



the fifth wheel

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Corvair's Kid Brother - The Chevy II

Anybody who has ever worked on a Corvair Turbo-Air engine must be amazed at the sheer number of parts involved in its assembly. Two crankcase halves, six cylinder barrels, two cylinder heads, two carburetors, twin thermostats, a dozen push rod tubes, a stack of sheet metal shrouds, a dozen valve seats, a box full of gaskets and o-rings, and dozens of bolts, studs, nuts, and sheet metal screws to hold it all together.

Oh, it's a wonderful little engine, but as an industrial engineer, I can assure you that our beloved flat six cost GM a lot in terms of materials, labor, and dollars.

And lets not forget the Quadri-Flex suspension, with its swing axles, box-member control arms, coil springs, spherical bearings,

and so forth. How could Chevrolet possibly make money selling such a sophisticated - and complicated - little car for the same price as a Ford Falcon, Plymouth Valiant, Studebaker Lark, or Rambler American? The cost accountants at GM must have been going crazy!

GM's Rush to Judgment.

It didn't take the General Motors Board of Directors to catch on. In 1960, the Falcon handily outsold the Corvair during the first few months after their introduction. And when 1960 sales were counted -- 435,676 Falcons, 250,007 Corvairs, and 194,292 Valiants -- one thing was clear: Falcon was the car to beat.

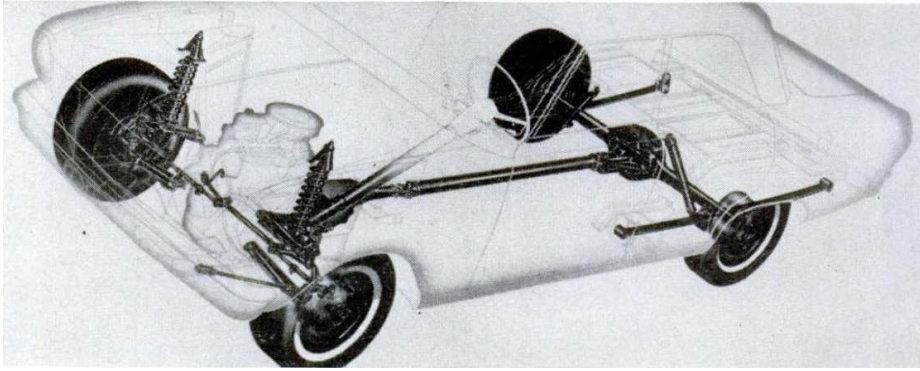
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Corvair's Kid Brother - The 1962 Chevy II. Simple, practical, and economical. And probably much more profitable for General Motors.



The Fifth Wheel is published monthly by the Lehigh Valley Corvair Club (LVCC), Inc. We accept articles of interest to Corvair owners for publication. Classified advertising of interest to Corvair owners is available free of charge to all persons. Commercial advertising is also available on a fee basis. Please contact our newsletter editors, Allan Lacki and Wesley Weiss, for details.

LVCC is one of the many regional chapters of the Corvair Society of America (CORSA), a non-profit organization that was incorporated to satisfy the common needs of individuals interested in the preservation, restoration, and operation of the Chevrolet Corvair. LVCC caters to Corvair people who live in and around the Lehigh Valley Region of eastern Pennsylvania. This is a very special car club! LVCC dues are \$10 a year for CORSA members or \$15 a year for non-CORSA members.



Phantom view of Chevy II showing front and rear suspension. Front coils are mounted high in the body to distribute load, avoiding need for separate front cross-member. Rear mono-leaf springs eliminate inter-leaf friction for a smoother ride without any need for control-arms or links.

(Continued from page 1)

The Falcon was such a simple car. It was just a plain six cylinder with a cast iron engine and Hotchkiss drive. But the public didn't care. They liked the Falcon better. And so, in December 1959, just two months after the Corvair was introduced, GM decided to build its own version of the Falcon.

When it was introduced in September 1961, the Chevy II was sold in four configurations: two-door coupe, four-door sedan, convertible, and station wagon. Unlike the Corvair, which took several years to develop, Chevrolet took only eighteen months to develop the Chevy II.

Chevrolet designer Clare "Mac" MacKichan recalled about creating the Chevy II: "There was no time for experimentation or doodling around with new ideas from either the engineers or from us in design. And it had to be a basic-type car. I think that was the quickest program we ever did at any time," he continued. "We worked night and day on that car, and it didn't take very long to run it through our shop because we had a deadline." The first production Chevy II rolled off the Willow Run, Michigan, assembly line in August 1961, in time for its September 29 introduction.

There's no doubt that the Chevy II was developed on a top-priority schedule.

But the short development period may have also been a reflection of the Chevy II's simplicity of design.

Simple Engines.

Chevrolet offered two engines for the Chevy II when it was introduced: a 153 cubic inch four-cylinder and a 194 cubic inch six. Both were developed

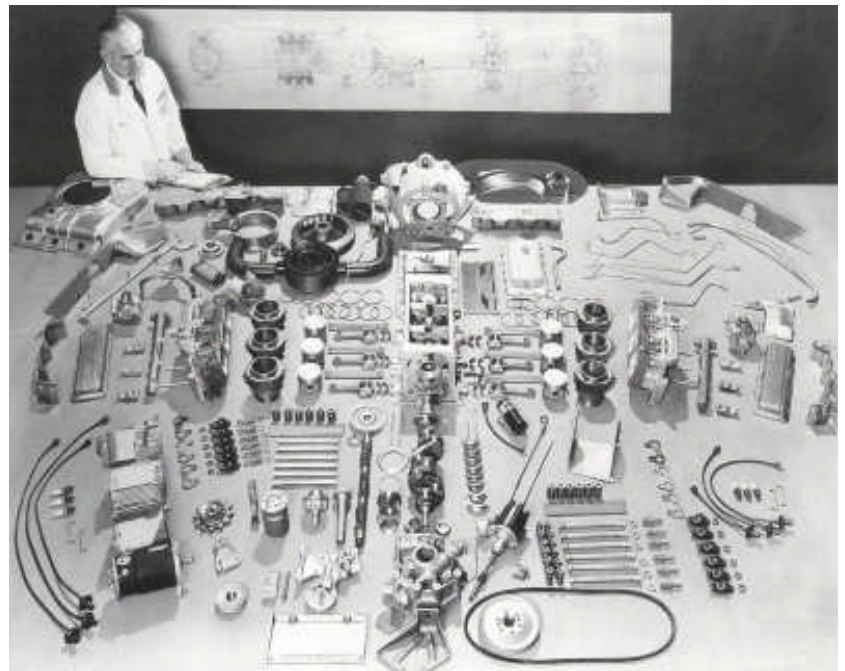
especially for the Chevy II. They were cast-iron engines, but they made use of newly-perfected thin-wall casting techniques, and so they were relatively light in weight. And much like the Tempest Indy 4, they made use of many off-the-shelf V-8 components. For example, they used valve gear, pistons, rods and bearings from the small 283-cubic inch Chevy V8. They were also machined and assembled on the same production line. According to Popular Mechanics magazine, "Their layouts are very conventional in every way. These are undoubtedly the most inexpensive engines to produce in the industry."

Such could not be said for the Corvair engine, which aside from the distributor, shared virtually no parts with other Chevrolet engines.

No Subframes.

The Corvair had a full unit-body construction, but it also had separate steel cross-members for the front and rear suspension. The 1962 Chevy II, on the

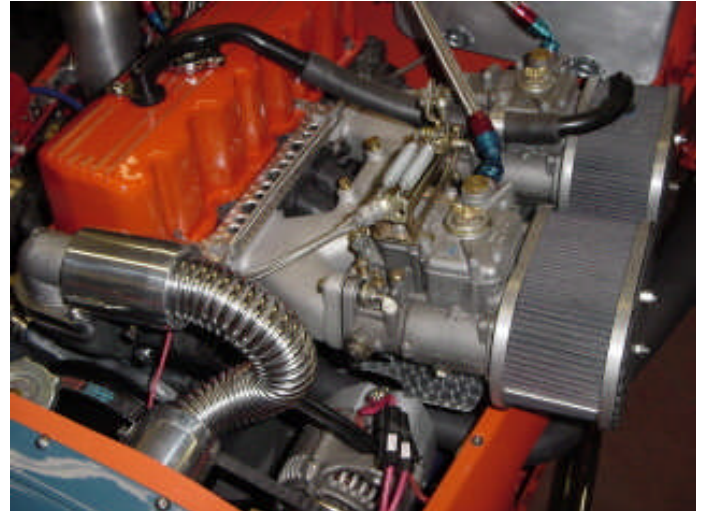
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The Chevrolet Corvair engine. Beautiful. Sophisticated. Complicated! It is probably not exaggeration to say that the 1960 Corvair 140 CID engine had three times as many parts as the 1962 Chevy II 153 CID 4-cylinder engine, and took twice as many man-hours to assemble on the production line.



Here is the little 153 cubic inch inline 4-cylinder, designed especially for the Chevy II. Although most Chevy II buyers opted for the optional 6-cylinder engine, the 4-cylinder became the engine of choice for midget racing in the 1970s.



GM still sells the 4-cylinder Chevy II engine, brand new, for industrial or marine applications. It's the GM Vortec 3.0L. These engines share the bell-housing bolt pattern with the small block Chevy V-8. 5-main bearings. Nice base for an economical street rod.

other hand, did not. How did the engineers get away with it?

Normally the front coil springs are placed between two suspension arms (wishbones). This exerts very high stresses in this area due to the concentration of forces. The new "unit," or box-type, bodies (no separate frame) aren't happy with these stress concentrations. By mounting the coil springs above the arms and seating them in the upper fender wells, the engineers spread these forces out, and eased the load on the front body structure.

Simple Suspension.

Chevy II's rear suspension was conventional in principle (Hotchkiss), with semi-elliptic springs taking the braking and driving loads. But it was also unique in that each spring had but a single leaf which varied in both width and thickness. This "Mono-Plate" rear leaf-spring design reduced weight, among other benefits, compared to multi-leaf assemblies. The two 5-foot-long single leafs were of varying width and thickness throughout their length to provide acceptable ride and handling characteristics and were mounted front

and rear in rubber insulators. The innovative rear springs, body structure, and engine innovations helped Chevy II to win the Car Life magazine Engineering Award for 1962.

Trend Toward Simplicity.

For two years (1960-61), the big new feature in American car engines was aluminum construction, which was supposed to solve problems of cost and weight. At one time it looked as if no more new Detroit passenger car engines would be tooled for cast iron.

But in 1962, there were four brand-new engine designs - and they were all cast in iron. In addition to the new in-line 4 and 6-cylinder engines for the Chevy II, Buick introduced a cast-iron V6 for the Special and Ford introduced the cast-iron 221 V8 for the Ford Fairlane and Mercury Meteor.

Which Was Better?

During a million-mile owner survey, Popular Mechanics noted that the six-cylinder Chevy II engine cost \$60 more than the four and offered 30 additional horsepower. Presumably the four was

offered as an inducement to the ultra-economy minded. But only 13.9 percent of owners reporting on the survey bought fours while 84.6 percent chose the six. (A few, 1.5 percent, didn't indicate how many cylinders their power plants contained). Like most American four-cylinders for the next two decades, the 153 4-cylinder was criticized for a general coarseness of operation. The Chevy II may have been simpler and cheaper to build, but the Corvair remained the driver's car.

Same Pricing, More Profits.

You may be thinking to yourself, sure, the Chevy II was a much simpler machine than the Corvair. Didn't it sell for less? And the answer is no!

Prices started at \$2,003 for a stripped-down 100 series two-door, four-cylinder sedan. The two-door sedan version of the entry-level Nova 400 cost \$2,198, while the convertible Nova commanded \$2,475.... To put that in perspective, prices for the 1962 Corvair 500 coupe started at \$1,992 and prices for the Monza convertible started at \$2,483: virtually the same prices as the Chevy II.

Considering that both cars were built at Willow Run, the Corvair certainly enjoyed no advantage over the Chevy II in terms of raw material prices, manufacturing methods, labor rates, shipping rates, or any of the other factors that affect manufacturing overheads. It's probably a good bet to assume that, by virtue of its simple design, the Chevy II was much cheaper to manufacture than the Corvair, and that meant higher profits for GM.

Article prepared by Allan Lacki.

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LVCC MEETING IN JANUARY

Don't forget our next club meeting, scheduled for Wednesday, January 25, 2012 at the LANTA center in Allen-

The Vortec 3.0L. In 1961, Chevrolet introduced two new engines for the Chevy II: a 194 cubic inch six cylinder and a 153 cubic inch four cylinder. The engines were nearly identical except for the number of cylinders. Although Chevrolet ceased to offer the little four cylinder for automotive applications after 1970, (the Nova had simply become too large and heavy for such a small engine by then), GM kept it in production, selling it for marine and industrial applications. It is also interesting to note that this same engine became a favorite for midget car racing for many years.



20KW

GM Vortec 3.0L I-4

Today, you can still purchase this tough little 5-main bearing engine either from GM dealers or Mercury Marine. Although numerous improvements have been made, it is easily recognizable as the same 4-cylinder engine that was introduced in 1961.

The four cylinder Chevy II engine is often confused with the later "Iron Duke" four cylinder that was developed by Pontiac in the 1970s, but the engines share no architecture. And of course, it shares nothing in common with the aluminum block Vega four cylinder engine which was introduced in 1971, a few months after Chevy stopped offering the four-cylinder Chevy II. It's something of a mystery why Chevy and Pontiac designed new 4-cylinder engines from a clean sheet of paper when it already had a strong, reliable 4-cylinder engine in its lineup.

town. Are you working on a new Corvair project? Bring in some Corvair parts for show-and tell! Also, we will be having elections for President, Vice President, Secretary-Treasurer, and Publicity VP. Nominations are still being accepted!

2012 CONVENTION UPDATE

Tech Sessions. We still need a few additional volunteers to make presentations at Tech Sessions for the July 2012 CORSA Convention in Sturbridge. Panel beaters, engine builders, chassis

fabricators, voltage regulator rewinders, and all other kinds of craftsmen (are encouraged to come forward and share their wealth of knowledge with the rest of the Corvair community. (Sorry, but the hotel cannot accommodate presentations involving the use of jack hammers, hydraulic rams, explosive charges, radio isotopes, or gluten. Other restrictions may apply...)

Attention Chapter Presidents!

The management of the Sturbridge Host Hotel and Conference Center has graciously offered to hang our banners throughout the hotel's indoor atrium. Did you say your chapter does not have a banner? Now is the time to sew one together for the 2012 CORSA Convention!

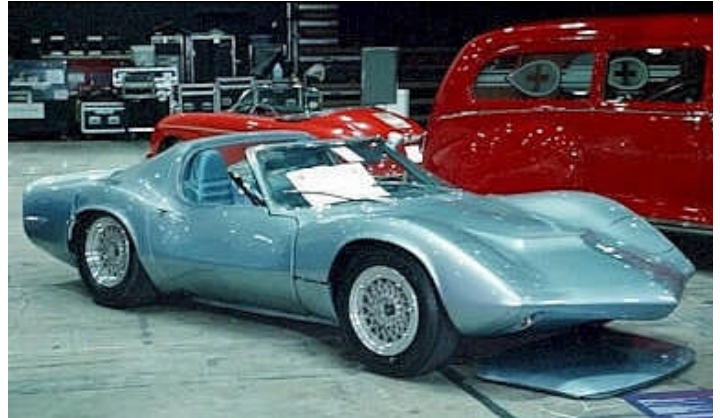
LVCC Merchandise for Sale!



LVCC license plates and hat pins: \$3.00 each. LVCC T-Shirts: \$6.00 each. Call or email Richard Weidner at 610) 502-1414 rcwvair@rcn.com

EXPERIMENTAL REAR-ENGINE CORVETTE TO APPEAR AT AMELIA ISLAND CONCOURS.

The story of XP-819, the one-off rear-engine experimental Corvette that Chevrolet built in 1964, began with Frank Winchell, the engineer then in charge of Chevrolet's research and development program. Winchell, who conducted many a test on the Corvair to provide engineering data that would defend and exonerate the Corvair, focused his enthusiasm for rear-engine layouts in a couple of different directions: on the track, via Jim Hall and the Chaparral cars; and on the street, via the Corvette XP-819. Now fully restored, XP-819 will make an appearance at the 2012 Amelia Island Concours d'Elegance, which takes place March 9-11, 2012. For more information, visit AmeliaConcours.org. You can also read more about this fascinating prototype at the Hemmings Blog.



FOR SALE: 1963 Corvair Monza M900 Coupe. 102 hp. Unrestored survivor. Runs perfectly. Never in a body shop or driven in snow. All service records since new. 50,000 miles. Needs nothing. Tinted glass. Day-night mirror. Pushbutton AM radio. Factory seat belts. Asking \$7,000 or serious offers only. Dave Riddle. (610) 264-7155. [Dariddle at verizon.net](mailto:Dariddle@verizon.net)



FOR SALE: 1965 Corvair 500 Coupe. 110 hp. Powerglide. Dennis Stamm recently purchased and refurbished this Corvair 500 coupe, which has a white exterior and red interior. It has only 39,000 miles on the odometer and is completely rust free. Dennis claims the car runs very well and would make a nice respectable daily driver. Price: \$4,500. Contact Dennis Stamm, Phone: (610) 926-4723 Email: [dmstamm at comcast.net](mailto:dmstamm@comcast.net)

LVCC Calendar of Events



It's not too early to start planning for next year!

January 20-22, 2012 :::: Auto-Mania 2012

Allentown, PA - Auto-Mania 2012, 22nd Annual Indoor Automotive Parts & Memorabilia Flea Market and Car Corral at the Agricultural Hall Allentown Fairgrounds. PA's Largest HEATED Indoor (NOW 50% Larger) Automotive Parts & Memorabilia Swap Meet and ALL NEW indoor & out door Car Corral (limited Car Corral Space so call ahead!) Admission \$7.00, Friday 12:00 noon - 9:00 pm, Saturday 9:00 am - 6:00 pm, Sunday 9:00 am - 3:00 pm., P.S. This Event Does Not Cancel For ANY Reason! e-mail: tonyabilliii@yahoo.com or <http://www.automaniashows.com>

Wednesday, January 25, 2012 :::: LVCC Membership Meeting.

Time 7:30 PM. Place: LANTA Community Center, 2nd Floor Meeting Room, 1060 Lehigh Street, Allentown , PA 18103. All LVCC members are encouraged to attend. Feel free to bring a guest.

January 26 - 29 2012 :::: Pennsylvania Auto & Boat Show

Harrisburg, PA - Motor Trend Auto Show Pennsylvania Auto & Boat Show, At the Pennsylvania State Farm Show Complex. Located at 2301 N. Cameron Street corner of Cameron and Maclay Streets, Exit 23 off of I-81. Event Hours:

Wednesday - Thursday 1:00 pm - 9:00 pm

Friday - Saturday 10:00 am - 9:00 pm

Sunday 10:00 am - 5:00 pm

Admission: Adults \$8.00 Senior Citizens (62+) - Active Military (w/ID) - Students (w/id) \$5.00 Children 7-12 \$3.00.

e-mail: Shaun.Foley@sorc.com or <http://www.motortrendautoshow.com/home.jsp> or www.AutoShowHarrisburg.com

January 29 – February 5, 2012 :::: Philadelphia International Auto Show

Philadelphia, PA - Philadelphia International Auto Show at the Pennsylvania Convention Center at the NE & NW corners of 12th and Arch Streets.

Saturday, January 28: 9 am – 10 pm

Sunday, January 29: 9 am – 8 pm

Monday, January 30 – Friday, February 3: 12 noon – 10 pm

Saturday, February 4: 9 am – 10 pm

Sunday, February 5: 9 am – 6 pm

<http://www.phillyautoshow.com/>

July 25 2012 to July 28 2012 :::: 2012 CORSA Convention at Sturbridge.

The Northeast Corvair Council (NECC), of which LVCC is a part, has been awarded the 2012 international convention for the Corvair Society of America (CORSA), to take place in Sturbridge, Massachusetts. The dates are July 25 2012 thru July 28 2012. Plan on being in colonial Sturbridge, Massachusetts, in July of 2012! See our website for details:

<http://www.corvair.org/chapters/necc/convention>

Next Membership Meeting: Wednesday, January 25, 2012

Mail Dues to:

Lehigh Valley Corvair Club
c/o Richard Weidner
2304 Main Street
Northampton, PA 18067

Club Officers:

President: William Remaly (570) 386-3578
Vice Pres: Dennis Stamm Phone: (610) 926-4723 Email: dmstamm at comcast.net
Secr-Treasurer: Richard Weidner. Phone: (610) 502-1414 Email: rcwvair at rcn.com
Newsletter Editor: Allan Lacki. Phone: (610) 927-1583 Email: redbat01 at verizon.net