



The Grid Leak

July/August/September — 2020

From The President..... Bill Werzner

In my last message to you all, COVID – 19 was the encore. At the time I was assembling this “President’s Message”, I was hoping that, by now, the virus would be winding down; for awhile it looked like that might be happening. Now with all the social unrest and so many who decided to disregard the health care workers’ warnings, those earlier efforts to control the pandemic may have been in vain. One thing for certain, it has impacted HVRA in ways I never imagined. With the new year just getting off to a start we were looking forward to springtime and summer activities: the Alvin Swap Meet, springtime Saturday morning meetings at Bayland, the annual Texas City HAM Fest and the HVRA Mega Auction. If you have been asleep all last quarter, and just woke up, I have

some sad news to share; these events have all been cancelled. Although not directly impacting our organization, social unrest and riots abound, leaving us deeply saddened and concerned for our nation’s future. So, we need to figure out how to proceed and maintain our functionality as a viable organization. I will share with you what your Board of Directors decided to do (due to circumstances beyond our control that have beset us) in the following paragraphs. Even in times like these, we will continue to function and have fun – let’s call it flexibility and resilience!



Cartoon drawn by Shannon Wheeler, American Cartoonist
www.shannonwheeler.com

Editor’s Note: How times have changed. Forty-two years ago, very few of us would have imagined a future where HVRA radio collectors would be conducting meetings on computer screens. Well, considering their history, computers can also be included as “Vintage Communication Equipment”. Welcome to the 21st century. Our new HVRA business card has been modified to read: **Welcome all antique radio enthusiasts, vintage electronic collectors, & hams.** See page 3, this GL, for an appreciative note from Bill.

From The President (continued) keep a good eraser near your calendar

Number 1: Bayland Park Community Center: Several weeks ago, the assistant director at Bayland called me to say the center was reopening, but at 25% occupancy per each room including the library, auditorium, etc. With the library's occupancy level, as I recall, limited to 12 individuals; that would mean a board meeting would be restricted to 3 members present – a no brainer. The dance floor room where we normally conduct our monthly meetings I recall has a 50 person limit. Again this would be a no go for us. A couple of weeks later as Covid 19 cases began to subside, the occupancy level was raised to 50%, and held there as of perhaps a week ago. That increased the occupancies to 6 and 25, still too low for our needs. Late last June the Harris County Covid 19 barometer was moved into the red zone; I have not heard how this has affected Bayland Community Center plans for July, but it surely impacted our planned swap meet at Mike's Ice House on Saturday, June 27th. Mike's, along with many other similar sites, were ordered to close – yes, Mike's was closed up tight that day when I was at EPO across the street.

Number 2: Uncertain Meeting Plans: With face to face Board of Director meetings on hold along with our traditional Saturday morning meetings, I wish I could look into a crystal ball and predict what the coming months will look like. At this point in time, all I can do is try to extrapolate from previous months and take an educated guess at what the probable outcome will be. The second Tuesday evening Board of Directors Meetings at Bayland will be discontinued throughout the remaining months. There is a possibility that we could hold a Tuesday evening general meeting on December 8th which has been done as recently as last year, but it will depend on Bayland Center / Harris County decisions. As for our General Meetings, our July 18th (revised date) meeting there, less than three weeks away, looks doubtful. The originally scheduled August 22nd and September 26th meetings should also be classified as tentative, so watch our web site often for meeting notifications or changes.

Number 3: Meetings Auctions & Swap Meets: In order to maintain some semblance of normalcy, we had to find a way for our members to meet in person. Thanks to Chris Macha, Co owner of Electronics Parts Outlet, who is also an HVRA member, we learned that their immediate neighbor, Mike's Ice House had extended an offer to Chris for us to meet there. Several weeks ago, Richard Slater, myself, and Chris met with owners Mr. & Mrs. Harris to discuss the possibility of having a kickoff swap meet and meeting, along with a buffet breakfast on Saturday morning, June 27th. That of course was cancelled due to the Covid 19 closure order from Harris County. There would have been no cost to us, but the Harris' asked us to purchase breakfasts (at seven dollars each) that they would prepare for us. This was approved by our members and we were looking forward to a fun event until things came to a crashing halt with their closure. Thirty members and guests had signed up for that swap meet, so we will plan a future swap meet at Mike's (see page 3 for location) perhaps during the summer. Again, watch our web site and e mail communications for future notifications.

Number 4: The Future. Looking towards the fourth quarter and beyond, should the County lift restrictions and reopen Bayland Park, we still could not hold Saturday meetings in months of October, November, and December due to planned shut downs for repairs, political activities, early voting, and holidays. Their current calendar, prior to the pandemic, only had Oct. 13th, Nov. 10th, and Dec. 8th available for Board meetings. Instead we will conduct ZOOM Board meetings, and probably schedule fourth Saturday monthly meetings at Mike's Ice House whenever an all clear is given. Our quarterly "GL" via e mail/web site will continue and web master Steve Scheel and Editor Jerry Sirkin have done a fantastic job with that. KUDOS to all who contribute articles, and support us by keeping your dues paid up. Remember, the "Grid Leak" is the life blood of our organization both in print, and in cyberspace so let us keep this good thing going! V. P. Lewis Brittain is working to secure what will likely be a new location for our 2021 convention including a change from February to later in the year, possibly September or early October due to the uncertainty regarding Covid 19. In closing, pray that a vaccine for COVID 19 is found and that the violence and social unrest ends. Bill W.

I Miss the Pizzas and Tuesday Evening Guys Nights Out and “What is ZOOM” by Bill W.

Covid 19 has ended our Tuesday night pizza supplied Board meetings and Saturday general meetings too. A couple of our computer savvy members, Steve Truch and Steve Scheel, suggested we try a ZOOM meeting. That term I had heard, but for an old T square and slide rule guy who still cherished his flip phone, it didn't have any meaning. I asked my realtor wife who spends hour upon hour on her computer and i phone, “what is this computer thing called ZOOM”? She gave me this bewildered look, and asked, “where have you been, I use ZOOM all the time?” My response was, “living here for the last forty-four years – why!” She could not believe I did not have a clue as to what it was – maybe it's my old radio brain locked in the 1950's – huh! What could I do, after all, she nabbed my beloved flip phone while I was in Hermann Hospital with a heart condition, neutered it, and handed me her “old” Apple i phone in exchange that I still struggle to master. It was tough to adapt, but with my wife's help, Richard Slater's donation of a camera, several calls to my sons in Austin, success finally came through! Kudos to y'all, and our first on line Board meeting – sans pizza, went very well. This was followed by a very successful on-line meeting Saturday morning, May 30th. There were no donuts to share, or coffee either, sorry; but Jeff Heller gave a fantastic program, live, on refinishing, and restoring finishes on radio cabinets with techniques that were new to me. So, HVRA achieved a milestone with a successful meeting in cyberspace, but meetings in person are still more fun.

HVRA Event Schedule: July thru October, 2020

Check our web site often for schedule changes and special announcements.

Remember, Directors' meetings (usually held on the 2nd Tuesday of each month) are open to all Members, sharing ideas, suggestions, or expressing concerns to our officers. General Membership meetings are usually held on the 4th Saturday each month except for conflicting events. Although these Membership meeting are for the benefit of active members in good standing, we encourage guests to attend and acquaint themselves with HVRA's activities. Members can participate in announced contests, presentations and auctions during these meetings.

TENTATIVE ACTIVITY SCHEDULE; Saturday Meetings pending Harris County Restrictions

July

14, Tuesday, Board of Directors' Meeting 6:30 PM via ZOOM.

25, Saturday morning, Possible Swap Meet, General Meeting, Program, & Auction 8:30 – 12 PM Mike's Ice House, buffet breakfast inside. \$7.00 each, or order your own.

August

11, Tuesday, Board of Directors' Meeting 6:30 PM via ZOOM.

22, Saturday morning, (Tentative) Swap Meet, General Meeting, Program, & Auction 8:30 – 12 PM Mike's Ice House, buffet breakfast will be served inside. \$7.00 each, or order your own. **Please note**, should Bayland reopen, we may possibly meet there. Watch web site for news.

September

8, Tuesday, Board of Directors' Meeting 6:30 PM via ZOOM.

26, Saturday morning, Swap Meet, General Meeting, Program, & Auction 8:30 – 12 PM Mike's Ice House, buffet breakfast will be served inside. \$7.00 each, or order your own. **Please note**, should Bayland reopen, we may possibly meet there. Watch web site for news.

October

13, Tuesday, Board of Directors' Meeting 6:30 PM via ZOOM.

24, Saturday morning Swap Meet, General Meeting, Program, & Auction 8:30 – 12 PM Mike's Ice House, buffet breakfast will be served inside. \$7.00 each, or order your own. Bayland will be closed for repairs.

Mike's Ice House, 8746 Lipan Road, Houston, TX 77063.

Centrally located, just off Fondren Road and a few blocks south of Westheimer it is on the corner directly behind EPO (Electronic Parts Outlet), at the intersection of Crossview Drive and Lipan Road . Take Lipan Road, turn into the back parking lot where the swap meet will be held. **See their web site at: mikesicehouse.com**. They have indoor and outdoor facilities, picnic tables, beer garden, and plenty of parking. The meals I have eaten there were great, so I recommend their excellent cooking. You certainly won't go away hungry if you fancy cheeseburgers with all the trimmings. Take a look at their menu, you may want to stay there for lunch and shoot some pool. I think you will be impressed with Mike's and its convenient location. Bring along a list of any electronic parts or supplies you may need, cross the street and then you're in the EPO rear parking lot! Watch HVRA web site for future events at Mike's as soon as Harris Counts gives the all clear – so keep safe, wear your mask, avoid crowds!

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Election of officers is currently scheduled at our Annual General Membership Meeting on Saturday morning, September 26th. This meeting was originally scheduled to be held at the Bayland Park Community Center, providing the COVID-19 pandemic to subsides.

An official meeting notice will be emailed to all members in Late August or early September once the final meeting format and the location is finalized. Any member wishing to be considered as a candidate, or needs additional description of duties, needs to contact President Bill Werzner or Vice President Lewis Brittain before August 31st.

Four Positions open include:

President, Treasurer, Historian, and At Large Position I.

Sterilizing Store bought Fruit, Etc.

Bill Werzner

During this era of Covid pandemic, my wife and I (and I'm sure we are not alone in this) get concerned about picking up not only the Covid virus, but other bugs as well from grocery store items and produce. Here is an easy way to sanitize those items that other customers have handled, and this is especially true when it comes to fruits and vegetables. People pick over these items and feel them to check for bruising, ripeness, etc. Bringing them home we wash them under running water before storing them in the refrigerator or on the counter top bowl i.e. bananas. Bacteria and viruses are killed with 70% alcohol - pure alcohol won't do the trick. A water component is necessary in order for the alcohol to break the outer protein layer and kill the "bug". You can use 70% isopropyl (rubbing alcohol), but 70% ethyl alcohol is preferred, at least by this old chemist. Everclear from the liquor store is 95%, to get to about 70% take 6 ounces of everclear and add 2 1/2 ounces of water and this will give you about a half pint to store in a bottle and work with. Take a gauze square or small piece of cloth, soaked with your 70%, and wipe down the items for storage.

2021 ANNUAL CONVENTION UPDATE

Vice President Lewis Brittain

NEW LOCATION?—NEW DATES!

Due to the unsatisfactory nature of the 2020 Convention Banquet dinner, we are considering a change from the Marriott North Hotel. Although some negotiations for a Marriott North 2021 Convention do continue, we have recently focused our attention on The Wyndham Houston West—Energy Corridor, off of I-10 West. Final details of an agreement are not far enough along, at this time, to announce a recommendation or a Board decision. Because these contract terms put a lot of pressure on HVRA's ability to comply with monetary commitments, the Board has decided to change dates towards a late Summer or Early Fall event and give us time to be a little more cautious and further away from any upswings in the Covid-19 pandemic that might befall us this coming winter, thus preventing an unpredictable attendance. As these decisions progress, we will notify all members by Grid Leak or email blasts with updated details.

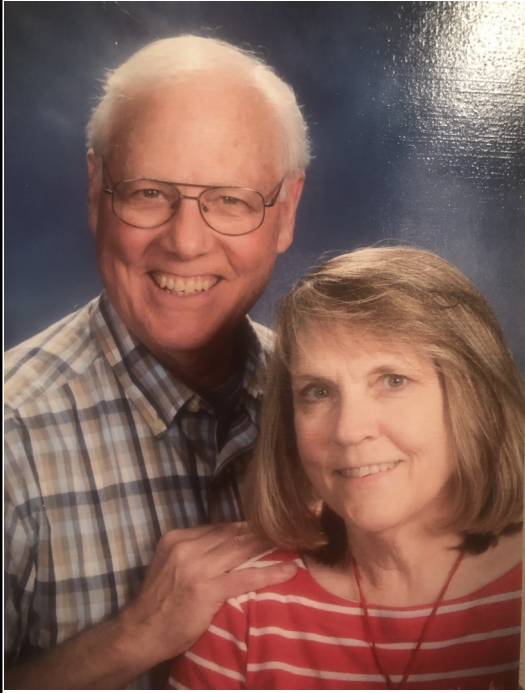
As of this writing, unless we find ourselves restricted to Contest space, no plans have been made to alter Contest Categories or Rules from those listed in the last 2nd Quarter Grid Leak.

Please remember, Atwater Kent will be the Manufacturer highlighted at this event.

HVRA wishes to pass along condolences to the following Families

Elaine Moore

The wife of long time HVRA member, David Moore, passed away at home in Bartlesville OK June 17, 2020 after a 2.5 year battle with lung cancer.



David and Elaine were married in 2014 and she became involved in HVRA conventions serving at the registration desk.

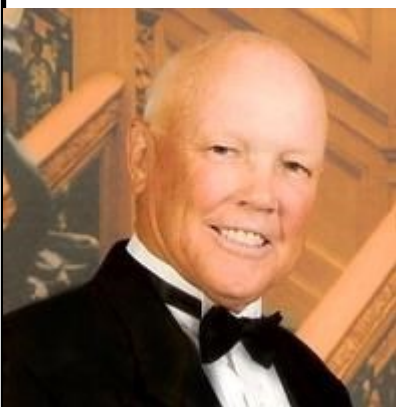
Originally from Norton KS, Elaine graduated from Oklahoma Wesleyan University in Bartlesville, taught for 35 years as an elementary teacher, and worked in Girl Scouts, sang in the church choir, was a member of the Daughters of the American Revolution (DAR). She was always active and enjoyed cruising, traveling, camping, and hiking.

David has been an active HVRA member since 1980, serving as President, Vice President, Grid Leak Editor, and as Convention Contest Chairman.

Eugene Hult

Eugene Edward Hult, Jr. passed away March 25, 2020 at the age of 75.

Gene was born May 25, 1944 in Evanston, IL and graduated from Iona Preparatory School in New Rochelle, NY, later receiving a BA in Political Science from St. Michael's College in Colchester, VT.



Prior to Gene joining HVRA in 2019, he worked for URS Consulting Engineers, where he oversaw projects including the transformation of a World War II aircraft carrier into the Intrepid Sea, Air, & Space Museum in 1982; after which he distinguished himself at Gilbane Building Company, where he managed sites including St. Elizabeth Hospital in Elizabeth, NJ; the Baylor College of Medicine's Center for Comparative Medicine in Houston, TX; the M.D. Anderson Cancer Center George and Cynthia Mitchell Basic Science and Research Building in Houston, TX;

He was devoted to his wife of 51 years, Eileen Santangelo Hult.

Lazy Man's Guide to Radio Refinishing



During the May 30th General Membership Meeting, Jeff Heller provided the first HVRA virtual technical session that we have had the experience of hosting. With the assistance of Ric Slater, Stephen Truch and Steve Scheel, 35 members joined the Zoom session for a regular business meeting followed by Jeff presenting from his garage in New Braunfels. Jeff presented a flawless program designed to help collectors understand the alternatives of refinishing the radios in their collection. A question and answer session followed the 90 minute meeting. If you missed this presentation, Steve Scheel has created a link on the HVRA.org website that will take you to the Facebook page for the entire video presentation.

DISCLAIMER FROM JEFF: In this summary and the program I have prepared for HVRA's May 30, 2020 meeting, I set forth MY methods for sprucing up radios including wood, plastic and even metal. THERE ARE MANY OTHER TECHNIQUES THAT YOU CAN USE TO ACCOMPLISH BETTER OR POSSIBLY WORSE RESULTS. My techniques are designed to avoid stripping, repainting or completely refinishing a radio. Many older wood radios for example were finished in shellac. Shellac is the resinous product of a bug found in India and Thailand. Most modern wood is finished using polyurethane or other man-made products. The good thing for us about shellac is that it can often be amalgamated or chemically re-melted to improve the look of 80 and 90-year old wood finishes. Likewise, various plastic radios including Bakelite and polystyrene will regain some luster along with scratch removal using the right polishes and techniques. *I therefore look to find an easy method to improve the appearance of radios in my collection.* This presentation focuses on some of these easy methods.

Continued

Wood Radios

1. **First Steps—Clean the Radio.** A lot of grime can be removed with a washing of **soap and water**. I wash everything including metal chassis. Be careful on your wood finishes to quickly remove and dry your wash water. **GoJo Natural Orange Hand Cleaner** is another good product for attacking grime. ANOTHER METHOD: Try **Howard's Orange Oil** to clean a dirty wood cabinet, applying with a soft cloth. You might find that you like how the radio looks just with an Orange Oil treatment!! FINAL STEP: Use a rag with some **mineral spirits** to wipe down the cabinet (removes excess grime and soap residues that the Orange Oil might "bring up").
2. **Is This Radio a Candidate for the Lazy Man's Methods? Or stated another way, know the limitations of these methods.** Some radios must be stripped or sand blasted or repainted. Water rings are a close call and there are products that can help remove them without stripping the varnish. Let's go through some examples of radios and decide what to do with them.
3. **Wood sets and amalgamating the finish.** There are two Lazy Man's methods to work an amalgamation.
 - A) **Howard's Restor-A-Shine** is a terrific product and comes in various shades. Sometimes, one or two coats of Howard's will improve a crackled shellac varnish finish. Apply with a soft cloth first to see how it takes to the surface. Let dry. Polish with **0000 steel wool dipped in wool lube**. Repeat the application of Howards followed by 0000 steel wool with wool lube. NEVER use anything more than 0000 steel wool without making sure you won't ruin the finish. After applying Howards and improving the finish with steel wool and wool lube, you can use some of the polishing methods discussed below to improve overall luster and appearance. If you don't have much time or inclination to use a lot of effort, try Howard's first.
 - B) Use a professional **Amalgamator like Mohawk's or Behlen's Qualrenu**. I usually use these products as they have a bit more "heft" than Howards and give me a bit more flexibility with surfaces needing a lot of TLC. They will sometimes remove much of the bad shellac that cannot be reformed; I use if I have a piece with too much shellac as well. Apply with a soft cloth, heavy on the first application, then lighter on second or third coats. I always do two coats, but rarely more than three. When finished with the amalgamator, we will use steel wool as described in D below.
 - C) What about a bad polyurethane finish? The amalgamators generally will not give good results to these types of finishes. Sanding is the best alternative. I use **3M plastic sanding pads**, sometimes with wool lube added, to see if I can work the finish without ruining the staining or underlying color scheme of the radio.
 - D) When you have applied two or three coats of the amalgamator, you can start your **steel wool routine using 0000 wool and wool lube**. Often you can get a nice sheen and low luster polish just using this technique. Using steel wool and lube allows you to work on imperfections in the finish as well.

Continued

4. If the radio needs more luster and work on the finish, the next step is to use **Deluxing Compound**. This product has a little wax in it along with some compounds that help with minor imperfections in the finish. I apply it with a soft cloth, let it sit just a little while, and then polish with a good micro-fiber or similar cloth. Sometimes two or three coats will help but wait a day if possible in-between so that the coats set up a bit. Another similar product to try is **Howard's Wood Finish Polishing Compound**. This product applies with a cloth followed by polishing with micro-fiber towels. Sometimes I try both Deluxing Compound and Howard's Polishing Compound on the bottom of the radio to see which I like best. I also have used Howard's Polishing Compound in place of every step described above for quick work on a radio finish, followed by wax polishing discussed below.
5. **Wax it or Leave It.** Depending on how the radio finish is looking, I may decide to leave it alone and call it a day; or, I might decide to apply one or two coats of wax. Adding wax at this point can bring up a higher shine or sheen or luster, depending on the wax you use and how much elbow grease you put into the process. There are a lot of waxes out there and I have tried them all. I am not a big fan of paste waxes and would only use that on a piece of furniture getting heavy use. I prefer bee's wax products and **Howard's** is my go-to wax. Buff the wax with micro-fiber or special towels designed for this purpose.
6. I may use a power buffer with a specially designed wax applicator used for cars particularly for larger radios. I like **Griot's Garage auto detailer buffer (model G8)**. Interchangeable pads are available and I also use this auto detailer buffer on plastic and metal radios.

Plastic, Metal and Bakelite Radios

1. After I have cleaned the cabinet, I have a variety of techniques for restoring the luster to these radios. The easiest method for improving the finish of Bakelite radios is to use **Glazyt and/or Novus plastic polishes**. Spray on and polish with micro-fiber cloth. Two or three coats might be necessary. The disadvantage of these products is that they generally don't remove more than a very light scratch or imperfection at best (even using Novus #3). I use these products only if the radio is in good shape without noticeable imperfections.
2. Another very good polish which can be used in place of Glazyt or Novus is **Oz Cream Plastic Polish**. I use Oz on metal and other plastics as well. I usually use it after working a radio with imperfections as a final step after doing the best I can to improve the overall appearance of the radio. Oz is always a good choice to try and it works very well. Get this product if you don't buy any of the other products I describe here. Another similar product that helps a bit more on light scratches is **Micro-gloss liquid abrasive**. This stuff is great on moderately compromised finishes with light scratches or haze. Two coats applied with a lot of elbow grease.

Continued

3. What if the radio needs a lot of work due to scratches, dulling or fading of a finish? Amazingly, some Bakelite radios will return to the original luster with elbow grease. Try a **Mr. Clean Magic Eraser** if you can't think of any other way to attack a crummy finish. Or, I might use **Hut's Ultra Gloss** if I have scratches or fading. Always try on a small piece on the bottom of the radio first. It might take several coats of Hut's or Oz. More problematic finishes I treat with automotive detailing compounds designed to remove scratches or haze in car finishes. I am partial to **Griot's Garage** products—**Complete Compound** helps with severely compromised finishes, followed by **Perfecting Cream** for enhancing luster and gloss. **Correcting Cream** is another product that helps remove paint specs for radio cabinets (why are so many Bakelite radios covered in stray paint specs?) I might apply these products by hand or with the auto detailer buffer. The buffer might also be used for the top of the radio to insure it has the best possible finish.

Product List

Available from Klingspors Wood Working:

Amalgator; Oz Cream Polish; Hut Ultra Gloss Plastic Polish; Liberon Ring Remover; Howard's Bee's Wax and Orange Oil; Howard's Polishing Compounds (unlike other Howard's products which are available in big hardware stores, the Polishing Compound is usually only found at Klingspor's); Kramer's Antique Improver; Mohawk Wool Lube.

Available from Rocklers (Stores located at the south side of Hwy 59 SW Fwy between Edloe and Buffalo Speedway and at 21352 Kuykendahl Rd in Spring):

All Behlen's products including Qualrenu, Shellac, Wool Lube, Brass Refinishing product.

Available at Griot's Garage:

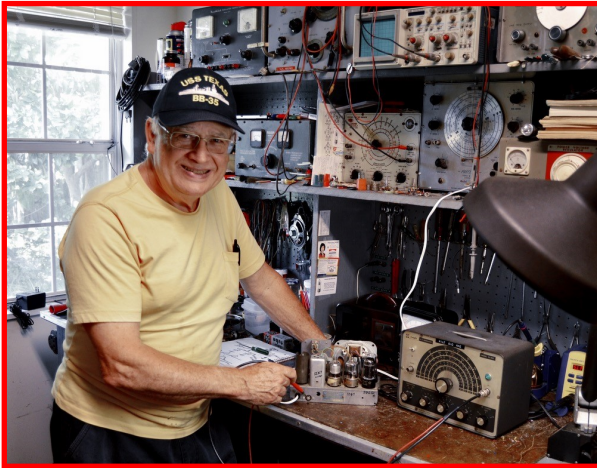
All auto detailing plastic and metal finishing compounds. I recommend the G8 auto detailer which has both 2 inch and 3 inch application pads.

Available at Big Box Hardware stores:

Most Howard's Restor-A-Shine amalgamators; 3M finishing pads (use carefully with more stubborn wood or plastic finish issues); 0000 steel wool; Mr. Clean Magic Erase



The Troubleshooter # 50 Triode by Bill Werzner



In the last quarter "GL" I presented the detailed characteristics (curves) of the first commercially available #45 triode vacuum tube that could operate with a filament powered by AC current. With the advent of sound motion pictures in the late 1920's there was a push to develop more powerful audio amplifiers. In 1928, Westinghouse again came through with a much more powerful output triode, the number 250 that was to become known as the #50. With a plate voltage of 450 Volts and a filament voltage of 7.5 V. at 1.2 Amperes, this tube could deliver 4.6 Watts of power. Wired in push pull, a pair could deliver almost ten Watts. These tubes were commonly used in

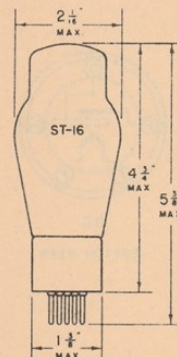
theater amplifiers and in some high end radios. The #50 known as "the big boy" reigned supreme until 1933, when RCA's 2A3 triode displaced it. It's original S-21 bulb was the largest ever used in the family of receiver tubes. When the filament was lit, the tube glowed like a light bulb. Another tube of that genre is the #10 that had an undistorted output as a class A amplifier of 1.6 Watts. That tube is listed as a sub for the #50, but was not as widely used. In my next vintage tube article I plan to discuss two early power pentode output tubes, the #46 and #47. It is interesting to note that of all the early power output tubes, the 6V6 and the 6L6 are still being produced today, and a number of others have evolved based on those two beam power tetrodes.



The #50 Triode Amplifier Tube, "Technical Data Electronic Tubes"
Tung - Sol Lamp Works Inc. Newark, NJ © 1940.

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TUNG-SOL



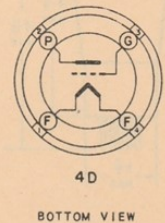
TRIODE POWER AMPLIFIER

COATED FILAMENT

7.5 VOLTS 1.25 AMPERES
 AC OR DC

GLASS BULB

MEDIUM 4 PIN BASE



THE TUNG-SOL 50 IS A FILAMENT TYPE POWER OUTPUT TUBE.

OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

PLATE VOLTAGE	300	350	400	450	VOLTS
GRID VOLTAGE ^A	-54	-63	-70	-84	VOLTS
PLATE CURRENT	35	45	55	55	MA.
PLATE RESISTANCE	2000	1900	1800	1800	OHMS
TRANSCONDUCTANCE	1900	2000	2100	2100	μMHOS
AMPLIFICATION FACTOR	3.8	3.8	3.8	3.8	
LOAD RESISTANCE	4600	4100	3670	4350	OHMS
POWER OUTPUT	1.6	2.4	3.4	4.6	WATTS

^A GRID VOLTAGE MEASURED FROM MID-POINT OF AC OPERATED FILAMENT.

SELF BIAS IS RECOMMENDED IN ALL CASES. THE GRID CIRCUIT RESISTANCE SHOULD NOT EXCEED 10 000 OHMS.

DIRECT INTERELECTRODE CAPACITANCES

GRID TO FILAMENT	4.2	μμf
PLATE TO FILAMENT	3.4	μμf
GRID TO PLATE	7.1	μμf

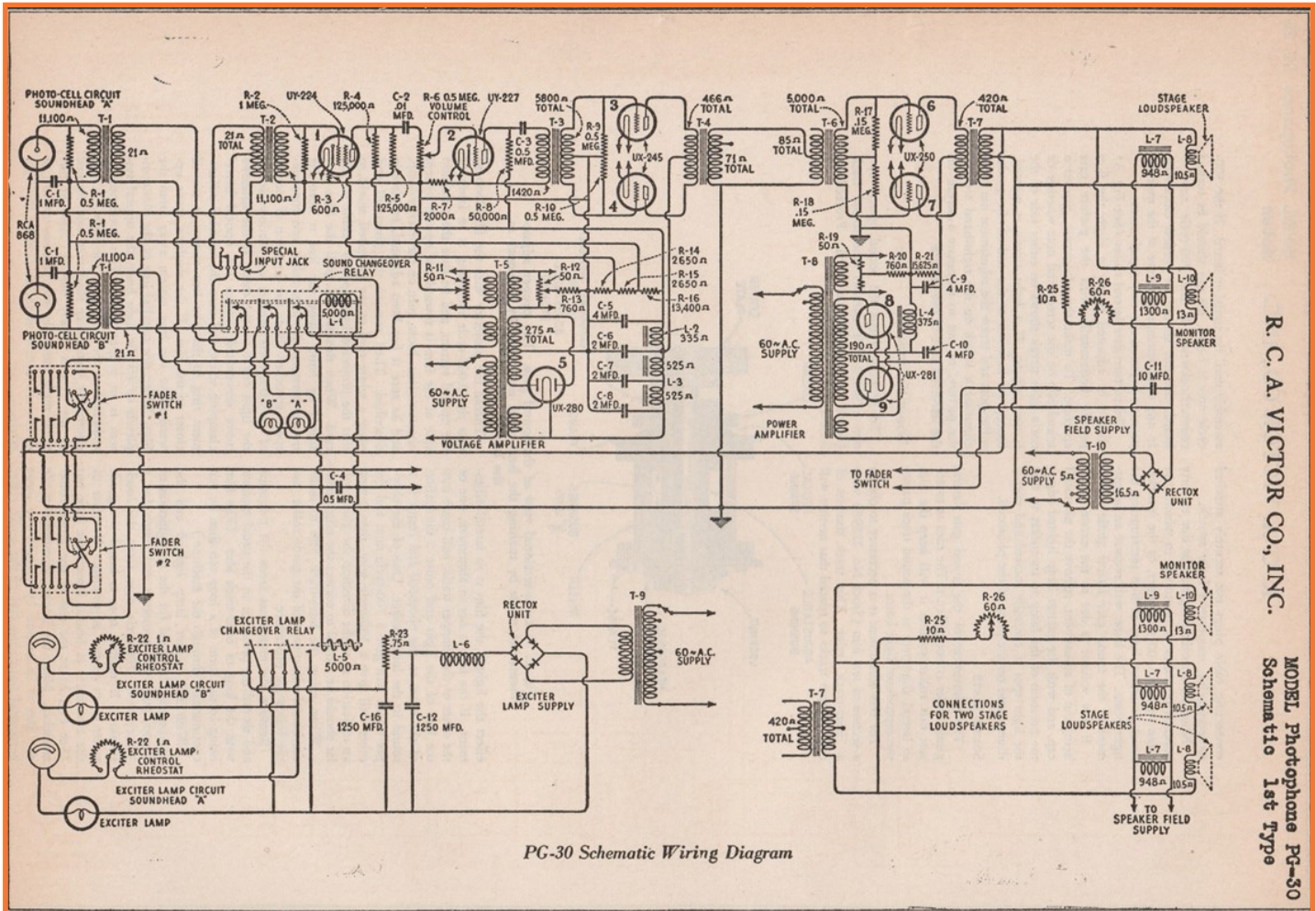


Diagram of an RCA theater sound motion picture amplifier c. 1930 using a pair of UX – 250 output tubes

Notice the two #81 rectifiers and the pair of #45 driver tubes. This amplifier probably helped heat the projection booth. Diagram copied from Riders Vol. III. This amplifier was probably designed for use in small movie theaters whereas larger theaters were equipped with much larger amplifiers that used multiple power output stages. If interested, take a look in Riders Vol. III and IV at some of those powerful amplifiers of the era. If you are not familiar with movie projection prior to the digital age, two projectors were required to run a movie. The 35MM film reels were on average around 18 minutes long, had optical sound tracks, and required a projectionist for making changeovers from one reel to the next. How do I know this? Well, I was a motion picture machine operator one time in my life from 1960 to 1968. My younger brother was too. During those last two years aside from being a U.S. Army Medical Laboratory Specialist in Denver, I also operated projectors in Fitzsimons Hospital post's theater which was one of the nicest theaters I ever worked in. There, the sound was provided by two large RCA theater amplifiers, and two auxiliary amplifiers, all using quad 807's. The theater had over 800 seats along with a huge stage and screen – you guessed it, the sound was fantastic! Fitzsimons is no more, the University of Colorado took over the place years ago, and the beautiful theater was razed – how sad!

Ancient Superhetrodyne (OR Battery Set) Resurrection.....by Tom Taylor

In the early days of superhetrodyne radios, you know, the ones producing a signal different than you wanted to hear and using a first detector to deliberately mix things up to produce a third signal you can't hear, there were fine hardwood boxes over two feet wide with circuitry for as many as eight or more tubes. Well, when antiquity rescue of the electron persuasion has beset you, these beasts particularly the multi tube superhetrodynes can pull you in. How and Why you say? Sorry the answer to that one is not clear to me either.

A few words of advice. Like less mature designs of the period, you can turn your attentions to continuity checks of all the coils once you determine no critical parts appear to be missing. Don't let fear of unobtainium take you down. There are often options such as the conventional RC coupling that came in later years. Its' only a stretched out radio with less parts you have there.

For the most fulfillment look for the many poor solder joints you will find on those wires with a square cross section. Expect a target rich environment. Clean, flux and fix. Expect to find several solder points with nothing on it just begging for reconnection of a nearby wire. IF one is found, the wire ends must take little movement to reach the suspect joint to be worthy of reconnection.

For tube sockets where pin contact is made at the bottom of the tube pin, you best sand, lightly file or resolder that tube pin tip or you will be leaving behind your third project exit opportunity. It is assumed at this time you thought to check tube filaments for continuity to minimize head scratching.

You aint done yet. Assume every thumb nut or standard nut serving wire attachment is loose and awaiting servicing.

Using your meter make sure all those filament rheostats are into the rheo task. It may take a number of swipes across their span to restore usefulness. Rebuilds and replacement are not without consideration.

Got any contacts like power switches or stretched out phone jacks? Use your burnishing tool or > 600 wet or dry sand paper to make 3-5 passes betwixt them before you verify continuity. You SHALL NOT file.

You could be ready now for a test, I mean powered test, but first what have you not laid hands upon in these conquests? IF you did your job right, you touched, treated and checked every item in it. That's right, I waited till the end to tell you these relics may be your greatest achievement in radio repair yet.

Being careful with where your supply leads go you can connect them up, remove the tubes and power the circuit to verify the following>>

NO tube filament connections SHALL be greater than 5 volts DC. Check each socket

All Intermediate Frequency (IF) and audio (AF) transformers SHALL have B+ at two places on them {occasionally less for the detector(s)}

All tube sockets should have a B+ on the plate connection. Look for the letter "P" on the socket or better yet get familiar with a base diagram in your tube manual

IF you plan on using an amplified computer speaker rather than headphones, you must add a plate load resistor to the last audio stage so that an output signal worth amplifying can be found across it. Anticipating the headphone served as a plate load, the factory had no need to install a resistor in parallel with the phone jack. For a B+ of ~ 100 VDC (convenience)and an 01A tube capable of only 3 ma, lets pick a half way point of 50 volts and 1.5 ma for Class A plate idling conditions. 50/.0015 = resistor starting point = 33K or (Orange)³.

Continued

Its' now time to insert your tubes and turn the computer amplifier on. IF you have passed your preliminaries, go with confidence to your antenna and ground connections as well as radio and supply power switch to anticipate the hiss of amplified noise in the computer speaker. Touching your finger to the grid of each tube from audio stages back towards the antenna you can find the broken chain link and start your finals. Yes you can do this.

A suspect stage may just need a twist of the tube in its socket suggesting the socket contacts needed a little polishing. Have you tested your tubes for gain? IF no filament illumination, rock its rheostat to be sure its contact is making. Swap tubes or insert signals as needed to close in on the last culprits. Oh, and if it is an IF frequency you are to inject expect that could be 70 or 90 KHz so do your homework.

You got this

Solder Bits by Tom Taylor REJUVINATION

When testing a 24A recently to see how many good spares I had, I held the Hickock 600 TEST button down to watch the emission come up if it was going to. All of a sudden it snapped up from its VERY LOW point as if I had just pressed the TEST button for the first time. Recalling that some early tubes take on a coating about the emitter (filament or cathode) which can be sloughed off with elevated voltage held for a brief period I inserted another retired 24A and when it stopped to grunt at about 15% or so I bumped the filament one step to 3.0 volts and within 15 seconds it proceeded directly to the green. Go to the following link for an explanation better than I could possibly provide: AntiqueRadios.Com/chrs/journal/rejuvenation.HTML For the article "Rejuvenation of Vacuum Tubes" by Lane S. Upton

Set Screw Seizures by Tom Taylor

Ever come across those knob set screws that defy any movement at all? Recently I have stumbled across a process that seems to have merit although I fear I may jinx my good fortune by telling others. You need four items, penetrating oil, a dental pick with a fine curve at the last 2 mm, {no larger than 2X the size of that comma} one of those automatic center punches that snap to make your mark as you push upon it and a 'fitting' screw driver of the right width and NO deformities at the business end. It should also fill the set screw slot, length and width. DO NOT bother considering engine oil or fine oil to avoid taking one more step towards deforming the one set screw slot you have to work with. That dental pick you choose to use or make must be able to find the threads in the knob right at the set screw interface. This type of center punch offers one handed assurance of an impact placed on target. They can be found for less than \$20 as viewed in the picture.

Using the pick, scribe among the set screw features, its slot and the surround. Place a drop or two of your penetrating oil on the set screw and then position the knob on the bench with the set screw facing up so the fluid has a chance to creep into threads. After a couple of days use your pick to clean rust from the set screw slot and traveling threads cut in the knob. Follow that with 5 to 8 pops of the center punch into the set screw slot to help shock it free. Now the point of maximum error is at hand. Put the knob near the edge of a flat surface such as the wife's dryer with the set screw facing out over the edge such that you can muscle up a secure turn of your screw driver. Think as if you get just this one chance to do it right and grip your two subjects, knob and driver. Try to make a SMALL CCW turn of ANY amount to the set screw. IF you were successful turn it back to where it was and begin an increasing rotation back and forth until there is freedom of movement towards the exit. Only then can you bring the set screw out of the knob for replacement. If you were not successful, reuse the penetrating oil and repeat all prior steps including the wait period. My preferred product is the "Fabulous Blaster PB Penetrating Catalyst" in the red, yellow and black 6 oz aerosol can.



got numbers ?

Numbers Stations and a Dollop of Shortwave

by your Historian, Steven Peña

I remember them well, though I was just a kid then. It would happen as I lay abed, late at night, listening to the little shortwave radio I had been given as a Xmas present. Sometimes it was the voice of a woman, a very soothing voice, as I recall. Other times it was one of those little hand-held xylophones, a series of tones played out methodically. Almost always it included numbers read out, just a string of them, and to me they were meaningless. They left me wondering what it was all about. What did the numbers mean ?

These were the famous "Numbers Stations." Cold War antagonists regularly communicated with their operatives around the world through shortwave Numbers Stations. The numbers, and sometimes verbal instructions, were a kind of code, a code to be deciphered by the operative, who, as it was shortwave, might be just about anywhere in the world. These one-way messages were sent in this fashion as it was virtually impossible to determine who the recipient was (short of the recipient's being careless, of course). I'm sure the reader has some familiarity with the physics of shortwave propagation. Reflected back from the ionosphere, shortwaves manage what most other portions of the electromagnetic spectrum cannot: they "skip" or propagate across the globe, sometimes very far from their source, in the process obscuring the identities of both source and recipient.

The technology is perfect in a place subject to a tyrannical or mercurial ruler. Caesar may cut the internet, or even satellite communication, but shortwave communication remains immune, so long as there is a power source. In addition, computer communication, however secure, always creates a digital trail. Shortwave is immune to that also.

Cold War intelligence agencies often employed OTP encryption (One-Time Pad), which, stripped of its intricacy in practice, amounts to a coded message and a key that is (1) entirely random and (2) used only once. OTP encryption, used correctly, is generally considered to be full-proof. The spy may leave the home country with a set of one-off keys, each tied to a specific time for a message; the key is destroyed after use. (Fun Fact: Edgar Allen Poe's principle hobby was cryptography. He may have been the greatest codebreaker in America in his day. He boasted he could crack any code, but warned that it couldn't be an OTP code, or in more than one language---reasonable stipulations, I suppose.)

There are still numbers stations.... and one can still tune in to them, particularly at night with its superior propagation characteristics. North Korea, Russia and Cuba are thought to be going strong still with coded broadcasts, and a history of numbers stations was published as recently as 2018. The U.S. still uses radio to broadcast into "enemy" territory. Radio Free Asia broadcasts to the Chinese region of Xinjiang in the Uighur language via shortwave. China jams the transmission, but a recent survey found that of those leaving Xinjiang about 20% had been listening to RFA broadcasts at least once a week.* You just can't stop that good ol' shortwave !

**The Economist*, October 26th, 2019

FROM THE EDITOR

PROPOSED NEW ADDITION TO THE HVRA GRID LEAK

Beginning with the first HVRA Grid Leak Newsletter, and continuing for many years, a portion of that publication was devoted to new acquisitions by members, recent repairs and restorations, and auction results showing items with significantly impressive sale prices.

Well we are certainly getting detailed contributions from members for repairs, restorations and “work-arounds”.....keep em coming.....we can always use more. We have recently tried to report significant auction results; but we can do a better job detailing auction prices. In fact, if you see an item at any auction and feel that the price was significant and important to report so others could appreciate how those prices affect their collection, please drop me a note.

Lastly...New Acquisitions. This is how we related to each other and learned “who collects what” and “I wonder who can I contact to assist me with a problem with some item in my collection”. Gilbert Hedge has contributed much personal time and effort interviewing members and highlighting their collecting history and experiences while describing their interests and prized collection (see past GLs for these impressive articles, and refer to the Grid Leak CD for the historical files). But we should not stop there; new and well heeled collectors make extraordinary finds that are worth highlighting. In todays world of electronic auctions, estate sale events and common antique store and flea market locations, prized collectables abound.

So I would like to dedicate space in future Grid Leaks to allow you to tell our members what you are most proud of as a recent acquisition or (finally) restored collectable. No particular format required (prefer a word document rather than pdf format, if possible)...certainly detailed description and good photo(s) are a necessary part of your article. Including a story or some personal note would also be interesting to our readers.

So I will start it off: My New Acquisition (by Jerry Sirkin)

As an antique (vintage) radio collector since 1968, years ago I decided to concentrate on Atwater Kent battery sets (not too many breadboards yet) and I have successfully collected examples of each of the battery models, Model 5A (preceded the 20 Big Box) through Model 50, made prior to the introduction of AC circuitry. The goal is to have all in



working condition with proper accompanying speakers. I'm well on my way but keep my eyes peeled for other unique AK units that offer technical steps forward as Mr; Kent continued to advance his company through the late 20s and into the mid 1930's. So, yes, I also have many A/C and battery sets manufactured after 1927.

My latest addition is a 7 tube AK Model 37 set with a very unique finish. Normally, painted in a two tone gold and brown wrinkle top and brown wrinkle cabinet, this particular introduction was referred to as the “Modernistic Set” and made as an advertising effort to promote the sales of AK's traditional sets. The 37, AK's first commercially sold, true A/C set combined elements from the 35 (chassis arrangement) and 36 (a/c power supply) and also incorporated a veneer dial. Prior to the 37, all other AK sets (except for the 35 series) were sold in mahogany wooden rectangular cabinets.....the 37 was his first true metal cabinet A/C unit. Introduced in late 1927 or early 1928, these Modernistic Sets rarely survive as a collectable original finished working radio with matching AK Type E speaker.



This particular Model 37 Modernistic Set fits the description in the literature as an earlier of two versions by its 17 plate tuning condensers (vs 13) and the location of the tube chart on the upper part of the power unit (vs lower). The serial numbers match between the front panel and the Model/Patent Plate (Chassis).....#1343935. Additionally, in order to not interrupt this unique paint pattern the traditional Model 37 Ship Medallion (same as Model 35) was eliminated and an AK Medallion was placed on the power supply lid.

Purchased in 2020 at a Sargent Auction, I may have paid too much during a competitive bidding session....but you just never see these very often.....and it works.

Published here, with permission from MAARC, is a book offer that you might be of interest to you. This offer is included in the June, 2020, MAARC Journal "RADIO AGE". This is a very worthwhile Radio Club to join and reap the rewards of many pages of well written technical articles,

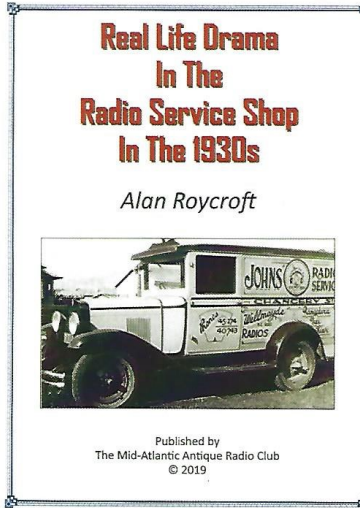
About MAARC's Alan Roycroft Book

By Domi Sanchez

[A quick search on the Internet revealed that there are a few tribute pages to Alan Roycroft and his work. Radio Age is fortunate to have published his articles. — Editor.]

Alan Roycroft served in the New Zealand Air Force during WWII. While serving as a radar specialist, he was stationed in Apia, Samoa. There, he operated a pirate radio station that broadcasted music, local Samoa news and hotel band concerts. One fateful evening, just after Roycroft fired up his transmitter located against the wall in his hotel room and his back to the door, someone pulled up a chair behind him. Visions of the Royal New Zealand Air Force (RNZAF) prison loomed when he turned around and saw the Resident Commissioner, Lieutenant-Colonel F. W. Voelckner sitting behind him. Instead of throwing Roycroft in jail, Voelckner realized that Samoa needed its own official radio station. Several years later, Samoa had its first licensed radio station, 2AP. Both Roycroft and Voelckner were instrumental in putting 2AP on the air. Roycroft went on to build over 125 (legal) radio stations in his lifetime, all of them with the console set so that the DJ faced the door.

Similar to the colorful story above, Roycroft wrote a number of articles for *Radio Age*. The



first article he submitted for publication in 1991 was about his experience in the movie projection room as a young boy. The short autobiographical articles soon accumulated into a series he called "Real Life Drama in the Radio Service Shop in the Thirties."

Many of our MAARC members enjoyed these articles and suggested we collect and publish them in one book.

The paperback, spiral bound book is available from select antique radio clubs and book dealers for a list price of \$14.99. But MAARC

members in the United States are able to purchase a copy for \$10, including shipping. You can also pick up a copy at one of the local MAARC meets for \$7. To order a copy, send a check, made payable to MAARC, to Brian Belanger. His address is on page 2.

The intent is not to make money on this publication, but to bring back Roycroft's delightful stories to our antique radio community. Order your copy today and enjoy following this talented radio man through his illustrious career.

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June 2020

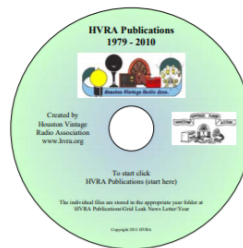
Radio Age

Sitting at home with nothing to do? Are all of your restoration projects completed? Do you still have questions about difficult electrical repairs to your prized radio(s)?

Well, fear not Mr. Collector. The HVRA CD - ROM awaits your attention. Indexed for easy use and filled with 31 years of HVRA Grid Leak articles your answers and vast amounts of general vintage radio information is just a small investment away.

Please fill out the attached form or print one out from our website (hvra.org) and you will be rewarded with more information than one man should ever know.

For additional CD information, contact Steven Pena, HVRA Historian.



Houston Vintage Radio Association Introduces

HVRA Publications 1979 – 2010

This DVD captures 32 years of HVRA and radio related historical information that may be used for research, finding technical or how to articles, or just reminiscing about old friends or past HVRA sponsored activities.

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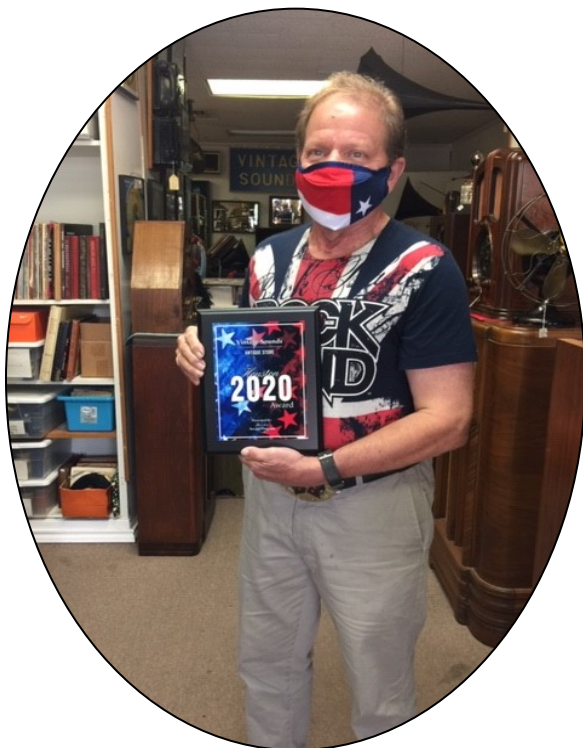
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Buy, Sell, Trade, & Services Offered

Vintage Sounds Named Best Antique Store in Houston June 2020



Bob Botto proudly displays the Houston 2020 Award Program gift.

Vintage Sounds celebrated their thirty-fifth year in business in February. Now located in the Market Place Antique Center, 10910 Katy Freeway, Houston, they service and repair vintage phonographs, radios, telephones, in addition to selling phonograph records, radios, phonographs, telephones, vacuum tubes, books, light bulbs, parts, and so much more. Open Friday, Saturday, and Sunday 10 AM - 6 PM.

HVRA members 10% discount on radio items. (713) 468-4911 www.vintagesoundshouston.com



Borden Radio Company website: <http://www.xtalmann.com> Antique Radio Schematic Service included in web-site. Crystal radio kits for sale. (281) 620 – 6692

Sargent Auction Service: www.sargentauction.com, Jims@sargentauction.com Jim Sargent, WA5QBR, Auctioneer, TX license 16135 Location: 200 Thomas Road, Granbury TX 76049

Allen Speaker Service: Speaker re-coning and repair, 919 W.19th St. Houston, (713) 862-2747.

Tom Granger Restorations, radio and phono cabinets. (281) 338 - 8277.
www.tomgranger@mac.com

Moving Sale: Extensive collection of test equipment, using tubes and semiconductors. Old computers from 1960s to 2000. All types of parts, vintage communication receivers and transmitters, metal cabinets, and more. Sale to begin about October 10th. Email Jimmie Stewart for a list at jimmietex@netzero.net.

Local Sources for Radio and Electronic Parts

EPO (Electronic Parts Outlet), 3753 Fondren Rd., Houston 77063 (713) 784 – 0140
ACE Electronics, 3210 Antoine Dr., Houston 77092 (713) 688-8114



Other Radio Related Activities

Texas Broadcast Museum: This museum is located at 416 E. Main Street in Kilgore, TX, phone 903-984-8115. There are hundreds of pieces of vintage paraphernalia related to radio and TV broadcasting. Admission is \$6.00 (\$5.00 for seniors and military vets).

Edington Family Museum of Atwater-Kent Radios: Jimmy Edington, long-time collector and original HVRA member, has re-purposed a beautifully restored hotel to display his outstanding collection of Atwater-Kent radios and related products. It is located in Silsbee, TX, about 80 miles east of Houston. See his website, www.atwaterkentsrus.com. If you would like to visit, please contact Jimmy in advance, 337-476-4328 or atwaterkentsrus@gmail.com

More Radio Clubs

Delaware Valley Historic Radio Club www.dvhrc.com

Oklahoma Vintage Radio Collectors President: Jim Collings, PO Box 50625, Midwest City, OK jcradio@cox.net; \$15 annual dues. Monthly meetings, annual show.

Antique Radio Club of Illinois, www.clubinfo@vintage-radio.org

Collins Radio Association (CRA). David Knepper, PO Box 34, Sidman, PA 15955. No dues. www.collinsra.com

Louisiana & Gulf Coast Antique Radio Club. Phil Boydston, 750 Moore St., Baton Rouge, LA 70806.

Michigan Antique Radio Club (MARC). Don Colbert, MARC, Pub: The Michigan Antique Radio Chronicle, quarterly. Dues: \$20. membership@michiganantiqueradio.org. Annual Extravaganza and other quarterly meets. www.michiganantiqueradio.org

New Mexico Radio Collectors Club (NMRCC). Monthly newsletter and members meeting (with flea market, auction and theme program). Dues: \$20. For more information contact John Anthes, jpanthes@comcast.net Club website: <http://newmexicoradiocollectorsclub.com>

Texas Antique Radio Club, Doug Wright, Canyon Lake, TX. wrightdouglas70@yahoo.com

Vintage Radio and Phonograph Society (VRPS), Dallas / Ft. Worth, TX. George Potter vrps@sbcglobal.net, website: www.vrps.org

Texas Panhandle Vintage Radio Society (TPVRS). Contact: Elroy A. Heras, 4086 Business Park Dr., Amarillo, TX 79110

Houston Vintage Radio Association

<ul style="list-style-type: none">-Monthly meetings: 4th Sat.-Auction at each meeting-Annual convention-Electronic classes-Swap meets <p>PO Box 31276 Houston, TX 77213-1276</p> <p style="text-align: center;">-www.hvra.org-</p>	<p>Welcome all antique radio enthusiasts, vintage electronic collectors & hams</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"></div>
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