



*Dues are due!*

# OSCILLATOR

DELAWARE VALLEY HISTORIC RADIO

*The Official Newsletter of the DVHRC*

*Vol. 8. No. 2. February.*

## WINTER MEET A SUCCESS!

The weather gods smiled on March 4, and our Super Winter Meet came off with nary a hitch. The number of vendor spaces was up five percent from last year thanks to creative table placement. All were sold, and most were occupied. Buyer attendance was very good and parking overflowed the Grimes Center parking lot into the surrounding



neighborhood.

Club president and event chairman Overbeck feels the buyer and seller turnout, available merchandise, and brisk sales contradict predictions of doom for our hobby caused by E-bay.

In addition to a nice selection of vintage sets, including four catalins, several cathedrals, two grandfather clocks, and a Scott All-wave 23, there was a nice selection of tube hi-fi equipment. Among the gear spotted on the tables were a Fisher 500C receiver, a Fisher X-1000 integrated amp, Allen Organ amplifiers, and a variety of H.H. Scotts. A Techniques (Panasonic) SP-15 turntable brought \$150 in the auction.

There were also some very good deals in the “boatanchor” department including an R-390A, a Hallicrafters R-274, and (count ‘em) there R-392’s. Your editor snagged a not too ugly ARC-5 receiver with dynamotor and the rare and highly-desirable tuning crank for \$12. Who says there’s no bargains left.

Special recognition is in order for everyone who worked to make this a successful event. Thank you, everyone!

## Miscellany

Your club publication could really do with more original material submitted by the membership. This could be as simple as a letter to the editor or a snapshot of your favorite radio. It could also be a full-blown article like the things we see from Lud Sibley or Bob Thomas. Our better articles sometimes get picked up by other clubs for their publications, thus increasing the author’s fame if not his fortune. If each member generated one page, once a year, we’d be awash in material. It’s not that difficult. Please try to help!

The following tip comes from Bob Thomas: There is a very interesting URL listed in the February issue of RADIO AGE. It is for a file of old advertisements maintained by Duke University. Some of the radio ads go back to the early ‘twenties, and there are also some rather early TV ads. It might be a good source for casual illustrations for the OSCILLATOR.

Try: <http://scriptorium.lib.duke.edu/adaccess/subcat-rtv.html>  
(I used this fine resource to retrieve the Scott ad for the February issue. – Ed.)

Our usual monthly meeting was held on February 8. Dave Snellman, who normally does a wonderful job on the meeting report, was absent with appendicitis. Fortunately, he is recovering rapidly, and even showed up to work at the Winter Meet.

## THE OSCILLATOR

Newsletter of the  
Delaware Valley Historic Radio Club  
P.O. Box 847  
Havertown, Pa. 19083

The *Oscillator* is published monthly by members of the non-profit DVHRC. Its purpose is to provide a forum to educate, inform, entertain, and communicate with collectors and preservers of vintage radio technology.

We welcome and solicit information relating to radio history or collecting. Submissions should be carefully researched, typed and accompanied with clear photographs or diagrams. Material on-disc (3-1/2" DOS/Win95) is particularly welcome.

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Personal views, opinions and technical advice offered in this news

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**COPY DEADLINE:** The 20th of each month.

The program was a video tape from *The Learning Channel* entitled "Understanding Electricity." This was a whirlwind tour of the subject. It's started with lightning: Mad scientists drawing bolts with wire-trailing rockets, to be exact. And progressed through other visually stimulating features including Coney Island, defibrillators, and artificial hands wired to your nervous system.

Dan Lubczanski conducted an impromptu show and tell. He had a very interesting and unusual French Sonorette 3-band table radio and an RCA 54B1 portable operating on a set of 9-volt transistor batteries.

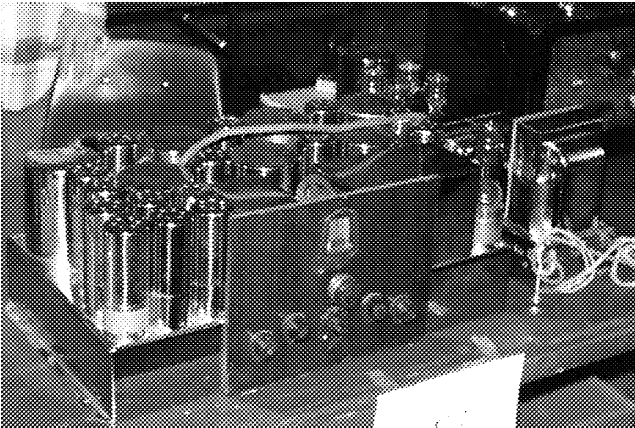
*Oscillator* editor Al Klase has achieved 15-seconds of fame with the appearance of his HRO-500 blurb in John Dilk's "Old Radio" column in February QST.

The next DVHRC meeting will be held at 7:30 PM, March 14<sup>th</sup> at the Telford Community Center. See you there!

## Ralph Muchow – RIP

Noted tube authority, Jerry Vanicek, reports the death of Ralph Muchow, of Muchow Museum (Elgin, IL) fame, apparently in the last couple of days. (Last minute E-mail report from Scoop Sibley.)

# Winter Meet in Pictures



# SOME THOUGHTS ON CRYSTAL SETS

By: Ludwell Sibley - with forward-looking technical ideas from Alan Klase  
Reprinted from the newsletter of the Ontario Vintage Radio Club

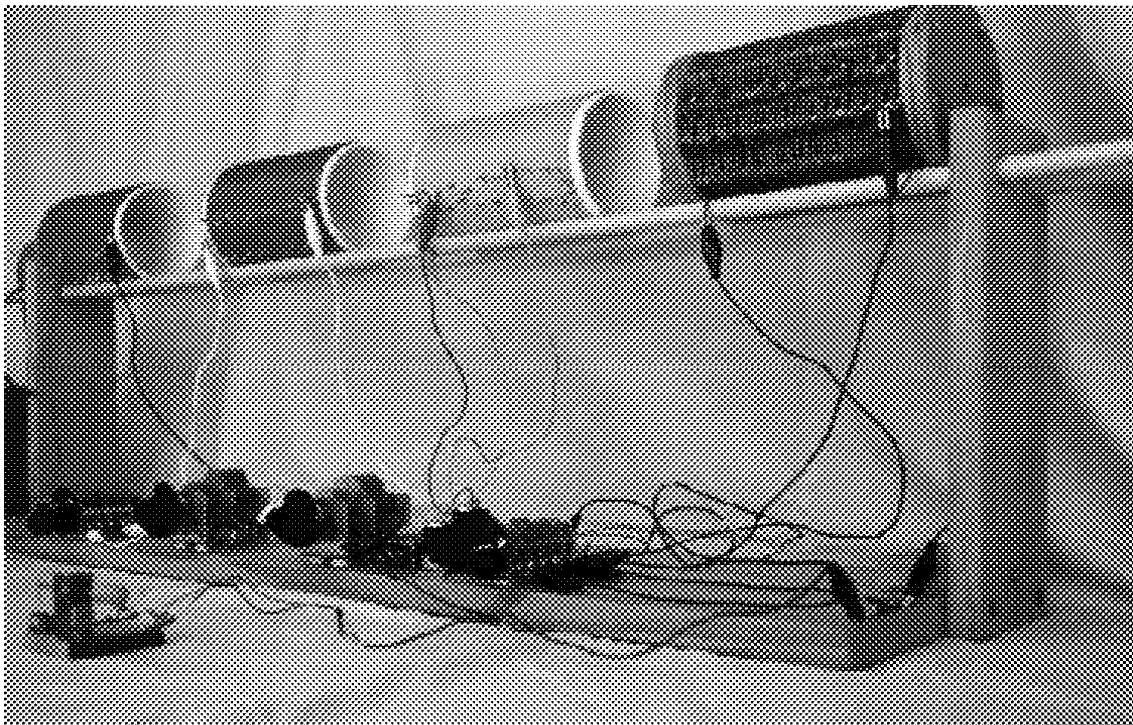
The "crystal set" is, depending on one's outlook, a nostalgic reminder of that "first radio," a charming collectible, or a subject for experimentation. In North America, tube radios overshadowed crystal sets early in the Radio Craze of the '20s. This contrasts with British experience, where a seemingly huge number of commercial models and a large production left a goodly supply for today's collectors to find.

The fun of catching radio signals with minimalist equipment still has appeal to experimenters. Surprisingly, substantial progress has taken place lately. A "hot" crystal radio today uses a ferrite-cored tuning coil, in part to improve the "Q" or quality factor (i. e., less loss), and in part for ease of winding and reduced size. Better than that, it has been found that increased sensitivity comes from two more factors.

First, headphones, that give both great sensitivity and smooth frequency response, can be made by using the elements from sound-powered telephone handsets. Such sound-powered phones were common on naval vessels of WW II and later. Another example is the U. S. Army TA-1/PT phone, but there are surely Canadian and British equivalents. Compared with traditional headphones, a headset made from these gets its performance from improved post-'30s design that does not rely on having the diaphragm resonate sharply in the middle of the audio band. Thus they sound natural. However, their alternating-current impedance is much less than that of old-time headsets, only a few hundred ohms, which would seemingly rule them out from use. We'll deal with that in a minute.

Second, the audio power that can be coaxed out of a crystal detector can be improved by *not* following the tradition of tapping the crystal down on the tuning coil. Such a tap was the usual approach to improving selectivity: load the coil less, and its "Q" and selectivity get better. However, remembering that the detector diode is a "square-law" device, it is important to give it as much voltage as possible to maximize conduction.

The key to both using a low-impedance headset and avoiding loading on the tuning coil is then simply to use an impedance matching transformer. There are lots of old-time transformers around, intended for crystal- mike-to-line application (say, 100 K ohms to 600 ohms) or line-to-grid use (say, 600 ohms to 50 K ohms; use it "backward") The combination of a detector not "tapped-down," a matching transformer, and a high- sensitivity headset can give a remarkable improvement, measured by Alan Klase at a whopping 15 decibels. This is equivalent to adding "three- fourths of a transistor" to the radio!



**1999 model high performance crystal set by Larry Pizzella of San Jose, CA.  
PVC pipe and silver-teflon wire are the order of the day.**

Because of the square-law aspect of the detector, the 15-dB improvement just cited pertains to reception of weak signals. It's somewhat less on strong stations - those on which improvement is less important anyway.

In the area of conventional headsets, the mica-diaphragm units made by Baldwin in "wireless" days are also in vogue; they're still relatively common despite their age. They measure about six decibels better than ordinary "classic" headsets like the Trimm "Featherweight."

Home-made crystal sets routinely turn up in flea markets, and draw far less interest than the factory ones. This is a pity, considering the pride that the constructor drew long ago from building the set. Occasionally a home-built has a novel construction feature. I have one with lots of tap switches, etc., mounted on the usual rectangular smooth black panel. Only by inspecting from the rear does it turn out that the panel was cut from a single-sided 78-RPM record, label and all!

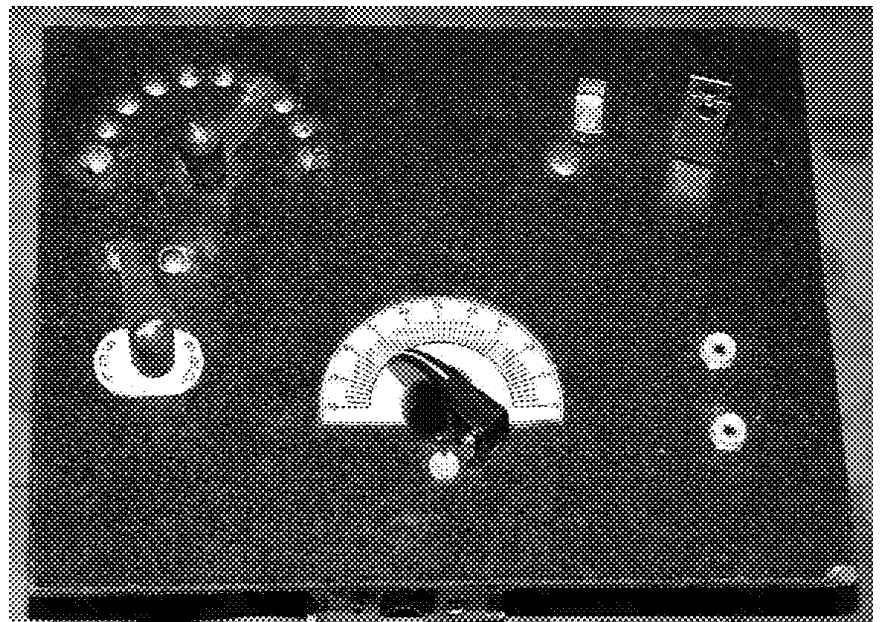
"DX" reception by crystal always seemed an elusive thing, particularly when using relatively inferior receivers. This led to a surprise: I got a Federal "Junior" crystal set a few years ago - the one housed in the squarish case that Federal had adapted from a desk telephone. Wanting to try it out, I wired a crystal diode across the detector stand, connected the available antenna - about 30 feet of wire going out to the front porch - and hooked up a '20s Western Electric headset. Tuning around the broadcast band, there wasn't much audible with the inferior antenna, mainly the 50-KW station a few miles away. The surprise was that, by tuning carefully, there were *short-wave* stations audible: Deutsche Welle, the BBC World Service, and that commercial SW outlet outside New Orleans. Apparently the Federal's big tuning coil has spurious resonances in, say, the 49-meter band. There was no chance of selecting one SW station; they all faded up and down, one or another predominating for a while.

Was this big-time transatlantic DX? Well, no, the signals were mostly as relayed through Sackville, New Brunswick or the Caribbean, so the distance was only 600 miles or so from New Jersey. And today's short-wave station typically has an "effective radiated power" of a megawatt or more, making reception vastly easier than when crystal sets were young. Still, it was a lot of fun. For a more vivid example of real crystal DX, my father heard KDKA from Pittsburgh in his home town of Pontiac, Michigan. KDKA was operating at only about a kilowatt at the time (the mid- 20s), so the distance (200 miles) is more impressive.

An unfortunate effect militates against some crystal-set users: The typical male listener loses a few decibels of hearing sensitivity with every ten years of aging. So a lot of us face a handicap compared to more youthful experimenters. In the early days of wireless, most ship operators were only 18-24 years old, had youthful hearing, and routinely worked thousand-mile distances on longwave with only a passive crystal (or Fleming-Valve or Marconi magnetic) detector. Before they had aged much, the conversion to vacuum-tube receivers was on. Even so, the First World War was fought mostly with crystal receivers.

One high point in the topography of crystal sets is Modern Radio Laboratories. This is an old-time mail-order supplier, founded during the Depression by Elmer Osterhoudt, a one-time ship operator who was probably out of work. He advertised in hobbyist publications for the next 55 years, offering a series of pamphlets, parts, and kits for constructing a wide variety of crystal receivers and a one-tube set as well. Of his designs, "the original is still the greatest": the MRL No. 2 crystal set. This is a simple yet effective design that occasionally turns up as a flea-market collectible (often unrecognized). Yet it can be built today from MRL's "HB-2" booklet. (There's also a slightly simpler version, the 2-A.) But the magic of MRL isn't the hardware; it's Elmer's unflagging enthusiasm for "small sets" as expressed in a vast variety of homespun literature, most of it still offered. He's gone, but the company has been reactivated. (I suspect that, somewhere, Elmer and AWA's Bruce Kelley are slapping each other on the back and swapping yarns about spark DX.) For those wanting to sample the MRL spirit, the address for today's MRL is PO Box 14902, Minneapolis, MN 55414. A catalog is \$2.00 US; the HB-2 handbook is \$1.25.

My source Klase has set up hands-on demonstrations of advanced crystal sets in the parking lot at AWA's Rochester conference, and was on the speakers' roster for the 1999 event. He has posted much of his test experience on the Web at: <http://www.webex.net/~skywaves/home.htm>.



A vintage MRL-2A

# Speedy Component Replacement

By: Al Klase

The obvious way to replace a leaded component, such as a capacitor, is to “excavate” the two solder joints using a solder sucker and various tools to clear the solder and unwrap the wire leads from the terminal. Unfortunately, this is not only time consuming, but is also likely to result in an unsightly mess if not actual damage to irreplaceable parts. All too often the component being replaced was the first one wrapped around the terminal. Even if the repairman exercises extreme care, the original craftsmanship is destroyed.

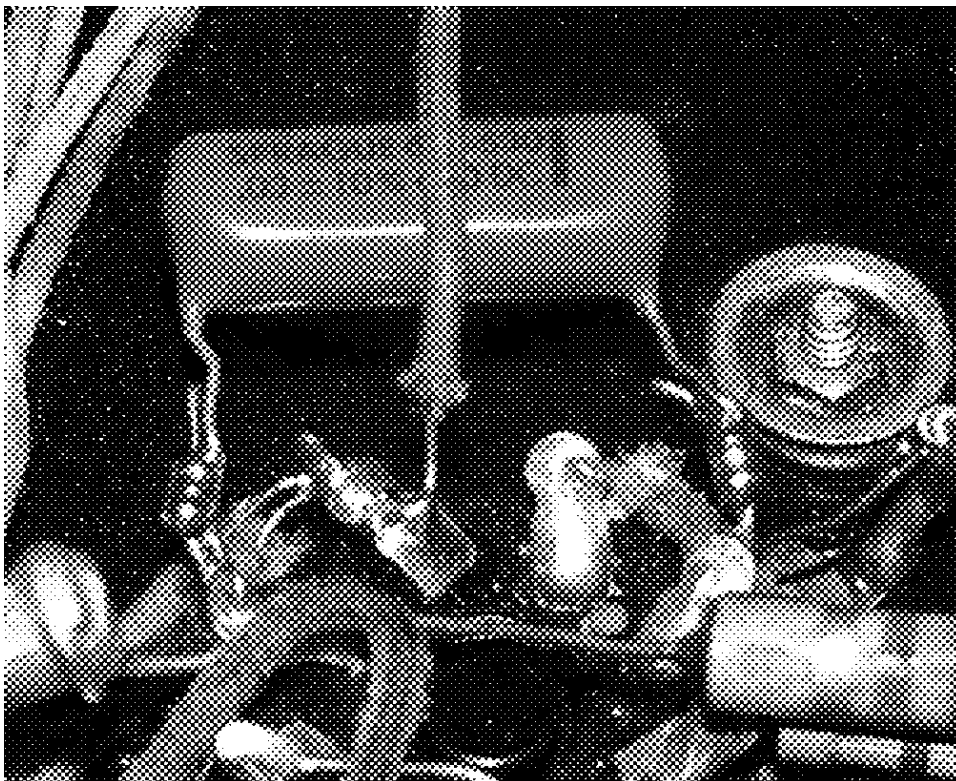
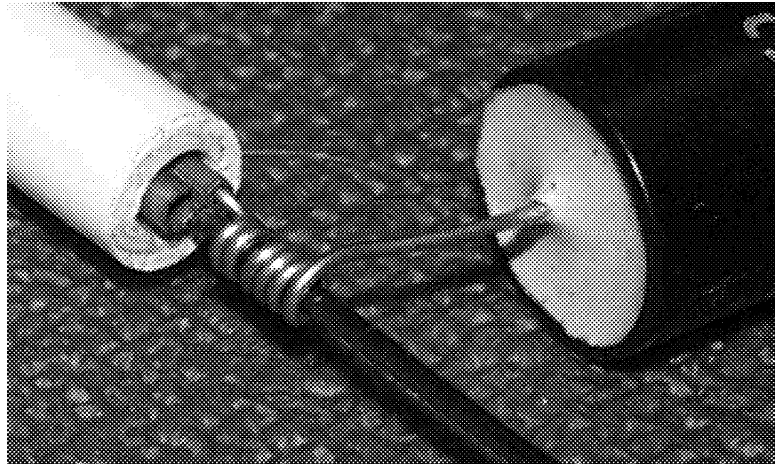
An answer to this problem comes to us from the 1950’s. Sprague capacitors, packaged for replacement service, came with devices called *quigs*. These were small spirals of wire heavily coated with solder and flux. The recommended procedure was to cut the leads of the old components leaving a generous stub. The new cap was then sleeved onto the old leads with the *quigs*. A brief application of the soldering iron completed the job.

*Quigs* are now vanishingly rare, but a similar technique can still be used. Cut the leads of the old part near the component body. Twist tight “pigtailed” in the leads of the new device. Thread these over the old wires, and solder in the usual manner.

A convenient tool for forming the “pigtailed” can be fashioned from common hobby-shop materials. It consists of two short lengths of brass tubing, 1/16” and 3/32” diameter, soldered to a length of 0.040” music wire, and glued into a handle made of thick-walled 5/16” plastic tubing. When the end of a component lead is inserted into the brass tube, a neat spiral can be quickly formed.

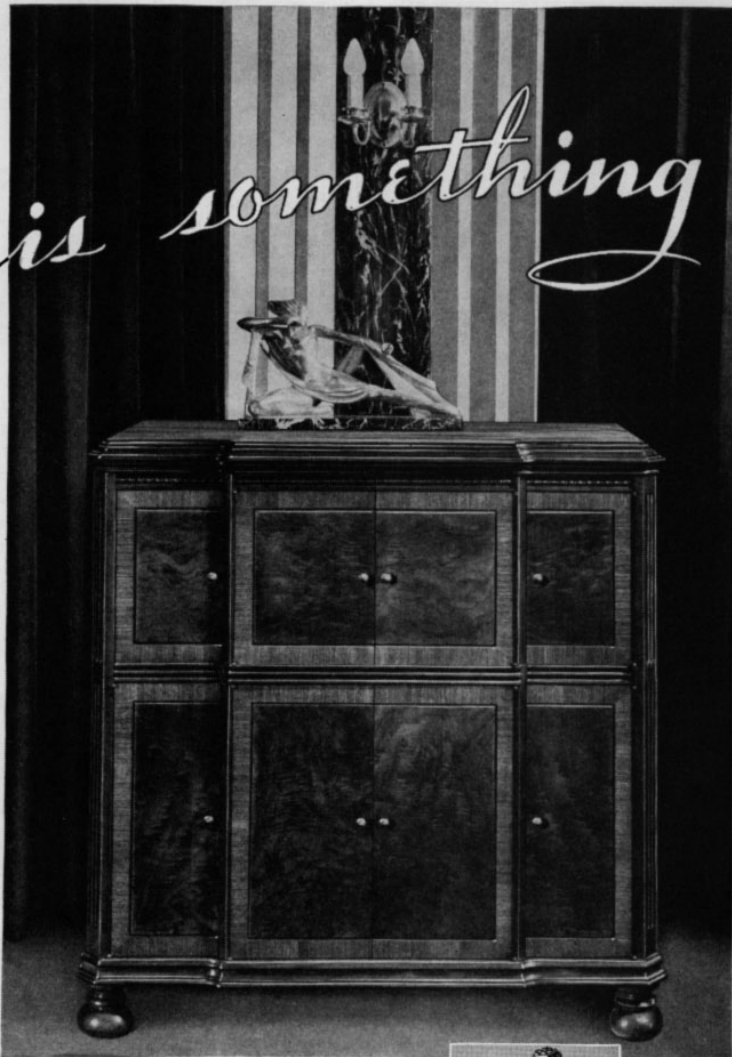
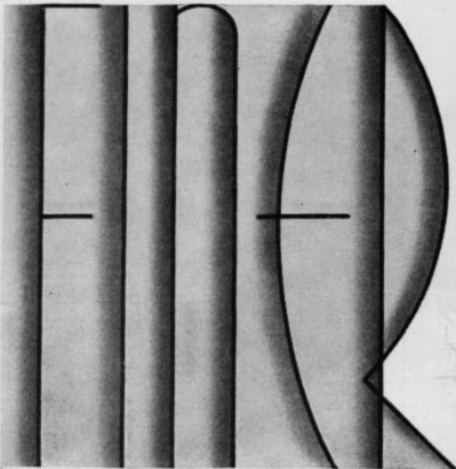
Another alternative is a stiff piece of wire or drill rod held in a pin vice. With luck, the collet will have sufficient open space to insert the end of the lead.

This technique allows a capacitor to be replaced in just a minute or two, even if its buried deeply in the chassis. (This is a real boon when doing a Hallicrafters SX-28!) The results are tidy and preserve the original craftsmanship of the radio.





*There is something*



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