



the fifth wheel

AUGUST 2013

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UNSAFE AT ANY ALTITUDE!

Editor's Note: This is the strange story about the relationship of the air-cooled Franklin, the rear-engine Tucker, and the Corvair fuel pump. Certain portions of this article was inspired by a story conveyed to the author by Richard Ribble of the Alamo Corvair Association.

The H. H. Franklin Company was incorporated in 1902 in Syracuse, New York, USA, to produce Franklin air-cooled automobiles. Barely surviving bankruptcy in 1933, the company was purchased by a group of Franklin engineers, led by Carl T. Doman and Edward S. Marks, who bought the assets at a bankruptcy sale and formed Aircooled Motors Development Co.

During World War II, Aircooled Motors was very successful producing helicopter and airplane engines. Several aircraft carried their engines, including the Aero-Flight Streak, Bartlett Zephyr, Bell 47, Bellanca Cruisair, Brantly B-1, Goodyear Duck, H-23 Raven, Hiller 360, Piper J-3F Cub, Seibel S-4, Sikorsky S-52, Stinson Voyager, Taylorcraft 15, Temco TE-1B, and the YT-35 Buckaroo.

In October 1945, Aircooled Motors was purchased by Republic Aircraft Corp. to ensure sufficient production of the O-500 (6A8-215) engine for the RC-3 Seabee. The acquisition was followed by an order for 5,000 engines for the Seabees (AY46). But Seabee production ended in 1947 after only 1,060 were built. After the war demand for the engines dropped dramatically and Republic was unsure of the company's future.



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 editor, Allan Lacki for details.

LVCC is one of the many regional chapters of the Corvair Society of America (CORSAs), 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.

Preston Tucker came to the rescue by purchasing Aircooled Motors in March 1948 to develop and produce engines for his rear-engine Tucker automobile. The Tucker car used a heavily-modified version of the Aircooled Motors six-cylinder horizontally-opposed O-335 engine, which was originally intended for the Bell 47 helicopter.

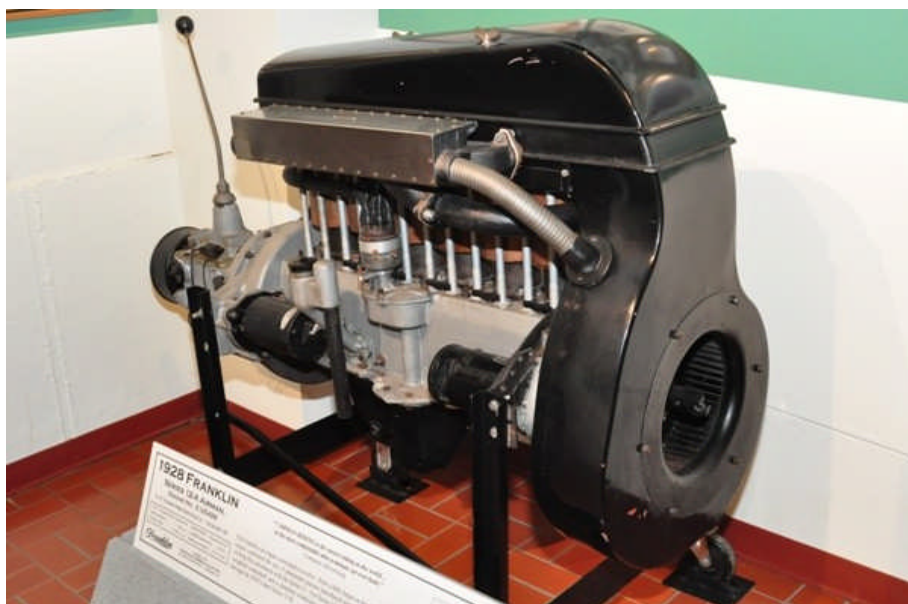
For reasons that remain unclear, Tucker's engineers converted the air-cooled engine to water cooling. But the result was a 334 cubic inch / 166 horsepower engine of substantial durability. According to sources, it was tested at full-throttle for 150 hours, the equivalent of 18,000 miles.

Only 51 Tucker cars were made before the company folded on March 3, 1949, due to negative publicity initiated by the news media, a Securities and Exchange Commission investigation and a heavily publicized stock fraud trial. Although the trial proved baseless, Preston Tucker was finished in the automobile industry. He died in 1956.

But the Aircooled Motors division of Tucker Industries escaped bankruptcy and remained busy throughout the 1950's. Ironically, no new engine development was undertaken during the later years of Tucker family ownership; a major reversal from Preston Tucker's preoccupation with innovation.

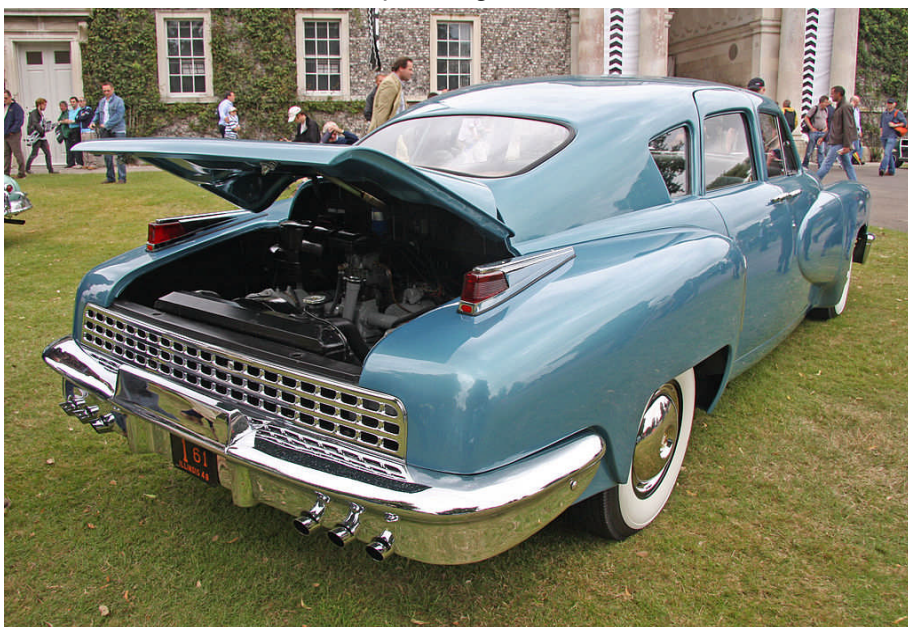
The Tucker family sold Aircooled Motors to Aero Industries, Inc. which renamed it Franklin Engine Co., Inc. And so, the Franklin name was restored. The new organization had the resources to develop and produce a new series of engines that continued until 1974, when Franklin was purchased by Audi, S.A. of Brazil. Audi, in turn, sold the assets, designs, and tooling, including many of the FAA Type Certificates, to the WSK-PZL group in Poland during 1975.

The WSK-PZL group manufactured large numbers of 4-cylinder and 6-cylinder air-cooled aircraft engines and sold them across the world. Like several other aircraft engine manufactur-



Above: 1928 Franklin automobile engine. Air-cooled. The blower is driven directly off the crankshaft.

Below: 1948 Tucker Torpedo. Equipped with a water-cooled version of the Franklin OC-335 helicopter engine.



ers, PZL incorporated a diaphragm-type fuel pump into the design of their 6A-350-C1, and 4A-235 series engines. And this is where the Corvair connection comes in: the fuel pump in question was an AC4886 fuel pump.

On December 18, 1999, a Globe GC-1B (Swift) airplane was substantially damaged when it impacted terrain following a loss of engine power near

Edgewood, Texas. The commercial pilot, sole occupant of the airplane, was fatally injured.

The 1946-model Globe GC-1B (Swift) was a low wing, single-engine, two-place airplane, which had retractable main landing gear and a fixed tail wheel. It was powered by a WSK "PZL-Rzeszow" Franklin 6A-350-C1R engine rated at 220-horsepower, and a McCauley two-bladed, constant speed-

controllable pitch propeller. At the time of the accident, the engine had accumulated only 59.54 hours since it was installed in the airplane.

The Federal Aviation Administration (FAA), working together with the NTSB Materials Laboratory, determined that the fuel pump had failed. An aluminum tab was attached to one of the pump's flange screws, and was marked "4886 262N."

During the FAA investigation, a Dana Corporation spokesman admitted that the marking is consistent with that used by Blackstone, formerly a subsidiary of the Dana Corporation. According to the Dana representative, the type 4886 (also known as a type AC4886 after the original design company) was designed for use in the Chevrolet Corvair. The pump was intended strictly for automotive applications, and was not intended for use in aviation.

Fuel pump failures continued, and in August, 2002, the FAA issued an Emergency Airworthiness Directive that grounded all aircraft equipped with the 6A-350-C1, and 4A-235 series engines. The Emergency Airworthiness Directive was prompted by a report received from the General Inspectorate of Civil Aviation (GICA), the Airworthiness Authority of Poland. The report informed the Federal Aviation Administration that there had been several failures of the valves and diaphragms in AC4886 fuel pumps. Failure of the check valves inside the pump had resulted in reduction or complete loss of fuel flow to the engine. Failure of the diaphragm could also result in reduction of fuel flow and an external fuel leak.

The FAA directive ordered the AC4886 fuel pumps to be removed from service immediately. Concurrently, PZL-Rzeszow issued Service Bulletin No. PZL-F/71/2002 providing instructions for replacing the AC pumps with sliding vane pumps to be provided by PZL at no cost to the owners of the engines. Good thing; the price of the new pumps amounted to over \$1,000 apiece.



Above: Franklin OC-335 helicopter engine.

Below: Water-cooled version of the Franklin OC-335 as equipped in the Tucker automobile.



Of course, by the time this occurred, Corvairs had been out of production for more than 30 years and nobody of sound mind could blame Chevrolet for PZL's error in specifying Corvair fuel pumps for their aviation engines. The FAA was also at fault. It issued "Type Certification Data Sheet No. E9EA" for the WSK "PZL-Rzeszow" Franklin 6A-350-C1R engine on December 8, 1994. This did not escape the attention of the National Transportation Safety Board,

with blamed the FAA for certifying the PZL engines with the inadequate component.

Polish production of Franklin engines continued until 2002 when WSK-PZL facilities were purchased by United Technologies Corp. (UTC) of the US in order to increase production capability for Pratt & Whitney (Canada). The Franklin piston-engine Type Certificates and tooling owned by WSK-PZL



This Franklin engine certainly looks like it still has a Corvair fuel pump!. For some reason, the FAA didn't ground the American Franklin engines so-equipped....

were not part of the UTC deal. The TCs and tooling have been sold to another Polish group but production is limited to manufacturing spare parts for the most widely used Franklin engines, namely the O-335 and O-350, the former being the basis for the Tucker.

This article was assembled by Al Lacki from the following sources:

- <http://www.gpo.gov/fdsys/pkg/FR-2003-03-06/html/03-5246>.
- http://en.wikipedia.org/wiki/Franklin_Engine_Company
- <http://home.comcast.net/~aeroengine/Franklin1.html>,
- <http://planecrashmap.com/plane/tx/N80951>.

CORVAIR FUEL PUMPS, by LON WALL

Editor's Note: This article was copied from the Corvair Underground website at: <http://www.corvairunderground.com/fuelpump.htm> The Corvair Underground is one of the largest Corvair parts supplier in the USA. Lon claims he has driven nothing but Corvairs since 1967, so he must know what he's talking about!

This is always a controversial subject amongst Corvair owners. But a great deal of the controversy is self inflicted. Mechanical or electric fuel pumps? Let's try and sort this out.

MECHANICAL FUEL PUMPS -

These are the pumps that came standard with all Corvairs from the factory. The mechanical pump is a simple diaphragm type that is operated by a push rod which rides on an eccentric on the crankshaft. The pump develops suction which draws gas from the fuel tank and distributes it to the carburetors.

It would be simple to say that all mechanical Corvair pumps are the same - but alas, that is not the case. The original 1960 models had a pump that appears to be the same but has a longer rod exiting the bottom of the pump. In turn a shorter pump pushrod was obviously used. This design was carried over into 1961 models for an uncertain period of time. This is why if you own a 1960 or 1961 you should always measure the overall length of your pushrod before you replace the pump.

In that same vein I would highly suggest that if you find you have one of these earlier pumps, you should convert

it to the 62-69 type. Why? Because it's easy and cheap to do and there is never a question in the future as to which pump you're using. If you should be unlucky enough to find an NOS earlier pump, do not be tempted to use it!

These 60-61 pumps were last produced well over 30 years ago and that pump will be too old to rely upon. To make the conversion, simply get one of our part number U-481 pump pushrods.

Now let's go back 18 years ago to 1992. One of the largest makers of Corvair fuel pumps got a defective batch of diaphragms. THIS HAPPENED ONCE and only in 1992. But the repercussions have lasted ever since. The problem was corrected within a few months BUT because this manufacturer sold to many different retailers it made it appear that numerous manufacturers were putting defective pumps on the market. To make matters worse, some of those retailers moved very few Corvair pumps, so for years (even to the present) some "brands" (labels, really) still sell defective Corvair pumps - all ones made in that original batch 18 years ago.

Well, bad enough you say. Oh it can always get worse - and it did. Back in the early 90's a small parts vendor saw an opportunity. Because everyone at the time was in a virtual panic this vendor saw an opportunity to promote their fuel pumps. An abnormal amount of negative advertising and outright nonsense permeated the Corvair grapevine. The claim, of course, was that this vendor's fuel pumps were perfect while everyone else's were bad. But there was an irony here.

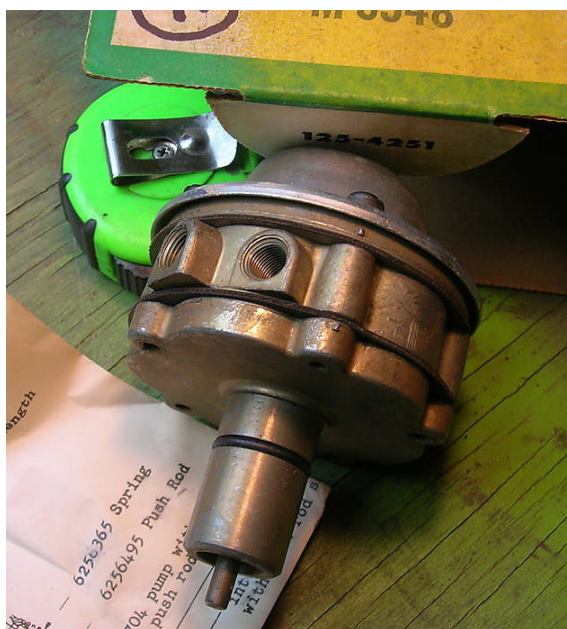
As time went on it became more than apparent that the vendors fuel pumps were actually *worse* than everyone else's. Where their pumps came from were anyone's guess, but by hundreds of defective pumps and 3 different, but failing, revisions later the matter was dropped.

But that wasn't enough. During this

timeframe numerous Corvair experts (some real some self-proclaimed) wrote articles that only clouded the issue even worse.

Some claimed that rebuild kits were the only answer. Ironical again, because the few remaining rebuild kits also suffered from the diaphragm problem, possibly because they had been the original supplier for this part from the beginning. Some claimed that certain visible features could warn you of doom. Visible reinforcement fibers in the diaphragm, the type of screws holding the pump body together, even the precise length of the lower diaphragm rod were deemed to be tell-tale signs. While it's true that some of these identities *sometimes* had validity, none of them were absolute.

The issue of the diaphragm rod length was especially absurd. It's true that the rod length has to fall within certain parameters, but the miniscule measuring of this rod was misleading overkill. The amount the rod protrudes from the pump casting can still vary up to at least 1/4 of an inch and still be within specs.



The original 1960 models had a pump that appears to be the same but has a longer rod exiting the bottom of the pump.

Take all of the above and horsewhip it to death from 1992 to the present and what can you expect? If you study the psychology of panics most of them look a lot like our fuel pump example. An issue can be twisted and confused so much for so long there is no way to untangle it.

A "white knight" came to some owners' rescue. The electric fuel pump is used on nearly all modern cars. Electric pumps are generally reliable, and are readily available. So why isn't that the end of the story?

I have said since Day One that I would never talk a happy electric fuel pump owner out of their pump. That has never really been the issue. The issues are new Corvair owners and what they should feel compelled to do. I think it's irresponsible to tell a new owner that he has to get rid of a perfectly functioning mechanical pump and replace it with an electric.

Electric fuel pumps cost more than mechanical pumps, especially when set up safely, take a bit of work and knowledge to retrofit and have their own problems (as do all mechanical devices). Bottom line - they are unnecessary, but if you really WANT one (as opposed to being convinced that you MUST have one) then that's your decision.

But what if your mechanical pump has failed?

FIRST - Make sure it HAS failed. I believe that many fuel pump "failures" have nothing directly to do with the pump. The most common of these is when you develop an air leak in the incoming fuel line. Spots to look for trouble include the rubber connecting line just behind the firewall (old cracked hose or loose fittings are the culprit) and make sure the fittings where the incoming line connect to the pump are

good. These air leaks can be transient or very specific and repeatable - all related to ambient temperature. If you think your fuel pump has quit pumping check these spots first.

And then there are leaks, both internal and external. Of course the biggest boogeyman is the internal leak that pumps gas into your crankcase causing everything from noisy lifters all the way to a trashed engine. This can be serious and I have seen it happen - with both mechanical AND electric fuel pumps - but it isn't so common that you have to spend every day immersed in paranoia about it.

External leaks can happen but they are usually the result of incorrect installation or other misuse of the pump OR you may have purchased one of the brands of pumps that never got sent back from the 1992 recall.

One important point about electric pumps is that if you chose to use one make sure to remember that the incoming line system was not designed to be pressurized.

RON AND THE TATTOOED LADY *By Ron Peles*

The Syracuse Nationals is a HUGE car show held annually on the grounds of the New York State Fairgrounds in Syracuse New York in July. The show is put on by the Right Coast Association. You can check them out at RightCoastCars.com. The show is open to any car and truck pre-1979. The cars include antiques, street rods, customs and race cars. A show within the show is for rat rods. For the past two years, show cars numbered in excess of 8,000 - not 800 but 8,000.

Among the participating clubs is the Central New York Corvair Club, which has a display inside one of the buildings. Gene Winfield, famous customizer from the sixties is there and gives out the Winfield Award for six

select custom cars. There is a pinstriping auction called Artie's Party, in which pinstripers from all over the country paint and then auction off their artwork for charity. Inside the main air conditioned exhibit hall of vendors, each year, there is a celebrity signing autographs. Past celebrities included Adam West, Henry Winkler and some of the other actors from Happy Days, etc.

This year, the celebrity was Danielle Colby-Cushman from American Pickers. American Pickers is on the History Channel, 9:00 PM on Mondays. Danielle works the two stores, one in Iowa and the other in Nashville, TN, and sends out Mike and Frank to "pick", e.g. find antiques. Lots of automotive, petroliana and motorcycle stuff. It's one of the top ratings show on cable TV. The celebrity autograph sessions raise lots of money for charity. This year, all proceeds were to benefit the Disabled American Veterans transportation project, to buy DAV chapters new vehicles to get to VA hospitals. Danielle was very nice and she signed a 1965 Corvair wheelcover for me.

At night, there are fireworks and during the day there are live musical acts on three stages. Many folks from PA, NJ, New England and Canada attend, as seen from the license plates. Each morning at 9:00 AM O Canada is sung before the Star Spangled Banner. The event kicks off with a poker run and free picnic at a lake for lunch (free) on Thursday, then the show is Friday, Saturday and Sunday. We usually leave Sunday for home. On Sunday they give away a newly built custom or street rod every year, nothing to buy, its included in your registration. Gloria and I have gone for years with either of the Corvairs and always get nice comments about Corvairs.

LVCC MEETING NOTES

Thanks to everybody who came out for our August meeting at Das Awkscht Fescht! Al Lacki handed-out new per-



Here is Danielle from the American Pickers TV show, signing Ron Peles Corvair Monza hubcap at the big Syracuse show! Her tattoos may look scary, but Ron reports that she is sweet and generous.



sonalized LVCC membership cards. If you weren't there, we'll mail one to you. Dick Weidner announced that our meeting room at the LANTA Community Center is being renovated, but it should be ready for us again in September. And so, our next meeting will be

back at our usual place, the LANT Community Center building at 1060 Lehigh Street in Allentown. Don't miss it!

Check out our Das Awkscht Fescht photo gallery on the next two pages!



Every year, Randy Kohler makes arrangements for a Corvair class at Das Awkscht Fescht.



Corvair came from far and wide, thanks not only to our own members, but also neighboring clubs like PCA and First State.



The weather was perfect! 75 degrees at mid-day with clear skies and a nice breeze. So nice, it blew down our EZ-Up!



Das Awkscht Fescht is widely known and draws many spectators from the public.



Rampsides are always a big hit, especially with younger folks who have never seen one.



You can hear the Turbo-Air engine fan pulling cooling air in through the grill behind the convertible top boot!



1963 Corvair sedan. The exterior is white, but the flying wing roof is painted light blue to match the interior.



Two Corvair Spyders, one a 1962 and the other a 1964, parked next to the LVCC EZ-Up.



Carl Moore, Wayne Troxell, Dick Weidner, and Jerry Moyer. Who is that man in the straw hat?



Dennis Weaver, Curt Stone, Gary Ganssle. I believe the lady with the sewing is Mrs. Dennis Stamm.



Here is Randy Kohler, pulling tickets for the many door prizes we gave away at Das Awkscht Fescht this year!



Our meetings are laid-back. At Das Awkscht Fescht we simply decided that our next meeting would be in September!

LVCC Calendar of Events!



Saturday, August 24, 2013 :::: Branches, Brawn and Beauty Car Show.

Souderton, PA. Location: Souderton Mennonite Homes, 207 W. Summit St , Souderton, PA. Time: 9:00 am - 3:30 pm This is the 38th year for this car show, auction, and chicken BBQ. Price: \$10.00 (pre-registration) and \$15.00 for day of event. August 22 is last day of pre-registration. All judged by "People's Choice". All cars must have a fire extinguisher on board. No alcohol, no motorcycles. Event is presented by the Living Branches Classic Car Club.

Friday, August 30, 2013 :::: Cruise at Steel Stacks.

Bethlehem, PA. Location: 101 Founders Way, Bethlehem, PA 18015 from 5:30 - 8:30 pm. Sponsored by Lehigh Valley Cruisers, Inc. Donations accepted for Camelot House for Children. Music, door prizes, 50/50, silent auction, food. One door prize ticket per vehicle. <http://www.lehighvalleycruisers.com/>

Sunday, September 1, 2013 :::: 25th Annual Slatington Lions Club Car Show.

Location: Slatington, Pennsylvania. Location: Slatington Airport on State Highway 873, 1000 Airport Lane, Slatington PA 18080. Cars, Trucks, Motorcycles. Pre-registration \$10 by Aug 25th, day of show \$25. Flea market and craft spaces available. For more info, contact Jeff Kunkle @ 610-428-3244, Charlie Sule @ 610-737-5667, Ted Kistler @ 610-703-6822.

Saturday, August 31, 2013 :::: 48th Annual Duryea Day Show.

Boyertown, PA. Time: 9 am to 4 pm. Location: Boyertown Community Park at the corner of Madison Street and Second Street, Boyertown, PA. Price: \$10 per car pre-registered. \$12 per car day-of-show. The Duryea Day show is a joint effort organized and run by the Boyertown Museum of Historic Vehicles –Pennsylvania's Transportation History Museum – and the Pottstown Region of the Antique Automobile Club of America. <http://boyertownmuseum.org/category/duryeaday>

Saturday, September 7, 2013 :::: Pottstown Nostalgia Night Cruise.

Pottstown, PA - Cruise "Nostalgia Night". Location: Downtown Pottstown, PA on High Street from 5:00 pm until 9:00 pm. No Alcoholic Beverages Permitted! Donations are always Welcome at the Entrance and this year part of the donations proceeds go to benefit the Children's Hospital of Philadelphia, Children's Miracle Network and The Pottstown Cluster. Everyone is welcome to come and show their cars. Participation limited to vehicles that are at least 10 year old or older. Phone Jay Berman at 484-256-4989 or Helen Aulenbach at 610-367-0122. Website: <http://modtiques.blogspot.com/>

Sunday, September 8, 2013 :::: 42nd Annual Strausstown Car Show.

Strausstown, PA. The event is held in the Strausstown Lions community park located along Route 183, 1/2 mile south of I-78, Exit 19. All show cars must be pre-registered. Registration deadline is September 2. Registration form is available at <http://www.strausstownlionsclub.com/wp-content/uploads/2013/05/2013carshow.PDF>

Saturday, September 14, 2013 :::: Harleysville Cruise Night.

Every second Saturday from May to October, the Bucks-Mont Street Machine Association hosts auto enthusiasts from near and far for "Cruise Night" from 6 to 11 p.m. in the parking lot of the Harleysville Walmart off Sumneytown Pike in Lower Salford. Large lighted, paved, secure parking lot for cruisers.

Saturday-Sunday, September 14-15, 2013 :::: Central Pennsylvania Corvair Days.

Hershey, PA. Hosted by Central PA Corvair Club. Location: AACAA Museum, 161 Museum Drive, Hershey, PA. Rally, show, scavenger hunt, social hour, and banquet. Phone: 717/991-7341. Email: earlzgames@comcast.net Website: <http://www.centralpacorvairclub.org/>

Wednesday, September 25 2013 :::: LVCC Membership Meeting.

Regular LVCC Club Meeting. 7:30 PM at the Lehigh and Northampton Transportation Authority (LANTA) office building in Allentown, Pennsylvania. The LANTA building is located at 1060 Lehigh Street Allentown, Pa 18103. Directions: From I-78: Take Exit 57, Lehigh Street. At the end of the exit ramp, go east toward the City of Allentown. Follow Lehigh Street of approximately 2 miles - past the Parkway Shopping Center on the right and Faulkner Volkswagen on the left - until you reach the LANTA entrance on your left. It is at the intersection of Lehigh and South Howard Streets, right across from a Hess service station. Drive around to the auto parking lot and enter through the office entrance. Our meeting room is on the second floor.

LVCC Classified Ads!



FOR SALE: 1964 Chevy Corvair Convertible (red with black interior). 4-speed, 110 engine. Runs and drives OK. Body patched, paint and top OK. Interior rough. Good project car. \$2,800.00 OBO. Located in Doylestown, PA. Please contact Jack Herman. 267-664-4745.

FOR SALE: 140 motor block, bare with all head studs. Came out of a 1965 Corsa with 4 speed trans. The block number is T1216RB. Best offer takes it. Contact Carl Moore. Email moo568@dejazzd.com.

FOR SALE: Left front door for 1964 Corvair convertible with wind wing. Minor rust at bottom. \$50. Engine deck lid for 1964 Corvair. Good condition. \$100. Call Fred Scherzer. (484) 948-5142.

LVCC Merchandise for Sale!



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

Next Meeting: Wednesday, September 25, 2013
Club Dues Are Due: \$15. (\$10 for CORSA Members).

Mail Dues to:

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

LVCC Club Officers:

President: William Remaly (484) 809-1081 (New phone number).
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