



The Oscillator



"All the Electrons that are Fit to Flow . . . "

The Official newsletter of the DVHRC

FALL 2018

Kutztown XXXIX Review



The DVHRC is extremely proud to partner with Renningers and the success of our Kutztown Radio Meet series is a tribute to a lot of hard work *together*. Renningers manages a unique venue with lots of space in an outdoor open market format with most safely under cover. There is a lot of promotion, logistics, and event management services provided by the Renningers staff.



Above: Easy sign up for next spring provided by friendly Renningers roving representative.

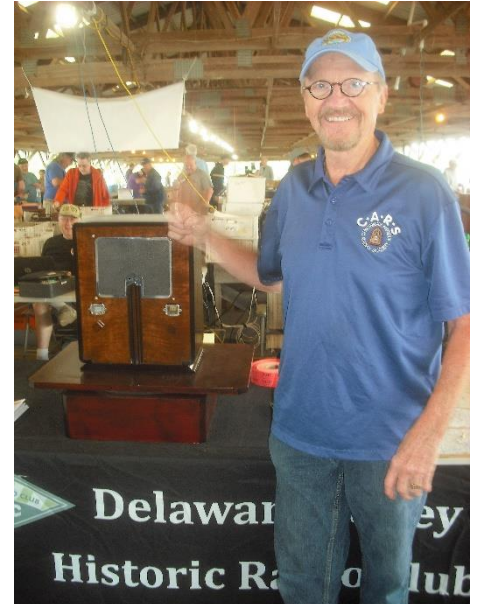
When you add in hundreds of volunteer hours from DVHRC members and others, it is really hard to place a value on all of that.

Lewie Newhard works locally with Renningers and club members throughout the year to make sure you have the best time possible and his passion and ours is to make it even better. At a recent membership meeting we reviewed KTZ-39 for a whole hour and your comments were studied to help us shape future events. One goal all clubs share is how to attract younger folks interested in vintage electronics so don't be surprised if we ask for your opinions on this and future Kutztown events.



Above: President Jarret Brown presents prize to Bruce Mager, winner of "best display" on Friday.

Below: More of Bruce's display. He owns and operates Waves LLC/WavesRadios.Com, in NYC.



Above: Tom Hunt of Lexington, KY found himself to be lucky winner of stunning Majestic Model 460-A Deco raffle radio on **Saturday**. Cash awards for those still set up after noon on Saturday were presented to Keith and Bob Seiwel, Max Theis and Steve Johnson. **Below:** Tom Spiegle made a good deal on Saturday on this big box for his essential Philco collection.





Delaware Valley Historic Radio Club

PO Box 5053
New Britain, PA 18901

www.dvhrc.com

The *Oscillator* is the quarterly newsletter of the Delaware Valley Historic Radio Club.

Articles on radio and television history or collecting can be submitted by the 25th of month prior to quarterly issue dates of April, July, October and January to the editor at gdottor@yahoo.com.

Personal views, opinions and technical advice do not necessarily reflect those of members, officers or Board of Directors of the DVHRC, nor is the DVHRC responsible for any buying or selling transactions.

Dues are \$20 per year and can be paid at a meeting or mailed to the above address. Meetings held 2nd Tuesday of each month at Telford Community Center.

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Above: Keith and Bob Seiwel stayed set up into Saturday afternoon and reaped a reward.

The Friday night auction was again efficient and allowed us to later enjoy social activities. Thanks to Pete, the Daves, Stan and the runners who get a lot of exercise and lend their expertise to describing items- and of course, you, our faithful buyers! Star of the auction was a pristine pre-war Zenith console.



Above: It all started innocently enough with the initial delivery of an estate's items but a week later the white room was jam packed with buyers.



Spring 2019 will be special-Kutztown XL (our 40th)! Stay tuned for further information!

Tubes Needed for DVHRC Kutztown Inventory



After Kutztown XXXIX, we can say the sales of tubes was a big success. With any success comes the challenge of replenishment of the most sought after tubes always in short supply. During your winter appraisals, please be generous by donating to DVHRC's tube program. Following are a list of the tubes the club is looking for. Dave and the DVHRC will be grateful for your efforts.

Any and all Globe tubes,

Any high end audio tubes ,

Any "unusual" transmitting tubes.

- | | |
|-------|--------|
| 5751 | 10 |
| 5842 | 12A7 |
| 6AQ8 | 2A3 |
| 6AZ8 | 45 |
| 6BD8 | 6Q7G |
| 6DC8 | 6U7G |
| 6BK8 | 85 |
| 396A | 12AX7 |
| 417A | 83 |
| 6072A | 6SN7GT |
| EL37 | 1L6 |
| 6A3 | 50A1 |
| 6F5 | 6L6GC |
| 6F6 | 6L6GAY |
| 6L6GA | 6L6GB |

2018 Remaining Meetings

[Nov 13](#)- Decade- 1970's Radios 7:30

[Dec 11](#)- X-mas Party at Stove N' Tap

Some Housekeeping Notes

Web references herein may need to be copied or manually entered into your browser. Please offer any suggestions to improve this newsletter as well!

We are always looking for a good story to publish, especially projects and technical fare – thanks to our members for two articles herein!

You may forward them to:

gdottor@yahoo.com

Upcoming Regional Events

Following are some excellent programs and a reason to have multiple club memberships in our region's clubs! Paste links into your browser to load. Some of what follows and even more hamfest events can be viewed via this website: [n2lvi delaware valley area hamfests](#)

National Capital Radio & TV Museum -NCRTV 20th Anniversary Press Junket

Friday, 12.14.18, Call for Info. The National Capital Radio & Television Museum operates in Bowie, Maryland, and also curates continuing exhibits elsewhere. Opened in 1999, the museum is open to visitors three days a week. The National Capital Radio & Television Museum is open to the public- Fridays 9 a.m. to 4 p.m., Saturdays and Sundays 12 p.m. to 4 p.m. When in the area, visit NCRTV Museum at 2608 Mitchellville Rd., Bowie,

Maryland, 20716. Contact via Phone: 301-390-1020 or see website for details on planning a visit:

<https://ncrtv.org>

NJARC Fall Swap meet Saturday, 11.03.18, 8AM to 12PM, vendor setup 7:15 Cost: \$5 buyer donation; Vendors \$25 per table (non-members \$30). Vendor setup 7:00 AM, Walk-around auction starts at @ 11AM. Expert antique radio repair available. Family oriented environment. Where: Parsippany PAL, 33 Baldwin Rd, Parsippany, NJ 07054, USA.

http://www.njarc.org/images/NJARC_Swapmeet_Flyer_2018_Fall.jpg

<http://www.njarc.org/directions.html#swapmeets>

<http://www.njarc.org/#calendar>

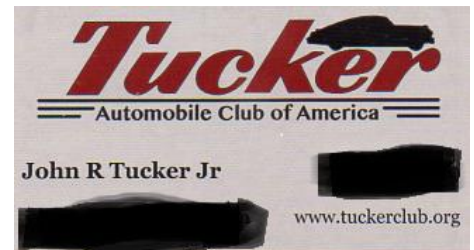
A Funny Thing Happened on the Way Home from the Sussex Hamfest! *By Bob Bennett*

While driving home from the Sussex Hamfest, my phone vibrated twice and did not answer since I was focused on my driving, and wanted to get home safely. I was tired getting home and forgot to check missed messages. The following Monday morning, I checked my e-mail to find this:

Hi Bob, I hope you got my phone message, I need some help with a Motorola 708 radio that is going in a Tucker 48. Please give me a call or email me.

*All the best,
John Tucker, Jr.*

At first I thought this may have been a practical joke, but I had called John, and the call was completely legitimate. He is the grandson of "Preston Tucker" the man who developed and made the "Tucker" automobile!



Now about the radio itself....These radios were given to dealers and sometimes buyers of the cars so once the cars got made, the radio was going to be installed. I did some research on these radios and found out they were already being used on 1941-1947 Plymouth, Chrysler, Dodge, and DeSoto cars.



Shown above is the Motorola 708 for the cars I mentioned. The radio was mounted under the dash with a remote head using 2 cables- one for volume and one for tuning.

Continued next Page

The Tucker radio is similar, but uses a different head and it's a hammer tone copper color shown below from top and rear view.



The radio has some interesting features.



To manually tune, the "T" button must be depressed. For tuned presets, the U,C,K,E, or R buttons must be held down for a few seconds to memorize that station. This is achieved with a solenoid on the chassis that rotates a switch to a position after the tuning has been done, and memorized. The volume control also has a solenoid for tone control. You depress the volume control, and rotates a 3 position switch for desired tone.

That was your 1948 graphic equalizer!



And now for the surgery... Well, at least initially the 8 tubes tested good. Below are the before and after pictures.



Above: Old caps evident in original state.
Below: Lots of replacements and testing, an alignment, and after 3+ hours playing on the bench, I gave the radio my seal of approval.



The car this radio is going into is Tucker #44 (out of 50 made in 1948) which has been restored and is going to the Pebble Beach Concours auto show where there

will be a "Tucker" show class celebrating the 70th anniversary of the car. Here's a photo of the finished car.

Bob



Refinishing a Vintage Radio Cabinet by Scraping *By Stan Saeger*

Nearly all vintage wood radios were finished with lacquer at the factory.

If the finish is in good shape, a good cleaning and some paste wax or butcher's wax is all that's needed. If it needs more help, Formby's Restore-a-Finish, or a similar product, can dissolve the lacquer allowing it to be smoothed over.

But what about a finish that is so far gone that it needs to be removed down to the bare wood?

Most will head to the big-box hardware store for chemical furniture stripper. Furniture stripper is nasty stuff. It usually contains methylene chloride, highly toxic and a suspected carcinogen. Less hazardous strippers are available, but I've found them to be less effective as well.

A second option is lacquer thinner. This will dissolve a lacquer finish for removal, but it's messy, time consuming, toxic and expensive since it evaporates almost immediately.

A third option is to use cabinet scrapers, or more correctly, hand scrapers. Hand scrapers offer several advantages:

- Non-toxic
- Minimal sanding
- Inexpensive: Cost is around \$20 for a three-piece set from amazon.com or any woodworking store
- Less messy, although you will want to work outside or in an area where dust isn't an issue

The standard three-piece set includes (pictured left-to-right) a 'gooseneck' which has curves of different diameters, a rectangular scraper with convex and concave ends, and a rectangular scraper.

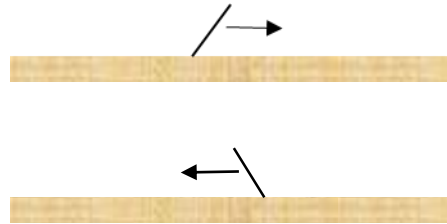


Even though you will be dealing with flat surfaces in most cases, you will find the gooseneck the most useful as only 1/4" or less of the scraper will be in contact with the wood, allowing the brittle lacquer to come off easily.

Besides the lacquer, any grain filler will be removed as well.

Always scrape with the grain of the wood. Pull the scraper toward you or push away from you with the scraper at about a 45° angle.

Go slowly at first. You will get the feel of the wood and be able to remove the finish without gouging or scratching.



Scrapers can also be used to smooth wood after the finish has been removed by another method. Refinishers of years ago used little sandpaper and relied on scrapers to obtain a smooth surface.

Once done scraping, minimal sanding will be needed. Grain filling, staining or toning, and new coats of lacquer can be applied.

Hand scrapers last a long time. They can be sharpened, but I usually buy new ones once they are dull. (Stan Saeger, DVHRC, 2018)

Trail Blazers to Radionics **Copyright 1943 by Zenith** **Radio Corporation**

Often at Kutztown Events, the "Buy it Now" table holds hidden treasure. The book entitled above costing a mere dollar \$1 is **prefaced** by the following:

Trail Blazers to Radionics and Reference Guide to Ultra High Frequencies have been prepared

to fill a need recognized by those in the communications divisions of our armed forces, by radio engineers, science teachers, and college and high school students, as well as by the layman. In writing *Trail Blazers to Radionics (Part 1)* every effort was made to present in a concise form important data that would not otherwise be obtainable without considerable research in a large library. The purpose of this work is to present biographies of great men of science and their research, and tell where such contributions are now used in the progress of science. We hope that its contents will stimulate a desire for the pursuit and advancement of knowledge by students, therefore preparing the way to the *Radionic Age* into which man is now entering.

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Miss Elizabeth Kelsey of Zenith Radio Corporation's engineering division has spent many patient

months in compiling and editing this book. She is a Fellow of the Royal Society of Arts and Sciences, member of American Association for the Advancement of Science, and an associate member of the Institute of Radio Engineers and of the International Television Society.

This book quickly highlights contributions of the trail blazers shown above; here are a few:

THALES 640-546 B.C. GREEK

Historical evidence seems to justify the statement that Thales of Miletus, another mathematician and philosopher, may be called the "father of electricity." He found that when the brownish-yellow stone we know as amber was rubbed, it took on a new property, attracting straw and hair. To Thales this was real magic. The Greek word for amber was "elektron" and from such an origin come the words electricity and electronics. Aside from this discovery of amber's "magic power," little was learned of the properties or causes for magnetic attraction until 1600 A.D. Perhaps the first person to use geometry for indirect measurement was Thales. While studying mathematics and physical sciences with the Egyptian priests, he impressed them by calculating the height of a pyramid. Thales selected a stick, drove it into the ground and determined its length, Next he measured the length of a shadow cast by this stick as well as the length of pyramid's shadow. By use of these measurements

and a familiar theorem of plane geometry he calculated the height of a pyramid.

Theorem: "If two right triangles are similar, the ratio of a pair of sides in one triangle is equal to the ratio of the pair of corresponding sides in the other triangle."

Thales added astronomy to his interests and predicted a date for the sun's total eclipse. On May 28, 585 B.C., two Grecian states were at war and when fighting was at its worst the sun disappeared. All involved knew of Thales' prediction and consequently they sought his counsel. He persuaded the leaders, on the strength of this prophecy, to stop the battle. Today we are told the country that is superior in communications and Radionics will be victorious. Let us not forget Thales, the first disciple of Radionics.

GEORGE OHM 1787-1854

GERMAN Ohm was eager to obtain a university professorship, In those days, a position of this kind could be attained only by the presentation and acceptance of a scientific treatise. Ohm chose electricity as a subject with possibilities for such a work. Laboratory equipment, even wire, had to be made by the experimenter, but these handicaps did not daunt him. Ohm's father had been a locksmith who taught his son a trade which now proved to be a real asset. The technic of wire-drawing was not common knowledge. Ohm mastered it, and began his studies by comparing the current conducting character-

istics of wire in various sizes and materials. Ohm made a discovery that resulted in formulating the famous law which bears his name. Ohm's Law is $E = IR$, $I = E/R$, or $R = E/I$, where E = voltage, I = current, and R = resistance. The unit of resistance called the ohm is the resistance of a conductor that allows one ampere of current to flow at potential difference of one volt.

George Ohm announced his findings and anxiously awaited the honors due him but they were not forthcoming. Instead, the German Minister of Education criticized him, and Ohm was forced to resign his position as teacher in a secondary school. Finally his research became known in scientific circles outside of Germany. This acceptance from abroad ultimately brought recognition by authorities of his native country. Just twenty-two years later, in 1849, he received the coveted professorship at the University of Munich. In 1854, after five happy years, Ohm died, the possessor of an honor that had been a motivating force to him.

Meeting of August 14, 2018

The theme of our August meeting was *Speakers*. Some key dates in the history of loudspeaker include: **1861**-Johann Philipp Reis installed an electric loudspeaker in his telephone mainly to reproduce tones with only muffled voice output.

1876- Alexander Graham Bell patented his first electric loudspeaker (capable of reproducing intelligible speech) as

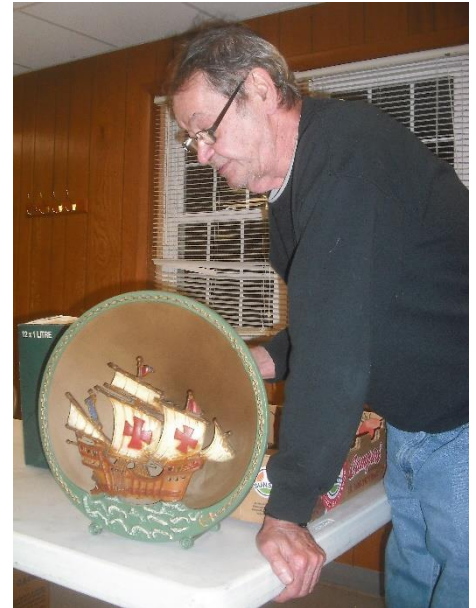
part of his telephone, which was followed in 1877 by an improved version from Ernst Siemens. Thomas Edison was issued a British patent for a system using compressed air as an amplifying mechanism for his early cylinder phonographs, but he ultimately settled for the familiar metal horn driven by a membrane attached to the stylus. In 1898, Horace Short patented a design for a loudspeaker driven by compressed air; he then sold the rights to Charles Parsons, who was issued several additional British patents before 1910. A few companies, including the Victor Talking Machine Co. and Pathé, produced record players using compressed-air loudspeakers. However, these designs were significantly limited by their poor sound quality and their inability to reproduce sound at low volume.

The first experimental moving-coil (also called dynamic) loudspeaker was invented by Oliver Lodge in 1898. The first practical moving-coil loudspeakers were manufactured by Danish engineer Peter L. Jensen and Edwin Pridham in 1915, in Napa, California. Like previous loudspeakers these used horns to amplify the sound produced by a small diaphragm. Jensen was denied patents. Being unsuccessful in selling their product to telephone companies, in 1915 they changed their target market to radios and public address systems, and named their product *Magnavox*. Jensen was, for years a part owner of The Magnavox Company.

The moving-coil principle commonly used today in speakers was patented in 1924 by Chester W. Rice and Edward W. Kellogg. The key difference between previous attempts and the patent by Rice and Kellogg is the adjustment of mechanical parameters so that the fundamental resonance of the moving system is below the frequency where the cone's radiation impedance becomes uniform.

These first loudspeakers used electromagnets, because large, powerful permanent magnets were generally not available at a reasonable price. The coil of an electromagnet, called a field coil, was energized by current through a second pair of connections to the driver. This winding usually served a dual role, acting also as a choke coil, filtering the power supply of the amplifier that the loudspeaker was connected to. AC ripple in the current was attenuated by the action of passing through the choke coil. However, AC line frequencies tended to modulate the audio signal going to the voice coil and added to the audible hum.

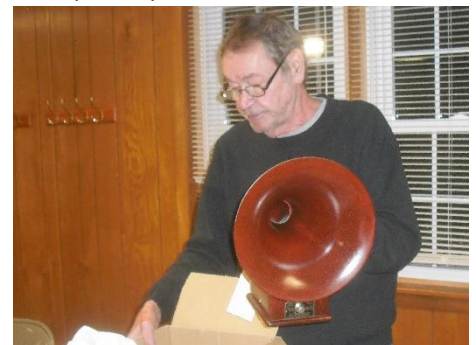
In 1930 Jensen introduced the first commercial fixed-magnet loudspeaker; however, the large, heavy iron magnets of the day were impractical and field-coil speakers remained predominant until the widespread availability of lightweight Alnico magnets after World War II.



Above: Lewie's Vita Tone 2000 ohm cast iron speaker from 1927 manufactured in New York City. **Below:** Rear of Vita Tone with cone & axle



Below: Dicto Gram speaker from 1922 in mahogany (glazed copper) with adjustable air gap for volume. This unit was manufactured again in NYC, specifically West 42nd Street.





Above: Pete Grave shows off communication receiver speakers. These can be rare since most hams opted out of these pricy accessories relying on their headphones. From left to right, @1949 Hammarlund SC-10 large speaker, RCA speaker from a Canadian model with front control, and Pete's childhood favorite, the Hallicrafters R46 which Pete talked his dad into purchasing for his SX43 rig.

See the following link to find your favorite communications speaker:
<http://www.virhistory.com/ham/speakers.htm>



Above: Wilbur Gilroy shows his piece of art speaker which included a hand-painted winter scene, with some mysteries yet to be solved including the artist's identity. The unit has references to "Walton Electric", Berwick, PA.



Above: Some beautiful grill cloth was seen at recent Kutztown 39 display in September.



Above: Terry Skelton has a nice collection of vintage broadcast electronics and brings us this unique NBC single headphone which may have been used for remote broadcasting applications.
Below: Close-up view of headphone.



Meeting of June 12, 2018

The theme of our August meeting was *Crystal Radios*.



Above: Jarret's Crystal-Dyne set was produced locally in Bethlehem, PA. **Below:** Heathkit quality design and materials evident in mdl CR-1



My favorite was always Crystal Blue Persuasion, Mm-hmm, It's a new vibration.