

*The*

# *Call Letter*

May 2016

Vol 42, #5



**2016 Spring Swap Meet**

# The Northwest Vintage Radio Society

Post Office Box 82379  
Portland, Oregon 97282-0379

The Northwest Vintage Radio Society is a non-profit historical society incorporated in the State of Oregon. Since 1974 the Society has been dedicated to the preservation and enjoyment of "Vintage Radio" and wireless equipment.

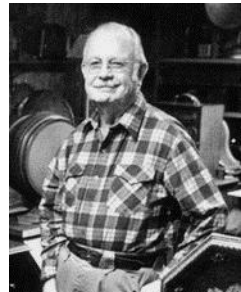
Membership in the Society is open to all who are actively interested in historic preservation. The dues are \$25.00 for domestic membership, due on January 1st of each year (prorated quarterly).

The Call Letter has been a monthly publication since 1974. It was originated with the founder, Bob Bilbie, and our first president, Harley Perkins. Through several editors and with the assistance of numerous society members, the Call Letter has continued to be a publication that informs members of the society's business and that supports the hobby of collecting, preserving, and restoring vintage radios.

Society meetings are held the second Saturday of each month at the Abernethy Grange Hall at 15745 S. Harley Ave. in Oregon City, Oregon. They convene at or about 9:30 AM for the purpose of displaying radios, conducting Society business, and exchanging information. Guests are welcome at all Society meetings and functions (except board meetings).

Other Society functions include guest speakers, auctions, radio shows, and radio sales which are advertised in the Call Letter and are held in and around Portland.

With each issue of the Call Letter, we remember Jim Mason, a charter member of the society who remained active until his death in 1999. A generous bequest from Jim's estate ensures the vitality of the Northwest Vintage Radio Society, and continued publication of the Call Letter.



## Society Officers for 2016:

President	Mike McCrow (503)730-4639	<a href="mailto:tranny53@frontier.com">tranny53@frontier.com</a>
Vice-president	Bryon Toon (503) 266-5527	
Treasurer	Ed Tompkins (360) 573-3895	<a href="mailto:edtomp@Q.com">edtomp@Q.com</a>
Recording Sec'y	Liles Garcia (503) 649-9288	<a href="mailto:landn2@frontier.com">landn2@frontier.com</a>
Corresponding Sec'y	Pat Kagi (503) 694-6149	<a href="mailto:kagi.pat@con-way.com">kagi.pat@con-way.com</a>
Board member at large	Mark Moore (503) 286-5224	<a href="mailto:mark@pdxhistory.com">mark@pdxhistory.com</a>
Librarian	Damon Vandehey (503) 459-1777	
Editor	Don Hanson	<a href="mailto:vanguard4@lycos.com">vanguard4@lycos.com</a>

## On the Cover

2016 Spring Swap Meet. (They look Really Interested...)  
Photography by Chris Butler

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## Announcements

### May Meeting

The next meeting will be on May 14 and starts at 9:30 AM.

### Meeting Minutes

None this month.

### May Feature

May monthly Feature is "**Radios From Someone Special**"

**Editor's Note** - Please have Call Letter Contributions in by **May 28**.

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Visit our web site at:

[www.nwvrs.com](http://www.nwvrs.com)

Find us on Facebook:

[www.facebook.com/nwvrs](http://www.facebook.com/nwvrs)

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## Calendar of Events

May 14. Stanwood Camano Amateur Radio Club Hamfest, Stanwood Middle School, Stanwood, WA. Contact: Fred Laun, w7pig@arrl.net <http://www.scarcwa.org/>

May 14. Matanuska Amateur Radio Association Hamfest. Wasilla, AK. *This is an ARRL sanctioned event.* <http://www.k17jfu.com/> Contact Shiela Olson, KL3TP (907)-746-1013, [k17jfu@gci.net](mailto:k17jfu@gci.net)

May 20-22. Washington State Search and Rescue Conference. Longview, WA. <http://www.wasarcon.org/>

May 20-22. River Radio Campout 2016. Pateros WA. Free "dry" camping along the Methow River at Pateros. Always the weekend prior to Memorial Day Weekend. Contact Roger W7CH w7ch@arrl.net (509)687-3919. <http://lakechelanradioclub.webs.com/> Flyer in PDF. (195K)

June 3-5. Sea-Pac Hamfest and ARRL Northwestern Division Conference. Seaside Convention Center, Seaside, Oregon. *This is an ARRL sanctioned event.* [SEAPAC@seapac.org](mailto:SEAPAC@seapac.org) . [www.seapac.org/](http://www.seapac.org/) . [Mailer in PDF](#). (919K)

June 5. CVRS Antique Radio Swapmeet. Burnaby, BC. [http://rac.eton.ca/events/detail.php?event\\_ID=1812](http://rac.eton.ca/events/detail.php?event_ID=1812)

June 10-12. 48th Annual Apple City ARC Hamfest. Apple City ARC. Dryden Gun Club. Dryden, WA. <http://www.qsl.net/w7td/> .

June 11. KARS Hamfest. Kootenai Amateur Radio Society. Post Falls, ID. Always the 2nd Sat in June. For information contact Bonnie, KG6QQM, 208-683-2939 or [KG6QQM@ARRL.net](mailto:KG6QQM@ARRL.net) or John, [n7ju@arrl.net](mailto:n7ju@arrl.net)

June 11. Port Ludlow ARC Annual TailGate'r. Port Ludlow, WA. <http://www.n7pl.org/>

# 2016 Spring Swap Meet

Photography by Chris Butler







# Antique Clock Radios with Radium Dials

*By John Cushing*

Many vacuum tube clock radios made in the 1940's and 1950's have "glow in the dark" clock dials that used paint combining Radium and the phosphor Zinc Sulfide. Radium dials were mostly phased out by the 1960's due to the fact that many of the women who painted these dials acquired cancer or bone ailments. This was caused by the common practice of "tipping" the brush by licking it, thereby ingesting radium.

I have collected over fifty clock radios from this period. About one third of these clock radios have radium dials, mostly from 1950 through about 1955. I got curious about how much radiation these radios' clock dials might be emitting.

I have a typical radiation survey Geiger counter from the 1960's that still works perfectly, so I used it to measure the radioactivity from several dozen of my clock radios. Measuring with the Geiger tube's window cover slid back and the opening pressed tight against a clock's dial cover I found typical readings ranging from .1 mR/hr. up to 2 mR/hr. My "hottest" clock radio was an Emerson 724 that read over 4 mR/hr., or 2500 counts-per-minute (cpm) at the dial. (For comparison, the Cesium 137 check source mounted on the side of my Geiger counter reads about 1 mR/hr. measured the same way.)

So does this matter? Are these radios safe to keep around?

Radiation dose and effect measurements are very complex, but here are a couple of comparisons that might be helpful:

- Background radiation in my shop is about 8 cpm on my Geiger counter, or about 1/300<sup>th</sup> of the reading from the "hot" Emerson 724.
- It would take about 4.5 days to get the same radiation dose as a dental X-ray if you kept your face jammed up against the Emerson's dial.
- It would take more than 2 years to increase your risk of cancer by 1 in a thousand if you kept your body jammed up against the Emerson's dial.

I also measured how quickly the radiation falls off as you move away from one of these clock dials. For my Emerson the level was down by two orders of magnitude to .05 mR/hr. at six inches and down to .01 mR/hr. at 12 inches. The latter reading is almost the same as the background level.

*So my conclusion is that it's probably safe to keep radium dial clock radios in your collection and even to use them in your bedroom as long as you don't keep parts of your body pressed up against the dial all the time.*

**BUT:**

What about working on one of these radios or disposing of one? What happens if the clock's dial cover is removed?

I have a few radium dial clocks with that I've kept for parts. When I measured the radiation level of a pair of hands from one of these clocks at zero distance *without* the clock dial cover I got much higher readings: up to 7mR/hr. or 5000 cpm. That's quite a lot.

The reason for this big difference is that the main type of radiation from radium is alpha particles, which are mostly stopped by the dial cover or by a foot or so of air. Remove the dial cover from the clock and the exposure goes way up.

Alpha radiation is one of the most damaging types to human tissue – about twenty times worse than X-rays or gamma radiation. And the risk is greatly multiplied if the source is ingested or inhaled, because now that source is in direct contact with the body and trapped inside the body.

Remember the “Radium Girls?” The reason they got such damaging doses from painting clock dials and aircraft instruments is that they ingested the radium and it lodged in their bodies, exposing them to lots of alpha particles over a long time.

Could this happen when working on an antique clock radio with a radium dial?



Yes it could: Most of these clocks are over 60 years old and the radioactive paint is often flaking off the clock hands or numbers. Inhale some of it, get it in a cut, or swallow it and you could have a powerful alpha source trapped inside your body.

*So if you work on an antique clock radio with a radium dial you need to be careful not to release any of the radium paint.*

If you see loose flakes of paint inside a clock's dial glass don't take the glass off. If the dial glass is broken or missing either replace it (wearing gloves and a disposable dust mask) or just get rid of the clock. If the clock is not running be careful about repairing it: You can generally replace the motor safely (if you can find one), but don't take anything apart that exposes the hands. The primary goal is to avoid getting any radium paint flakes or dust into your body or scattered around your work area.

*And if you dispose of one of these radioactive clock radios don't just throw it in the trash.*

Radium 226 has a half-life of about 1600 years, so it will be dangerous for a long time. After removing any useful radio parts you want to keep take the radio to your local hazardous waste disposal site, explain that its clock has radium in the dial, and they will know what to do.

Just like being aware of PCB's in transformers, lead in solder, cadmium plating on some radio chassis, and other hazards from our early radios, dealing with radium dial clock radios safely is part of our hobby.

## **Member Dan Howard Published in AWA Review**

*From Dan Howard*

For the second year in a row I've been honored to have an article accepted for the AWA Review (the AWA's annual peer-reviewed book). The AWA Review is a free benefit of membership in the Antique Wireless Association. Dad, Sonny, Joe Beseda, and I are all members. And it is disappointing that more members of the NVRS don't belong to the AWA. They have a world-class museum and publish a fine quarterly magazine (not to mention the annual Review).



A couple years ago, a friend gave me a complete but totally ratty Zenith Royal 500E transistor radio. The other day I took it out of the “someday” box to play with it. Once I replaced the electrolytic caps, it worked, but it sounded bad. Weak and distorted. I plugged in an external speaker to prove the problem was not the built-in speaker. (Actually, the built-in speaker was nothing to write home about, but it was not the source of distortion.) I suspected the output transistors. To check this, I put a signal tracer one stage earlier, on the driver transistor's collector, where it goes to the interstage transformer. Clean. These early Zeniths are convenient to work on, because the transistors are plugged into sockets. That makes it a much more casual operation to simply yank one out and either check it or plug in another.

I did the former, in order to put them on a curve tracer. This is a very useful tool when you're dealing with transistors, whose characteristics are more variable than tubes; and in some cases you have a batch of unmarked parts and no idea what they're good for. My tracer is a Heathkit IT-1121, which I bought off an eBay seller some years ago. Unlike the “Cadillac”, the Tektronix 575, this little instrument is not self-contained. It doesn't have its own display system; you connect it to an oscilloscope. That's no handicap if you have a scope.

The trouble was obvious immediately. The two transistors were very different. One had an  $h_{FE}$  of only 70, while the other was over 200. This is important in a push-pull amplifier. One transistor amplifies the positive parts of the waveform, the other amplifies the lower parts. If the transistors amplify by different amounts, then the positive parts of the waveform will be amplified more or less than the negative parts, and the amplified waveform will not be the same shape as the original, i.e. distorted.

So I went looking for matched transistors. I only had a few parts in my stock, and no pairs of the same type, so I went looking for candidates on eBay. I found a lot of 20 GT1322's, pnp audio parts from a seller in Bulgaria. The parts are ex-Soviet licensed copies of a French design. I got 20 for about \$10. When I got them, I put them straight on the curve tracer and noted down their  $h_{FE}$  to make some matched pairs.

But that's not all we need to match. In this particular circuit, which is used in virtually all transistor radios, the emitters are connected together, and (except for the DC resistance of the transformer) the bases are

connected together too. Basically, as far as biasing is concerned, these transistors are in parallel. That means that the base-to-emitter voltage is the same for both parts, which means that those parts had better react the same, or the circuit will be out of balance even if  $h_{FE}$  is matched. So we have to match for two things at once.

You can't use a curve tracer to match  $V_{BE}$ . Well, you sort of can; if you hook a scope across base and emitter, you can view the voltage there. The trick only works if the curve tracer grounds the emitter, or close. Another approach is to wire up a breadboard which pipes some current into the base, and you hook up a voltmeter and measure.

I had to go back and forth; some pairs that matched well for  $V_{BE}$  did not match for  $h_{FE}$  and vice versa. When the smoke cleared away, I had a half dozen pairs and another dozen weird singletons. I installed one of the pairs, and *voila* – good sound. So my red-blooded American radio lives again – thanks to an Eastern Bloc organ transplant. I've been keeping an eye on it. So far, it hasn't called me “comrade”.

## Lectro Manufacturing and Sales

By Art Redman

### Lectro Crystal Detectors



Most efficient,  
easily adjusted  
detector on  
market—glass  
enclosed.

**Price \$2 each.**

**Ask your  
dealer.**

TRADE MARK REG

### Lectro Mfg. & Sales Co.

331 Oak St., Portland, Or.  
Manufacturers and Jobbers  
Radio Supplies

The Lectro Manufacturing and Sales Company were located at 331 SW Oak Street in downtown Portland. Their first radio product was a glass-enclosed detector selling for \$2.00. Ads for this radio item began in the Oregonian newspaper on May 21, 1922 as "most efficient easily adjusted detector on market". Lectro were also distributors at the same time for Kennedy radios. President Joseph M. McNaughton and Secretary Nye Kern headed the firm of ten salespersons.

The firm began in 1917 manufacturing valve grinders, generator testers, electric troubleshooters and gas savers. The company made a signal system invented in Hillsboro; a red light activated by car headlights approaching railroad crossings. Other products were radio cabinets made of Spanish cedar, four-inch coils with taps selling for \$6.00 and both single and double slide-tuning coils.

Beginning, March 1924, Lectro offered an Improved Ultradyne Superhetrodyne kit for \$73.00. The Company expanded in June 1925 when the firm acquired a license to manufacture Northwestern Radio parts and sets for Charley Austin.

Lectro's ad campaign in June 1925 was trade in offers for on old sets to buy a new Telemonic Radios for \$135. Telemonic radios had the Acmedyne circuit, a type of Neutrodyne using a Telos Vario-transformer in the R.F. stages, made by the Danziger- Jones Company of New York City. Lectro sold Telemonic brand radios licensed from Danziger-Jones made by the Northwestern Radio Manufacturing Company, for the west coast market.

## \$50 FOR YOUR OLD RADIO SET

Here is the LECTRO solution to the constantly increasing price confusion which has resulted from extravagant newspaper advertising, offering discontinued or obsolete radio sets at so-called "phenomenally low prices."

LECTRO is determined to give its customers only the best in radio sets. And we are determined to offer the best at a price even lower than any one of the countless cheap or poorly constructed sets being thrown on the market daily as "remarkable bargains."

### Absolutely the Best

The price of the powerful TELEMONIC is \$135.00 without accessories, such as tubes, loud speaker and in ferris.

This is our special offer: We will pay to every purchaser of the powerful TELEMONIC the sum of \$50.00 for his or her four or five-tube radio set, regardless of original cost, age or present condition! For a three-tube set we will pay \$40.00.

You can have seven days' free trial on the TELEMONIC in your own home, so that you can convince yourself that it is far superior to the set you now own. If you decide not to keep the TELEMONIC, return it to us and we will at once give you back your old set, plus the full amount you have paid us for the TELEMONIC.

If you like, your new TELEMONIC can be purchased on liberal time payments.

"TELEMONIC" is the trade name used by Danziger-Jones Co. for the Acmedyne circuit which is built for us under license by the Northwestern Radio Mfg. Co.

**LECTRO MFG. & SALES CO.**

85 5th Street

Portland, Oregon.

NOW SHOWING THE  
**KOLSTER**  
**SHAMROCK**  
**MAGNAVOX**  
**ALL ONE-CONTROL RADIOS**  
**GREBE**

Radio Service of Every Kind  
 Portland's Oldest and Largest  
 Exclusive Rad. Store

**LECTRO MFG. & SALES CO.**  
 67 SIXTH ST. BR 6863

The Company gave up radio manufacturing before 1927 like every Portland radio part manufacturers of the 1920s to become a retail outlet and service shop. The company from its new location at 67 SW Sixth Avenue sold one dial Kolster, Shamrock, Magnavox and Grebe brand radios. The last mention of the Electro Company in the Oregonian was on February 20, 1927 when Lectro agreed along with thirty other firms and individuals including President Joseph McNaughton to donate radio equipment to the Portland Public School system.

Sources:

“Lectro Crystal Detectors”, ad in The Oregonian of June 11, 1922, Section 4, page 9.

“\$50 for your old radio set”, ad in The Oregonian, June 11, 1925, Section 4, page 11.

“Now Showing the Kolster, Shamrock, Magnavox, Grebe radios”, ad in The Oregonian, November 7, 1926, page 6.

## Swap Shop

**Temporary Ads:** Run for 3 months unless reset requested (each month adds one asterisk \*)

**Permanent / Semi- Permanent Ads:** Marked with a hash mark #



\* Powerstat Variac \$35 OBO

Variable autotransformer made by Superior Electric. 120 Vac in and 0 to 140 volts ac out; rated at 7.5 amps. Great for testing appliances or old radios. New cord-works good. Contact Craig Wohlgemuth at 360-573-6616 or e-mail [cw2engineering@comcast.net](mailto:cw2engineering@comcast.net)

\*\* Wanted: A Dial Glass, with three bands and dial pointer for Philco 41-260 Console or any other Philco. Also in the June 2010 Call Letter I had an article on my Minerva Tropic Master Model W117 that I sold and I would like to buy it back. I will be at the April swap meet so anybody can bring the dial glasses or the Minerva. Homer “Jim” Myers 1-509-525-6264

# Special Sale: Large collection of high-end quality radios that range from mid-1920s to late 1950s and into the 1960s for sale. Only NWVRS, PSARA club members and personal guests are invited! For appointment call Steve Berglund 206-244-6428

# Amplitrex tube testing service. Highly accurate tube testing with computer printout. Can test 211, 845 and other rare and hard to test tubes. Will trade testing for tubes, parts, etc. [robertwstephens@frontier.com](mailto:robertwstephens@frontier.com)



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*America's best music*

33 rpm

45 rpm

QUARTZ

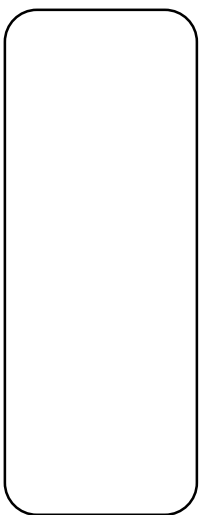
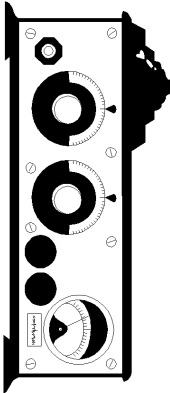


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NW Vintage Radio Society  
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