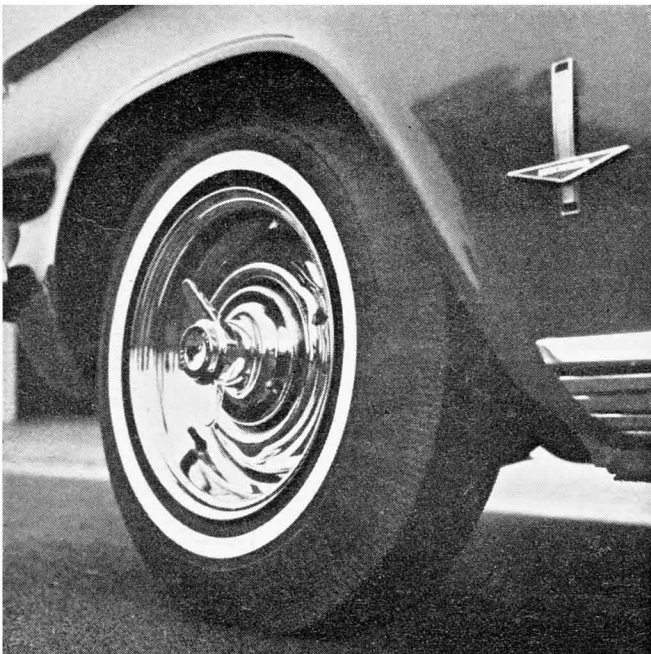
stable will be the car. The Corvair's track is already 54.1% of the wheelbase, where the popularly called "Wide Track" is only 53.3%. One word of caution about reversed wheels in general: the reversing has to be done by a competent, careful shop, else the wheels will be out of true and out of balance, and the altering of the hub/rim relationship can cause wheel centers to crack out and wheel bearings to fail. We are not at all certain that whatever benefits accrue from the reversing are worth the risk.

Bolt-on engine equipment can be risky, too; the would-be improver of operational efficiency can, through misguided ministrations, completely destroy all versatility or performance potential of his particular plant. But with organizations such as EMPI, the experimentation has been done before the kit is offered to the public. Final and fine tuning, of course, has to be left to the individual and this factor sometimes spells the difference between a successful and an unsuccessful conversion.

EMPI currently offers two types of intake manifolds for the Corvair, one mounting a single Rochester 4-barrel carburetor and the other a Rochester 2-barrel unit. Both carburetors are original equipment on Chevrolet V-8s and are in relatively plentiful supply. The manifold consists of two extension tubes, which bolt to the old carburetor flanges at the heads, and which are connected by a common chamber on which the carburetor is mounted.

Both systems offer certain specific advantages over the stock system and over each other. Both have drawbacks. The buyer must determine whether the advantages overcome the drawbacks.

REVERSED WHEEL widens track, helps handling.



IN ACTION, the Camber Compensator keeps rear wheels aligned.



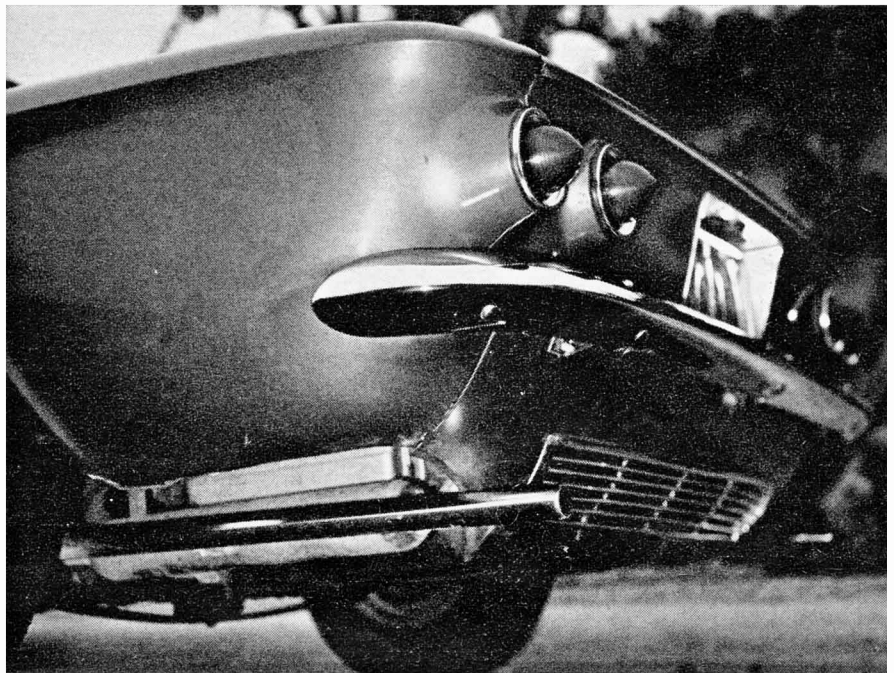
The stock Corvair comes from the factory with a pair of single barrel, 1.25 in. dia. throat carburetors, which give, when wide open, 2.45 sq. in. of venturi area. Substituting the 2-barrel single unit, albeit at a greater distance from the intake ports and hence slightly slowing engine reaction, gives an increase in area to 3.24 sq. in. The 4-barrel, as is well known, operates on 2 barrels (1.44 in. dia. each) most of the time, but when the primary throttles reach a pre-set position, the secondary pair begins to open, so that when full-throttle is reached, all four barrels, and 6.48 sq. in. of venturi area, are open.

More area means simply better breathing at the top rpm range—hence more power, more rpm.

The drawback, of course, is that large venturis do not operate well at low speed. There's so little vacuum through the venturi that gasoline is not properly vaporized and the engine often starves out. Without the assistance of carburetor heat, it is most difficult to keep the 4-barrel equipped Corvair running at an idle when it is cold. The 2-barrel model we drove, which had a form of carburetor heat, was much better in this respect.

The 2-barrel system actually was a prototype of a new manifold EMPI is announcing shortly. Finished in a black crackle paint, the manifold conducts heat along itself to the carburetor. This probably is not nearly as efficient as ducted hot exhaust gas, but it is far less complicated. This new manifold mounts the carburetor lower and farther forward than other similar setups, thus eliminating the need for modifying the inside of the deck lid.

Checking the performance revealed some definite improvements, although



**VISIBLE BENEATH** chromed exhaust pipe is EMPI's Camber Compensator.

we can't call them startling. We sampled both a 4-barrel equipped car and one with the 2-barrel; the former needed a tune-up, the latter was fresh and didn't. As a comparison, we list the results from a *Car Life* road test of a stock, 1961 Corvair Monza.

	4-BBL.	2-BBL.	STOCK
0-40 mph.....	7.0 sec.	7.2 sec.	6.8 sec.
0-60 .....	15.0	15.5	15.5
0-80 .....	21.1	32.5	35.0
¼ mile .....	19.9	20.3	20.3

Obviously, the benefits to be gained are all at the upper end of the performance scale. This can be interpreted as passing performance, too, since this is the range (3rd and 4th gears, 3000-5000 rpm) most used for

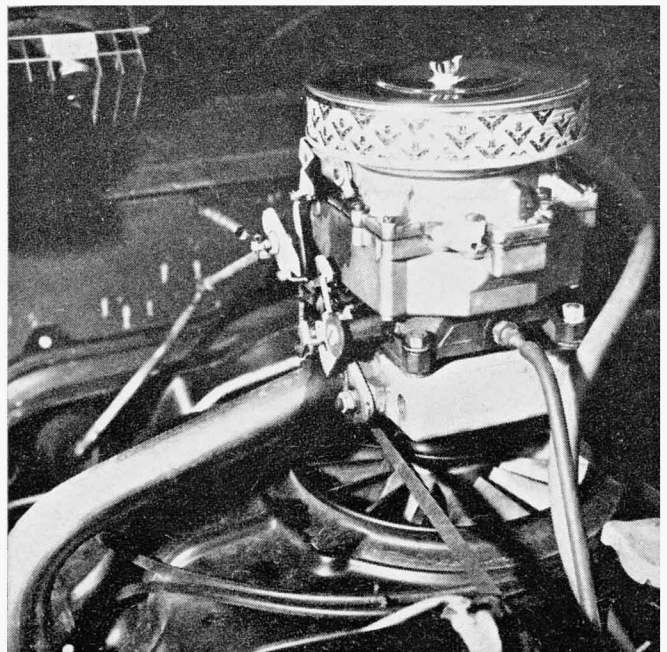
accelerating past slower-moving vehicles. The safety factor is obviously increased. The lower range performance is not improved noticeably, however, and the Corvair has just as much "dig" with the stock carburetion. We must note, though, that the seemingly lumpy idle and bucking characteristics typical of the Monza 102-bhp engine are eliminated by the addition of either EMPI carburetion system.

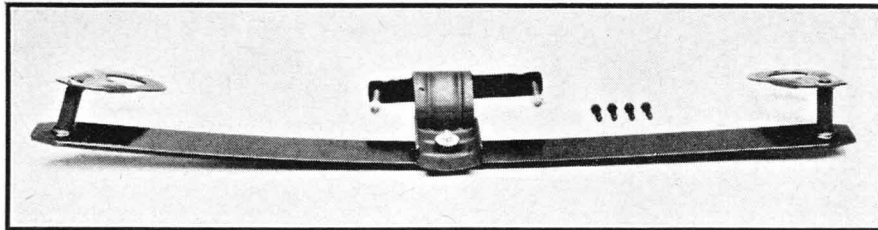
Another increment in the car's fun factor was notched by EMPI's Bestone dual exhaust system which, while it may not necessarily increase the engine efficiency, does wonders for driver morale. Although quiet enough

**BIG CARBURETOR** mounts on manifold extensions.



**ROCHESTER 4-barrel** improves top-end performance, acceleration.





COMPENSATOR attaches to differential housing, suspension arms.

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to pass inspection by the most unequivocal law enforcer, the unobtrusively audible exhaust note is just right for the enthusiast.

Interior accessories are also popular and here EMPI offers the gamut. As can be noted from the photos, our test car had EMPI's Instrument Console. This combines cylinder-head tempera-

ture gauge, electronic tachometer and an ammeter set into a single panel, which is mounted on top of the regular dash pad between the twin humps. The console is finished in a matching material and blends well into the scheme of things. However, on our test car the tachometer didn't work accurately and the instrument lights

didn't dim with the panel light rheostat. Turn signal flashing caused 2000 rpm fluctuations of the tachometer needle, leading us to believe that a shielded cable should have been used to connect tachometer to coil.

We found the cylinder head temperature gauge to be very worthwhile, particularly during our test runs, where we kept a wary eye out for any temperature rise. It did go as high as 300° F. while we were testing, from a normal cruising temperature of 260°. Head temp gauges should be made standard equipment on all Corvairs.

Headrests, which we can take or leave, and dummy spotlights, which we'll definitely leave, were the finishing, customizing touches.

What does all this cost in terms of money? Our demonstrator had more than \$550 in EMPI accessories added to a car which costs \$2364 to begin with. Is the game worth the candle? It all depends, as Tom said saltily, upon your taste. ■

## CAR LIFE ROAD TEST



### CORVAIR MONZA Empi-equipped

#### SPECIFICATIONS

List price	.....\$2364
Price, as tested	.....2914
Curb weight, lb	.....2530
Test weight	.....2860
distribution, %	.....37/63
Tire size	.....6.50-13
Tire capacity, lb	.....3600
Brake swept area	.....197.7
Engine type	.....flat-6, ohv
Bore & stroke	.....3.44 x 2.60
Displacement, cu in	.....145
Compression ratio	.....9.0
Carburetion	.....1 x 4
Bhp @ rpm	.....102 @ 4400
equivalent mph	.....95.0
Torque, lb-ft	.....134 @ 2800
equivalent mph	.....60.5

**EXTRA-COST OPTIONS**  
Camber Compensator, 4-bbl. carb., reversed & chromed wheels, wsw tires, headrests, wood-rim steering wheel, instr. console, Quickshift, dummy spotlights, anti-roll bar, am/fm radio.

#### DIMENSIONS

Wheelbase, in.	.....108.0
Tread, f and r	.....54.5
Over-all length, in.	.....180.0
width	.....67.0
height	.....51.5
equivalent vol, cu ft	.....360
Frontal area, sq ft	.....19.2
Ground clearance, in.	.....6.0
Steering ratio, o/a	.....n.a.
turns, lock to lock	.....3.3
turning circle, ft	.....45.5
Hip room, front	.....2 x 25.5
Hip room, rear	.....57.0
Pedal to seat back, max.	.....39.0
Floor to ground	.....9.0
Luggage vol, cu ft	.....6.6
Fuel tank capacity, gal.	.....14.0

#### GEAR RATIOS

4th (1.000), overall	.....3.27
3rd (1.438)	.....4.70
2nd (2.350)	.....7.68
1st (3.647)	.....11.9

#### PERFORMANCE

Top speed (4300), mph	.....93
Shifts, rpm-mph (manual)	
3rd (4700)	.....70
2nd (5000)	.....46
1st (5050)	.....30

#### ACCELERATION

0-30 mph, sec	.....4.1
0-40	.....7.0
0-50	.....11.0
0-60	.....15.0
0-70	.....21.1
0-80	.....31.5
0-100	.....
Standing 1/4 mile	.....19.9
speed at end	.....68.5

#### FUEL CONSUMPTION

Normal range, mpg	.....14-16
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#### SPEEDOMETER ERROR

30 mph, actual	.....29.0
60 mph	.....57.0
80 mph	.....75.6

#### CALCULATED DATA

Lb/hp (test wt)	.....28.0
Cu ft/ton mile	.....81.7
Mph/1000 rpm	.....21.6
Engine revs/mile	.....2780
Piston travel, ft/mile	.....1205
Car Life wear index	.....33.4

#### PULLING POWER

4th, max gradient, %	.....8.7
3rd	.....13.0
2nd	.....21.1
Total drag at 60 mph, lb	.....125

