



The Grid Leak

July – August – Sept. 2016

www.hvra.org



July 16, 2016

HVRA Summer Mega-Auction

Doyle Convention Center

From The President

Bill Werzner,
HVRA President

At the bench



As an opening remark, I hope you and your families here in Texas have survived the onslaught of heavy rains and flooding. We were fortunate here in the southwest area of Houston in that we remained high and dry. As I sit here in front of my computer typing my input for this newsletter, the rain has stopped and the sun is beginning to peek through the clouds. For a while I was concerned that a lot of us down here on the Gulf Coast were going devolve “evolution in reverse” to the Devonian period and grow gills.

With that said, let’s move on to HVRA business. With the third quarter newsletter now in print, looking back, May was a fun month despite having to cancel our regular meeting at the Bayland Center due to the Memorial Day weekend. Mike Payne’s annual swap meet in Alvin on May 14 was given high remarks by those who attended. Unfortunately, I had to miss Mike’s event due to car problems – long story, but look forward to next year anyway. Two weeks later, HVRA Treasurer, Tom Taylor and wife Dianna secured reservations for our first ever spring picnic with a catered barbecue and swap meet in Friendswood at Frankie Carter Park. We had a fun time swapping radios and parts, and we enjoyed a fantastic barbecue lunch with all the trimmings. No one went home hungry! Many thanks to Tom and Dianna for all the time and work they invested in this new endeavor. Let’s plan another picnic next year, but not on Memorial Day weekend!!

Looking ahead, we will resume regular monthly meetings June thru September with monthly programs, auctions, and basic electronics classes (time permitting). **Mark your calendar for our annual summer mega auction July 16 at the Doyle Convention Center in Texas City.** In September, HVRA will once again participate in Houston Vintage’s weekend extravaganza at the Hobby Airport Museum Terminal September 16 & 17. We have a 10 X 10 area reserved for exhibits and sales just as we have done these last three years.

I also want to take this opportunity to thank Derek Ross for all the work he has done manning our web site and being newsletter editor at the same time. Kudos for jobs well done! I know others continue to invest time and effort in making HVRA a fun and dynamic organization, your names would fill the page. What can I say but many thanks and let’s keep up the effort! I also welcome the new Grid Leak editor, Jeff Heller and Steve Scheel, the new Webmaster. Thanks for volunteering.

Before I close, there is one more important item – the yearly election of officers will be September 24. Here is your chance to accept a nomination, and maybe become a member of the Board of Directors.

HVRA Officers

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

Vice President: Jerry Sirkin, 281-844-4124, gsirkin@aol.com

Treasurer: Tom Taylor, 281-996-5835 ihcrally@yahoo.com

Secretary: Mike Monsour, ACOTX, 832-829-2227 msircg@gmail.com

Historian: Richard T. Slater, 832-977-6111 richard.t.slater@nasa.gov

At Large # 1: Reid Shipp, WA5ARI, 281-943-9877

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: June – September, 2016

Tuesday, June 14, 2016 Monthly Board of Directors Meeting 6:30 PM, Bayland Park Community Center Library Room, 6400 Bissonnet, Pizza served!

Saturday, June 25, 2016 Monthly meeting at Bayland Park Community Center, 6400 Bissonnet 9:00 AM, Program & auction, Coffee, juice, and snacks. Electronics class: AM signal generator troubleshooting.

Tuesday, July 12, 2016 Monthly Board of Directors Meeting 6:30 PM, Bayland Park Community Center Library Room, 6400 Bissonnet, Pizza served as always.

Saturday, July 16, 2016 Annual HVRA Summer Mega Auction, Doyle Convention Center, 2010 5th. Ave. N, Texas City, TX. 77590. Watch hvra.org web site for auction information. Auction starts at 12 noon. Auction set up area opens at 8:00 AM. HVRA members can enter the auction area only without charge. However we strongly encourage you to pay the \$5.00 registration fee to enter the adjoining Tidelands Amateur Radio Society sale and swap meet areal. A \$2.00 registration fee is required for all Non-HVRA members who wish to attend the HVRA auction. Food and drinks available on site.

Saturday, July 23, 2016 Monthly meeting at Bayland Park Community Center, 6400 Bissonnet 9:00 AM, Program & auction, Coffee, juice, and snacks. Electronics class: Transformer power supplies.

Tuesday, Aug. 9, 2016 Monthly Board of Directors Meeting 6:30 PM, Bayland Park Community Center Library Room, 6400 Bissonnet, Pizza served as always.

Saturday, Aug. 27, 2016 Monthly meeting at Bayland Park Community Center, 6400 Bissonnet 9:00 AM, Program & auction, Coffee, juice, and snacks. Electronics class: AC/DC output stage problems.

Tuesday, Sept. 13, 2016 Monthly Board of Directors Meeting 6:30 PM, Bayland Park Community Center Library Room, 6400 Bissonnet, Houston. Pizza served as always.

Friday & Saturday, Sept. 16 & 17 Fourth annual Vintage Houston Expo. 1940 Houston Hobby Airport Terminal Museum, 8325 Travelair St., Houston 77061.

Saturday, Sept. 24, 2016 Meeting at Bayland Park Community Center, 6400 Bissonnet 9:00 AM, Election, Program & auction, Coffee, juice, and snacks. Electronics class: AC/DC detector & AVC problems.

Tuesday, Oct. 11, 2016 Monthly Board of Directors Meeting 6:30 PM, Bayland Park Community Center Library Room, 6400 Bissonnet, Pizza served as always.

Saturday, Oct. 22, 2016 Monthly meeting at Bayland Park Community Center, 6400 Bissonnet 9:00 AM, Program & auction, Coffee, juice, and snacks. Electronics class: AC/DC output stage problems.

May 27: HVRA Picnic at Frankie Carter Randolph Park

On Saturday May 28, HVRA was unable to hold our normal monthly meeting at the Bayland Community Center. Thanks to some great planning by Tom Taylor and Lance Borden, we were able to hold a picnic and silent auction at Frankie Carter Randolph Park in Friendswood. Although was the Saturday of Memorial Day weekend, we still had a good turnout of HVRA members and family guests who enjoyed some barbecue and friendly banter on a beautiful day in the park. The silent auction worked very well and about 25 items were sold during the auction. We hope to schedule another picnic outing like this but not on a holiday weekend and likely during a month when the temps are a bit cooler.



Gilbert Hedge enjoys some fine barbecue!!

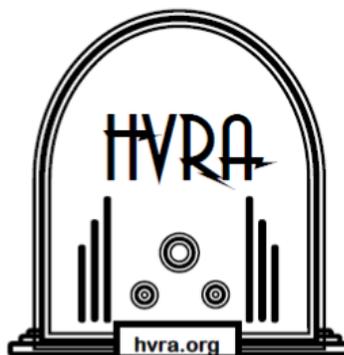


Texas City Mega Auction: Saturday July 16



HVRA will hold its Third Annual Summer Mega Auction on **July 16, at the Texas City Hamfest sponsored by the Tidelands Amateur Radio Society (TARS) and held at the Doyle Convention Center in Texas City.** A picture of the Doyle Convention Center is on the cover of this month's Grid Leak. The Hamfest doors open at 8:00 am. The HVRA auction setup starts at 9:00 am and the Auction takes place beginning around Noon. **There is a \$5.00 entry fee for the Hamfest** and we encourage everyone from HVRA to support the Hamfest. HVRA non-members must pay a \$2.00 fee to bid at our auction. **If you do not want to pay the \$5.00 Hamfest fee and you are an HVRA member, you can only enter our Auction area from a side entrance in the facility.** No exceptions. There will be items for sale in our auction and of course HVRA members are encouraged to bring their own items for auction. The website address is texascityhamfest.org

Directions? Take I-45 South to Exit 16 (Lowry Expressway) which turns to the east. Go 8 miles east and you will eventually enter Texas City. Turn right at 21st Street (there is a stoplight). The Doyle Center is just a few blocks from there at the corner of 21st Street and Phoenix Lane. Plenty of parking.



Battleship TEXAS Amateur Radio Station participates in Museum Ships Weekend 2016.



Many HVRA members volunteer in support of the Battleship Texas and HVRA raises money for the Texas through our auction program. Mike Brannan reports on the results of the recent amateur radio event known as Museum Ships Weekend where ham operators seek contact with museum ships around the U.S.

During the weekend of June 4-5, the Battleship Texas amateur radio station made a total of 303 contacts and worked 18 museum ships. Ships worked included the SS Cedarville, Watson Museum, Carl B Bradley, USS Turner Joy, USS New Jersey, USS North Carolina, USS Wisconsin, USS Iowa, USS Alabama, USS Lexington, USS Ingham, USS Hazard, CSSA Hunley, Grand Camp Memorial, USS Cobia, USS Yorktown, USS Razorback, and LST-325.

Operators were: K9GEM, Jerry Mueller; N5KT, Gerald Doucet; Logger, Gerald Doucet, Jr.; and KA5OXA, Mike Brannan. Reid Shipp acted as Docent to the public allowing the operators to work the contacts.

Steve of Alpha Antennas donated a 60 foot J-Pole Senior which we hoisted from the Aft flag halyard on the Aft mast. We were able to reorient the J-Pole as a sloper from WNW to ENE and back to take advantage of propagation conditions. It was a great performer and accounted for many of our contacts. Including a contact with Sydney, Australia on 40 meters at 11:40pm TEXAS time. A special thank you to the TPWD staff and overnight program staff for their help in making our two overnights work well.

Battleship TEXAS was commissioned in 1914 as the most powerful weapon in the world. Her rich history is unique and she is perhaps the most significant warship still afloat. During World

War I, she served with the British fleet keeping the German High Seas Fleet bottled up in the North Sea. Between the wars TEXAS established many firsts in using aircraft and radio for gunnery and radar development. She fought through World War Two supporting the invasion of North Africa, Normandy, Southern France, Iwo Jima, and Okinawa plus many other missions.

Contact me for more information about the Battleship and amateur radio on the Battleship.

Mike Brannan

mikebranna@aol.com

281-782-3046

Radio Collector Spotlight

Featuring: Lance Borden

By Gilbert Hedge

As a member of Houston Vintage Radio Association for over 35 years, Lance Borden has been a constant and generous supporter of the organization, serving as Vice President for two years and Old Equipment Contest Chairman for over eighteen years. Lance is very active in the organization, attending most board meetings, monthly meetings, yearly conventions and various swap meets.



Lance's curiosity and interest in electrical and mechanical devices started at a very early age, by the time he was 8 he had already begun collecting. At age 15 he obtained his Amateur Radio Operators License WB5REX. Over the next few years he learned how to fix old radios and work on other electrical and mechanical devices. However, his collection began to really grow, in about 1980, when he started asking all his friends and coworkers if they had any old radios and visiting local flea markets, auctions and garage sales. Then one day a neighbor told him about another man who also collected old radios, Dave Moore, who informed him that there was a new organization in the Houston area, whose members were interested in collecting and preserving old radios, which led to Lance joining the HVRA.



Early childhood inquisitiveness, constant tinkering, later education and work experience in the aerospace industry, has led him to compiling a broad array of interesting and unique objects in his collection, as he says an “eclectic collection” which includes: phonographs, battery sets, AC sets, telegraph keys, AC-DC sets, Ham equipment, old military equipment, old telephones, spy radios, Van de Graaff Generators, tin toys, steam engines, cameras and spy cameras. He also has a, as he says “small” collection of airplanes: 1929 Inland Sport mono plane, which was designed by his grandfather (currently being restored), 1948 Luscombe 8F (for sale), 1954 Cessna 170B (for sale). Lance holds a private pilot’s license, FAA A&P license and FAA IA license (so he can work on the planes and then inspect the work).

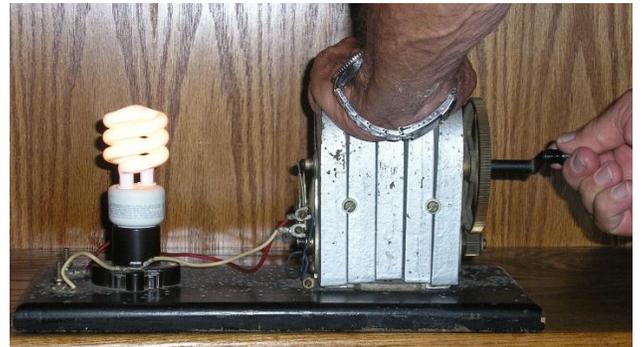


Over the years, Lance has provided the members of HVRA with some very interesting contest entries during our Annual Conventions. He has won numerous awards including a Best of Show in 2007 for his Old Military Equipment display “Chinese-American Field Radios from the Korean and Vietnam Wars”



Lance has designed and manufactures a line of crystal radio kits and other related items, that he sells worldwide through his Bordon Radio Company website (www.xtalman.com). He has written several articles for a national electronics magazine and offers a copy service, that reproduces radio schematics for anyone who needs more detailed information about a particular old radio.

Recently Lance has been downsizing and refining his collection “keeping the good stuff and selling the rest”. He is currently looking for a TBY-8 WWII Code Talker Radio transmitter/receiver, and would also like to broaden his collection of Spy radios.



HVRA Members Forum

Solving A Hum Problem

by Tom Taylor

Some time ago I was pleased to buy a Zenith shutter dial that needed normal restoration. The circuitry used may in some respects be considered representative of the time. Once I had it working good using all the normal practices of parts exchange, alignment, cleaning, lubrication etc I became aware of a slight hum when the volume was not at minimum. That of course told me it was not in the power supply. It was present on any band and appeared to be a trait of that radio. Sure enough a web search indicated that a slight hum was characteristic of at least this model. The following is an attempt at explaining how it was corrected.

Pulling and then replacing the tubes one by one while headed towards the antenna I found that the origin of that hum was around one tube in the front end. After a check on the underside regarding anything suspect about that stage and the ones either side of it I could find nothing irregular about the filament grounds and even a tube replacement did not correct the issue. Considering the web notice of this trait I accepted it was a 'design' issue and set out to find a fix so that my attentions would not be drawn away from an otherwise fantastic radio. Having been sensitized to grounding techniques and the treat of ground loops I started tracing the B minus AKA signal ground paths from that area. When your turn comes you will be looking at all components that lead back to the origin of the power supply B minus which is

most often the power transformer center tap on a full wave supply. Turns out that Zenith used for at least that model a 'daisy chain' ground return path where {generalization used here} bypass capacitors and both the grid leak and cathode resistor were 'referenced' to a wire string that went from the suspect stage to the prior stage and from there by way of a wire to the former stage and from there by way of a wire to its prior stage etc all the way back to the transformer CT. As I recall there were about six soldered stop over connections on the way back to this power source reference point. Ideally we would like that 'ground reference' to be as good at the earliest stages as it would be at its origin, the (power supply) source otherwise we amplify any error/issue through all subsequent stages. The daisy chain approach assumes that it will be, that wire and solder are perfect!! Instead, each of those short wire segments as well as each of those soldered connections offer VERY small but finite resistances associated with a junction where small return currents were being added to the current summations from former connections. The resultant (ground return) voltage drops at each stage were in effect producing **SMALL** signal currents in the reference points of the most sensitive stages found furthest from the supply reference. Once I cut that ground daisy chain path of connections near the front end and run an equal gauge wire from there directly back to the 'reference' at the transformer CT, the hum was gone. I hope you find the merit of this story as the specific details of that experience has started to fade just a bit.

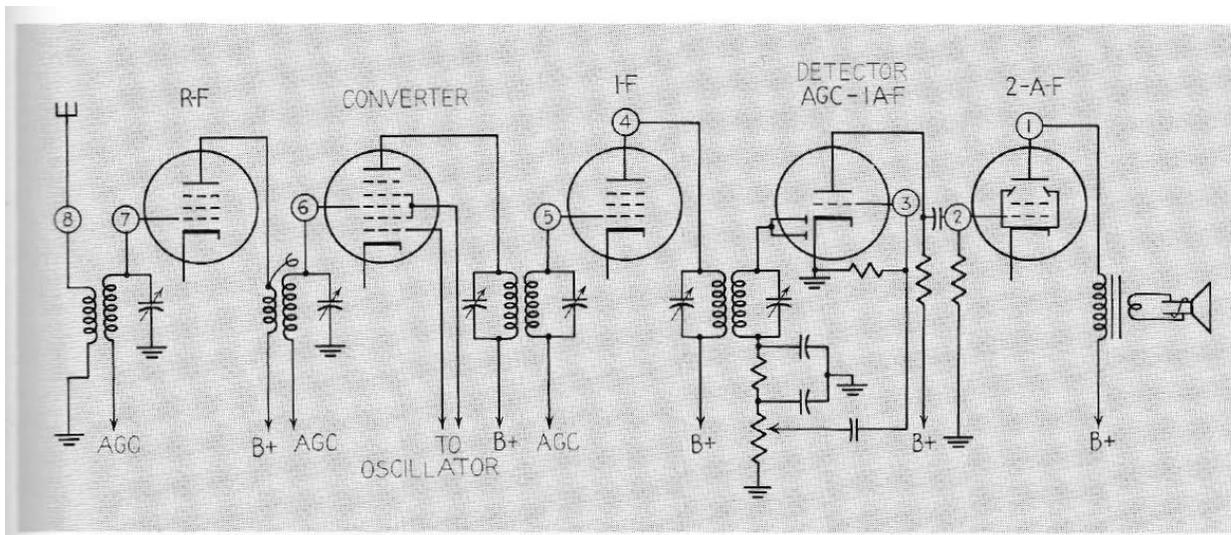
The Trouble Shooter

by Bill Werzner

Trouble Shooting With the AM Signal Generator

Several times I have been approached by some of our newer members who want to learn how to begin basic trouble shooting of vintage radios. I always begin by suggesting they start with a simple five tube radio – the famous “All American Five”. That radio is a good foundation to use as a starting point and from there one can advance to some of the more complex radios such as multiband and transformer powered sets. I don't recommend starting with a Zenith Transoceanic, an AM FM set, or some other complex multiband receiver. OK, let's start with the All American Five, using five tubes with filaments wired in series. The first thing to do is make certain you don't have a hot chassis to deal with. If one side of the AC power cord is connected directly to the chassis – watch out! An isolation line transformer is preferred, for safety; but lacking one, make sure the neutral line is in the neutral side of the AC outlet and that it is the side connected to the chassis. Let's assume you have replaced all the old wax capacitors, checked the resistors, replaced bad wiring, tested the tubes and the circuit voltages look good. The signal generator has three basic functions and you don't need an expensive one to do basic trouble shooting. Function 1 is a simple audio output signal, this you can hear through headphones and is used to test the audio output stage (from the volume control input, to the speaker). Function 2 is a radio frequency signal that is adjustable from perhaps 100 kHz to 30+ kHz and higher. Function 3 is an adjustable radio frequency, modulated with the generator's audio signal. With function 3, your signal generator is just like a miniature radio station.

Function 3 is used to inject signals to the grids of tubes forward (in the direction of the antenna's signal), and away from the detector / volume control. Now take a look at the diagram. The tubes here could be eight pin types 12SA7 converter, 12SK7 i.f., 12SQ7 detector & first audio amplifier, 50L6 or 35L6 power output to speaker transformer, and 35Z5 rectifier. The miniature tube analogs to these could be 12BE6, 12BA6, 12AV6, 50C5 or 35C5 & 35W4. With the negative or "ground" lead from your signal generator connected to B-, minus side of the filter capacitors, begin trouble shooting for the problem stage – assuming the radio was dead following your overhaul. Look at the diagram below and write down what signal you would inject at the numbered test points. Check answer, bottom of last page. This diagram could represent an "All American 6" as the rectifier tube is not shown. Here the tube layout could be L to R: 12SK7,12SA7,12SK7,12SQ7, & 35L6 with 35Z5 rectifier not shown. Good luck with trouble shooting and watch out for wayward electrons!



From "Elements of Radio Servicing" by Marcus and Levy, ©1967, p. 31

Now some hints from Bill's bench: Use XYLENE to dissolve hardened wax, thickened oils, and greases, but keep it away from plastics. ACETONE will remove unwanted paint and to fuse some broken plastics (hardware store solvents). Be careful with it around plastics, as like xylene, it too will dissolve some plastics. Acetone applied three or four times to loose tube bases with a medicine dropper will re-adhere tube bases to the glass envelope. Use a strong rubber band to tighten the tube to the base and wait overnight. The same can be applied to loose tube grid caps. Wear protective gloves and use adequate ventilation when using these solvents – caution! Both are very flammable. Go Jo (non-pumice containing) hand cleaner from auto parts stores etc. does a great job of cleaning wood & plastic / Bakelite radio cabinets (also good for cleaning dirty hands).

ANSWERS TO TROUBLE SHOOTER ARTICLE

- [1] Audio signal with set turned off to test output transformer and speaker.
- [2] Audio signal with set turned on – tests output tube circuit.
- [3] Audio signal with set on - tests first audio tube circuit.
- [4] Modulated rf at i.f. 455 kHz (0.10 uF capacitor in series with probe) 2nd i.f coil & detector.

[5] Modulated rf at i.f. 455 kHz tests 2nd i.f. tube & stage.

[6] Un-modulated rf at i.f. 455 kHz, if set plays then, oscillator stage is problem.

[7] Modulated rf at i.f. 455 kHz tests rf amplifier stage.

[8] Modulated rf and adjust to sweep broadcast band i.e. 550 to 1600 kHz – circuit & station tracking.

Local Sources for Radio and Electronic Parts

EPO (Electronic Parts Outlet), 3753 Fondren Rd., Houston 77063 test equipment, parts, etc., etc.

ACE Electronics, 3210 Antoine Dr., Houston 77092 parts, test equipment, etc., etc.

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

HVRA Annual Election of Officers, Sept. 24

Nominations for President, Treasurer, Historian, and At Large Position #1 will be taken starting at 8:30 AM. Members elected to these positions are expected to serve two years, attend both regular and monthly board meetings, and adhere to the responsibilities of their office as defined by HVRA bylaws. Nominees must be paid members in good standing with a willingness to volunteer for HVRA.

2017 ANNUAL CONVENTION AND AUCTION

Advanced Registration Begins August 27, 2016

Location: Houston Marriott North (Greenspoint Area) Dates: February 10 – 11, 2017

Discounted guest rates: \$91.00/night for Thurs - Sat, Feb. 9th – 11th, 2017, check-out no later than Sun AM, Feb. 12th. Free Wi-Fi in the guestrooms. Reservations can be made by calling 1-800-228-9290 or by an HVRA web link ([see HVRA website for Marriott web link](#)). Please remember, current Marriott Rewards member will receive credit for this stay; however, if you choose to use your member points for this stay, your reservation must be made over the phone or through Marriott's online website (web link will not let you use your points, only get credit). The current Agreement includes a cutoff date of January 26, 2017, for the HVRA discounted guestroom rates; please try to make reservations prior to that date. We will again try to have the Marriott work with us to extend that date if possible and also to increase the number of rooms allowed to HVRA. HVRA has blocked out 65 room nights (5 on Thursday, 35 on Friday and 25 on Saturday); this is 10 more than in 2016. Please make reservations early, so that I can expand the blocked rooms, if availability permits. Keep in mind that if you attempt to make reservations that include Thursday night, your entire request might fail if all 5 rooms for that day have already been reserved by other attendees. If that is the case, please contact me and I will attempt to have the Marriott re-adjust our allocated nights to suit your needs. Also, Marriott is discounting their buffet breakfasts to \$15.00 for Fri. – Sun. Coupons will be given to

all HVRA members attending the Convention and their family guests. You do not need to stay at the Marriott to get this discounted breakfast, but you do need to be registered for the Convention.

The activities will begin early Friday and continue through the Saturday evening Awards Banquet. The Convention space has been modified in order to have a flow of items in one direction across the auction table. A revised floorplan will be included in later notifications. Although this modification **will not** affect the Contest room space nor the Tech session space, we do anticipate a smaller area dedicated to our swap meet room. Further information regarding swap meet table space will be detailed in the GL and on the website in the fall. We plan to again have a series of Technical Sessions on Friday afternoon. In addition to our annual Tech lecture session (2) from noon to 3pm on Friday, I am attempting to have morning classes designed to describe basic elements of test equipment, tubes and basic electrical diagnostics for battery and A/C sets. I am looking for volunteers to conduct 2 Friday morning (1 hr each) classes for beginners to learn some hands on basics and a little theory which will help them test and evaluate their collection. Please contact me to discuss the details.

Instead of recognizing one brand as the Convention “Featured Manufacturer”, the board has agreed to recognize “Radios made or sold by tire manufacturers and carrying that tire manufacturer’s name (at least 40 years old).” Non-USA tire manufacturers are included. Companies such as Sears, Pennys, Western Auto and Montgomery Wards did not manufacture the tires sold by their outlets; therefore, they will not be included. Please contact Jeff Heller (Contest Chairman) or me for questions.

The Advanced Registration period will begin August 27, 2016 and continue thru January 31, 2017. Registration (bidder) number is based on date HVRA receives your completed registration form and payment. As in the past, auction check outs (after auction handlers and volunteers) will begin with the lowest registration number. Additional information concerning the Old Equipment Contest, Convention Registration Fees, Banquet costs and other pertinent information will be provided on the HVRA website and future Grid Leaks. If anyone has any problems with room reservations or any questions regarding the convention, please contact me at 281-844-4124 (gsirkin@aol.com) and I will attempt to help.



Hobby Air Museum Event September 16 & 17

Now for the fourth year HVRA will participate as vendors during Vintage Houston's "Take You Back to Houston of the 1940's" theme show. We will man a 10x10 table at the show and we will display some vintage radios. There are many show attendees who are interested in vintage products and will stop to ask questions at our display. We will need to man our table on Friday afternoon and evening and all



day Saturday. The Hobby Air Museum is located behind the present airport. To get there take Telephone Road (TX-35) south from I – 610. Hobby Airport is on the left, continue south & turn left on Neuhaus to Travelair St. where the Terminal Museum is located. Parking area for vendors is adjacent to the museum and across the street for visitors. There will be displays of all kinds, food vendors on site, drinks served, music and entertainment both days. This is an event the whole family will enjoy, so come on down, spend the day, and take a step back in time! A small admission charge will be required to enter and tour the museum inside. Watch HVRA web site for future information.

More Radio Clubs

Antique Radio Collectors Club of Ft. Smith, Arkansas (ARCC). Paul Tucker, 4700 N. "N" St., Fort Smith, AR 72904. Dues: \$10. Monthly meetings, annual show.

Antique Radio Club of Illinois, www.clubinfo@vintage-radios.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, membership@michiganantiqueradio.org. Pub: The Michigan Antique Radio Chronicle, quarterly. Dues: \$20. Annual Extravaganza and other quarterly meets. 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 **Vintage Radio and Phonograph Society (VRPS), Dallas / Ft. Worth, TX** George Potter, vrps@sbcglobal.net, www.vrps.org

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

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 30th 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 just west of The Room Store on the north side of the Katy Freeway). 10% member discount on radio items.

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

Sargent Auction Service: www.sargentauction.com | Jim@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

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

What could a career in electronics mean to you?

Escape from a dead-end future

Freedom from automation fears

Greatly increased earnings

A key spot in a key industry

A better standard of living

A chance to be your own boss

The Grid Leak

July-August-September2016

New Website – www.hvra.org

From The President

Upcoming Club events calendar

July 16 Texas City Hamfest and Mega-Auction

September 16 & 17 Hobby Air Museum event

Two Member Troubleshooting Articles

Notice on renewing your membership!

Please check the expiration date by your name

In the address label!