

### Newsletter of the Lehigh Valley Corvair Club (LVCC)

# the fifth wheel

Winner of the 2014 CORSA Tony Fiore Newsletter Competition

#### JANUARY 2016

### Inside this issue

1963 Corvair Monza! Copied from a Chevy Ad	1
Next LVCC Meeting Wednesday, Jan. 27	1
Howling Pilot Bushings How and Why	2
Oilite Pilot Bushing Pho- tos	3
Pilot Bushings. Thinking Outside the Box Photos	5
Dave Noneman's Green- brier Makes the Media!	7
Nominations for 2016. Elections at Next Meeting	8
NJACE Parts Auction in New Jersey	8
Blast from the Past! Abarth Exhaust	8
LVCC Classified Ads	9
Handy Tool for Changing Fan Belts	9
Local Car Events Around Lehigh Valley	10
Entrance to LANTA (Where We Meet)	10
LVCC Club Officer Contact Information	10



ESTABLISHED 1976



Next LVCC Meeting: Weds. Jan. 27, 2016

Time 7:30 PM. Place: Lehigh and Northampton Transportation Authority Headquarters (LANta), 2nd Floor Meeting Room, 1060 Lehigh Street, Allentown, PA 18103. Latitude : 40.587607 | Longitude : -75.474405. Bring a guest!

Don't get locked out! If you arrive late, the main door of the LANta office building may be locked. This is for security purposes. But the facility is open around the clock, so ask one of the garage employees to direct you to the second floor.



*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. For details, email our newsletter editor, Allan Lacki, at redbat01@verizon.net.

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 dues are \$10 a year for CORSA members or \$15 a year for non-CORSA members. Make your check payable to Richard C. Weidner, LVCC Treasurer, and send it to his address at 2304 Main Street Northampton, PA 18067.

# Howling Pilot Bushings How and Why!

### Angry Owners Rant!

VirtualVairs, CorvairCenter, and the Corvair Forum are three popular internet discussion boards where you'll find lots of complaints about howling pilot bushings. Typical rants go like this:

"I too am having issues with the aftermarket pilot bushings for my 140. My original GM bushing never squeaked once. Should have left it in there. Two soaked and squeezed oil bearings later are still noisy after 500 miles. If the original bearing lasted all this time and the replacements don't, I'm going with the quality of the new ones stink."

"Does anyone happen to have NOS GM Oilite (not sure I am spelling that correctly) pilot bushing they would sell me? GM #6256648. I am through with the aftermarket ones we are getting. In my recent engine rebuild and clutch refresh the brand new pilot bushing screams it head off in the morning when I start out. Eventually quits once things warm up.

We sure never had that problem with the original Oilite ones! Our local club Corvair mechanic who did the installation has done lots of clutch jobs over the years. He soaked the bushing in oil over night before installation. He did another clutch job for another club member a few weeks later and had the same thing happen, screeching bushing."

### What's a Pilot Bushing?

Every car out there with a manual transmission has a transmission input shaft. The input shaft connects the crankshaft of the engine to the gears inside the transmission. The clutch disc rides back and forth on the shaft. When the clutch is engaged, the crankshaft and input shaft rotate as one and power is transmitted to the transmission through the shaft. However, when the clutch is disengaged, the shaft does not rotate. And so, if the engine is running while the driver is pushing on the clutch pedal, the crankshaft must be able to spin without grabbing onto the transmission input shaft. There needs to be a bushing or a bearing that supports the shaft where it joins with the crankshaft. That's the pilot bushing.

The "pilot" in the name pilot bushing stems from the fact that the input shaft and the crankshaft need to be perfectly aligned when the transmission is bolted to the bell housing; otherwise, the input shaft will not fit into the hole (internal diameter) of the bushing.

The transmission input shaft is typically between six and ten inches long on most front-engine / rear wheel drive cars. But because of the transaxle arrangement, Corvairs have very long input shafts, about 24 inches in length. And, at the mating surface, they are only 15 millimeters in diameter. (Yeah, millimeters. That translates to about 19/32nds of an inch.

The input shaft therefore needs to be truly straight to keep it from whipping and hogging out the pilot bushing and the input shaft bearing inside the transmission. Because nothing is perfect, the pilot bushing on a Corvair takes a harder beating than on most other cars. Imagine what happens when you rev up your Corvair to, say, 4,000 RPM and dump the clutch!

And yet Corvair pilot bushings are such small things. According to my vernier caliper, the internal diameter is a tick over 15 millimeters, the outer diameter is a tick over 23 millimeters, and the length is three quarters of an inch. They are press-fit into a hole in the end of the crankshaft and are made of an oil-impregnated sintered bronze material known as "Oilite", which according to Wikipedia, was invented by Chrysler around 1930. The following information is from the current Oilite catalog:

Oilite bearing products are made by the P/M process, with close controls on materials and manufacturing to produce the premier self-lubricating bearing. With the emphasis on quality throughout the process, we produce Oilite bearings with large interconnected pores vital for the channeling of lubricants to areas between the shaft and bearing. At rest, the capillary action will recover lubricant from the surface and replenish the reservoirs. This porosity feature of Oilite is the most sought-after quality of our bearings.

### Oilite Explained.

Oilite bushings have approximately 20 percent oil by volume, which has been generally considered to be sufficient for a pilot bushing. You can always tell if your pilot bushing is an Oilite-style bushing by simply heating it up or by squeezing the ends of it with your thumb and forefinger with some regular motor oil inside. In either situation, you should see small beads of oil ooze from the outer surface.

It must be remembered that the input shaft rotates within the pilot bushing when the clutch is disengaged, which is basically when the driver is stopped or shifting the gears. And there is really no way for a mechanic to grease or oil a pilot bushing because it's buried in the bellhousing beneath the pressure plate, clutch disk and flywheel. So, Oilite seems to be a good choice of material

General Motors had been using Oilite pilot bushings for their manual transmission cars for many years. The Corvair was no exception. Corvair pilot bushings aren't much smaller than those used on larger GM engines. The pilot bushing on a small block Chevy V8 engine, for example, is only slightly larger in its external diameter.

# Oilite Pilot Bushing Photos.



True Oilite bushings have a flecked appearance like this one. If shiny, it may have been machined improperly.



Oilite pilot bushing is press-fit into the end of the crankshaft.



Oilite under a microscope at 500% magnification.



Here's the transmission input shaft inserted into the bushing.



Another view inside the bellhousing.



Checking a pilot bushing with a magnet.

### NOS Oilite Bushings.

Some of the guys on the Corvair discussion boards swear the original Oilite pilot bushings were better than the repro versions offered today. And it's not just Corvair guys who make this claim. The same gripes are written up on Camaro and Mustang discussion boards to mention a few.

Often, the complaints blame pilot bushing on cheap Chinese copies made of "magnetic" oilite-style bushings. But that's not really fair, for there are several grades of Oilite bushings that are still being manufactured by the Beemer Precision, Inc. - the company that currently holds the Oilite trademark. And some of them are made with a bronzeiron alloy. Here is a run-down of the types of Oilite bushings currently offered by Beemer Precision:

<u>Oilite.</u> Standard Oilites are the most widely used of all the types of Oilites available. It is the type GM specified for pilot bushings on its cars and trucks. Engineering specifications that encompass the standar Oilite material are: ASTM B-438-95A Grade 1 Type II, MIL-B-5687D Type 1 Grade 1, CT-1000-K26, SAE 841, and old SAE standard Type 1 Class A.

<u>Oilite Plus.</u> Oilite Plus is the same bronze alloy as an Oilite, impregnated with turbine oil and fine particles of polytetrafluoroethylene (PTFE). However, it is intended for slow speed applications and therefore is not suitable as pilot bushing material.

<u>Super Oilite</u>. Super Oilite is an iron based material that is harder, stronger, and cheaper than Oilite. Again, it is rated for slower speeds. This is probably the type of "magnetic" Oilite that car guys gripe about on the discussion boards.

<u>Super Oilite 16 is Super Oilite that has</u> been heat treated to a hardness greater than HRC 50. This material is used for extreme loads and slow oscillating motions. As you can see, there are several kinds of Oilites, but only one is suitable for use as a pilot bushing...the original standard SAE-841. Those folks who have had bad experiences with "magnetic" Oilites are victims of vendors who have specified the wrong type of Oilite for their repro bushings. It's not necessarily a Chinese thing.

### What Makes Them Howl?

Some people call it a squeal, some call it a screech, and some call it a howl. But whatever you call it, it's loud. And quite embarrassing to a car guy.

Pilot bushings howl when there isn't sufficient lubrication. Down at the microscopic level, the howling is a symptom of galling between the pilot bushing material and the input shaft. After a while, this can lead to pilot bushing wear, which in turn, will lead to hard shifting and eventual destruction of the input shaft surface. In the worst case, the bushing and shaft will seize, making it impossible to shift the transmission.

The howl is often intermittent and that makes the condition exasperating. But most often, they will howl when the car is cold. Why? When pilot bushings are cold, the oil withdraws into the pores of the metal by way of capillary action and so there is no lube on the contact area between the bushing and the input shaft.

Of course, the opposite is true, too. When pilot bushings are hot, they sweat oil, which is a good thing until the oil burns out of them completely. In theory, this shouldn't happen before the clutch burns out, but a number of people have had pilot bushings screech within a few hundred miles of replacement.

Even if a vendor specifies the right kind of Oilite, i.e. SAE-841, the end product can still be defective due to improper machining. Here is what the Oilite catalog has to say about that: There are a few basic machining practices required to optimize retaining surface micro-porosity and the self lubricating properties of Oilite® bearing materials. Cutting tools must be sharp. For this reason, carbide inserts are highly recommended since they hold a cutting edge much longer. This preserves the open pore structure from which oil can flow freely. A dull tool will smear the pores, greatly reducing the self-lubricating qualities of the material.

Roller burnishing is an excellent choice to modify an ID slightly. Ball sizing can also be used on the ID effectively for final sizing.

Honing and grinding are never recommended on Oilite® bearing materials. Using these methods on any surface which will become the bearing surface will introduce grinding media and could easily smear the bronze pores sealing the micro-porosity.

After extensive machining, bearings should be reimpregnated with appropriate / specified oils. Vacuumed impregnation is recommended. If bearings were not lubricated prior to machining and if cutting fluids were used, that medium must be removed prior to any impregnation of the oil selected for the application. Your authorized distributor can provide oils for reimpregnation after machining.

### Why Not Go NOS?

Simple: The hoarders have grabbed them all! Seldom do you see NOS Corvair pilot bushings on sale. And to make things worse, the outer diameter of a Corvair pilot bushing is unique.

As we have seen above, small block Chevy V8 pilot bushings are almost identical, but they have a slightly larger diameter. And so are the pilot bushings for Buicks, Oldsmobiles, Pontiacs and other Chevrolets. Not even a Vega or Chevette pilot bushing will fit. So, you can't use any other kind of pilot bushing in a Corvair unless you want to do some machine work.

#### JANUARY 2016

# Pilot Bushings. Thinking Outside the Box!



Here we have a typical needle bearing, like the kind used in newer GM performance cars.



Self-lubricating graphite plug bushings.





A heavy duty sealed ball or roller bearing would seem to be the best solution. They work well in applications where the pilot bearing is installed in the center of the flywheel instead of the crankshaft, but they are too big to fit in a Corvair crankshaft!

Kevlar-reinforced nylon pilot bushings have been offered for diesel trucks for several years.



Graphalloy sounds like a dream come true, but alas, are only suitable for slow-moving low-RPM applications.

### **Other Alternatives:**

Warning! If you are contemplating something other than a NOS Corvair Oilite, you should be aware that nobody on the planet makes either a bushing or a bearing that has the same dimensions as a Corvair pilot bushing. Not Timken, not SKF, not FAG, not nobody! Not even Beemer Precision!

So let's start there. Some machine work will be necessary for any of the alternatives discussed below. We've thrown in some "straw man" ideas that are not really feasible but are interesting nonetheless.

Sealed Ball Bearings. Roller Bearings. Even the guys with diesel pickup trucks have had problems with pilot bushings, and some have resorted to large lifetime lubricated ball bearings and roller bearings in their place. I'm talking about bearings with inner and outer races and grease seals to keep the lube in and the dirt out, like alternator bearings.

This modification is feasible for those vehicles where the pilot bushing is pressed into the flywheel instead of the end of the crankshaft. Simply machine the hole in the flywheel to the proper diameter and press in the larger, beefier sealed bearing. I suppose it would be possible to ream out the hole in the end of a Corvair crankshaft, too, but it would take a total tear-down of the engine to do it.

<u>Needle Bearings.</u> Needle bearings are a special breed of roller bearing. They are more compact and therefore can be made to fit into the end of a Corvair crankshaft.

The difference between a needle bearing and a roller bearing is the ratio of diameter and length of their rollers. When the ratio of the diameter and the length of roller of a roller bearing is between the interval of 0.1 to 0.4, that bearing is called a needle bearing.

For many years, vendors have offered needle bearings (as opposed to roller

bearings) as replacements for Oilite pilot bushings. Japanese manufacturers like Mazda and Toyota have been using needle bearings successfully for years. (I have driven my own two Japanese manual transmission cars over 300,000 miles without any pilot bearing problems). In fact, Chevy is now using needle bearings on its latest highperformance V8s.

THE FIFTH WHEEL

Needle bearings offer the benefit of lower friction and thus smoother shifts as compared to Oilite bushings. But the overall diameter of GM pilot bushings is so small that there is no room for grease seals or an inner race. And so, the needles can be easily contaminated with dirt from inside the bellhousing When a needle bearing fails, it usually takes the input shaft with it.

Although most Corvair pundits advise against the use of needle bearings, one Corvair racer uses them on his street Corvairs because he has so many bad experiences with howling repro pilot bushings. He buys small block Chevy V8 needle bearings and machines them down so they'll fit the Corvair crankshaft. "If the bellhousing is dial indicated, the needle bearings work great..."

Graphite-Plugged Self-Lubricating Bushings. As far as I can tell, nobody has ever tried to substitute a graphiteplugged bushing for a pilot bushing. These curious bushings come in bronze and iron. They have holes drilled around their circumference. The holes are plugged with a mix of graphite and other solid lubricants. A number of manufacturers including National Bronze of Michigan offer them in various sizes. The performance statistics in the National Bronze catalog suggest they have suitable temperature, speed and pressure ratings for a pilot bushing.

<u>Graphalloy Bushings.</u> We investigated Graphalloy, too. These interesting bushings are manufactured by Graphite Metallizing Corporation of Yonkers, New York. The main ingredient in Graphalloy is - you guessed it - graphite! But unlike graphite-plugged bushings, the graphite is part of the alloy from which the bushing is manufactured. It can perform at temperatures to 750 degrees, but alas, is only suitable for applications up to 500 RPM. Think of that the next time you rev your Corvair at a stop light.

Kevlar Bushings. At first blush, Kevlar pilot bushings would seem to be another good alternative. Like Oilite, they can tolerate a bit of contamination and they are self-lubricating. They first made their appearance for diesel applications, where rotating speeds and temperatures are relatively low.

A couple of vendors have been offering Kevlar bushings for gasoline V8s, but out in the field, the results have been mixed. In high-performance applications, there have been reports that the "plastic" literally balls-up.

And the term "Kevlar" is a bit misleading. These bushings are actually made of a material known as "Hydlar ZF", which is an aramid fiber filled nylon material rated for only 210 degrees Fahrenheit in continuous duty. Sure, aramid is synonymous with "Kevlar", but the temperature tolerance is a bit low for a pilot bushing.

Furthermore, Hylar ZF cannot tolerate surface speeds greater than 100 SFM (Surface Feet per Minute), which equates to 650 RPM for a Corvair transmission input shaft. 650 RPM is just a high idle.

Other Plastics. According to the "Advanced EMC - Bearing Material Guide", there exist certain kinds of plastics that may meet our need for a bushing. For example, Fluorolon 4031, Fluorolon 40331 can tolerate high temperature, high speed, and heavy loads. But I have not been successful in finding any company that offers bearings made of these materials, nor rod stock with which to fabricate them. You can find the "Bearing Material Guide at this website with the very long URL! http://www.advanced-emc.com/ product\_guides/Advanced-EMC-Bearings-Guide.pdf

(Continued on page 7)

#### JANUARY 2016

Dupont Vespel SP-2515 is another super-plastic that may suffice as a pilot bushing material. The Dupont website has plenty of information about Vespel including brochures about Vespel bushings. In addition, Dupont offers tubes and rods in Vespel which are probably suitable for machining into pilot bushings, but more research needs to be done to determine if the tubes and rods are being offered in usable sizes.

<u>Wrap-Up.</u> So, there is a summary of alternatives to Oilite pilot bushings. As noted, nobody makes a bushing or bearing that would fit in the end of a Corvair crankshaft, so any of these alternatives would require precision machin-

#### THE FIFTH WHEEL

ing or adapters of some kind.

And with the exception of needle bearings, nobody has tried to make a pilot bushing (or bearing) out of any of the alternative materials.

If you want to try it, you'll be trailblazing uncharted territory. Based on our research (which is admittedly pretty shallow), some of them look promising. If you succeed, you will be a hero not only in the Corvair community but all across the world!

On the other hand, it would be easier and cheaper to simply pay one of the hoarders for a genuine NOS Corvair pilot bushing and be done with it! Your choice. Al Lacki

### Post Script:

Valuable information about sizing and machining Oilite can be found in this online brochure:

https://www.oilite.com/PDFs/ odesigneng.pdf

### Dave Noneman's Greenbrier Makes the Media!!



LVCC member Dave Noneman's Greenbrier appeared in "Old School Rodz" magazine! And so did a Rampside. The photo was taken in September at the Gasket Goons Car Show which is held every year in Springtown, PA. Congratulations Dave!

#### THE FIFTH WHEEL

### Nominations!

Nominations are still being accepted for the positions of President, Vice President, Secretary/Treasurer, and Activities Director. Submit your nominations by e-mail or postal mail to Dick Weidner, our Secretary/ Treasurer: Here is his contact information: Richard C. Weidner 2304 Main Street Northampton, PA 18067 rcwvair@rcn.com. Elections will take place at our January meeting. Please participate in this very important process.

### NJACE Parts Auction

It's not too soon to be thinking about the annual New Jersey Association of Corvair Enthusiasts (NJACE) Parts Auction, a staple now dating back more than 30 years and one of the most popular Corvair events in our region.

This year's auction is scheduled for Saturday, February 13, indoors at Ashley's Auto Body on Hillside Avenue in Flanders. Mark the date! (We'll use the following Saturday, February 20, as a "snow date" if necessary.)

At this event, new and used Corvair parts and accessories are sold at auction, with a 10% commission of the sale price going to the club treasury. You may bring parts to sell, you may buy, or you may do both, or you may just come to enjoy the fun.

Here is what you need to know to fully enjoy the day: First, plan on making a day of it. Due to the nature of how the auction operates, it is not possible to process any buyers or sellers until the auction is completed. Doors open at 9:00 for set-up, we begin the bidding at 10:30 AM, take a pizza break at 12:30, resume the bidding at 1:00 PM, and finish up typically around 2:30 PM. Only at that time can we tally the sales, collect from the buyers, and pay the sellers.

Second, plan on getting there early. We'll open the doors at 9:00 AM, to allow time to tag and display any parts you are selling, and to allow you to peruse the parts being offered. If you're selling, you will need to fill out an Auction Lot Card for each part or group of parts being sold as one, so please allow sufficient time to do this before the start of bidding.

Auction Lot Cards are available on the NJACE website so you can print what you need and fill them out in advance. (http://www.corvair.org/chapters/njace/ Auction\_Lot\_Cards\_2016.pdf).

But you can also get blank lot cards that day. If you are buying - or even if you think you are not buying - you will be issued a Bidder Number by which the auction desk will track all purchases. We ask that items being offered be limited to Corvair parts or Corvair-related items, only. Also, we ask that you not bring more than one of the same item to sell. You can, however, sell multiple items in a "lot." You could offer, say, one lot of six oil filters, instead of six individual oil filters.

Remember that only quality items sell easily. Greasy, rusty, bent and broken pieces have limited appeal.

The club will deduct a 10% commission on all sales. You may also donate items for the full benefit of the club.

Did we mention that lunch is included at no charge?

### **Blast from the Past!**

Back in the 1960s, Carlo Abarth, the Carroll Shelby of Fiats, manufactured custom exhaust systems for a variety of foreign and domestic cars. Check out this wild quad-pipe set-up he offered for Corvairs. Complete with a cross-over pipe and plenty of hangars front and rear. And he also offered a dualtip muffler to replace the stock muffler on single-exhaust Corvairs. Have you ever seen an Abarth system on a Corvair?



# LVCC Classified Ads!

**FOR SALES:** 1961 Corvan. 15,000 original miles, parked since 1965, last inspection! Owner says no rust. Cranks over but does not start! Standard shift. Want fair price. Kermit Wenner 610-428-5718.

**FOR SALE:** 1966 Corsa coupe, 140 hp white with red interior. The front crossmember is off and gas tank is out. Crossmember is solid and gas tank was sealed and coated. Interior is out and some rust repair was done. Have all the parts. Car has telescoping steering column and rear speaker option. Mark Snyder. Phone: (610) 965-4039. Email: mapka2000@yahoo.com

**FOR SALE:** 1969 500 coupe, 110 hp/PG, very low mileage. Garaged since early 90's. Fathom green with black interior. Bench seat. Car is complete. Has all the smog equipment. Mark Snyder. Phone: (610) 965-4039. Email: mapka2000@yahoo.com

**FOR SALE:** Corvair Parts. The parts are varied and plenty. I have pictures of most items in the Flickr link below. A few items I didn't photograph are a standard black steering column, a 110 or 95 HP engine complete, and a 4 speed transaxle with a broken side cover. If there are any questions, please ask. I also have literature for the cars. All is late model. Mark Snyder. Phone: (610) 965-4039. Email: mapka2000@yahoo.com. Flickr link: https://flickr.com/photos/62003436@N05/ sets/72157662486686311

# Handy Tool for Fan Belts!

A handy tool to carry in your Corvair is a dwarf deep offset 12 point flank drive 9/16" box wrench. It can be used to tighten the bolts on the fan idler and also the bolts under your generator or alternator. Available from Snap-On, Part Number: XSO1618A deep 60 degree offset 1/2 9/16 wrench.

Thanks to the Central Pennsylvania Corvair Club for this tip!



### **Clark's Corvair Parts**<sup>®</sup>

400 Mohawk Trail, Shelburne Falls, MA 01370 (413)625-9776 www.corvair.com



### **Our 42<sup>nd</sup> Year!** *Get the 2013-2018 Catalog*

If you did not get our latest catalog in 2013 or 2014, you can get one free on your first \$50 order during 2015. (Additional catalogs \$3 with an order)

Over 100 new repro parts in the past 3 years.

# Local Events In and Around Lehigh Valley

Car show season hasn't started yet and so we don't have any outdoor events to recommend to you. However, you may want to consider these indoor events. They sound like fun!

### Thursday January 28 to Sunday January 31, 2016 :::: Pennsylvania Auto Show 2016

Location: PA Farm Show Complex & Expo Center, 2301 N. Cameron Street, Harrisburg, PA 17110. Hundreds of the hottest new cars and trucks all in one place! Time: Thursday 1 PM - 9 PM, Friday 10 AM - 9 PM, Saturday 10 AM - 9 PM, & Sunday 10 AM to 5 PM. Prices: Adults (13 and over) \$10, Senior Citizens (62 and over) \$6, Military (Active with I/D only) \$6, Students (w/ID Onsite Only) \$6, Children (12 and Under)\* FREE. Email: SFreeman@enthusiastnetwork.com Website: http://autoshowharrisburg.com

### Saturday, February 13, 2016 :::: NJACE Annual Corvair Parts Auction

Location: Ashley's Auto Body on 274 Hillside Ave, Flanders, NJ 07836. Time: 9:30 AM to 3:00 PM. Price: Free to get in. We'll use the following Saturday, February 20, as a "snow date" if necessary. LVCC members are certainly welcome! 10% commission payable by sellers to NJACE on parts sold. Free pizza lunch! Staged by amateur NJACE auctioneers, this indoor February event provides ample opportunity for Corvair enthusiasts to get hot deals on Corvair parts plus a few laughs! Call or email Brian O'Neill at (973) 729-5586 or bmoneill@juno.com

# LANta Community Center Entrance



Lehigh and Northampton Transportation Authority (LANta) Headquarters

Community Center Meeting Room, 2nd Floor

1060 Lehigh Street Allentown , PA 18103

We Meet Here! (Entrance to LANTA)

### LVCC Club Officers:

President: Dennis Stamm Phone: (610) 926-4723 Email: dmstamm@comcast.net Vice Pres: Fred Scherzer Phone: (215) 234-4458 Email: jukeboxman@comcast.net Secr-Treasurer: Richard Weidner. Phone: (610) 502-1414 Email: rcwvair@rcn.com Newsletter Editor: Allan Lacki. Phone: (610) 927-1583 Email: redbat01@verizon.net

# Next Meeting: Wednesday, Jan. 27, 2016