

The

Call Letter

of the Northwest Vintage Radio Society

Vol. 25

December 1999

No. 12



Merry
Christmas
1999

Celebrating **25** years in print!

The Northwest Vintage Radio Society

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 \$15.00 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 (except July and August) 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).

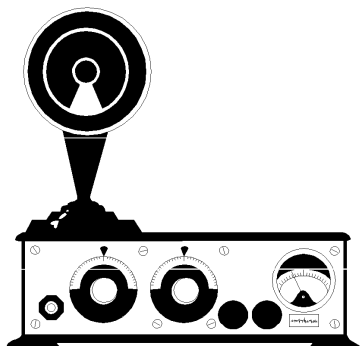
Other Society functions include guest speakers, auctions, radio show, and radio sales which are advertised in the *Call Letter* and are held in and around Portland.

Society Officers for 1999:

President	Charles Kent	(503) 281-9335
Vice-President	George Kirkwood	(503) 648-4809
Treasurer	Ed Charman	(503) 654-7387
Secretary	Liles Garcia	(503) 649-9288
Board member at large	Dave Rutland	(541) 929-4498
<i>Call Letter</i> Editor	Rick Walton	(503) 284-5648
Librarian	John Bucholz	(503) 629-4836

The Society’s address is:

The Northwest Vintage Radio Society
Post Office Box 82379
Portland, Oregon 97282-0379



December 1999

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On the cover: Dan Howard displayed this pair of Christmas Arvins a year ago at the Christmas party, and this year we get to enjoy them in color on the cover.

Call Letter Deadline 10 days prior to meeting day.

**Don't miss the meeting — usual time — December 11.
Officer elections for 2000!**

**Annual pot-luck Christmas party! Music, food, & fun!
Bring a salad or dessert.**

Monthly feature:

**Vintage test equipment and Christmas theme radios.
And don't forget — tailgate swap meet starts at 8:30!**

**The Northwest Vintage Radio Society is once again on-
line! Visit the revived NWVRS web site at
www.nwvrs.org.**

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 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, Rick Walton

Well folks, this isn't the special 25th Anniversary issue that I promised last month in this column. Work pressures limited the time and energy I had to do justice to such an undertaking, so I'll have to wait till January to do the special issue. Note that in February we'll be having the celebration.

That said, it is still important to remember that this month marks the 25th birthday of the Northwest Vintage Radio Society. They weren't calling it by that name at that first meeting — they wouldn't for another month — but it was, nevertheless, the first gathering of the people who started our club.

In this issue we have the sequel to the article by Larry Weide that appeared last month. This month he explains how to recone those old cone speakers. Lots of pictures this month from the last meeting. For your editor, the most fun in this issue is the color cover, a first since I've been editing, and perhaps a first for the *Call Letter*, although it's not the first time color has appeared in these pages.

I've been poring over the *Call Letter* archives in preparation for our 25th Anniversary Celebration, and especially in preparation for next month's issue. I'm working on an article about the *Call Letter* itself, showing how it has evolved and grown since that first letter sent out by Bob Bilbie inviting the recipients to join in the formation of a radio club.

Don't forget that we elect officers at this meeting, then we party! Bring a salad or a dessert to share along with the fun and fellowship.

NWVRS 1999-2000 Calendar of Events

- December 11** Regular meeting. Election of officers for 2000. Annual Holiday party. Monthly feature: vintage test equipment.
- January 8** Regular meeting.
- February 12?** 25th Anniversary celebration.
- February 19** Year 2000 Salem Hamfair (Rickreall), presented by the Salem Repeater Ass'n. and the Oregon Coast Emergency Repeater, Inc. \$6 advance, \$7 to register at door.
- May 20** Spring Swap Meet.

Meeting Minutes

by Liles Garcia, NWVRS Secretary

President Charles Kent called the November 13, 1999 meeting of the Northwest Vintage Radio Society to order at 10:05 AM. The minutes printed in the Call Letter were approved as written. Ross Othus from Seattle attended today as a guest. Club members wish Dick Bosch a speedy recovery from his recent surgery.

Old Business

Club Caps and Jackets—Wendy announced that one or two large jackets are still left.

Club Mailing Address—Charlie is checking that other clubs, organizations, and publications have our club's correct mailing address.

Library—John Bucholtz brought some of our library books for members to look at.

Club Web Page—Dave Brown reported that our web site is doing well. Members can e-mail Dave for leads and needs items.

Swap Meets—Our Spring 2000 Swap Meet will be on May 20 at the Armory in Hillsboro. The members discussed several swap meet ideas. We also discussed different styles and methods of having auctions at our swap meets and meetings. The auctions would be for fund raising for our club.

New Business

Nomination of Officers—The existing officers were nominated.

Christmas Party—Our club's Christmas Party will be on our December meeting. Everybody mark your calendar now and plan to attend.

25th Anniversary Party—Our club's 25th Anniversary Party will be after the first of the year since December is a busy month for everyone.

Leads and Needs

Tony Ranft needs some advice on a Philco vernier drive dial.

Dick Howard brought some radios to give away.

George Kirkwood needs some small Crosley knobs.

Dave Brown needs a back for a Zenith K412R radio.

Charlie has a lead on a console and a table set, contact him for more information.

The program topic for the December meeting will be old test equipment and radios that have a Christmas theme.

Our program today was crystal radios. Members showed and discussed the crystal sets that they brought.

The meeting was adjourned at 11:15 AM.

Replacing Early Paper Speaker Cones

by Larry Weide.

reprinted from Colorado Radio Collector's *The Flash*, 1/95

Editor's note: Larry Weide has written a very complete BASIC program that "will calculate the calculate the size of a circle of paper required to create a cone of a specified size." It is available by going to the Nostalgiaair web site and finding this article under "Tips and Training." About midway through the article is a link to the source code.

Hi... all you CRCers! Well, if you had read last month's 'Box article on the restoration of antique speaker permanent magnets, you might have caught the comment I made about doing a subsequent article on the restoration of antique speaker paper cones. Some of the guys mentioned that they thought that Leamon Brooks, one of our very knowledgeable CRC members, had some information for making flat stock paper patterns that could then be formed into the desired sized speaker cones. To make a long story short, indeed, Leamon is a fund of knowledge on the subject. So, I want to give a lot of thanks and credit to Leamon Brooks not only for mailing me a copy of his speaker cone data table, but also for spending time with me to talk through some of the finer points of constructing replacement early speaker cones.

During the 20's and even into the early 30's, most speakers didn't have much "hi" to their "fi". For all intents and purposes the first ones were merely a horn attached to an earphone. The next step was to remove the horn and metal acoustical diaphragm and replace these parts with a paper cone attached to a mechanical linkage that was in turn operated by a coil/magnet assembly (see Nov/94 Flash 'Box article). This type of speaker was far better than the horn speaker, but pretty soon engineers developed the first models of the modern day speaker. That is, a speaker with a compliant cone that was integrally attached to a low mass voice coil that in turn was operated by it's close proximity to a strong stationary magnet.

Many of the old paper cone speakers have survived and they sure do add authenticity to the display and operation of the radios that they were originally attached to. Unfortunately, time, dampness, pests and abuse have taken their toll on many a paper cone. But as you will see, replacing a cone is not all that tough, and it can be done very inexpensively.

Although the cones of the various speakers came in many different sizes and colors, they had two characteristics that make them fairly easy to replicate with modern materials. First, most of them were constructed with a paper that had the constitution similar to medium grade tag board - which is easily found in most art supply stores. Second, they almost always had the shape of a regular cone - which lends itself to a simple construction technique.

So, let's take a stab at reconstructing one of these speaker cones. The first thing to do is to determine your original cone's depth from the opening that faces the listener to the back where it comes to a point. Actually, the exact point is normally missing as this is the usual place where the mechanical linking rod is connected. Next, you need to determine the width of the cone's opening. In cases where the cone is missing or beyond useful measuring, you would use the speaker shell/container and linkage connecting points to anticipate the cone's dimensions. Don't forget, tag board is cheap, and you can afford to make a mistake or two when arriving at your final accurate measurements. You may also want to "play" with other even cheaper papers until you get the dimensions just right.

The next step is to calculate and mark cutout guidelines on the tag board paper, using the depth and width measurements that you just made. There are two calculations to make. First is the diameter of the circular pattern, and second is a circle chord line that will indicate what size "pie" shaped section to cut out of the pattern to correctly form it into a cone shape. At this point you can go a couple of ways;

- You can use the formulas below that I worked out.
- Or, you can use the simple PC BASIC program below that I wrote.

To find the pattern diameter and chord by formula follow these steps;

1. Use the depth (h) and width (w) of the cone to find the diameter (D);

$$D = \sqrt{4h^2 + w^2}$$

or... D = The square root of the quantity of 4 times the depth squared plus the width squared.

2. Find the “pie” shaped section cutout angle (a);

$$a = 360(D \angle w) / D$$

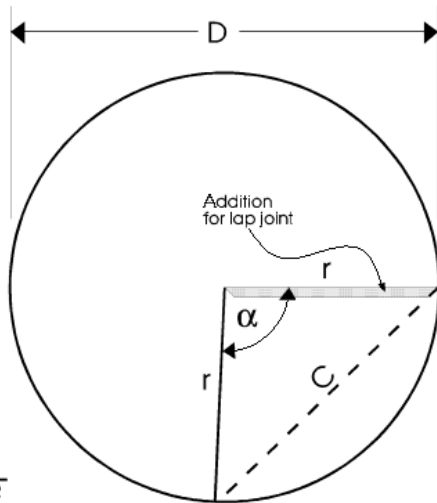
or... a = 360 times the quantity of the newly found diameter minus the width, all of which is divided by the newly found diameter

3. Find the chord length (C);

$$C = D \sin(a/2)$$

or... C = the newly found diameter times the sine of one half of the newly found cutout angle

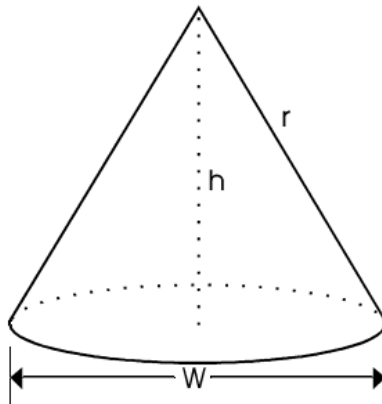
Pattern and Cone Relationships



$$D = \sqrt{4h^2 + W^2}$$

$$\alpha = \frac{360(D - W)}{D}$$

$$C = D \sin\left(\frac{\alpha}{2}\right)$$



Be aware that if you do the above calculations with a scientific calculator you may need to account for the angle in radians rather than in degrees (as is the case of the BASIC program below).

$$\text{Radians} = \text{Degrees} \times \pi / 180 \quad (\pi = 3.141)$$

To find the pattern diameter and chord by simple PC BASIC program:

```
10 INPUT "Enter required cone depth ",H
20 INPUT "Enter required cone width ",W
30 PRINT "Pattern diameter = ";D=SQR((4*H*H)+(W*W));PRINT D
40 PRINT "Pattern chord = ";:PRINT D*SIN(360*(D-W)/D*3.141/180/2)
```

OK, we're now ready to make our tag board pattern.

1. Using the diameter (D), draw a circle on your paper. If you don't have a suitable pencil compass use the string/pin/pencil method to draw your circle.
2. Using the chord (C) as the length of a line, draw this line so that it starts and ends exactly on the circumference of the circle. The exact position around the circle is unimportant.
3. Now, draw a triangle connecting the center of the circle with the two points that are marked by where the chord line touches the circumference of the circle. The chord line itself will become the side of the triangle that is opposite the center of the circle.
4. At this point we have drawn the outline of a "pie" shaped section of paper that you need to cut away - after you have cut out the entire circle. But first However, in order to allow a lapped glue joint, you need to include an additional 1/4" to 1/2" strip along side one of the radii that you will be cutting along. Be sure this additional paper area is marked/taken from the section that you are cutting out (throwing away) and is accounted for AFTER you have drawn the correct guide-lines as described in step #3. This lap strip will have to have its end corners trimmed a bit so that they don't interfere with the glue joint.
5. After you have completely cutout your pattern you can begin to shape it into a cone by carefully easing the two cut sides together so that it forms the lapped joint. The trick will be not to kink or crease the paper as you wrap it around. I've used cans and other cylindrical objects as forms to help "ease" the paper into a curve without creasing it.

6. The next step is to glue the lap joint in place. Leamon likes to use a carpenter's glue. This type of glue will allow you to do a little adjustment or moving of the joint before it sets up. This is important in that the position of the paper in the lapped joint will determine just how symmetrical your cone will be - assuming that you've done your marking accurately to begin with. Leamon says that some folks sand the visible edge of the joint to "feather" out the seam to make it less noticeable (whew, and I thought Dave Boyle was finicky!).

A troublesome area may be the mounting of the front opening of the cone. The problem is that there were many ways to do the mounting, so you'll just have to see how your original cone was done. Sometimes the cone was rolled/bent around a cover edge. Sometimes the cone was attached to a ring of felt, cloth or other paper. Sometimes the front opening of the cone was free floating and was supported in a guide made of a band of felt or other material that lined the cabinet interior.

Hey, that's basically it. For those cones that are visible and have colors other than the "raw" paper, you can lightly tint them with a non-water based paint. Flat spray colors will be the easiest to apply, but you'll have to decide for yourself what replicates the original cone the best.



Hoyt B ELIMINATOR VOLTMETER

A new sensitive voltmeter, for regular Dealers' service work as well as for laboratory and precision measurements. Resistance 1,000 ohms per volt. Provided with two scales—0-100 volts and 0-500 volts, covering the entire range of ordinary B Eliminator and Power-Amplifier work. Price, HOYT Standard B Eliminator Voltmeter, 0-100 and 0-500 volts—\$28.50.

Equipped on special order with additional scale, either—0-10 volts or 0-100 ma. at \$32.50.

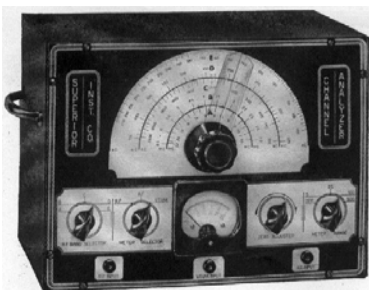
Send for Price list Q-6

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THE X-RAYOMETER

A portable instrument with a large circular scale and several control knobs and switches on the front panel.



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FOR THE FIRST TIME — THE NEW
CHANNEL-ANALYZER
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THE CHANNEL ANALYZER WILL—

1. Follow signal from antenna to speaker through all stages of any receiver ever made.
2. Instantly track down exact cause of intermittent operation.
3. Measure both Automatic-Volume-Control and Automatic-Frequency-Control, voltage and circuits without appreciably loading the circuit, using built-in highly sensitive Vacuum-Tube Voltmeter.
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5. Track down and locate cause of distortion in R.F., I.F., and A.F. amplifiers.
6. Check exact operating voltage of each tube.
7. Locate leaky condensers and all high-resistance shorts, also show opens.
8. Measure exact frequency, amount of drift and comparative output of oscillators in superhets.
9. Track down exact cause of noise.

Photo Display

Photos by Rick Walton

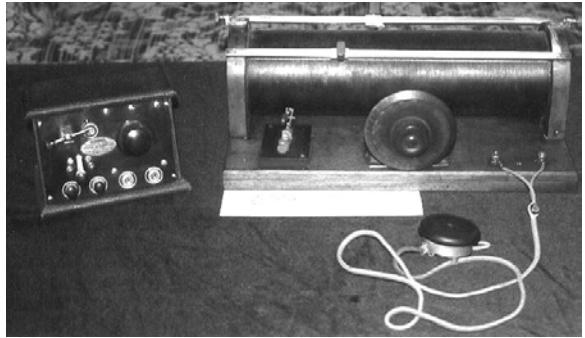
Crystal sets were featured at the November meeting, and here are the photos of the sets that were displayed.



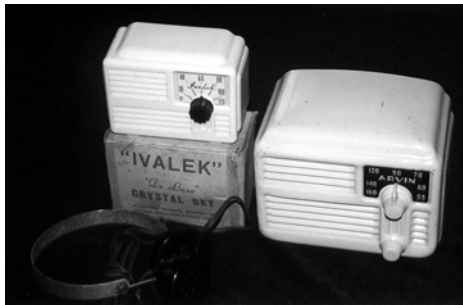
Collection - Jerry Talbott
One of three 3rd place winners!



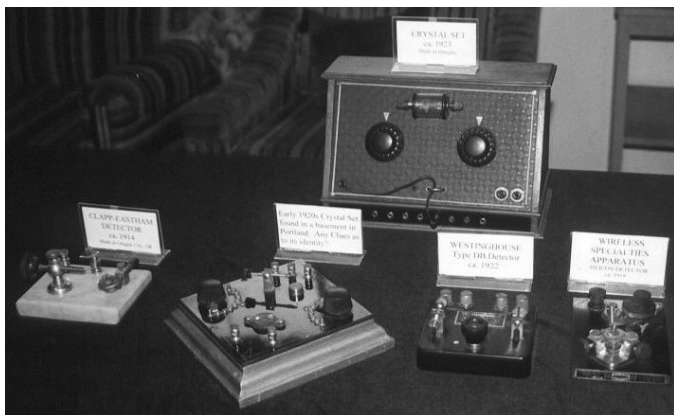
Sputnik - Charlie Kent
One of three 3rd place winners!



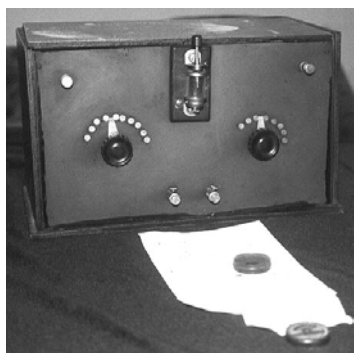
Kodiak and a Belgian set- George Kirkwood
One of three 1st place winners!



Ivalek and Arvin - Dan Howard



Collection - Dick Howard
One of three 1st place winners!



Homemade set - Rudy Zvarich
One of three 3rd place winners!



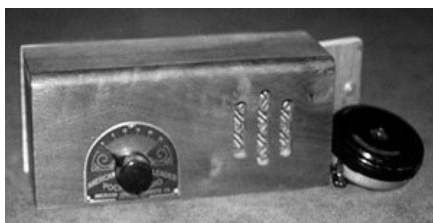
Hyatt - Sonny Clutter
One of three 1st place winners!



"Breadboard" - Dave Brown
2nd place winner!



Olson kit - Mark Richardson



American Leader Pocket Radio - Tony Ranft

Swap Shop

FOR SALE: Thousands of tubes, hundreds of radio parts, panels, meters, surplus, etc. R5-D3 electronic surplus, Bob Lee, 6111 SE 82nd Ave., Portland, OR, (503) 774-6560.

BUY, SELL, & TRADE: Vintage Radio, Early Television and Hi-Fi.

Wanted: Tubes, Parts and whatever you might have related to early radio & TV. Visit my web-site at: < <http://www.radiolaguy.com> > or e-mail me at: < sonny@radiolaguy.com >

Thanks, Sonny Clutter, phone (360) 834-5741

WANTED: The Crystal Radio Guy wants crystal sets and toy germanium diode radios. Buy outright, or trade for other radios. Galen (503) 231-9708.

WANTED: Zenith tube shields. Have non-Zenith shields (Philco, other brands) to swap. Contact Dick Dielschneider.

FOR SALE/TRADE: 1947 Scott 800B AM-FM-SW radio/phono console. Motor drive tuning, chrome good, excellent condition. \$150. Jerry Talbott (503-649-6717)

Leads and Needs

See the meeting minutes.

Roster Corrections and Additions

Please add Gordon's name to your roster. Gordon has been a member since last January but his name was inadvertently omitted from the current roster. Gordon has our apologies and your editor has a red face!

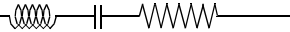
Ormsby, Gordon

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Corvallis, OR 97330

(541) 753-6398

1928-1939 Wood Radios



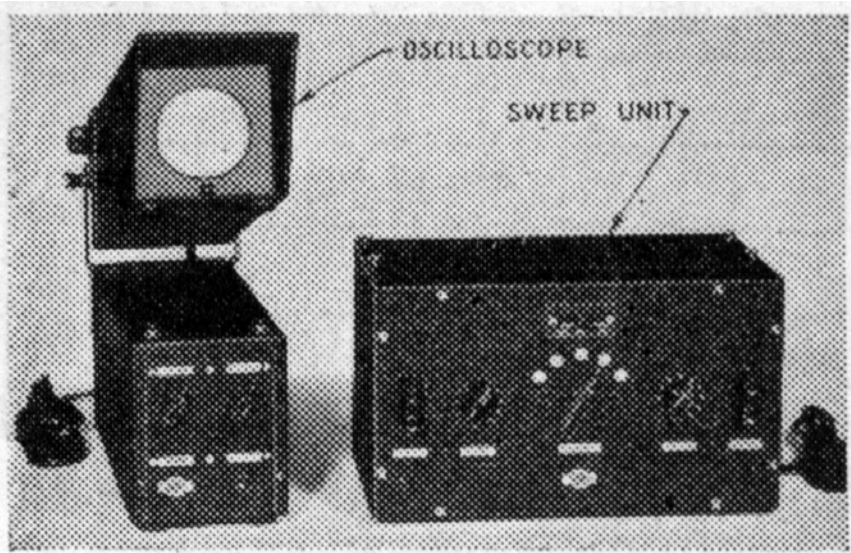
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The Back Page

In keeping with this month's feature of old test equipment, here's a photo of an oscilloscope made by the Clough-Brengle Co. taken from the April, 1935, issue of *Radio-Craft* magazine. It depicts one of several items pictured as "The Latest Radio Equipment." The description with the photo reads:

This cathode-ray equipment is new in mechanical development—yet it employs a proven type of cathode-ray equipment and sweep-unit type tube, is fully standardized, portable, and suited for field-service work, as well as production and laboratory use.

Brilliancy is sufficient to allow photographic records when desired. Furnished complete in crackle-finished metal housing, dimensions 11½ x 6½ x 16½ ins.



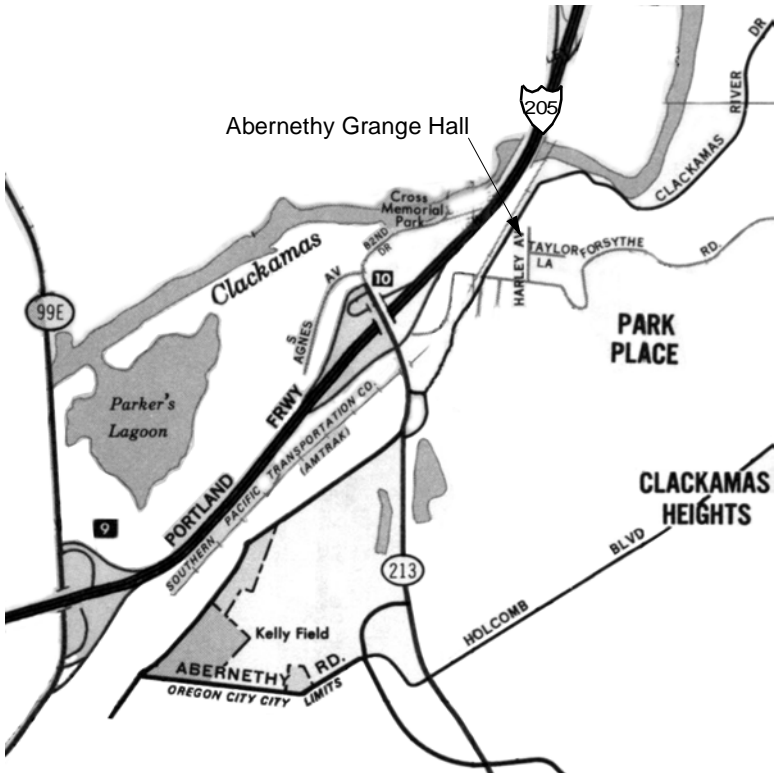
Cathode-ray oscilloscope. (674)

Meeting Location!

Our monthly meetings are held in the Abernathy Grange Hall, located at 15745 S. Harley Ave. in Oregon City. Here are instructions for getting there and a map.

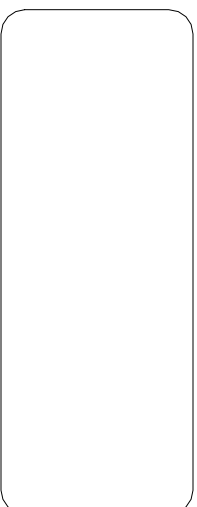
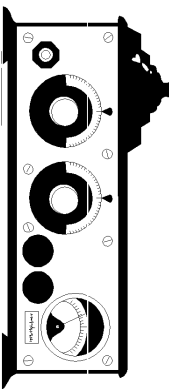
1. Take the OR-213 exit, exit number 10, towards PARK PLACE/MOLALLA.
2. From the South, turn **RIGHT** onto SR-213, or from the North, keep **RIGHT** at the fork in the ramp and merge onto SR-213.
3. Turn **LEFT** at the first traffic light onto CLACKAMAS RIVER DR.
4. Turn **RIGHT** onto S FORSYTHE RD.
5. Turn **LEFT** onto S HARLEY AVE. The Abernathy Grange Hall is a little past S. Taylor Lane.

The written instructions came from “Map Quest” on the Internet; the map is scanned from a AAA map with much detail removed for the sake of clarity.





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



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