



## *The Grid Leak*

*April/May/June 2018*

**Will This Be Your Last Issue of the Grid Leak?? See inside article by HVRA's Treasurer for Details About Our New Membership Renewals**



**Jim Sargent, President VPRS and Emergency Auctioneer and Banquet Speaker for HVRA's Annual Convention**



**Some Nice Atwater-Kent Radios and advertising materials sold at auction**



**Another great radio auction at the 40<sup>th</sup> Annual HVRA Convention**



**De Forest Electrolytic Receiving Set, An Award Winner in our Convention Contest**

## ***From The President***

Bill Werzner,  
HVRA President

### **At the bench**



Life is full of surprises and some are not so nice, as what happened to me in early February. I had never been seriously ill in my seventy-four years and never spent even a day as patient in a hospital although I used to be a pathology lab technician for a couple of hospitals in my younger days. No, I wasn't even born in a hospital, but in our old home place in a country town attended to by, you guessed it, an old time country doctor. Well, everything had been great until that first week in February when some stray electrons got together and took revenge inside the left atrium of my heart – causing uncontrolled fibrillation. I didn't realize how serious this was despite my doctor's alarm when he ran an electrocardiogram during a routine visit. My wife probably saved my life by insisting I go to the hospital and that was when things got really serious. So, for the next eight days I was a patient at Memorial Hermann Southwest and underwent an ablation procedure that interrupted the stray electron circuit via an rf probe via a femoral vein. The probe zapped the nerve bundle causing the problem and now I'm just about my old self once again. Ah, the wonders of modern medicine and this procedure is said to be 95% effective so I guess I'm lucky. The big downer was missing our club's fortieth anniversary auction and convention on February 9 & 10. HVRA Vice President Jerry Sirkin took command and steered the convention to a successful conclusion along with all our officers and volunteers who fulfilled their roles like true professionals. Not only was I absent, but so was our guest speaker who was recovering from a bout with the flu. It pays to have friends and as the old saying goes, "a friend in need is a friend indeed". Jim Sargent, VRPS President came to the rescue and not only conducted the auctions, but served as guest speaker during the Saturday evening banquet. Jim, we all owe you a big favor and kudos for a job well done! With that said, and you all know now, I'm alive and almost fully recovered let's move on.

With the Houston Livestock Show and Rodeo over, springtime is busting out all over and before those hot lazy hazy days of summer descend upon us, now is the time to check out our attics and garages for those items that we could possibly live without. Our next big selling events will Mike Payne's annual tail gate and swap meet in Alvin, TX, and the Texas City HAM Fest and HVRA auction. So, gather up those radios, etc. that have been languishing in your attics, get some photos and let's begin assembling a manifest for our big Texas City summer auction. We still have material from the Troyer Estate that will be sold in Texas City so watch our web site at [www.hvra.org](http://www.hvra.org) as the manifest develops. During the convention, "GL" Editor Steve Scheel conducted a survey that resulted in a real eye opener with regards as to what direction our club should take into the future. Stay tuned as we plan to reopen the survey for more members who missed it the first time. Our Board is interested in addressing your concerns and desires for our future course. There also seems to be a growing desire among our members for a resumption of radio repair and basic electronics classes that were held during the 1990's and this too is under consideration. That pretty well concludes my opening remarks so in the meantime, watch out for those wayward electrons – especially those that get out of control in the nerve bundles inside your heart!

P.S. I recommend listening to your doctor's advice and your spouse too (most of the time).

**Bill Werzner, President, HVRA**

## HVRA Officers

**President:** Bill Werzner, 713-721-2242, werz1943@gmail.com

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**At Large # 2 and Grid Leak Editor:** Jeff Heller, 281-702-6920 hellerj1@comcast.net

**Webmaster:** Steve Scheel, 281-687-5771, targeteye1@gmail.com

### **HVRA Event Schedule: April through July 2018**

Check with our web site [www.hvra.org](http://www.hvra.org) often for unexpected schedule changes, or special announcements. Remember, the Board of Directors' meetings are open to all members. This is where you can share ideas, suggestions, or express concerns with our officers.

- April 10 (Tuesday) 2018 [Monthly Board of Directors Meeting](#)** @ 6:30 pm - 8:30 pm Bayland Community Center, 6400 Bissonnet St Houston, TX 77074 As always, all members are welcome to attend. Pizza Served!
- April 28 (Saturday) 2018 [Monthly Members Meeting](#)** Set-up starts at 8:00 am and the meeting starts at 8:30 sharp. Bayland Community Center, 6400 Bissonnet St Houston, TX 77074
- May 8 (Tuesday) 2018 [Monthly Board of Directors Meeting](#)** @ 6:30 pm - 8:30 pm Bayland Community Center, 6400 Bissonnet St Houston, TX 77074 As always, all members are welcome to attend. Pizza Served!
- May 12 (Saturday), 2018 [Annual Alvin, Texas Tail Gate and Swap Meet](#)** Set up should begin around 8:00 am. Held at Mike Payne's place (all of the details are below in HVRA Happenings)
- No regular monthly meeting in May due to the Memorial Day Holiday weekend**
- June 1 & 2 (Friday and Saturday) 2018 [Annual Museum Ships Weekend](#)** Battleship Texas. All are welcome to attend and the special Battleship Texas Amateur Station (NA5DV) will be operating (see details below in the HVRA Happenings section)
- June 12 (Tuesday) 2018 [Monthly Board of Directors Meeting](#)** @ 6:30 pm - 8:30 pm Bayland Community Center, 6400 Bissonnet St Houston, TX 77074 Pizza Served!
- June 23 (Saturday) 2018 [Monthly Members Meeting](#)** Set-up starts at 8:00 am and the meeting starts at 8:30 sharp. Bayland Community Center, 6400 Bissonnet St Houston, TX 77074
- July 7 (Saturday) 2018 Annual Tideland's Amateur Radio Society & HVRA Summer Mega Auction** Doyle Convention Center, Texas City, TX Doors open at 8:00 am. The HVRA Summer Auction starts at 12:00 Noon. Don't miss it, there will be a lot of auction items available.
- July 10 (Tuesday) 2018 [Monthly Board of Directors Meeting](#)** @ 6:30 pm - 8:30 pm Bayland Community Center, 6400 Bissonnet St Houston, TX 77074 Pizza Served!
- July 28 (Saturday) 2018 [Monthly Members Meeting](#)** Set-up starts at 8:00 am and the meeting starts at 8:30 sharp. Bayland Community Center, 6400 Bissonnet St Houston, TX 77074

## HVRA News and Happenings

### **Is This Your Last Grid Leak? HVRA Revises Its Membership Renewal Procedures Please Read! Submitted by Ric Slater, HVRA Treasurer**

#### *NOTICE ON PAYING HVRA MEMBERSHIP DUES AND GRID LEAK INFORMATION*

The HVRA Board needed to make a change in how we do our membership payments to avoid the excessive time and resources it takes to keep track of when memberships are due throughout the year and sending notices to remind members. We don't want to lose any members in the process, but we need to take steps to streamline the process.

The change is that we now require renewals to be paid in February of each calendar year. This is a change from having dues required at various time during the year based on when you paid them the previous year.

Anyone who paid their dues prior to, or at the recent annual convention do not to renew their membership until February 2019. For everyone else who owes their membership prior to June 30, 2018, **this is your last Grid Leak** and you will not get the July Grid Leak unless you send in your \$20 registration. Our mailing address HVRA Treasurer, PO Box 31276, Houston, TX 77231-1276. **DO NOT PAY ATTENTION TO THE "EXPIRATION DATE" THAT MAY APPEAR ON YOUR MAILING LABEL AS THEY ARE NO LONGER ACCURATE AND WE ARE WORKING TO REVISE THAT LABEL.**

We hope everyone continues to stay a member and understands our reason for making this change.

### **Saturday July 7: Texas City Hamfest and HVRA Summer Mega Auction**

This annual event, also known as the Texas City "HAMFEST", will be held in the Doyle Convention Center, 2010 5<sup>th</sup> Ave. North, Texas City, on Saturday, July 7. It is sponsored by the Tidelands Amateur Radio Society, see their website [www.tidelands.org](http://www.tidelands.org) HAMs, DX'ers, collectors, tinkerers, and curious individuals by the hundreds will be on hand swapping and selling throughout the center and its parking lots. You will find just about anything electronic, and then some, among the many tables, trunks, and tail gates. HVRA will have a table inside the air conditioned auditorium distributing newsletters and club brochures to all who stop for a visit. If you like swap meets, don't miss this annual event. People start arriving around 7 AM to get a good place to park and do tailgate swapping. The doors to the event open at 8:00 am. Food and drinks will be available inside. There is an admission charge of \$5.00 to enter the Hamfest area. The HVRA Summer Mega Auction will start at 12 Noon in the adjoining auditorium where an admission fee of \$2.00 will be required for non-members of HVRA. We will have a large auction with a \$5.00 minimum bid and a 15% seller's fee. We will publish an auction manifest on our HVRA website that will include items from the Troyer Estate and others that did not make it to the February auction. This includes some very nice items that we simply did not have room to include in that auction. Now is the time to round up those items that may be languishing in your attic or garage, take some photos, list them, and forward them to me at [www.werz1943@gmail.com](mailto:www.werz1943@gmail.com)

## **From the Webmaster : Stephen Scheel**

Our website is slowly getting populated with articles please visit the articles section and check it out. You will also find a "Wanted / For Sale / Swap" Section. If you have a need and are a member in good standing just send an email to [info@hvra.org](mailto:info@hvra.org) and I will post your ad. It can stay up as long as your stay in good standing. Also, please confirm you are receiving email communications from HVRA with reminders for important announcements and club events. If you are not receiving them it is because we do not have a valid email address for you and again please send an email to [info@hvra.org](mailto:info@hvra.org) and request it be updated or the emails may be dumping into your spam fold so check that as well.

**To coincide with the release of this newsletter I will also be reopening our online HVRA survey so anyone that has not had a chance to fill it out can do so.** We are getting some very good data from all of you in regards to how we can make sure the club is offering activities members are interested in. Here is your chance to help set a direction for the club! **Visit [hvra.org](http://hvra.org) and fill out the survey.** If you have already done so thank you very much.

### **40<sup>th</sup> Annual Convention Presentation on "The Founders of Early Radio" Will Be Available on the HVRA Website**

Our 40<sup>th</sup> Annual Convention featured the **Legacy of Radio's Founding**. Jeff Heller gave a tech talk presentation on the **"Four Giants"** who contributed to radio's founding and development both technically and commercially. These giants were **Guglielmo Marconi, Lee de Forest, Edwin Armstrong, and David Sarnoff**. Many of you attended the presentation which included a large slide deck with many photos as well as a "quiz" and answer key. These materials will be posted very soon on our HVRA website. If you did not see the presentation, you are welcome to peruse the materials there. Additionally, a "shout out" to Jack Wisbiski who won the contest following the presentation by answering the most quiz questions correctly. Questions? Contact Jeff Heller, [hellerj1@comcast.net](mailto:hellerj1@comcast.net)

### **Annual Museum Ships Weekend Friday and Saturday June 1 & 2, 2018**

The Annual Museum Ships Weekend is scheduled for Friday evening June 1 (opening at 7:01 pm (00:01Z) to Saturday evening June 2 (closing at 6:59 pm (23:59Z)) at the Battleship Texas located at the Texas State Park site off Battleground Road in Deer Park, TX. As many know, special event amateur radio stations will be operating at many other historically restored ships across the US during those hours. At the Battleship Texas, special event station NA5DV will be in operation during hours that the Park department authorizes (and there are usually overnight operators). All are welcome to come and see the special event station in operation and tour the battleship. Contact Mike Brannan ([mikebrannan@aol.com](mailto:mikebrannan@aol.com)) Joe Peet ([joepeet1@yahoo.com](mailto:joepeet1@yahoo.com)) or Bill Werzner ([werz1943@gmail.com](mailto:werz1943@gmail.com)) if you are interested in operating or attending at the special event ham station.

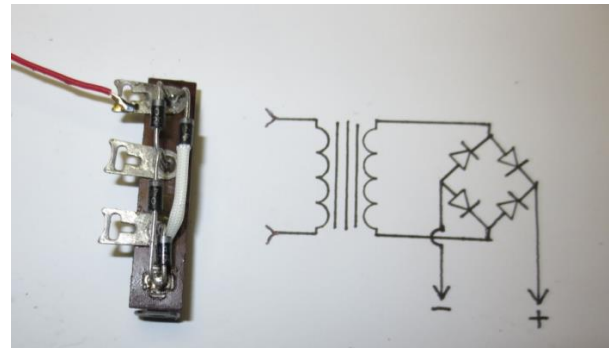
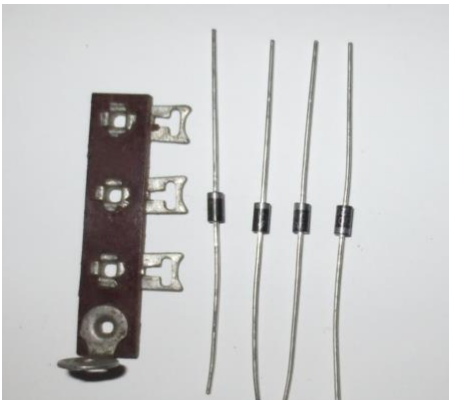
## **Saturday May 12—Buy and Sell at Mike Payne’s Place**

Mike Payne’s Annual Swap Meet & Tail Gate Auction will be held in Alvin, TX on Saturday morning, May 12. Mike will again open the gates to Electro Junk Inc. around 8 AM to his large parking lot for those who will be swapping and selling. Swappers and sellers will have first dibs for parking spots inside the event area as has been the policy in previous events. This is an informal gathering and you can never tell what will show up in the trunks, tailgates, or on the many pallets of fine surplus electronics Mike will have for sale. To get there take Texas Highway 6 or 35 from Houston to Alvin. In Alvin take N. Gordon St. south through downtown, turn right on W. House St., go four streets and turn left on Hill St. Continue two blocks south to 307 W. Dumble St. and you are there (can’t miss it)!

### **HVRA Technical and Restoration Articles**

**The Trouble Shooter Part 1: by Bill Werzner**

#### ***Constructing a Full Wave Rectifier Bridge Using Silicon Diodes***



Have you ever been in a situation where you needed to replace a full wave rectifier bridge in a limited space? This happened recently when I had to rebuild a power supply in a Telefunken table top radio. Things were so compact even after removing the filter capacitor can ( 40 – 40 uF @ 450 V.) and the old cylindrical (silver oxide?) rectifier tube. I decided to share this with some of our newer members who may encounter a problem like this and try to figure out late on a Sunday night how to wire in the diodes. The photo on the left shows a three lug vertical terminal strip and the four 1N4007 (1KV PIV, 1 Amp silicon diodes). The silver or white band marks the positive end. The finished unit along with the diagram is to the right with the red wire going to B+. Then B- (ground) is soldered to the chassis mounting eyelet. Counting from the top, lugs 2 and 3 are for the transformer secondary wire connections as shown in the diagram. Do not use this rectifier design on AC DC non transformer sets with chassis ground for B-. Care to guess why not?

## The Trouble Shooter Part 2: by Bill Werzner

### Demystifying Those Atwater Kent Dog Bone Resistor Color Codes

Here is a handy chart that helps you identify those uniquely marked dog bone resistors commonly found in A-K sets.

GE 3-178 A-K.

ATWATER KENT MFG. CO. RESISTOR DATA

### TUBULAR RESISTORS

(When replacing a tubular resistor, use a resistor of the same identifying color and size)

**1/2 WATT**

Part No.	Color	Resistance	List Price	Part No.	Color	Resistance
5920	Red-yellow	250,000 Ohms	\$ .25	21050	Blue-gray	1,000,000 Ohms
5930	Black-purple	500,000 Ohms	.25	23120	Red-black	20,000 Ohms
5940	Green	2,000,000 Ohms	.25	23130	Red-gray	800,000 Ohms
5950	Maroon	10,000 Ohms	.25	23170	Green-yellow	900,000 Ohms
5960	Gray-yellow	15,000 Ohms	.25	26160	White	40,000 Ohms
5970	Gray	30,000 Ohms	.25	26410	Green-red	3,300 Ohms
5980	Red-blue	100,000 Ohms	.25	28050	Blue-yellow	5,000 Ohms
1040	Black	65,000 Ohms	.25			

**1 WATT**

Part No.	Color	Resistance	List Price	Part No.	Color	Resistance
5285	Gray	30,000 Ohms	\$ .25	19346	Green-red	3,300 Ohms
5544	Yellow	7,500 Ohms	.25	19581	Red-yellow	250,000 Ohms
5545	Maroon	10,000 Ohms	.25	19649	Black-purple	500,000 Ohms
5592	Black	65,000 Ohms	.25	20151	Purple	6,000 Ohms
5801	Black-red	20,000 Ohms	.25	20223	Red-gray	800,000 Ohms
5892	Green	2,000,000 Ohms	.25	21784	Gray-green (superseded by 22211)	
6282	Blue-red	100,000 Ohms	.25	22211	Yellow-gray	15,000 Ohms
6724	White	40,000 Ohms	.25	22407	Black-yellow-red	50,000 Ohms

**1 1/2 WATT**

Part No.	Color	Resistance	List Price	Part No.	Color	Resistance
7210	Maroon	10,000 Ohms	\$ .30	28760	Red-blue	100,000 Ohms
7220	Gray-yellow	15,000 Ohms	.30	28770	Purple	6,000 Ohms
8030	Red-black	20,000 Ohms	.30	29710	Gray	30,000 Ohms
8750	White	40,000 Ohms	.30			

The resistors shown above are of the tubular type, that is designated and illustrated as such. The wattage rating are shown in the illustrations. In order to avoid confusion, by listing the wattage rating of the various tubular resistors upon each wiring diagram and parts layout, such information is omitted and this page furnished in its place.

The various tubular resistors, with the possible exception of those used in the very old receivers, are exactly as shown above and it is a simple matter to determine the wattage rating by comparing the resistor with the illustration shown above. As a matter of fact, there can be no confusion concerning the half watt resistor. As to the difference between the one watt and one and one-half watt unit, the increased diameter of the latter is easily seen. As a matter of fact the one watt unit has pointed caps, whereas the one and one-half watt unit has somewhat blunt cap ends.

The color designations stated upon the wiring diagrams correspond with the colors stated above. Likewise the values stated in the diagrams correspond with the values given above. The flexible and flat resistors are so indicated upon the wiring diagrams and parts layouts. Wattage rating for these units is not available at the time of this writing.

## WHAT IS CIRCUIT Q? by Ron Soyland

Q, or quality factor, has some meaning in radio work, in some cases just as important as amps and volts and ohms. Yet it is not clearly understood by many. Let's examine exactly what Q is and how it can affect the operation of a circuit.

Q is a factor that defines how well a circuit conforms to the theoretically perfect equivalent. A low Q circuit poorly conforms, and a high Q circuit closely conforms to the theoretical ideal.

All components thus have Q, whether it is a resistor, a capacitor, an inductor, or any combination of the three. Even active components such as vacuum tubes have Q but for now we will stick to passive components.

First, we must look at exactly what we measure when we are determining Q.

**RESISTANCE:** That property of a circuit that impedes electric current by converting the current into electromagnetic energy. (heat)

**CAPACITANCE:** That property of a circuit that tends to keep voltage constant.

**INDUCTANCE:** That property of a circuit that tends to keep current constant.

**IMPEDANCE:** That property of a circuit that impedes changing electric current but does not convert it to electromagnetic energy.

The theoretically perfect manifestation of each property would be a component that ONLY had the defined property and had no mixed in parts of the other properties. For example, a capacitance would not have any associated inductance or resistance: it would only manifest capacitance. All real world components and circuits display varying combinations of each of the above properties. Q is simply a measure of how much of the undesired mixed in properties are present.

Each type of component has its own Q, and any combination of components has a separate associated total circuit Q. For example, a resistor will ideally have no inductance or capacitance, but in the real world resistors have significant amounts of each that show up if the frequency is such that these contaminants become significant. The same goes for capacitors and inductors.

So how does Q affect the operation of a circuit? This is determined by the frequency of currents in the circuit. At pure unvarying DC, resistance is the ONLY property that has effect. Thus capacitance and inductance are not considered, as they have zero effect at unvarying DC. The voltage is not changing so capacitance does not have any effect. The current is constant so inductance does not have any effect. However when the current begins to change, immediately capacitance and inductance come into effect. Capacitance tries to keep the voltage associated with the current constant, and inductance tries to keep the current constant. The faster the change in current the more intense are the effects of capacitance and inductance. Thus, at very low frequencies the effects will be relatively small unless the inductance or capacitance is large. At pure unvarying DC the resistance will be the total impedance to current flow in the circuit. As the frequency increases, the impedance to the change in current becomes greater because of the effects of inductance and capacitance. The resistance is no longer the only effect on the current. The capacitance will try to keep the voltage constant



thus impeding the change. The inductance will try to keep the current constant, again impeding change. As the frequency of the change in current increases, the resistance becomes less of the total impedance, and at a certain frequency in any circuit resistance becomes less of an effect than the reactance of the capacitance and the inductance of the circuit.

The change in impedance due to reactance is directly proportional to frequency. Thus the impedance due to reactance will have twice as much effect if the frequency is doubled, etc. As the frequency increases, components may not any more display their original characteristics; the stray contaminating characteristics may overwhelm the native nature of the component. A resistor may look more like an inductor. An inductor may look more like a capacitor. Thus components must be carefully selected for the frequency they will be used at.

In high Q circuits, the resistance will be drastically less of the total impedance than the reactance of the capacitance and inductance. This is good. We don't want waste heat in our circuits.

So, if we have zero resistance does the Q go to infinity? (the simple Q formula predicts this) The answer is no! Even though there is theoretically no power lost in a totally reactive circuit, there is another factor that severely affects circuit Q. This factor is distribution. It is a very poorly understood parameter and is not usually discussed in basic engineering texts.

The theoretically perfect component is considered to be a point source. Thus, a resistor will be a point with two terminals that have zero displacement in space. A capacitor, the same. An inductor, the same. Note that this concept is mathematical only, it is not realizable in reality. Thus, all components will diverge from theoretical in the real world, since there must be some spacing between the two terminals to avoid a short. Also, the component will have some volume. A capacitor has plates with surface area. That diverges from a point source, and at some frequency that surface area will severely affect the characteristics of the capacitor. An inductor will have length. Thus there will be capacitance associated with different parts of the length. As frequency increases, this distributed capacitance will severely affect the inductor characteristics. So, even if the capacitor or inductor has zero resistance (made of superconductor material) it will have undesirable effects of the unwanted mixed in parameter. The Q will be less than perfect, and cannot in any practical way even remotely approach infinity.

The effects of distribution are the main reason a tuned circuit has a certain limiting Q even if it is made of superconductor material. The resistance of the circuit will be so small that it will give an unrealistic Q in the usual Q equation, and yet the actual Q will be far below what is calculated. This divergence is caused by the distributed nature of the parameters of the circuit. The inductor must not have any distributed capacitance and the capacitance must not have any distributed inductance. To match the Q equation they must both be point sources. This is not practical in the real world of course so the Q will always be significantly lower than the simple Q formula using only resistance and reactance predicts. This is why using different wire sizes, litz wire, silver wire, and any other "trick" to get higher Q hits a certain limiting point where the nature of the wire no longer is the major effect in determining the circuit Q. The effects of distribution now far outweigh the effects of the conductor itself.

Understanding the above principles you can now make a better judgment when making up your tuned circuits. It may be that resistance itself is not the limiting factor for Q in your tuned circuit. Changes to the design to minimize distribution will then be the factor to improve on.

## Hallicrafters Radio Co.: “RIP” by Reid Shipp

Hallicrafters is a venerable name brand for many radio collectors, but its history was a bit rocky at times. Bill Halligan was a Chicagoan who wanted to manufacture radios. However, RCA held almost all of the key radio patents in the late 1920's and early 1930's, and Halligan could not obtain a license from this monopoly. In 1933 he obtained radio licenses when the Silver-Marshall Co. went bankrupt. But things did not work out well for Halligan despite his ability to make great some iconic radios. In 1936, Hallicrafters merged with Echophone Radio Corp. and they jointly operated as Hallicrafters.

The first Hallicrafters radio produced in fair quantities was the SX-9 Super Skyrider. Several other successful Skyrider models followed in the 1930's. Halligan's company also designed several amateur radio transmitters designated HT-1 through HT-14. During WWII, Hallicrafters built the BC-610 (a military version of the HT-4) and the SX-28 receiver, both were used in the SCR-299 communications unit. Hallicrafters equipment was used by all branches of the military as well as with US allies during the war.

After the war, Hallicrafters produced many radios including the S-38 line of communications receivers—the first radio for many aspiring hams and SWL'ers. The company also made plastic cabinet AM and AM/FM radios and televisions as it tried to expand into the growing consumer market, but overall these operations were not very successful. Still, company employed 2500 people in 1952 at its plants in Chicago, Illinois.

In the following years, Hallicrafters manufactured many general coverage shortwave receivers, amateur band receivers, amateur transmitters and transceivers for CW, AM and SSB. Some of its most well-known models in addition to the S-38 line are the S-40B, SX-110, HT-42, HT-44, SR-150 and many others.

The company tried to make the move into the expanding two-way commercial radio, citizen band and military equipment markets. But in 1988, it declared bankruptcy. Another US radio company was gone. Long live the memories of Hallicrafters through us vintage collectors.



SX-28 Skyrider



BC-669B (SCR-543 and HT-14)



The Famous S-38 line (S-38B here)

## The Saga of the Murphy Radio

by Tom Taylor

On a road trip back from the recent Orange Texas hamfest a pair of my friends encouraged a stop at two antique malls just off I-10. Although I initially said I would sit in the truck to relish the recent buys at both the hamfest AND the first antique mall, they encouraged me to get out and walk with them while at this second mall. Not altogether sure how it happened other than what might look to an outsider like kicking dirt in on an open grave, I wound up with still another purchase AND it was a 220 VAC English console made by Murphy Radio LTD that



was produced in 1935. That's right, it had at least three to five things going against it from the outset despite the fact it was in fine condition. Well, on arrival at its new home I gave it a step down transformer wired backwards that had been saved in its original box for no less than 25 years just to find that the loose pilot lamp was in series with all other filaments. After replacing all the usual parts while checking cathode voltages for reasonable tube health I was initially reassured by the voice of Rush Limbaugh. Feeling some return of normal breathing I proceeded on to spray tube sockets, oil the main tuning capacitor and pot shafts, check alignment at its 117Kc IF etc. while being rewarded with a progressive stumbling

drop in station strength and quantity until it was virtually silent except the audio section. Fearing all manner of unknowns about "foreign" parts, I started probing about to find the oscillator was not working where once it had worked. Evidence of its demise comes when you hear noise in the speaker but it does not change at all when you tune about and the fact that brushing points with a screw driver like grid caps, coils and the antenna itself always resulted in a static noise. [Keeping one hand behind me of course]. Coil continuity was good all over and tube voltages were all reasonable leaving me with few other parts to investigate. At some point, as I recall, providence pointed my nose to the main tuning capacitor where I started checking continuity to ground for its frame and its rotor. While the frame to chassis ground might be around 7 ohms that rotor to frame resistance was found anywhere from about 120 ohms to 2 additional ohms based on position of the capacitor. There is NO WAY an oscillator will stand for that. You can forget ball bearings and grounding clips along the rotor for this radio, there was only a copper clam shelled capture clip at each end to hold that rotor in place and provide the ground path to the frame which still had an imperfect connection to its mounting base, the chassis. Realizing that I could solder to copper I provided the needed high frequency shunt to that chassis with a short length of 3/16 braid. Botta Bing Botta Bang! Supplied that power and back it came with stations that stayed everywhere. Somewhere in ones travels instinct and providence or let's say providence and instinct become big influences in one's life.

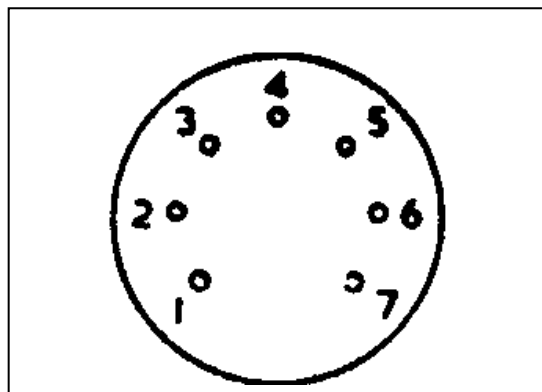
## Solder Bits (short articles and repair notes—contributions welcome!)

**Submitted by Tom Taylor:** Several times I have run across issues with a black plastic tube socket leaking or even smoking between pins. When you have been all about an area replacing and measuring with no success and there is a black tube socket involved, investigate the following. Pull the tube out and while the set is powered go to the plate pin and later the screen grid pin where high voltage is found and see if there is ANY voltage drop across their resistor supplying B+ from the source. If there is no load from a tube there better not be ANY voltage across its supply resistor. On the screen where there is most often a bypass capacitor you have that additional part to consider but there better be as much voltage on one side of those supply resistors as on the other if the tube is on the bench.  $VR = 0$  if there is no "I" in the "IR" part of the equation. Look for example at the base diagram of a 6AU6 shown to the right. Notice that the pin next to the plate is one side of the filament which could be grounded in many circuits. Further, you see that on one side of the screen there is a pin for the cathode which could be grounded in many circuits. The path to ground then across 50+ year old rosin and dirt coated phenolic is less than 1/8 of an inch from the full B+.



With a 45 deg separation between pins 1 - 7 on the 3/8 inch circle the pin separation is closer to 0.13 inch, almost 1/8 inch

Recently I was driven to a Hallicrafters HQ180A receiver plagued with static that sounded in the speaker like listening to bacon frying through a cardboard tube. With a scope probe on the screen grid pin I could see the random voltage twitching with the tube laying on the bench. Lifting one side of the capacitor there made no difference. Replacing that socket made the difference. If that tube is near the front end you can expect every stage thereafter to be amplifying it so turn that scope channel gain all the way up as you get close to the antenna.



Similarly, replacing the octal 1232 (AKA 7G7) tube socket (base diagram shown above) in a Zenith restored all the front end gain expected of that console radio. BTW, American Phenolic was the manufacturer as seen with a magnifying glass.

**Submitted by Tom Taylor:** While it is true you don't see it very often, I ran across still another mica capacitor this time from Aerovox that was a problem, or lets say in this case shorted. If there is one thing about these old radios, anything can go bad so arm yourself with good test equipment and jump in the water.

In this case I looked everywhere in a simple circuit that looked as if resistors and capacitors were \$5 bills at the time of production. I was literally getting down to considering building then shaking a necklace of chicken bones about this one when I found the culprit.



## **REPORT ON THE 2018 ANNUAL CONVENTION (HVRA's 40<sup>th</sup> ANNIVERSARY)** **By Jerry Sirkin, HVRA Vice President**

It is always a pleasure to write of a successful convention. Success can be measured in many ways: turn-out, a good time for attendees, great choices for buyers and, finally, a profit for HVRA. Well, if you attended the February event, you know that we hit home runs on all the above. (Astros got nothing on HVRA!!).

Stats: 601 lots of which about 340 were from 7 estates. We had 29 warm bodied sellers on Friday and 50 buyers...20 members bought and sold. Saturday saw 26 warm bodied sellers and again 50 buyers; 14 members bought and sold. Total registrants were 100, but only 85 attended. The total auction sales grossed \$25,300 and HVRA's net sales were \$7,035. After all expenses, HVRA realized a \$3500 profit from this event.

HVRA members enjoyed the merits of 3 auctions, a fantastic tech talk, snacks, cash concession meals, swap meet tables, the contest room and exhibits, a 40<sup>th</sup> anniversary room and a banquet dinner with a great guest speaker. Our success was also attributable to the many volunteers working before and during the convention. Jeff Heller put together a great radio contest and worked tirelessly preparing a well-received tech talk addressing the early founders of radio. Along with Gilbert Hedge, David Moore and Steve and Cindy Scheel we put together a 40<sup>th</sup> anniversary room with reflections of the past, a recognition of HVRA entrepreneurs of the present and a look into where members feel HVRA should head in the future. A big thanks to Steve Scheel for trucking estate items from storage to the Marriott and to Konrad Werzner, David Herlinger, Stephen Truch, John Derry, Johnny Knight and several others who helped load and unload the truck late Thursday. Reid Shipp and his merry men of auction handlers kept a steady pace set by auctioneer Jim Sargent over the two days. As mentioned earlier by Bill Werzner, Jim stepped in at the last minute and, for about 10 hours of auctioneering, maintained an entertaining, even toned delivery. Thanks again to Jim, Reid, Konrad, Mike Slovan, John Given, John Derry,

Jimmy Stewart, Walter Mosely, Steve Scheel, Erik Stehl, David Herlinger and the others who assisted during the auction. Our historian Stephen Pena and his wife, Magdalena, kept busy taking photos of all the activities throughout the two days. I hope you have time to look at the photos presented on the HVRA website. Another big thanks to Jim Sargent for his Banquet dinner presentation. During the banquet, HVRA hosted the founder and first President, Frank Cooper. In appreciation of their 40 years of service, Frank Cooper and Bill Werzner were presented service awards. Each year this Convention is overseen by a group of volunteers welcoming registrants at the front table and supporting the financial responsibilities of our Treasurer, Ric Slater and me. Thanks to Gail Sirkin, Lois Janssen, Magdalena Pena and Tom Taylor for their help. A big thanks to our Treasurer Ric Slater for his dedication to seeing that all bids and sales were properly recorded and for maintaining a smooth check-out process. As with Jim Sargent, Ric also spent continuous hours recording all auction bids. I apologize to any volunteers not mentioned above and I thank you for your help.

Among the top 25 auctioned items were: Machined Steam Engines (\$875, \$475 and \$180); AK Radios: 10A BB for \$675, 10C BB for \$530, AK Lamp for \$180, AK 735 for \$210, AK Lighted Sign for \$160; Collins Receiver (\$350), Transmitter (\$390) and Power Supply (\$220); ca1857 English Sewing Machine (\$500); a Glass covered Breadboard (\$475); Many Zeniths: #3-R for \$550, #4-R for \$250, #715 for \$200, Shutterdial Console for \$200; TV-7 Tube Tester (\$200); Groups of 199 and 201A type tubes ranging from \$100 to \$150 per group; ca1931 Scott Console (\$260); Victor Phonograph (\$300); Truetone Radio (\$270); Silvertone Radio (\$220); Maritime Ship Receiver (\$200). I will attempt to list a more complete list on the HVRA website. Thanks again to all attendees, sellers, bidders and helper. See you February, 2019.

## **Do You Have Post Auction Pleasure or Buyer's Remorse?      By Dave Herlinger**

It's Saturday morning at the eagerly awaited HVRA Annual Show and Auction. It's the 40<sup>th</sup> anniversary of the club's founding. You've spent a couple of hours examining the cornucopia of vintage electrical devices. Some are beautiful, some need some restoration, and some are going to be passed over. You drool over some, puzzle over others, and turn your judgmental nose up at a few. You've written up your wish list on the back of your bidder's card. You take your seat, the P.A. is tested, the preliminary remarks are over and what turns out to be a marathon six-hour auction begins.

The auctioneer promised no breaks, so you tried not to drink too much coffee. Sooner or later you will need to run to the restroom, so you peek in the room where the unsold items reside, seeing how far down the tables your prize sits. You decide to make the dash, quick as you can, hoping you don't run into anyone who wants to talk. After relief comes, you hustle back to the auction, only to panic when you sit down and realize you don't have your phone! Dang it! You run back down the carpeted hallway and back to the men's room, with a fear you never knew before you got your first smartphone. Thank goodness, there it is! Like a scene from an old Keystone Cops film, you again run back on 69-year-old creaking knees, hoping that the auctioneer hasn't knocked down your coveted prize just yet.

Safely back in earshot of the auctioneer, breathing heavily, gambling with yet another cup of coffee to silence your yawns (the elderly gent at the end of your row is already snoozing), you await your date with destiny. The hours tick off, the items come and go, bids are made fast and furiously, and you try not to be brusque when fellow club members want to chat. You are deathly afraid that you will miss that one item you want so badly. After seeing some stratospheric bids, you consider calling your wife to ask if you can get a second mortgage before your "holy grail" is held aloft by the handlers. You may have chosen to sit in front to get a better view, or perhaps because it unnerves you to see who and how many

are bidding against you. Others sit or stand at the rear or on the flanks to better scope out the competition's resolve. Some really nice items go so cheaply you are dismayed, as you recall how you paid three times as much for the same set 35 years ago. Moments later, you are astounded at how rapidly the auctioneer can call, recognize, acknowledge and raise the bid, before you can process what is happening. In less than a minute, your whole reason for being there today, that one item more precious to you than a Hobbit's gold ring, that which you desired above all else, has been hopelessly raised beyond your reach! \$900 for the horizontal steam engine model! Nooooooooooooo!!! As time passes, you see several more items on your list far exceed your financial constraints, and you see them go to someone else. You can't cry in your beer, but you could use the empty coffee cup.

Stunned, you try to recover. You console yourself. Ok, so you lost that one, that one (and that one). But you don't give up. It's not your first rodeo. You've been through this scenario in so many auctions before. It ain't over until the last item is gaveled down. You can still hope. You can still dream. There are still three more goodies on your wish list. Stay strong, stay focused and don't get carried away. Remember your limit. You're not going to mortgage the house. The card is in your ready hand, you've got your poker face on, but the sweat on your brow in the over-airconditioned chill might give you away. You are in control. You've set your limit and you are gonna stick by it by golly! Yeah-----Sure you are.

At last, when your butt is numb from sitting for six hours, the auction is over. You can make that emergency run to the rest room while they are printing up the tally. After your account is settled, and you and others have squeezed and crammed acquisitions into vehicles in the growing darkness and the pouring rain, you head back into the hotel. Regardless of the damage done to your checking account, it's time to relax. You enjoy the evening hobnobbing around the banquet tables with your fellow and lady wizards. You catch up with folks you have known for years but haven't seen since the last show and auction. You look around the room and wonder: do I look that old? Have I really been a member for almost the entire forty years? You suddenly realize that gray-bearded fellow that you saw in the bathroom mirror this morning was you.

After a satisfying meal and genial conversation, the program begins. Honors are bestowed on the those who have contributed so much to the success of the club. Images of winning contest entries are shown. The guest speaker entertains and enlightens us all. Then, until next year, the banquet hall empties. Time to say goodbyes. You feel good. It was a fun day. You are glad you came. You laughed and chuckled with folks who understand why we do what we do. You reminisced about times past, and remembered those who have gone "into the ether". You marveled at the patience and skill of those who create priceless replicas of a technology from a century ago or beautiful one-of-a-kind hand-built masterpieces. You saw things that you never knew had been manufactured. Maybe you came away with an idea for a contest entry for next year. You may have commiserated with those who had losses to Harvey, or met some nice folks you never knew before. You may have gotten some advice from others having more knowledge than your own, or shared some of your experience with a novice collector.

You pull into the driveway at 11 pm, too exhausted to pull your prizes out of the car in the cold drizzle, and you hit the hay. The next morning comes the reckoning and the clarity a good night's sleep brings. What the heck did I buy? Why on earth did I buy it?

You stumble out in the cold, and carry your treasures to the workbench for evaluation. At that point, what do you experience? Is it satisfaction, pleasure, excitement and joy (cue the happy flute music)? Is it a new project, something you always wanted (birds singing)? OR..... (cue the heavy and ominous music) is it remorse? Why did I get carried away? What was I thinking? Why didn't I see that missing component? How come I didn't notice that crack? I've already got one of those, why did I buy another?

Sometimes we buy things because we spent time on the internet (during the auction!), hoping to acquire items cheap enough to resell for profit. But mostly we buy because we want another toy to play with or simply put on a shelf to admire. Some buy at a high price in ignorance of a true value and others buy simply because they get caught up in a bidding frenzy. It can be a heady experience, after all. The auctioneer encourages the faint of heart with phrases like “He won’t bid again!”, or “It’s worth so much more than that!” and “We won’t see another like that!”.

We know how it goes. Sometimes we get what we hoped for and sometimes we are disappointed. Pleasure or remorse? Regardless of the outcome, for some strange reason we keep doing it over and over. I am reminded of what cartoonist Walt Kelly’s character Pogo once said “*We have seen the enemy, and he is us.*”. See you next year!

## **HVRA 2018 Convention Contest Results--Congratulations to our Winners and Thanks to our Contestants by Jeff Heller, HVRA Grid Leak Editor and Convention Contest Chairman**

There were 42 entries in the 2018 HVRA 40<sup>th</sup> Annual Convention Contest. HVRA offered 19 different Contest categories and first and second place was awarded in all categories. Our major awards include Best Restoration, Best Vintage Equipment and Best Artifacts and Collections as well Best of Show and Best Exhibitor voted upon only by contest exhibitors. Major award winners received both ribbons and a wooden plaque to commemorate their success.

Our congratulations to these winners but more importantly, to all of the contestants who took the time to bring equipment for display. Our Contest and its display of vintage radio and related equipment is an important feature of the Annual Convention and it provides education about our hobby as well as the chance for recognition for those who entered displays in the Contest. The Contest is successful because we have a broad cross section of items from our members and the Contest attendees for display. The Contest winners were:

1. Wireless/Spark Equipment—No Entries
2. Crystal Receivers—Tom Burgess (Jeweler’s Wireless Receiver)
3. 1920’s Battery Receivers—Gilbert Hedge (1929 Tom Thumb Portable)
4. Cathedrals, Tombstones & Consoles—Carter Sanford (Zenith Spinet Console)
5. Table Receivers-Wood —John Schmitt (Zenith 5K037 Battery Set)
6. Table Radios-Plastic—No entries
7. Transistor Radios—Jeff Heller (Zenith Trans-Oceanic Model B600L Leather)
8. 1980’s+ Electronic Equipment— Stephen Scheel (Sony ICF-6800W Portable SW radio)
9. Phonographs, Speakers and Reproducers—Ray Richardson (Peerless Headphone Speaker)
10. Miscellaneous Vintage Electronics—George Wilder (Plug-in IF Amp for TV)
11. Kit Electronics—Tom Burgess (Air Champ Crystal Set)
12. HiFi Equipment—Mike Slovan (Homebrew Loctal Tube Amplifier)
13. Amateur Radio—Reid Shipp (Kenwood TS-830S Transceiver)
14. Military Radios and Equipment—Mike Langston (USN RAL-7 Regen Receiver)
15. Replicas and Vintage Style Creations—Ray Richardson (Six Homebuilt Replica Radios)
16. Ugly Radios—John Given (Shop Project Mystery Set)
17. Foreign Radios—No Entries



18. Convention Theme: Radios and Electronic Products Associated with the Big Four Founders of Radios—Tom Burgess (De Forest Syntonizer Electrolytic Receiver))
19. Open Display—Tom Burgess (1922 Western Electric 279A Transmitter Tube)

Contest Awards: **Best of Show:** 1<sup>st</sup> Place, **Mike Langston** (USN RAL-7 Regen Receiver); 2<sup>nd</sup> Place **Ray Richardson** (Six Homebuilt Replica Radios).

**Best Restoration** **Mike Langston** (USN RAL-7 Regen Receiver).

**Best Vintage Equipment** **Gilbert Hedge** (1929 Tom Thumb Portable Radio).

**Best Vintage Artifacts & Collections** **Steve Scheel** (Homebuilt Battery Set from a Collection of Parts).

**Exhibitor’s Choice** **Bernard Sampson** (Space Age Collection).

**Best New Contestant** **Gino Candida** (1984 Tandy Personal Computer).



1922 Western Electric 279A Transmitting Tube



USN RAL-7 Regen Receiver: Best of Show and Best Restoration

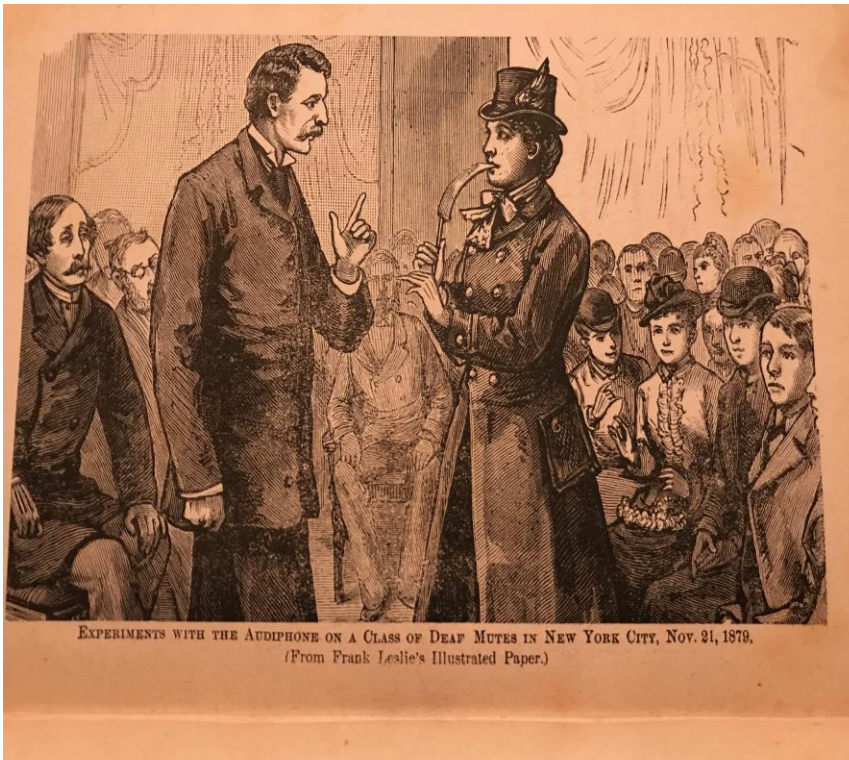
## On The Lighter Side of Radio

*The Grid Leak welcomes your submissions that highlight the lighter side of vintage radio, from cartoons to historical and vintage articles and related materials.*

### **The Audiophone—Every Nice Home Should Have One by Steven Pena, HVRA Historian**

Recently, I was perusing one of my old books (a series of lectures and debates of Col. Robert Ingersoll) and found that the back pages were all devoted to a recent invention. The book was published in 1879, the year that Mr. R.S. Rhodes of Chicago had announced his “Audiophone.” The Audiophone was a device that allowed the deaf to hear, it was claimed, and that made it possible for a dumb person to learn to speak. I was amazed to read of this, as it seemed to be a rather remarkable set of claims.

The Audiphone worked like this: a fan-shaped diaphragm is made to curve to the shape, roughly, of a banana. On one end of the diaphragm is a handle; this handle allows one to press the top of the diaphragm to the upper teeth. The vibrations produced by the sound waves striking the diaphragm are conveyed to the upper teeth and hence the auditory nerve. We are told that the audiphone “gathers the faintest sound and conveys them... to the brain.” Even those deaf persons who have false teeth will begin to hear. Those who have never spoken may begin to speak. Amazing claims these, and all concerning a little non-electrical device with no moving parts (except insofar as it vibrates).



I have long been interested in forgotten and “overlooked” technologies. That is why the Audiphone interests me. It intrigues me to think how long this little instrument was used and how widespread its use became. Clearly it did not become a dominant technology, which, given the amazing claims that accompanied it, prompt the obvious question as to whether it really worked. The pages at the back of my book have numerous glowing accounts, not just from individuals, but also from major newspapers, such as the Chicago Tribune and the New York Herald. (It was tested also at the St. Joseph’s Institute in NYC, the Principle of the Institute giving an account of the results.)

The Audiphone was patented, “throughout the civilized world.” The conversational model sold for \$10; the Double Audiphone, for deaf-mutes, was \$15, and “ornamental” models ran up to \$50.

Rhodes died in 1902 when he was struck by a train..... apparently he didn’t hear it.

Accompanying pictures are from the book.

## More Pictures from the 40<sup>th</sup> Annual Convention

□



Jeff Heller giving the Convention Tech Talk on the Big Four Founders of Radio: Marconi, de Forest, Armstrong and Sarnoff



Gilbert Hedge, 1929 Tom Thumb Portable Radio, Best Vintage Equipment



Ray Richardson, Six Homebuilt Replica Radios—Second Place, Best of Show



John Given, Best Ugly Radio—Mystery Shop Project



Air Champ Crystal Set, First Place in the Kit Radio Category



## More Radio Clubs

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

**Antique Radio Club of Illinois**, [www.clubinfo@vintage-radios.org](mailto:www.clubinfo@vintage-radios.org)

**Collins Radio Association (CRA)**. David Knepper, PO Box 34, Sidman, PA 15955. No dues. [www.collinsra.com](http://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, [membership@michiganantiqueradio.org](mailto:membership@michiganantiqueradio.org). Pub: The Michigan Antique Radio Chronicle, quarterly. Dues: \$20. Annual Extravaganza and other quarterly meets. [www.michiganantiqueradio.org](http://www.michiganantiqueradio.org).

**New Mexico Radio Collectors Club (NMRCC)**. Charles Burch, 39 Chaco Loop, Sandia Park, NM 87047. Pub: *New Mexico Radio Collectors Club Newsletter*, quarterly. Dues: \$12. Annual Sale & Show and monthly meetings. <http://members.aol.com/NMRCC.org>

**Texas Antique Radio Club**, Ed Engelken, Schertz, TX (830)899-3864, [www.EdEngel@gvtc.com](mailto:www.EdEngel@gvtc.com)

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

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

## Local Sources for Radio and Electronic Parts

**EPO (Electronic Parts Outlet)**, 3753 Fondren Rd., Houston 77063 (713) 784-0140 [www.epohouston.com](http://www.epohouston.com)

**ACE Electronics**, 3210 Antoine Dr., Houston 77092 (713) 688-8114 [www.ace4parts.com](http://www.ace4parts.com)

**Vintage Sounds**, 10910 Old Katy Rd., 77043. Tubes, parts, records, etc. open Fri. Sat. & Sun.

**Allen's Speaker Repair**, 919 W. 19<sup>th</sup> St. Houston (713) 862-2747

**WJOE Radio, LLC** Radio parts and accessories [www.wjoe.com](http://www.wjoe.com)

## Buy, Sell, Trade, & Services Offered

**Vintage Sounds** Radio & Phonograph Sales & Repair including vintage auto radios, battery sets, foreign sets, etc. We also sell and service vintage telephones and telegraph equipment also parts, new & used tubes, transformers, schematics, books, phonograph parts & needles, records, etc. **Vintage Sounds** celebrating our 33<sup>rd</sup> year in business. Open Fri., Sat, & Sunday from 10 until 6 PM. Now located in The Market Place Antiques, 10910 Old Katy Road, in Houston (Located about two blocks west of the Athena Gun Club on the westbound I-10 feeder road). 10% member discount on radio items. (713) 468-4911  
[www.vintagesounds.com](http://www.vintagesounds.com)

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

**Sargent Auction Service:** [www.sargentauction.com](http://www.sargentauction.com), [Jims@sargentauction.com](mailto:Jims@sargentauction.com) Jim Sargent, WA5QBR, Auctioneer, TX license 16135 | 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. [wwwtomgranger@mac.com](mailto:wwwtomgranger@mac.com)

**Escutcheons For Sale Tom Taylor** has an extensive collection of escutcheons for sale. Nearly a dozen each Philco and Zenith PLUS Air King, Airline, Columbia, Courier, Glorytone, Majestic, Pacific, RCA, Silvertone, Stewart Warner, Traveler, Westinghouse etc, several with the glass. Tom Taylor [IHCRally@Yahoo.com](mailto:IHCRally@Yahoo.com)

## Other Radio Related Activities

**Texas Broadcast Museum:** [www.txmbc.org](http://www.txmbc.org) 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).

**Eddington Family Museum of Atwater-Kent Radios:** Jimmy Eddington, long-time collector and 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](http://www.atwaterkentsrus.com) If you would like to visit, please contact Jimmy in advance, 337-476-4328 or [atwaterkentsrus@gmail.com](mailto:atwaterkentsrus@gmail.com)

## HVRA Shirts Are Now for Sale

Introduced during the 2018 Convention with same logo and color as the new HVRA hats, HVRA VP Jerry Sirkin is ready to take orders for this new short sleeve, navy blue, 3 button polo shirt. But first he needs to get an interest level from our members. No commitment right now. Just contact Jerry if you are interested and he will research the best price. Jerry needs your contact information, the size (S, M, L, XL, XXL, XXXL), if you prefer a pocket, and if you prefer 100% cotton or a 50/50 polyester/cotton mix, and quantity. HVRA's goal is to keep the price at or below \$20 per shirt (plus sales tax). The stitched logo is priced on a volume basis, so the more shirts he can supply to our designer, the cheaper each completed shirt. Once Jerry gets your responses, finds the best price for good quality shirts and the volume discounted stitching cost, he will then contact you for a commitment. Please respond prior to April 30<sup>th</sup> to Jerry Sirkin at 281-844-4124 or [gsirkin@aol.com](mailto:gsirkin@aol.com)

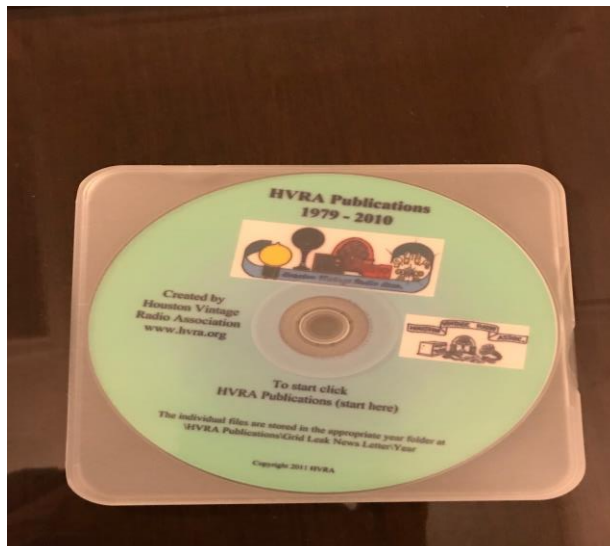


## HVRA Items for Sale

In case you are not aware, HVRA has a number of items for sale. Have you seen our latest hat? Be stylish and wear the HVRA logo around town in your new hat! Our new hat is on the left while our more recent vintage hat is on the right. We have both hats with the new hat priced at \$15.00 and the older hat priced at \$10.00.



Also, we still have copies available of our special club CD. This was compiled several years ago by Gilbert Hedge and contains numerous articles from our Grid Leak publication 1979-2010. It is also available for \$10.00 and is a great resource guide for troubleshooters of all experience levels. You can obtain these items from our club Historian, Steven Pena, [penas@stthom.edu](mailto:penas@stthom.edu)



## Welcome to New and Returning HVRA Members

### HVRA welcomes back old members:

Jimmy Edington Silsbee, Texas

Ray Richardson Kountze, Texas

### HVRA welcomes the following new members:

Scott Austin Longview, Texas

Christina Cantu Houston, Texas

Ron Carroll Loti, Texas

Bob Connor Houston, Texas

Robert Dushek The Woodlands, Texas

Ronald Gregory New Waverly, Texas

Logan Harty Houston, Texas

Rose Herrera Pearland, Texas

Edward Mustoe Pflugerville, Texas

Chris Noynaert College Station, Texas

Jack Wisbiski League City, Texas



Conrad Werzner Accepts an Award given to Bill Werzner recognizing his 40 years of service to HVRA



Unique Peerless Horn Speakers displayed by Ray Richardson

## ***The Grid Leak***

*April/May/June 2018*

**Website – [www.hvra.org](http://www.hvra.org)**

**From The President**

**Upcoming Club events calendar and club news**

**Member Technical and Troubleshooting Articles**

**Be sure to check the article inside about the Club's new membership renewal deadlines. Ignore any expiration date shown on your mailing label!**