



January 2024
Volume 45, Number 1



Members and guests anticipating the holiday luncheon, Dec. 10.

Puget Sound Antique Radio Association

The Puget Sound Antique Radio Association
P.O. Box 3493
Bellevue, WA 98009-3493

The Puget Sound Antique Radio Association (PSARA) is a non-profit historical society incorporated in the State of Washington. Founded in 1973, PSARA is dedicated to the preservation and restoration of antique radio and wireless apparatus.

Normally, PSARA holds its business meetings at the Cedar Valley Grange Hall at 11:30AM on the third Sunday of each month (second Sunday in June and December). The meetings are held in hybrid mode, i.e., in person and via Zoom. These meetings consist of a brief business session with association news, and are preceded by demonstrations or presentation of interest to radio collectors. Light refreshments are available. There is an informal swap meet in the parking lot or inside prior to each meeting. PSARA does not endorse, does not promote, and is not responsible for any transactions that may take place in the parking lot or within the building.

The Cedar Valley Grange Hall address is 20526 – 52nd Avenue West, Lynnwood, WA. The closest I-5 freeway exits are 181-196th St SW (southbound) and 179 – 220th St. SW (northbound).

This newsletter, *The Horn of Plenty*, is published monthly, and in electronic format is free to members. It contains information on meetings and other activities, feature articles and classified ads. PSARA is not responsible for the material contributed for publication, nor the quality, timeliness, or accuracy of the items or services offered for sale. The buyer assumes all responsibility for the satisfaction of any transaction. The newsletter Editor is Adam Bruckner, (apbruckner@comcast.net or (206) 719-1574). If you receive the newsletter via email, please notify Gary Johnson (gejohnson7388@gmail.com) of any email address changes.

Membership dues are \$25 per year (\$30 for family), prorated quarterly. For print copies of the newsletter submit an additional \$5 per year. Annual renewals are due January 31st. Persons joining in the 4th quarter and paying \$25 will have membership through the following year.

Website: <https://www.pugetsoundantiqueradio.com>.

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Founded 1973



51 Years Strong

The Horn of Plenty

The Newsletter of the Puget Sound Antique Radio Association

Dedicated to Preserving the Technical and Aesthetic Heritage of Radio

January 2024 Volume 45, Number 1

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(Cover photo by Roger Heiland)



Letter from the President

Hello Members,

It was great to meet spouses and guests at the PSARA Holiday Luncheon. Thank you all for making the meetings such a fun place to be and share with our families! I want to give a hearty and heartfelt thank you to all of our volunteers. I would like to highlight the contributions of just a few:

Karen von Talge once again kindly arranged and setup our holiday meal. New member **Jackie Lane** and **Ha Vuong** graciously helped to prepare. Thank you so much! It all looked wonderful!

Al Ross, **Bruce Girard**, and **Matthew Wise** arrived early and stayed late in order to broadcast via Zoom to our remote members. I want to personally thank them for all that they do to keep us all connected.

Dale Hicks and new member **Chuck Eckard** helped with cleanup and moving the tables and chairs back into place. Honorary member, **Lynda Glaspey**, donated tubes to pay for our holiday potluck – VP **Rich Lane** collected money for the party through our designated tube sales. Secretary **Gary Johnson** shared his knowledge of repair at the club's workbench and then recorded the meeting minutes. **Rodney Boleyn** sold pins, collected membership renewals and helped with cleanup.

Upcoming activities:

The proposed November Contest additions and/or changes will be discussed at our January business meeting.

Previously announced committees are looking for member participation. Here is when they will next meet:

- **Photography Committee** and **Website-Historical Committee: January 11th, 2024** (combined this month)
- **Volunteer Committee** to organize volunteers for events (always meets the Thursday before the next business meeting): **January 18th, 2024**
- **Auction Committee:** Let Rich Lane know if you would like to be part of this committee to help us get ready for the April Auction! Meeting dates will be announced in February.

Some ideas to consider:

Expanded dates at the Grange: Do we want to offer additional in-person meetings focused on classes, without having to stop for our business meeting? These types of events have been popular, and we could extend our monthly meetings to allow more participation. Suggested topics include how to solder, how to stay safe at the workbench, how to use an oscilloscope, how to use a signal generator, etc.

Attracting college students to join us: Should we offer discounted or free membership to students? Focused workshops? A lending library of books and test equipment?

Hope to see you soon!

Julyah

**** Please Renew Your Membership ****

It is time to renew your membership for 2024! Membership renewals are due March 17, 2024, but please renew early at any business meeting or by mail. Contact our Treasurer, Rodney Boleyn if you have any questions (see p. 2 for his contact information).

Vice-President's Report

Holiday Luncheon Was Very Enjoyable – I want to thank all of the members who brought in contributions to the holiday luncheon. This has been my second year planning this event and despite my attempts to put together a menu I have come to the conclusion that we have a better meal when people bring in the special meals they make for the holidays. It is very enjoyable to taste a wide variety of dishes and that's what makes it so good! The camaraderie that comes with spending time together over a meal is the icing on the cake.

Glaspey-Donated Tube Sales Have Started – At the December meeting Julyah announced the start of tube sales that came from a donation by PSARA member and past secretary **Lynda Glaspey**. Lynda donated the tubes with the expressed wish that the proceeds go to paying for the holiday meal – on opening day proceeds amounted to \$163. There are a lot of tubes still left for sale. The 450 tubes include radio, audio, TV, and ham types that had been tested as good by Cliff Glaspey on a Hickok TV7 tester. Sales will continue after every regular meeting.

April 2024 Auction – The April auction will be held after the regular business meeting on Sunday, April 24th. A lot of items are being offered, so in order to have an organized sale we will need good planning and volunteers. We will need help in the areas of making an auction list, taking pictures, staging, and presenting items for the auction. If you can help in any of these areas please respond when the call for volunteers is announced.

I want to wish everyone a happy and healthy 2024.

Rich Lane

January Meeting Schedule

Friday Night Builds (7 PM, Zoom): These are our tech meetings, covering many topics: homebrew tube and transistor radios, electronic circuits, antennas, LTspice, radio servicing, test equipment, etc.

Sunday Zoom (9:30 AM, Zoom): These meetings are wide-ranging. Sometimes we suggest topics, but they also arise spontaneously every time. Both the Friday and Sunday Zooms are great fun, so join us!

January 21: Business Meeting: 11:30 AM – 1:00 PM (*hybrid*)

The permanent Zoom login information for all meetings is:

<https://us02web.zoom.us/j/83027407253?pwd=aW1aWk5hN0N6ZmdzQTEyZ3RnRStvQT09>

Meeting ID: 830 2740 7253

Passcode: 793702

To join by phone, dial any of the following numbers:

+1 253 215 8782 US (Tacoma)

+1 669 900 6833 US (San Jose)

+1 346 248 7799 US (Houston)

+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

+1 301 715 8592 US (Washington DC)

Meeting ID: 830 2740 7253

Passcode: 793702

(Find your local phone number: <https://us02web.zoom.us/j/83027407253?pwd=aW1aWk5hN0N6ZmdzQTEyZ3RnRStvQT09>)

Notes from the Editor

I hope that you all had a very pleasant holiday season. We now start a brand new year, a leap year at that. Were any of you born on February 29? Have you had any radio experiences associated with Leap Day? If so, please share them with us!

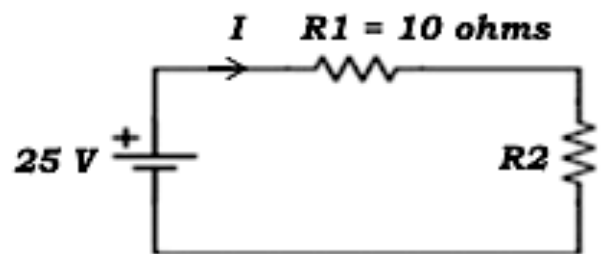
I am again in Los Angeles for a while, so I won't be at the January business meeting in person, but will attend via Zoom. Being an avid shortwave listener, I have a portable world band receiver with me but reception at my location in L.A. is terrible, overwhelmed by all sorts of EM interference. It isn't even possible to listen to WWV on any of its frequencies, even at their optimal times of day. This problem is getting beyond worse in and near big cities, unfortunately. There are too many electronic devices everywhere, radiating EM noise in the SW spectrum. Although all are supposed to meet FCC emission regulations, I doubt that many do, and the FCC doesn't have the resources to do anything about it.

As I have requested in every issue of this newsletter and at every meeting, please submit articles on any radio or TV related topic. Your knowledge and experiences are needed and much appreciated, so please share them with us. Don't be shy, just do it! If you send your article to me by the 20th of the month (a hard deadline!), it will appear in the following month's issue, provided there is room (if there isn't, it will appear in a later issue). The earlier you submit your article, the better. Thank you!

Adam Bruckner

Answer to November Puzzle

As mentioned last month, the solution to the November puzzle is trickier than the one for the October puzzle (how well do you remember your high school algebra?). The question was "what is the current flowing through the circuit in amperes, if R_2 is dissipating 10 Watts?" Interestingly, there are actually two correct answers, 0.5 A and 2 A.



So, how do we solve the problem? A direct way is to apply Kirchhoff's Voltage Law, which states that the sum of the voltages in any closed loop of a circuit is equal to 0 (voltage sources are defined as positive, while voltage drops in passive components are defined as negative). In other words, in the circuit above we sum the voltage of the source ($V_s = 25$ V) with the voltage drops in the two resistors:

$$V_s - V_1 - V_2 = 0.$$

Because it's a series circuit, the current, I , is the same in both resistors, so, applying Ohm's Law, $V_1 = IR_1$, and $V_2 = IR_2$, and thus $V_s - IR_1 - IR_2 = 0$.

We know $V_s = 25$ volts and $R_1 = 10$ ohms, but we don't know what R_2 is. However, we know that R_2 is dissipating 10 W, and that power dissipation is given by $P_2 = I^2R_2$, so $R_2 = P_2/I^2 = 10/I^2$.

Plugging $R_2 = 10/I^2$ into the equation and using the given numbers yields $10I^2 - 25I + 10 = 0$, a classic quadratic equation, which has two solutions, $I = 0.5$ and $I = 2$. It follows that R_2 can have either of two values, 40 ohms or 2.5 ohms, respectively. This puzzle is a good exercise in high school algebra, which you all had to take, right? Remember? If you're flummoxed by how to solve quadratic equations, there is at least one other way to solve the puzzle. See if you can come up with it.

New Members

Member	Month Joined
Eric Lenius, Port Orchard, WA	December.

Minutes of the December 10 Meeting

At 11:42 the business meeting was called to order by club president **Julyah Gabriel-Havel**. There were no new members but there were two guests: **Meander and Flora**, who are interested in all things old, especially military radios.

There was no Secretary's report (**Gary Johnson**) due to the contest in November (no business meeting).

Treasurer's report (Rodney Boleyn): Two months' reports were summarized, with very little net change in the treasury.

Vice President's report (Rich Lane): The April auction event planning will commence in January. Thanks to Jan Porter who donated a 1948 Sentinel TV; Amadeo Rossi, who donated tubes, radios and test equipment; and Stephen Grafton KD7LXM, who donated 6 boxes of vacuum tubes, test equipment, and radios delivered by PSARA member Rick Bungay.

Adam Bruckner, our newsletter editor asked members to please send articles – anything radio-related is welcome. He was thankful to Al Mackenzie, who sent him lots of good stuff recently.

President's report (Julyah): Should there be changes to the contest next year? More categories? Matthew D'Asaro proposed that large console radios and TVs be virtual (they are costly and dangerous to transport). Should the TV category be split into "small" and "large"? Possibly a "hybrid" mix of virtual and live? Adam proposed a homebrew category of any sort, but not built from a kit (the entry would have to be demonstrated as a functional unit). A second new category Adam proposed was sound reproducing equipment (wire recorders, phonographs, tape, etc.). Someone mentioned perhaps including guitar amps and PAs. Jerry Brannon, on Zoom, added telephones and associated equipment as a possible new category. The subject was tabled for consideration until the February meeting.

Committees: We currently have photography, website, volunteer, and 501(c)(3) committees actively meeting on certain Tuesdays or Thursdays via Zoom.

Abraham White Award: Members can brag about a great deal on a radio-related purchase from a store but must show a receipt (i.e., nobody was taken advantage of):

- **Glen Doremire** – near Sequim, a second-hand shop had a radio for \$20. He offered \$10 and they settled on \$12. It turned out to be a B.F. Goodrich Mantola 1936 Model R400, valued at \$250. It had been rebuilt & does work, but the fuse needed fixing.
- **Matthew D'Asaro** – in 2019 purchased a rare British TV for \$100 + tax. There are very few of these found in USA.
- **Rodney Boleyn** – found an ugly yellow radio in Snohomish, and initially ignored it. On closer inspection, the labels were on top of the yellow paint, so it came that way from the factory. He wrangled a deal with a rug he wanted and paid \$25 for the radio. The photo was very nice.

A vote for best story was taken by a show of hands and Glen's story got the most votes of members present and on Zoom, so he won the award.

Old Business: None

New Business: None

Leads & Needs: A card for Jim Gianacos was passed around. He's recovering but has been having a tough time of it. We all wish him the best this holiday season and beyond, looking forward to his being able to join us via Zoom.

Grab Bag/Box: Didn't happen this time – will need to draw twice next time.

At 12:12 pm the meeting was adjourned.

The Holiday Luncheon was enjoyed by all in-person attendees (almost 50). Two members, Al Mackenzie and Doug Thomle, gave show-and-tell presentations while the food was being enjoyed. Al talked about the US rowing victory in the 1936 Olympics and played a recording of the live radio broadcast of the event. Doug talked about his 58-year-long project to build the most accurate possible model of Isambard Kingdom Brunel's giant 19th century ship, the Great Eastern.

Respectfully submitted, **Gary Johnson**, Secretary.

Scenes from the December Meeting and Holiday Luncheon*



The Officers preparing to start the hybrid meeting.



The November Contest ribbons ready to award.



Eyeing the bountiful luncheon offerings.



Greg Schilling and Steve von Talge chatting.



Glen Doremire and his B.F. Goodrich Mantola.



Doug Thomle describing his Great Eastern model.

* Photos on this page are by Chris Conrad, Roger Heiland, Al Ross, and Adam Bruckner.

Common Causes of Hum

Toshi Yamada

In the October 2023 issue of this newsletter I wrote about “Resistor and Capacitor Troubles,” based on an article in a 1947 issue of *National Radio News*, published bi-monthly by the National Radio Institute (NRI). This time I found an interesting chart in the 1946 NRI home study bulletin 41RH-2, which is titled “How to Eliminate Hum, Squeals and Motorboating.” Hum is a common, bothersome problem that we often encounter in vintage radios. Reproduced below from this bulletin is a summary chart that should be helpful in finding solutions for particular hum problems. The full bulletin (1948 version) can be found at http://www.segalandassociates.com/Documents/Radios-Televisions/NRI-Radio-Course-1948/Vol-41_How-To-Eliminate-Hum-Squeals-And-Motorboating.pdf.

COMMON CAUSES OF HUM		
<p>This table covers only the more usual causes, with the most common first. Use it as a guide or memory refresher. Make localizing tests first, unless you are led directly to one of these troubles by the symptoms.</p>		
Type	Location	Causes
Steady, 120 cycle (or 60 cycle, if set uses half-wave rectification)	1. Power Supply	Open, low capacity or high power factor filter condensers; leakage causing choke saturation; gassy rectifier tube.
	2. A. F. Stages	Open decoupler condenser; open grid circuit; reversed hum-bucking coil; poor connection.
Steady, 60 cycle	1. A. F. Stages	Cathode-to-heater leakage in tube; open grid circuit; hum adjuster unbalanced (where used); poor connections.
	2. Power Supply	Defective rectifier tube; open in half the high voltage secondary or in connection to tube. (Full-wave rectification only.)
Modulation Hum	1. R. F. Stages	Cathode-to-heater leakage in tube; open decoupler condenser; reduced screen grid or plate voltage; excess bias; poor connections.
	2. Outside Set	Poor Antenna or ground; power line modulation; defect at station.

Why I Like Antique Radios

Mark C. Anderson

This article was relayed by member Rick Bungay. It was originally published in the Winter 2020 issue of the NARC Newsletter, and is reproduced here with the permission of that publication's editor. Some very light editing was done. If you replace NARC with PSARA, the same memories and feelings are evoked.– Ed.*

The heritage tied to the old radios of the 1930s is Americana at its best. I can picture the neighbors congregating at a farmhouse huddled around a warm wood burning stove with the familiar hum of the Philco in the background. Fortunately, there was always a ten-year-old kid in the room with a knack for tweaking the tuner and positioning the antenna. In those days there were only a few sources for the news; the gossip over the backyard fence, the old men at the barber shop, a local weekly newspaper, or the radio. All the news and entertainment that came into their lives from the outside world was sent over the AM band in that “Golden Age of Radio”. Collecting and restoring these antique radios is a tangible thread that connects me to friends and family who had their mettle tested in the Depression Era.

The newscasters of the day brought the events of the world into the living room. The FDR fireside chats, which began in 1933, started out as a means of sharing the New Deal, but led into the US involvement in WWII. There was the foreboding message of Hitler invading Poland in 1939, and then the shock of the Japanese attack on Pearl Harbor in 1941. All this came over the air by the very recognizable voices of Walter Winchell and Will Rogers, with their anecdotes and observations on the events of the day. (*Will Rogers died in 1935, so he did not report on WWII. – Ed.*)

On the entertainment side, every Saturday night brought the Grand Old Opry on the 50,000-Watt WSM Nashville station, featuring the music of The Gully Jumpers. It was a Bluegrass and Country artist's dream to get there because it was a sure sign they had hit the big time with a large nationwide audience.

Live broadcast music was easily accessible, and many folks were too poor to have a phonograph player and records. The announcers would kick off the show with, “Live from the Roosevelt Hotel ballroom, Guy Lombardo and the Royal Canadians,” and other venues and bands such as Louis Armstrong and Jimmy Dorsey. The comedians also had their own shows on various networks and stations: Bob Hope, Jimmy Durante, Fred Allen, Burns and Allen, Jack Benny, and others. And who could forget the sponsors who became household words – Chesterfield, Lucky Strike, Texaco, and many other local products and businesses.

On the technical side, maintaining these old receivers is a challenging task. I went to tech school in the 1970s and it was all about microprocessors and integrated circuits. Vacuum tubes were glossed over as an outdated and inefficient voltage-controlled device. I think we spent a total of three days on the subject. The cathode, grid, and plate had stepped back and took their place in history, as the emitter, base, and collector emerged on the scene. For a while in the 1980s and '90s parts were hard to come by, but today you can Google anything you need and there is someone who will mail it to you overnight. Rare schematics, parts lists, and drawings are all just a click away. You can do the research, order the part, and pay for it, all on your phone or computer!

I went to a NARC swap meet a while back, and strolled through the specialized flea market of tubes, knobs, manuals, and sets. I thought to myself, wow, these are my people! There is a bond between the dwindling number of silver-haired repairmen as they throw around the lingo with terms like “grid leak bias”, “motorboating”, and “B+ choke”.

Treasure your NARC friends and the special skillset they possess. They are fading like an AM broadcast signal in the night.

* NARC stands for Northland Antique Radio Club, founded in 1986. It is located in Minneapolis, MN, and its website is <https://www.northlandantiqueradioclub.com>.

William Dubilier unveils an astonishing new “wireless telephone” to fairgoers at Seattle’s Alaska–Yukon-Pacific Exposition on June 21, 1909

Peter Blecha

Posted 11/07/2008

HistoryLink.org Essay 8832

This story from HistoryLink was suggested by Al Mackenzie. The organization permits its stories to be reproduced, as long as proper attribution is made, which has been done above. The article’s website is <https://historylink.org/File/8832>. – Ed.

On June 21, 1909 – more than 10 years prior to the launching of America’s first commercially licensed radio station – a young inventor named William Dubilier (1888-1969) publicly unveils what was promoted as a “wireless telephone.” In hindsight his ingenious prototypical contraption was actually less a “cellphone” than a critical stepping stone to a not-yet-existent device that would come to be known as the “radio.”

The A-Y-P Expo boasted many other displays of marvelous new inventions, but that “wireless telephone” caused the greatest stir. *The A-Y-P Daily News* trumpeted that “Without reflecting in the least on the other inventions exhibited ... we unreservedly assert that that it should be a big success, and the Wireless Telephone will go down into history with its name always coupled with that of the Alaska-Yukon-Pacific Exposition.”

Early Experiments

Born in New York, William Dubilier dropped out of high school, but, as he later recalled to *Radio Craft* magazine, he’d become “interested in radio when I read in the local papers that [Guglielmo] Marconi [Italy’s Nobel Prize-winning (1909) electrical genius] was coming to this country to lecture on his wireless telegraphy apparatus in 1903.”

The wireless telegraph – which would be introduced to the public at the St. Louis Exposition in 1904 – was a major scientific breakthrough. The new device allowed the transmitting of *dash-dot-dash* Morse Code messages – but proved to appeal mainly to the maritime industry and others interested in monitoring and safeguarding shipping or transport. A more practical model would be one that allowed the transmission of spoken messages – and various inventors began attempts at a wireless telephone. But until Dubilier’s subsequent innovations, those efforts resulted only in machines with onerously bulky sizes.

Along the way, Dubilier’s fascination with all the scientific experimentation going on led him to taking up schooling in electrical engineering, to an inspector job with the Western Electric Company, and then to another sending messages for the Continental Wireless Telegraph and Telephone Company in 1906. The 20-year-old was very ambitious, and in 1908 formed his own Commercial Wireless Telegraph & Telephone Company.

With a goal of improving upon others’ earlier attempts at making a “wireless telephone,” Dubilier somehow came up with a technological innovation that would have immense impact: that of using the glassy mineral mica to help form a “condenser” (today’s “capacitor”), which ultimately “revolutionized radio broadcast transmissions” (*US Industry Today*). The immediate application was Dubilier’s first Wireless Telephone whose less-than-a-cubic-foot size was initially the most obvious advancement.

As *Technical World Magazine* later noted: “The Dubilier instruments are not noticeably different in principle from the wireless telephone devices of the past, but they are compact. Instead of great coils of wire and oscillators as big as a dining-room table, the Dubilier apparatus is reduced to marvelously

small dimensions.” But as early as 1908 the visionary inventor predicted that one day “every car would have a portable wireless telephone to call for help in case of a breakdown” (*US Industry Today*).

The Mind-Boggling Contraption at the A-Y-P

The general public first witnessed Dubilier’s mind-boggling contraption – the first ever that could successfully transmit a voice rather than just the clicks of Morse Code – on prominent exhibit in Expo’s Manufacturers Hall building. At one end of the booth “there has been built a sound-proof contrivance from which conversation is carried on Wireless Telephone to various sections of the building and grounds” (*A-Y-P Daily News*). In addition to such spoken-word experiments, crowds at the Exposition also saw “a vocalist [sing] into a mysterious device, and the melody came sputtering through earphones some distance away” (*Washington: A Guide*).

The Exposition’s Director of Exhibits, Colonel H.E. Dosch, inaugurated the exhibit, was bowled-over, and raved to *The A-Y-P Daily News* that “It is the greatest achievement of the age. I am mystified in its accomplishment ... its future is practically unlimited.” The newspaper gushed that the “demonstration is beyond the words of man to analyze its very ‘spook-like’ accomplishments, defying and actually overthrowing many of the time-honored theories of science, the Radio Wireless Telephone sends the human voice through walls, through glass, through steel, through granite, and, in fact, any substance, without connecting wires of any description.”

Although attendees were uniformly astounded by the device, capitalization of its core achievement – the broadcasting of the human voice and recorded music – was not realized for a significant period of time. Dubilier’s invention was really less a telephone than a short-range radio. And “after this first crude appearance ... the radio retired to its proper sphere as wireless telegraphy,” as used by industry (*Washington: A Guide*). But the young inventor was far from finished with his quest to popularize his invention.

Mind-Boggling Contraption at Luna Park?

Once settled in Seattle, Dubilier accelerated his experimentation and an interesting quote from the man himself raises the possibility that after the A-Y-P Exposition closed in October, he may have taken his invention across town to the Luna Park grounds in West Seattle (or to some other site?). He later told *Radio Craft* magazine:

“It is not generally known that I operated the equivalent of a broadcasting station as early as 1909. The novelty of receiving music through the air appealed to the owner of an amusement park in Seattle. He fitted up a crude receiving set and erected a sign ‘Listen to the Wireless for 10¢.’ Strangely enough, every time that I visited the amusement park and attempted to listen-in, I was told that the apparatus was out of order. The receiver was working, but there was no music to pick up – for the simple reason that I was not at the transmitter to operate it!”

Seattle’s Wizard Youth

In 1910 Dubilier demonstrated his device once again at Seattle’s annual summer Potlatch Festival, and in October – having improved its design – he showed that it was now capable of transmitting a signal the entire distance to Tacoma. “Conversation carries that far as clearly as on the ordinary telephone” noted *Technical World Magazine*. Years later *The American* magazine would recall that: “The young engineer built on the outskirts of the city a station with what was then the largest wooden tower in the world, installed apparatus, and built a small receiving station in Tacoma, thirty miles away. In a month he had established daily wireless telephone communication between the two cities.”



WILLIAM DUBILIER TALKING FROM SEATTLE TO TACOMA, A DISTANCE OF THIRTY-FIVE MILES, OVER HIS WIRELESS TELEPHONE.

From *Choose Washington*, Washington Department of Commerce.

<https://choosewashingtonstate.com/a-wireless-telephone-in-1909/>

In 1912 he repeated his amazing feat by setting up “a broadcasting transmitter ... and visitors to Seattle’s summer Potlatch were invited to a curbside booth to listen through earphones to broadcast phonograph music” (*Washington: A Guide*). By this time Seattle media couldn’t contain the town’s provincial pride: Blaring newspaper headlines claimed Dubilier as a “Seattle Boy,” a “Wizard Youth,” and that “Seattle May be Made Famous By Astounding Success” (*The Seattle Times*). Word spread and Dubilier’s achievements garnered additional headlines across the nation.

Commercial Radio’s Debut in Seattle

The positive response to his work encouraged Dubilier and in 1912 he told *Technical World Magazine* that “Influential men believe in my invention as much as I do, and we plan to build a factory and manufacture my machines upon a large scale. This will be, I believe, the first wireless telephone factory ever opened in America – or the world, for that matter. The machines are not costly to turn out, and we will be able to supply them so cheaply in large lots that they may be used extensively in cities, much more cheaply in rural communities than the present wire systems, for marine and coastwise work, and for special uses such as by forest rangers on the great reservations of the Rocky Mountains and Pacific Coast.”

Even with so many uses for his device in mind, Dubilier never did found that factory in Seattle, but his experiments continued and he soon “began to broadcast recordings from a 320-foot tower near the city.” That’s just about when radio-mania struck and the “enthusiasm of amateurs was contagious. Rooftops began to sprout antennae, and enthusiastic experimenters filled the air with code signals and weird static shrieks” (*Washington: A Guide*). One of Seattle’s “amateur” radio enthusiasts was young Vincent L. Craft who began airing broadcasts from his Ravenna neighborhood garage (6838 19th Avenue NE) and within a couple years was granted an official license to operate Seattle’s first commercial radio station, KJR.

By that time, in 1922, Dubilier had moved back to New York City. There he founded the Dubilier Condenser Company, which became the earliest commercial manufacturer of capacitors. The quick rise of the radio industry – and then the television industry in the 1940s – brought his company phenomenal growth. By 1966 Dubilier possessed more than 350 electrical-science design patents and his firm – which had merged with Cornell Radio and formed Cornell-Dubilier Electric in 1933 – became a successful company that still exists as a subsidiary of Exxon-owned Reliance Electric.

Introducing the “SR 25”



WE INVITE YOUR ENQUIRIES
Hallock and Watson Radio Service
192 Park Street “KGG” Portland, Ore.

Hallock & Watson
ad from *Radio*,
January 1924.



ANTIQUE RADIO CORNER



by James A. Fred

□ Hello out there in Radioland! The AWA (Antique Wireless Assn.) conference took place the first weekend in October, 1976 but this is my first opportunity to tell you about it. There was a continuous Flea Market both days, an old radio equipment auction, seminars on vacuum tubes, talks on restoring old radios, historical presentations on Crosley, and the end of RCA's tube production. But most of all I enjoyed meeting collectors who read my column in ELEMENTARY ELECTRONICS. Many collectors and their wives came up to tell me that I was responsible for them being there. Many said they had read "Antique Radio Corner" and immediately subscribed to this magazine so as to not miss an issue. Some had been collecting radios for years without being aware that there were other collectors living nearby, or that there were clubs for collectors, or even knew that the AWA existed. It certainly made me feel good to know that I had introduced such an interesting and rewarding hobby to so many persons.

AWA Conference High. Attendance at the AWA Conference reached a new high with over 400 collectors registered for the activities. One of the highlights of the Saturday night banquet was the introduction of Mrs. Alfred Grebe, the widow of the brilliant designer of the

Grebe radios. You are indeed fortunate if you have a Grebe receiver in your collection.

Of interest to all collectors was the announcement of the publication of "The Saga of the Vacuum Tube" by Gerald F. J. Tyne. Mr. Tyne has spent many years revising, expanding, and correcting a series of articles bearing the same name which was printed in *Radio News* magazine between 1943 and 1946. It is a detailed record, extending to 1930, of scientific research, pioneer inventions, development by industrial teams, and the applications and production of vacuum tubes. It includes the story of science and industry combining forces improve the early vacuum tubes to meet the needs of the military in World War I.

The book will contain nearly 500 photos and drawings of tubes. 275 brand names of independently produced tubes are listed to aid collectors in finding and identifying tubes. The book will cost about \$25.00. As soon as definite price and ordering information is available I will have it in this column. I am sure that it will be a book every collector will want for his own library.

Seattle Collectors. If you live in or near Seattle, Washington you will be happy to know that an antique radio collecting club has been formed there.

The first meeting was held at the home of Lee Williams with five persons present. If you are interested in joining you can write Woodrow F. Wells, 8307 NW 22nd Avenue, Seattle, WA 98117, or call him at 789-2370.

If you live near Opelika, Alabama or plan to vacation there next summer you will want to visit the world's largest privately-owned collection of battery-operated radios and phonographs. It's owned by J. Herbert Orr, a pioneer in magnetic tape recording. Mr. Orr's collection includes both cylinder and disc phonographs and they all work. The radios have all been restored to like new condition and there are so many that they are housed in several buildings. One of his major developments, just patented, is a player piano that uses computer technology and magnetic tape to create the player-piano effect. A mini-computer attached to the piano records the movement of the keys, pedals, and hammers on cassette tape. After recording a selection played by a live person the playback switch is flipped and the piano keys hit the proper strings and the original playing is heard. The entire collection consists of many thousand pieces and is the world's largest collection of this type. The collection is available for viewing by the public. (Continued on page 76)



Antique Wireless Association (AWA) meeting had 400 collectors in attendance. Here are a few of the goodies at the flea market.



Alan Douglas, left, talking about his collection of old medical machines with AWA president Charles Brelford.



Early transmitter (arc type), one of several on view in the Antique Wireless Association's Museum.

Carl and Jerry Make a Homing Device

Mike Intlekofer



Carl and Jerry were busy in Carl's backyard, as they replaced the guy wires on their ham radio antenna tower. Being the more limber one, Carl would scramble up the tower and secure a rope near the guy wire to be replaced. Down below, Jerry would secure the rope to the wire anchor, and then the boys could back off the turnbuckle, detach the old wire, and replace it with a new galvanized wire and hardware. Just as they were finishing the second wire, their neighbors Henry and Emily Larson strolled into the yard. Henry and Emily were avid gardeners and accomplished photographers. After exchanging greetings, Emily announced: "We have a situation in our darkroom, and we are hoping you boys can help. You did such a good job of finding the thief in our pond, we thought you could figure out this problem too." Of course, this intrigued the boys, so they invited the Larsons to sit at the picnic table and explain the situation.

"We have been using the darkroom for decades, developing black and white film, and making black and white prints. Recently, we decided to advance to working with color film and paper, even though color processing is more complex, and exposure and temperatures are more critical. Color gives us new avenues to explore in photography." "That's right," Henry chimed in, "but with color film and paper, we can't use the red safelight that has served us for all these years. We have to work totally in the dark. Of course, we know the darkroom well, and we can perform most functions by using our experience and judgement, but now we have real trouble with operating the exposure timer for printing." "We have covered the display on the timer with black paper," added Emily, "the timer has a START button, but it's near the FOCUS button, the CLOCK button, and the keyboard. If we hit the wrong button, our focus is lost, or we reset the clock, or change modes on the timer. We figure there must be a way to properly locate our fingers to push the button in the dark, so that we are not groping around near that control panel."



This set the boys to thinking. "We could use ultrasonic distance sensors to locate your hand, left to right, and up and down. The display could be red, yellow, or green lights to tell you how close you are getting," was Carl's first thought. "No way, my friend," was Jerry's prompt reply, "No lights permitted in the darkroom. That would apply to digital readouts as well." "OK," countered Carl, "Then we could use ultrasonic distance sensors, but they control a recorded voice that says, 'getting nearer, getting farther' type of guidance." "That's a start," agreed Jerry, "but maybe it would be better to use tones. A high pitch tone would indicate that you were getting closer, a low pitch indicates that you are far away." Emily objected: "That would get confusing when you have two systems, one telling left/right and the other telling up/down." The boys nodded in agreement, and asked the Larsons to give them a few days to ponder the problem and devise a solution.

After replacing the remaining guy wires on the tower, the boys sat down to discuss the darkroom problem. "I can think of all kinds of mechanical ways to solve the problem," said Carl, "but they are clumsy and disruptive." "What are you thinking of?" Jerry asked. "Well, we could make the START button very big to distinguish it from all the other buttons," said Carl, "Or, we could make a plastic panel that hinges over the front of the timer, with a hole for just the START button. Or we could install a vertical plastic rod below the timer. The Larsons could grope to find the plastic rod, then slide their finger up the rod, which would lead exactly to the START button. But none of these appeal to me, and they kind of encumber the whole darkroom experience." Jerry agreed, and the boys lapsed into silence for a while as they mulled over possibilities. "I was thinking how we would do the ultrasonic method," said Jerry, "and the circuitry gets complicated. We would make ultrasonic sensors to measure the hand location, but then we would have to couple that signal to a variable pitch circuit. Then there is the problem of having two tones at two different pitches for the users to figure out." "Well, we need something besides pitch to vary," replied Carl, "How about if we change pitch for one variable, but we

At this realization, the boys went through their parts bins and found some long, narrow strips that had been trimmed from printed circuit board material. They removed the antennas that were on the theremin box and replaced them with short wires going to the circuit board strips, and built some plastic supports that would hold the strips, one above the timer box, and one to the right. "Let's test the concept by mounting it on the bench voltmeter," Jerry suggested. Using some C-clamps and tape, they positioned the strips, and adjusted the theremin controls to give a low-frequency, low-volume tone when no hand was near. Then Carl moved his hand towards the meter, and both the pitch and volume of the theremin increased until his fingers



rested on the "RANGE" knob. He practiced this several times, making some adjustments, until he felt confident in positioning his hand. "OK, time for the ultimate test," said Jerry, and he turned off the room lights. Noting that the equipment pilot lights still lit up the room, Carl also closed his eyes, and then reached for the "RANGE" knob. To his pleasant surprise, using the tone for guidance, he landed his fingertips right on the knob. "Very good," said Jerry, "Let me try." Jerry practiced for a while, and then tested the method from a sitting position, a standing position, and starting with his hand way behind his back. In all cases, he was able to home in on the "START" button quite accurately with his eyes closed. "I think we have found a solution," was his comment. Carl agreed.

The boys worked on building a support system for the sensor strips, which used a piece of plywood which went under the timer, and a couple of vertical columns to support the plastic rods holding the sensor strips. When it was ready, they brought the system over to the Larsons for a demonstration. After it was set up, Henry and Emily practiced using it, just as Carl and Jerry had, and soon became adept at precisely locating the START button in the impenetrable darkness of the photo lab. "Well, you have done it again," said Henry, "and I will stop by the music store tomorrow to pay for the theremin. Your invention will make the darkroom experience a more pleasant one. Emily and I will get started on a session right now." And with this, he showed the boys out of the darkroom and firmly closed the door. "Wow, he seemed mighty anxious to get started," observed Jerry. "I suspect the darkroom is good for activities other than photography," speculated Carl, as they walked home with big smiles.

Is the C. I. C. Loud Speaker "Different"?

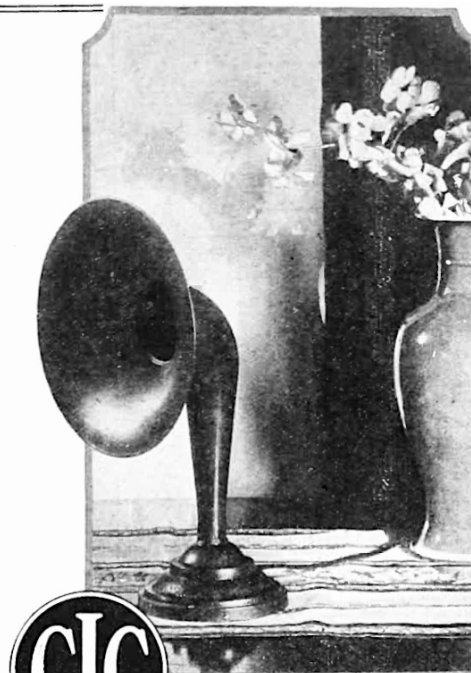
Yes, if pipe organ metal for the horn, a mica diaphragm, and years of knowledge of acoustics and telephone engineering can make it so. The only way to prove it to yourself, however, is to "Listen to the Difference" and see how the C. I. C. Loud Speaker excels others on the market at twice the price. Your dealer will be glad to give you a demonstration.* Send for leaflet "Loud Speaker Facts."

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C.I.C. ad from
Radio, January
1924.



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Upcoming Events

- **January 21:** PSARA Business Meeting, Cedar Valley Grange Hall, 20526 - 52nd Ave. W., Lynnwood WA, 11:30 AM.
- **February 17, 2024:** 44th Annual Salem Hamfair, Polk County Fairgrounds, 520 S. Pacific Highway West, Rickreall, OR 97371, 9:00 AM – 3 PM. <http://www.n7cfo.com/amradio/hf/Salem24.pdf>
- **March 9, 2024:** Mike & Key ARC, 42nd Electronics Show & Swap Meet, Washington State Fairgrounds, Puyallup, WA, 9:00 AM – 3:00 PM. <https://www.mikeandkey.org/flea.php>

2024 PSARA Business Meeting Dates

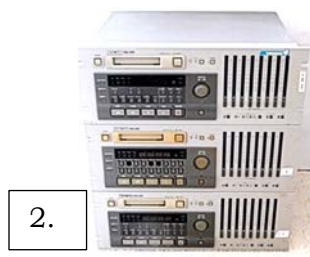
January 21	July 21
February 18	August 18 – Shoreline Swap Meet
March 17	September 15 – Election of Officers
April 21 – Auction	October 20 – Repair Clinic
May 19	November 17 – Radio Contest
June 9 – 2 nd Sunday	December 8 – 2 nd Sunday; Holiday Party!

Marketplace

Ads run in 3 consecutive issues (the number at the end of each ad shows how often it has run). Please include a picture of each item, if possible. Ad requests must be received by the *Editor* (apbruckner@comcast.net) by the 20th of the month for publication in the following month's issue. It is your responsibility to update your ads; reminders will not be sent.

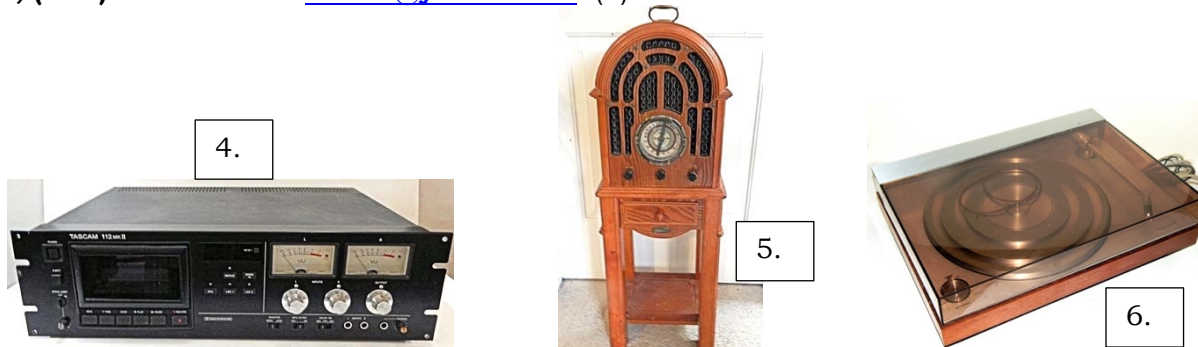
Items for Sale or Trade

- Tektronix cabinet and front panel only, for Model 2235 oscilloscope (AN/USM-488). Very clean. **\$10** or best offer. Greg Schilling, (253) 302-0237. (1)
- Bosch PB10-CD Power Box jobsite radio (Photo #1 below). Radio works, CD quit working. Battery charger is untested. **\$20**, as is. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (1)
- TASCAM DA-88 8-tack digital audio recorder, (Photo #2 below), **\$125**. Have two; both work. Uses common Hi8 cassettes. Buy both, get third non-working one FREE. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (3)
- TASCAM RC-848 remote control unit for DA-88 above, (Photo #3 below), **\$125**. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (3)



- TASCAM 112 MkII Audio Cassette Recorder (Photo #4 on next page), **\$275**. With Dolby B-C NR HX Pro and pitch control. Works. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (3)

- Crosley/GE cathedral reproduction radio on stand, (Photo #5 below), **\$50**. Despite the Crosley name, this uncommon radio resembles a 1933 GE K-64 radio. Features AM/FM/Cassette. Near mint. Works. With rare permanently attached stand. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (3)
- Bang & Olufsen Beogram 3000 Turntable, (Photo #6 below), **\$175**. With stylus. Needs new belt. **Walter Kiefner, (425) 774-3593 or wkusa@yahoo.com**. (3)



- Many audio and radio magazines such as: *Audio Electronics* '97-'00s, *Speaker Builder* '91-'00, *Radio News*, *Radio Craft*, *Citizen's Radio Callbook Magazine*, all early to mid 1930s, some years complete, many others. Send wants or inquire: **Mark Oppat, moppat@comcast.net or 734-207-2346** (Michigan, so Eastern Time Zone). He also has a website: <https://www.oldradioparts.net/>. (4)
- AMI jukebox Model B (later 1950s), without audio amp, Local delivery possible. **\$95. Toshi Yamada, (206) 819-7050 or ja1ftc@hotmail.com**. (P)
- Need a wall wart? I have hundreds of linear and switching types available: 3, 4, 5, 6, 7.5, 9 and 12 VDC at various current ratings; AC and other voltages, too. **\$2 each. Al Ross, bartohill@aol.com**. (P)
- Are you one pesky knob or set of knobs away from completing that radio or amplifier project? Contact **Rich Lane at radiodoc56@msn.com or 209-202-9492** and let's see if we can put those woes to an end. Send pictures, knob dimensions and shaft type, and we will try to find a match. (P)
- I have many radios for sale from a 30+ year collection. See some of what is being offered on this link: <https://www.flickr.com/photos/18288353@N07/>. I live in the West Sound area, so a look at the radios is possible and prices are negotiable. I attend monthly PSARA meetings, so delivery is available with a meetup at the Grange. **Rich Lane at (209) 202-9492 or radiodoc56@msn.com**. (P)
- Large collection of quality radios, ranging from mid-1920s to late 1950s and into the 1960s for sale. Only PSARA and NWVRS club members are invited. Please call **Steve Berglund (206) 244-6428** for an appointment. (P)
- Vacuum Tubes For Sale by Radiocity360. Over 10,000 tubes are in inventory for sale. All tubes are either new old stock or used tested good on a calibrated Hickock TV7 tester. For requests or a price quote contact **Rich Lane, (209) 202-9492 or radiodoc56@msn.com**. (P)

Items Wanted

- Wanted: Radiola 16 candidate for restoration. Should be somewhat complete; no tubes is OK. **Dirk van Veen, (206) 832-7126 or dirk.j.vanveen@gmail.com**. (3)
- Wanted: Alligator clips; I need many of them for my hobbies. **Harvey Kravitz, (360) 440-4599 or harveykravitz@outlook.com**. (3)
- Wanted: General Electric M-125 console radio. **Ron Rock, ron-nancy@comcast.net or (425) 225-6001 (landline)**. (3)
- Wanted: Rotary "Function" switch for a Drake R-4B receiver. Must work properly in all switch positions. **Adam Bruckner, (206) 719-1574 or apbruckner@comcast.net**. (P).

• Wanted: Windup phonographs parts, pieces, 78 RPM records, cylinder records, needles, cathedral radios, crystal sets, related advertising, literature; HO scale model trains. **Harvey Kravitz, (360) 440-4599 or harveykravitz@outlook.com**. (P).

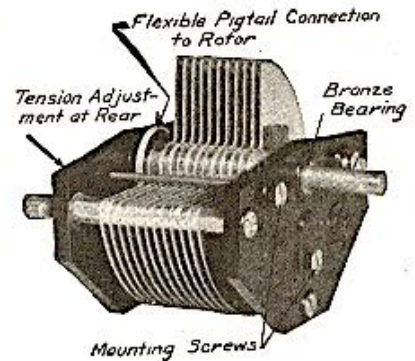
An Engineering Achievement

K & C NEW VARIABLE CONDENSER IS 100 PER CENT

THE day of the unstable variable condenser has passed. The Kilbourne and Clark Mfg. Co., hastened it and now have passed it. The new type K-C variable condenser is the answer. This condenser is the outcome of months of study of the faults of all variable condensers. It is the embodiment of all that is desirable. Objectionable, faulty features have been eliminated down to the most minute point.

The K-C variable condenser of the new type is mounted on two moulded end plates, of pure bakelite, this high-grade non-hygroscopic insulating material reducing leakage losses to a minimum. The shaft of the rotor plates revolves in bronze bushings that are moulded in. These bushings give a wear-proof permanent bearing that obviates enlarged shaft holes and resulting short circuits and explosive noises in the head phones. There are no sliding contacts. The rotor plates are connected with a lug by means of flexible Belden braid, affording a direct and positive contact.

The K-C vernier condenser comes with dial, correctly marked from 0 to 100, and a separate control knob for the vernier adjustment. The vernier is a two-plate extension on the condenser that has been designed to give the greatest breadth of movement in tuning in the faintest of signals.



View Showing Typical Construction

Cat. No.	Capacity	No. of Plates	List Price
3	.00003 mfd.	3	\$2.50
7	.0001 mfd.	7	2.75
13	.0002 mfd.	13	3.25
17	.0003 mfd.	17	3.35
23	.0005 mfd.	23	3.50
31	.0007 mfd.	31	4.75
43	.001 mfd.	43	5.00
63	.0015 mfd.	63	7.75

For condenser with vernier adjustment add \$2.00 list to above prices.

Kilbourne & Clark Mfg. Co.

Head Office & Works, Seattle

BRANCH OFFICES

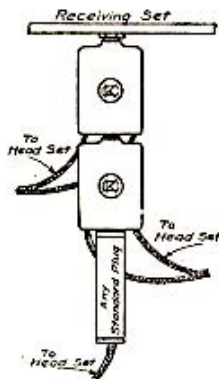
Portland, 305 Larrabee St. Phone 6156.
 San Francisco, 591 Mission St. Phone Sutter 40.
 Los Angeles, 1103 W. 10th St. Phone 581-002.
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K & C "Series Automatic" Plug \$1.25 each

Ad for Kilbourne & Clark variable condenser and "Series Automatic" plug, Radio News, January 1924. (Submitted by Al Mackenzie)

This company was one of the earliest manufacturers of wireless equipment in the U.S. and was located in Seattle. One of its founders was Edward C. Kilbourne. His biography can be found at <https://www.historylink.org/File/1251>. The story of the company can be found in the NWVRS newsletter of April 1992, starting on p. 7 (<https://www.worldradiohistory.com/Archive-Old-Radio-Groups/Call-Letters/Call-Letter-1992-04.pdf>).