

The

Call Letter

*September, 2013
Vol. 39 – No. 9*



NEXT MEETING: SEPTEMBER 14TH @10AM

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 10 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 2013:

President	Sid Saul (503)869-5280	saulsidney@gmail.com
Vice-President	Mike McCrow (503)730-4639	tranny53@frontier.com
Treasurer	Ed Tompkins	edtmp@Q.com
Recording Secy	Charlie Kent (503)281-9335	radiogallerykent@qwestoffice.net
Corresponding Sec'y	Jim Harper (503)538-8738	JLHarperclan@aol.com
Board member at large	Mark Moore (503)286-5224	mark@pdxhistory.com
Call Letter Editor	Tony Hauser (503)438-0297	abhauser@aol.com
Librarian	Robert Robinson (503) 255-3585	srrobins@comcast.net

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On the cover: An Oakland, California made early ship’s radio from the display of West Coast radios at the August meeting.

Monthly Feature: Custom Radios (either homebrew or those made in custom shops of the 40’s & 50’s). No scheduled Tech Talk.

**Visit our web site at www.nwvrs.com
 and on Facebook: www.facebook.com/NWVRS**

Next Call Letter deadline: September 29, 2013

The *Call Letter* is the official publication of the Northwest Vintage Radio Society. Circulation is limited to the membership and guests of the Society. The Society is not responsible for the material contributed for publication, nor the quality, timeliness, or accuracy of the items or services offered for sale in the SWAP SHOP. By common agreement of the board of directors, the buyer assumes all responsibility for the satisfaction of any transaction.

From The Editor

by Call Letter Editor Tony Hauser

Greetings again fellow Society members.

It was a real pleasure to make it out to Oregon City for the meeting last month (my first in quite a long time) and catch up with some of my fellow members. It is encouraging to see that, even in the middle of summer, when years ago we wouldn't even have a meeting, we can still fill the seats and enjoy a great meeting, display, and Tech Talk.

The September meeting will include a very interesting display of Custom Radios that will undoubtedly have many unique, one-of-a-kind items. Make sure to bring out those sets in your collection to share with everyone.

An important item in this month's issue is a reprint of a letter sent to our Society from the Editor of The Journal of the California Historical Radio Society in San Francisco. They are interested in sharing articles between our two publications with the goal of disseminating our combined expertise to a broader audience. This is something our members will need to consider (perhaps at this month's meeting?).

One other note; I received no bio columns from any of our members this month. That is why the inside back cover is blank.

Remember, the dial stops here.

Tony



NWVRS Calendar of Events

Most of the hamfest and ham swap meet information comes from: PNW Hamfair web page at www.n7cfo.com/amJradio/hf/hf.htm

September 14 NWVRS monthly meeting 10am; tailgate swap 8:30.
Feature: Custom Radios.

September 28 **Washington State Convention (Spokane Hamfest)**
Spokane Valley, WA. www.kbara.org Contact Betsy,
N7WRQ n7wrq@aol.com

October 12 NWVRS **Fall Show & Sale** 9am-3pm. American
Legion Hall, 21510 Main St. Aurora, OR.

October 26 **Swap-Tober-Fest. Mid-Valley ARES** Polk County
Fairgrounds, Rickreall, OR. K7un@swaptoberfest.net
www.swaptoberfest.net

November 9 NWVRS monthly meeting 10am; tailgate swap 8:30.
Nominations for 2014 Officers.

December 14 NWVRS **Holiday Party** 10am; Election of 2014
Officers.

January 11 NWVRS **Annual Meeting** 10am; tailgate swap 8:30.

February 2014 **Salem Hamfair & Computer/Electronics Swapmeet**
Rickreall, OR at the Polk County Fairgrounds.
www.w7sra.com

NWVRS August Meeting Minutes

by *Recording Secretary* Charlie Kent

Vice President Mike McCrow called the August 10, 2013 meeting of the Northwest Vintage Radio Society to order at 10:00 am. Guest John Hills attended and became a member after the meeting. John has a varied interest in electronics and radio items.

Education Fund

Our Vice President explained all the items approved by membership, that were previously talked about in meetings and *Call Letters*, have been purchased.

Recording Secretary

Charlie Kent asked for a motion to approve the June 8, 2013 meeting minutes as they appeared in *The Call Letter*. A motion was made to accept, seconded, and approved.

Treasurer's Report

Ed Tompkins gave the Treasurer's Report.

Speed Feldschau Memorial Picnic and Swap Meet

Event coordinator, Charlie Kent, talked about the July 13 event. It was suggested we schedule it again for next July. A motion was made, seconded, and approved.

Corresponding Secretary

James Harper reported that Tube Collectors Association in Ashland (Bob Deuel's club) sends him a newsletter each month. James left copies for members to view and return. Sid Saul was the first to take them home to read.

October Aurora Swap Sale

Brian Toon gave a report on the upcoming October Swap Sale in Aurora. Afterward the Recording Secretary made a plea for volunteers to help Brian take down and put away tables after each meet. The people who graciously volunteered were James Harper, Mike McCrow and Sid Saul.

Good and Welfare

Liles Garcia reported that Bruce Baur has a hurt back; Dick Bixler took a fall and is on the mend; and Rick Ryan lost his mother and cards have been sent. Sonny Clutter is recovering from knee surgery.

Leads and Needs

Leads and needs were exchanged in the meeting. No leads and needs were reported to the Recording Secretary for publication.

(ed. addition: NEED: Power supply for an Atwater Kent Model 44 or other model using the same model supply. Also need an English language service manual for a German Siemens Schatulle radio model H42. I also need a cabinet for a Zenith Tombstone model 4T26. I will bring this to the October swap meet to either sell or pick up a cabinet. I can also pick up the AK power supply at that time. Homer J. "Jim" Myers, 1-509-525-6264, Walla Walla, WA.)

Monthly Feature

The September monthly feature will be **Custom Radios**, either home brew custom or radios that were made in custom shops of the 1940's and 1950's.

There were 43 members and guests in attendance. The meeting adjourned at 11:57 am.

Tech Talk

Rudy Zvarich presented on car radios. His presentation was informative and delighted all who stayed to listen.

A Message From The V-P.

by Mike McCrow

Well September is here, and soon it will be fall. Time for football, cooler weather, and rain, rain, and more rain. Now is the time to start getting your favorite radio ready for the second annual Don Iverson Craftsmanship contest.

The rules will remain the same as last years event. The contest will take place at the regular meeting in March 2014. Here are the rules:

1. Restoration to be performed by contestant only. Reproduction items such as dial lenses, dial faces, knobs, radio backs, etc. are allowed.
2. Pictures of radio, before and after are allowed, but not required. Also an explanation of what was done to the radio electronically is not required, but can also be submitted.
3. A tech. committee of five judges and one alternate shall preside over the competition.
4. Entries shall be judged on:
 - a. Cosmetic restoration and authenticity.
 - b. Electronic restoration and how it plays.
5. Each judge shall rate each entry on a 1-10 scale with 10 being the best possible for each category. The radio that receives the highest total will be declared the winner.
6. If a judge is entered in the contest he or she cannot vote on their own radio. The alternate will take their place.
7. The alternate judge's score will decide the winner in the event of a tie.

And KGW Makes Four

by Art Redman

The Oregonian newspaper completed installation of its radio station KGW on March 18, 1922. The station was installed in a twenty-four square foot room under the big clock in the old Oregonian Building and Tower located at SW Sixth Avenue and SW Alder. Four seventy foot long Aerials were constructed and were terminated at the top of a sixty-foot steel mast which was erected on the roof 152 feet above the streets along with counterpoises laying a few feet above the roof which served as a ground.

The first words transmitted by KGW were allegedly profanities uttered by radio engineers of The Ship Owners Radio Service of New York. They constructed the station and were testing the unit and did not realize at the time the transmitter was working properly. The transmitter was constructed from General Electric parts and had three fifty-watt vacuum tubes; one used as a speech amplifier, the second as a Heising modulator, and the third as a Colpitts oscillator. The filaments were lit by a direct current generator and another DC generator supplied 1000 volts to the plates. The radio receiver was the Acmehone Loudspeaker Receiver covering 150 to 350 meters and came equipped with a two stage audio amplifier.

The Oregonian in its March 19th issue totally ignored station KGG of the firm of Hallock and Watson; 7XI was already broadcasting on the air officially as KGG on March 15th. The paper stated that “there are two broadcasting stations operating in Portland, and one amateur, that of W.P. Hawley Jr. (7XG) and one professional that of the Northwest Radio Manufacturing Company (7XF), Mount Tabor of which Charles L. Austin is the president. The Oregonian station’s operation is several times as powerful as that of the Mount Tabor plant. The Hawley plant is one of the finest amateur stations in the United States”.

The Oregonian further dismissed all other radio stations as rank amateurs by stating that “unlike radiophone broadcasting done so far in Oregon, The Oregonian will not confine its musical service to records. There will be a piano and other music instruments in the broadcasting station and instrumental and vocal selections by visiting artists will be sent together with the work of local musicians. (*cont. p. 16*)

August Display

Display of West Coast Radios from the August meeting. Photos courtesy Charlie Kent.



Hallock & Watson, Portland, Oregon



Morrow Radio Manufacturing, Salem, Oregon



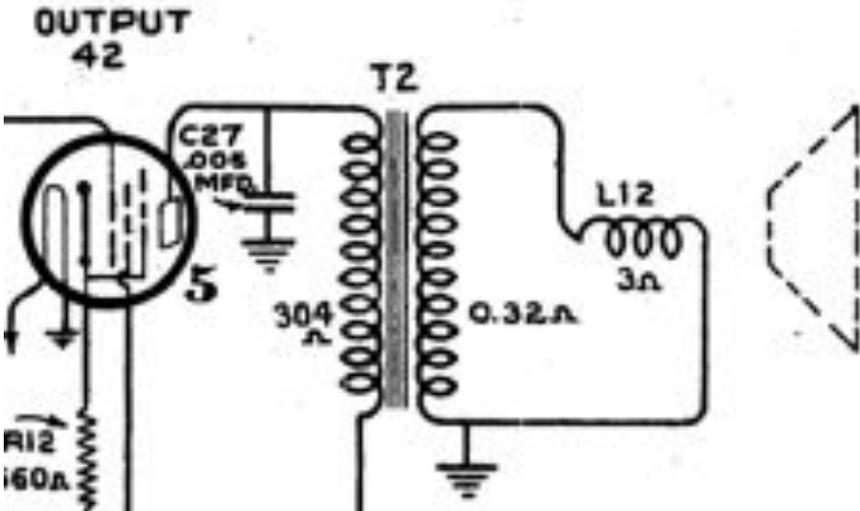
Troy Radio, Los Angeles, California

Output Trannies: Single-ended or Double? Part I

by President Sid Saul

Thanks to Rudy Zvarich’s excellent Tech-Talk given at last month’s meeting. Afterwards I found the inspiration to test my own 1938 RCA car radio model 67M, schematic found in Rider’s Vol 9-47. Of course the speaker was missing and the output transformer open. Glancing at my box of cannibalized output transformers (OT) gave me pause to reflect, pun intended.

Be it car transmissions or output transformers, both just couple the source to the load, having no *real* impedance by themselves. By *single-ended* (SE), I am referring to an output stage consisting of a single power tube or tubes in parallel. Push-Pull is considered *double-ended* and to be discussed in a future article.



So where to begin. Let’s start with the radio’s 42 output tube, see schematic. We need to connect the plate to the speaker.

Looking up the tube specs of our 42 pentode with a plate at 250 volts, it shows 80,000 ohms ac plate resistance. A long way from

matching the impedance of a 4 ohm speaker, but this *can* be done with an OT. The *Load Resistance* column is the number we are seeking, shown as 7000 ac ohms. Load Resistance is not a characteristic of the tube, but rather a number experimentally or mathematically found to give the maximum undistorted output power for that tube, not the maximum power possible.

A₁ Single-Tube Class A₁ Amplifier
42 Output Tube Pentode

PLATE VOLTAGE	250	315 max.	Volts
SCREEN VOLTAGE (Grid No. 2).....	250	315 max.	Volts
GRID VOLTAGE (Grid No. 1).....	-16.5	-22	Volts
PLATE CURRENT	34	42	Milliamperes
SCREEN CURRENT	6.5	8	Milliamperes
PLATE RESISTANCE (Approx.).....	80000	100000	Ohms
AMPLIFICATION FACTOR (Approx.)...	190	260	
TRANSCONDUCTANCE	2350	2600	Micromhos
LOAD RESISTANCE	7000	7000	Ohms
TOTAL HARMONIC DISTORTION.....	7	7	Per cent
POWER OUTPUT	3	5	Watts

80,000 ohms *ac plate resistance* across the plate may give us the strongest sounds, but it would be badly distorted, especially due to the second harmonic discussed in a future article. It has been proven that we get the *lowest* distortion for an acceptable power level by tweaking this match. If using a triode as our power tube in a SE radio, the strongest cleanest sound would come when we double the tube's ac resistance rating. This again is Load Resistance. For example, the 01-A triode tube has an ac plate resistance of 10,000 ohms. We would be looking for an OT with a 20,000 ohm primary. Not the same for pentodes and power beam output tubes. For these, instead of doubling the resistance we divide by seven to ten. For instance, take the 42 pentode rated at 80,000 ohms plate resistance. Notice the Load Resistance is clearly noted as 7000 ohms. In this case it is one-eleventh of the 42's plate resistance. Always someone to louse up my generalities!

So you see jumping to the Load Resistance column for the output tube saves a bit of time and thinking. Just match this number

with the OT primary. You may have noticed that the schematic doesn't tell us what impedance value we should use for the replacement speaker. The voice coil (L12) indicates 3 ohms. DC ohm values shown on schematics are used for checking for opens and shorts, but tell us little about impedance. Although, we can easily use a VOM to determine the impedance of our speakers. With the vom probes across the voice coil, simply multiply the found value in ohms by 1.25 *fixed value*, something you can do with any voice coil speaker.

3 ohms from *this* schematic or tested value multiplied by 1.25 assures us that we are indeed looking for a 4 ohm replacement speaker. Later I will demonstrate how to determine the speaker's impedance without markings on a schematic. So we now know the impedance of both the speaker and the power tube being 4 and 7000.

First we need to find an OT that will handle as much power as the original. Usually if the original and replacement are of about the same size, we are close enough. Now we can discuss TR's. This stands for Turns Ratio, something necessary for evaluating all OT's. The number of turns of wire on the primary compared with the number of turns on the secondary displayed as X:X.

We should determine if the replacement OT's windings are open. The primary winding will have the highest dc ohm reading with several hundred or more ohms, compared with the secondary winding being of a few ohms or less. Next there should be zero continuity between primary and secondary leads. Also zero from *any* lead to the frame of the OT. This out of the way we can calculate the TR needed for this radio. We already know the load resistance of our tube from the chart being 7000, and the speaker being 4 ohms. Simply dividing 7000 by 4 gives us 1750. Using a calculator find the square root of 1750 which gives us 42:1, our desired TR for the replacement transformer.

We could order a *new* transformer by selecting a TR of about 42:1 from the catalog, or we could test our used OT's. All we need is a source of *low voltage* AC, less than 10 volts for safety such as with a variac or low voltage filament transformer. Let's say we are using a 6.3 volt transformer. Connect this into the primary of our candidate OT and read the secondary voltage with an ac meter. Divide the secondary's voltage by the input. The first OT I selected read 67 volts. $67/6.3$ revealed an 11:1 ratio, not even close to the 42 needed. Trying another transformer I found 285 volts on *it's* secondary. So $285/6.3$ gave me a TR of 45:1, close enough. I now have my replacement OT and speaker, confident in knowing it will sound like new without

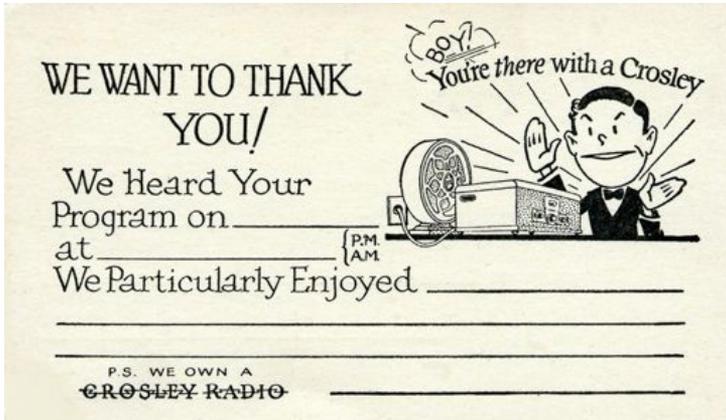
distortion. Distortion below 5 percent is the norm, but in this case it is clearly shown on the chart as 7 percent Total Harmonic Distortion THD at 3 watts output. This is just what the Load Resistance shown on the chart guarantees us. Makes it easy doesn't it.

Before I forget let's calculate the speaker impedance without any markings on the schematic. We already know this tube's load resistance of 7000 found on the chart. We just calculated the TR of 42. Squaring 42 gives us 1764. 7000/1764 gives us 3.97 ohms, confirming our 4 ohm speaker. So better not use an 8 ohms speaker here!

Just for future reference, squaring of the TR's, or 42 in our case, we find the OT's Impedance Ratio of 1764:1. A 4 ohms speaker loading the OT's secondary reflects (1764 X 4) or 7K across the primary. We have just matched our tube for the maximum undistorted sound possible. OT's will never look the same to you.

Next time we will walk through the magical and mysterious *double-ended* Push-Pull, where one plus one definitely does not equal two. It isn't just the power you will find intriguing, it's the MAGIC!

So until next time,
Sid



A Letter From CHRS

Northwest Vintage Radio Society (NWVRS)
PO Box 82379
Portland, OR
97282-0379

Dear Director,

As is certainly the case for your organization, the California Historical Radio Society is dedicated to disseminating information to our members to encourage interest and education about the history, preservation, and restoration of vintage radios and televisions. It seems to us that if vintage radio organization can agree to work together in sharing information, we all would benefit from the broad knowledge that exists in each of our groups and this information would be available throughout the vintage radio community rather than just limited to memberships.

One way we propose to begin is to share articles that we publish. Enclosed is a copy of the most recent Journal of the California Historical Radio Society. In putting it together we realize what a challenge it can be to develop quality articles in time to meet publishing deadlines. We thought we'd reach out to you to see if your club has the same situation and are interested in sharing articles or collaborating. Our contributors' material could be made available to you and vice versa, offering our combined membership a broader diversity of expertise and viewpoints. Both of our publications would offer full attribution to the contributor and his (or her) club of course.

Relatedly, we'd like to put a link to your club's website up on our own and supply the same to you. There are regular updates to our site and even a link to radios we have for sale. If any of this is of interest, please get in touch with the undersigned via 'snail mail' or email.

All the best,
Richard Watts
Editor of The Journal of the CHRS
jrchrs@comcast.netsc

Swap Shop

FOR SALE: *I need to finally sell my radio collection. I am using a walker now and have some difficulty getting around and I cannot lift anything of very much weight. I have about 100 radios from the 20's through plastics in the 50's. I have one Catalin in perfect condition, several cathedrals, battery sets, consoles, and chassis of different years including several containing globe tubes. I have a supply of radio knobs including some for Catalin and Zenith radios, some very nice speakers, and other miscellaneous items such as Abbotwares radios and tube checkers. Be sure to call before you come down to see me. Glen Bricker, 1425 Daugherty Ave, Apt. #4, Cottage Grove, OR. 541-942-3717.

FOR SALE: *I have an old model 14 KTR Teletype (Western Union Telegraph Co Simplex Printer 2-B) that I am finally parting with. Do any of you know if there is a Portland Teletype group around anymore? I have found groups around the country, but these buggers are heavy, so shipping gets pretty spendy. Cliff Tuttle, 503-368-7956, tuttlekip@gmail.com

FOR SALE: *KIEL "Golden Voice Table Radio", ca. 1930. Beautiful piece of period furniture containing an Atwater Kent 55C radio chassis. Tubes check OK, light up, but no sound. Asking \$400. Call Nick in Vancouver at 360-750-0286 or email, nick9818@gmail.com.

FOR SALE: Thousands of tubes, hundreds of radio parts, panels, meters, surplus, etc. R5-D3 electronic surplus, Bob Lee, 9770 S.E. Stanley Ave., Milwaukie, OR 97222, (503) 513-0410

FOR SALE: Many Tubes New and Used – 30-day money back Warranty. For list visit www.antiquetubesupply.webs.com. I can ship OR bring to club meetings. Damon Vandehey, (503) 459-1777.

FOR SALE: Amplitrex professional tube testing at reasonable rates. Curve tracing, plate current matching, noise testing and highly accurate Gm readings. Adds value to high-value tubes!
robertwstephens@frontier.com.

FOR SALE: Questions about restoration of vintage radio? Visit Radiolaguy's web site often for this information plus lots of other

interesting displays, photos, virtual museum plus lots of other information on vintage radio and television. Oh, yes, there are items for sale as well and NVRS members get a substantial discount on most of these items. Thank You, Sonny the Radiola Guy
Visit my vintage radio web site: <http://www.radiolaguy.com>

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“And KGW Makes Four” (cont. from p. 7)

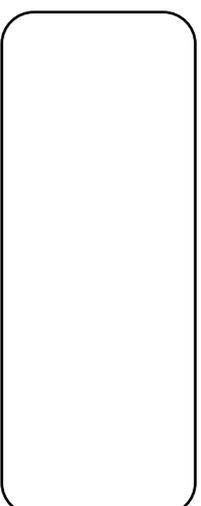
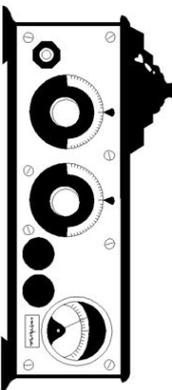
Weather forecasts are to be sent regularly and important news as occasion suggests although the station is not primarily for the dissemination of news.” Hawley’s station 7XG also had a Steinway Grand piano and several extra microphones for singers and musical instruments, and 7XI was giving weather reports. It seems live music wasn’t the only distinction KGW could bring to listeners in 1922 and 1923.

The Oregonian took great pride in being the first Oregon newspaper to print a radio column in its Sunday edition “just as it is now the pioneer in the state in operating the first broadcasting station with a newspaper plant” which was also incorrect. It became good business for the Oregonian to simply ignore their chief competitor Hallock and Watson who were allied with the Oregonian’s rival newspaper the Oregon Journal. The Journal supplied KGG with news reports for their nightly news program airing from 7:15 to 7:30 pm which the Oregonian also failed to mention along with W.P. Hawley’s piano and live music. Later historians like Percy Maddux in the book *City on the Willamette the Story of Portland, Oregon* published in 1952 relied on the Oregonian as a source thereby overlooking Hallock and Watson’s role in being the third radio station to broadcast ahead of KGW in the March, 1922 month of Radio Madness in Portland.



Lemco Model 340
Radio Telephone Crystal Set
Cavalier Radio Co.
Oakland, California
San Francisco, California

NW Vintage Radio Society
P.O. Box 82379
Portland, Oregon 97282-0379



FIRST CLASS MAIL