

The Grid Leak

July—August
2013

www.hvra.org

(Color GL on web site)



*Texas City Hamfest combined with the HVRA auction
was held at the Doyle Convention Center.*

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**Swap 'n Shop
BBQ
Cecil & Fran Miles
Grapeland TX
Nov. 2, 2013**

From The President.....

Some of you may wonder why the July – August “Grid Leak” publication is running a little late, well let me explain. This is something we anticipated a few months back and is the reason why July and August events were mentioned in the previous publication. Like most of us, especially those of us who are retired – but technically still working, savor a vacation once in awhile. This was the case with our loyal Editor in Chief, Dave Moore, who spent several weeks vacationing in beautiful Colorado. If you have never been to Colorado, please find time before you tap at the pearly gates to go there for a visit or vacation. No, Dave didn't have to brave any of the terrible forest fires we watched on the evening news, but told me he did get a whiff of the smoke. Colorado is a big place, and in reality only a small portion of the state was scorched by the fires. However, the damage in those areas was horrific and our hearts go out to those who lost homes and loved ones in those fires. During my days in the U.S. Army, I was stationed at Fitzsimons in Aurora – a suburb of Denver as a medical laboratory specialist, so when I say how beautiful Colorado is, I'm speaking from experience. Denver was also a Mecca for finding vintage radios and vintage radio parts.

How I wish I could go back in time to Denver in the spring of 1968! Back then, Larimer Street in downtown was considered a “skid row” area, not a good place to be especially at night. However, there was an old business somewhere on Larimer Street that specialized in old radios along with parts that filled bins up and down the aisles. I made several trips there on Saturday afternoons to buy parts for projects that I worked on in the hospital post's hobby shop. To the east of Fitzsimons near I – 25 was a salvage yard and a store that sold military surplus electronics. A sergeant, who roomed next to me, knew the owner and would bring electronic units back to our billet for tear down. For his work, the owner would let him keep a portion of the parts that he salvaged. One evening he knocked on my door showing me a unit with nixie tubes that bore the label “Milliseconds to Air Burst”. An atomic bomb detonator – anyone know? I remember one of my projects was an electronic fish caller that I built from salvaged parts. No, it wasn't radioactive, but it sure got the attention of the other guys with its buzzing and beeping. Another project was a 1949 Buick radio from the salvage yard I converted to 117 VAC. I remember

Bill Werzner ,
HVRA President

At the bench



how the guys gathered around as we listened to the news that night when North Korea captured the USS Pueblo. Everyone wanted to know how I converted a car radio to AC that sounded so good.

Now the main reason in wishing I could go back in time. In May one of the guys told me of another surplus business not far from Fitzsimons. I have never seen anything to this day that could equal that place - a vintage radio man's dream. There were large bins of tubes: globe #50's. 2A3's, 199's, Western Electric spherical triodes, on and on, for 25 to 50 cents each. I spent what little money I had for a few, not knowing what I would ever use them for. A few days later I finished my tour of duty and used what money I had left for my long drive back to Southern Illinois. With E Bay today, and if I could have only had a few hundred dollars back then, and know then what I know now, what a dream come true! I guess this is another example of how today's trash can become tomorrow's treasure. Maybe this should be a hoarder's creed and rationale for packing our garages and attics with the things we treasure – things that others call trash, will turn into cash. Remember “Sanford and Son”? Ah yes, those were the days my friend!

Now to our new members, our monthly Board of Directors meetings are open to all HVRA and BTARS members. If you plan to attend, watch our meeting schedule and e mail me a day in advance so I'll know how many large pizzas to order at \$1.25 per slice. Here is your opportunity to offer suggestions, criticisms, ideas, or just enjoy a pizza dinner with the guys. The monthly Board Meetings enable us to address club business matters that otherwise would consume time during our regular meetings. This gives us more time to do the fun things we all enjoy. Do we value your participation? You bet we do and now on to our fourth publication of the year. Bill W.

HVRA Electronics Classes

July 27 Class VIII

“First Stage Audio Amplifier Circuits in 1920's Era Radios” Including driver circuits for single & push pull output stages – trouble shooting & repair.

August 24 Class IX

“Audio Detection Circuits in 1920's Era Radios” Detector circuits, volume control, and early avc trouble shooting and repair topics.

September 28 Class X

“RF amplification in early radios including TRF and superhets”. Trouble shooting and repair will be main topics

2013 General Meeting Contests

By Reid Shipp

August 24 Low B+ amplifier contest

October 26 Golden Ears contest

Rules—Description

Low B+ amplifier contest: Amplifier must be working and provide a reasonable volume, use vacuum tubes with a low plate voltage. The winner—amplifier the meets the requirements and uses the lowest plate voltage.

Golden Ears contest: any solid state, vacuum tube amplifier, home built, kit or commercial. A blind listening test will determine the winner. Amplifiers will be played with organ & drum music. Speakers will be provided.

Note: Previous contest winners are eligible, the previous contest entries are NOT.

Mike Payne's Annual Swap Meet May 25 in Alvin, TX

If you missed Mike's annual swap meet in Alvin, you missed a really fun event. The weather was perfect, mosquitoes absent, and lots of nice stuff was bought, sold, and bartered.

Throughout the morning the larger than average crowd made the rounds from trunks to tail gates looking for those treasured finds.

Mike's warehouses were filled to the rafters with electronics of every description that spilled over into a couple of low boy trailers filled with recyclable resources of every description.

There was just about everything electronic imaginable and the prices were right.

Thanks again, Mike, to you and yours for being wonderful hosts once again. Will it be on schedule again in 2014? We certainly hope so!

HVRA Election of Officers in September

Once again we are looking for a few good volunteers who are willing to accept nominations for a two year term as club officers.

To qualify, you must be a member in good standing with annual dues paid, willing and able to attend both monthly Board of Directors and general meetings, and fulfill requirements of the office that you may be elected to serve.

Positions open for nominations include:

- Vice President
- Secretary
- At Large position II
- Grid Leak Editor

Currently, these positions are held by: VP—Jim Calbeck; Secretary—Tom Taylor; At Large II—David Moore; Grid Leak Ed—David Moore

We are always looking forward to having new officers elected from our general membership to bring new ideas and share their expertise as club leaders.



A nice console finds a new home



A trailer full of electronics, a parts picker's dream.



Reid's recyclable resources ready for sale.

Texas City HAM Fest & HVRA Mega Auction July 13

This was a new venture for HVRA in becoming part of the annual Texas City HAM Fest held each year in the beautiful Doyle Convention Center in Texas City.

Several HVRA members rented tables to sell and swap items during this event as we have in the past. This year was different in that the convention center informed Tideland's Amateur Radio Society that they would have to rent the entire auditorium rather than the 3/4ths area they had rented in previous years. What looked like a dilemma for TARS, became a win, win, situation when HVRA contacted TARS Treasurer Joe Wileman about the possibility of holding the HVRA summer mega auction on the same date.

That unused auditorium area was a perfect setting for an auction that became a popular spot for all who came to view the numerous lots during the swap meet event.

The auction started at 12 noon and was finished around 3 PM following plenty of spirited bidding from the forty-four registered bidders. The total of 178 lots brought \$3,203.00 in sales of which \$146.00 was donated to the Battleship Texas fund and \$21.00 to the club treasury.

The HAM fest was possibly the best ever in total attendance and was said to have been a total sellout, the first time in its history.

Many thanks to all our volunteers who helped bring our summer mega to a successful conclusion. It was certainly a fun event, so perhaps we can do it again next year?

We also extend our gratitude to the TARS staff for being wonderful hosts and working together with our volunteers. Thank You!



Auctioneer/President, Bill Werzner (l) and Walter Mosley (r) look for bids.



*Derek Ross admires a Walton's Zenith radio -
"Man, I wish he'd put this up for sale!"*



Hickok test gear awaits auction.



Tables filled with auction items

Battleship Texas Museum Ships Weekend—BTARS

The Battleship TEXAS Amateur Radio Station worked the Museum Ship Weekend <<http://nj2bb.org/museum/>> Saturday mid-day and afternoon and after 3 PM on Sunday. We worked 40, 20 and 15 meters with two rigs on Saturday plus the VHF net sponsored by BVARC <<http://bvarc.org/>> on 146.94 MHz. We had quite a few radio operators from West Texas, OK, KS, AR, AL, and closer stations.

On Saturday, BTARS were hosts to a group of hams from Bryan/College Station and a number of drop-ins. BTARS always enjoys the company of the Bryan/College Station group, and we wish we would have been able to spend more operating time with them onboard. There were quite a few visitors to the ship who were lectured on the TEXAS, its radio systems, ham radio, BTARS and restoration projects.

On Sunday, there was a Navy Reserve program that occurred onboard the TEXAS. After the ceremony, several retired Navy gentlemen who were ham radio operators visited BTARS. We also operated an Icom 706 with the TEXAS' original vertical antenna on 40 meters. The entire weekend, the band conditions varied drastically from solid 59 contacts to barely readable 51 signals.

In cooperation with the FTV <<http://www.usstexasbb35.com/>>, BTARS hopes to continue restoration of the TEXAS' longwire antennas monthly once again starting in July 2013.

BTARS had a good Museum Ship Weekend; we certainly thank the Texas Parks and Wildlife Department and Battleship Texas Staff <<http://www.tpwd.state.tx.us/state-parks/battleship-texas/>> for doing so much to help us.

Peter Farver, KD5OCR
BTARS President



This very nice Pathe phonograph sold for \$95.

Battleship USS Texas Update

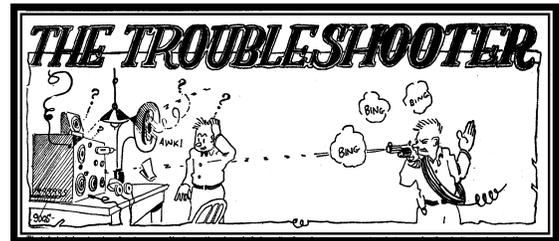
Much work is underway aboard the Battleship USS Texas in preparation for the one hundredth anniversary of her commissioning next year and its eventual permanent dry docking. If you have visited the ship in recent weeks you noticed that portions of the main deck along with major sections of decks 2 and 3 are shut down due to extensive below the deck construction work. Much of this work involves rebuilding the ribs far down in the ship in areas that may be over 20 feet below the water level. The ship itself, all 35,000 tons of her, displaces about 28 feet of water as she sits floating there in the slip.

One of the goals in which HVRA members along with BTARS (Battleship Texas Amateur Radio Station) members are involved in is the re-activation of a WW II era TDE Westinghouse transmitter in the main transmitter room. Preliminary studies have revealed the TDE to be a good candidate for restoration. Sometime in the coming months we need to remove the original motor generator from the base of the transmitter for servicing. A DC power supply will be provided by the ship's personnel to power the generator when it is ready for operation. Some electrical repairs will be necessary and with the motor generator removed, access to those areas will be much easier. We will be in need of volunteers to assist with these repairs. BTARS are perusing antenna replacement between masts and transmission lines down to the third deck transmitter room. At this time the possibility of going on the air with an original transmitter during the commissioning centennial are looking good. What an achievement that will be to go on the air with a 70+ year old U.S. Navy transmitter. Contact one of the HVRA officers if you would like to volunteer in this effort.



The Problematic Black Plague Infestation in I.F. transformers

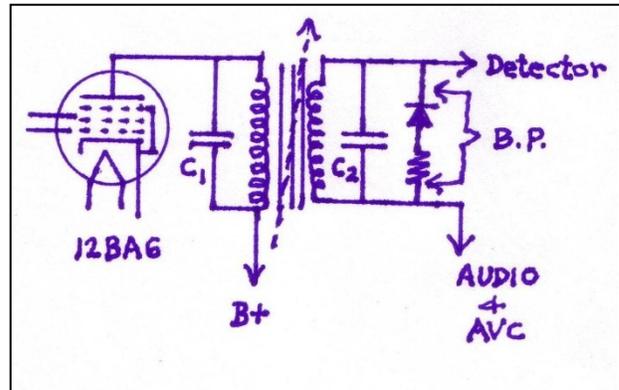
By Bill Werzner



I have written about this malady before, but in recent years it has become endemic in many of the radios that have been brought to me for repair. This problem is concentrated in radios manufactured mainly from the post WW II era to the early 1960's. The intermediate frequency transformers in these radios are of the powdered iron "slug type" tuning to vary the coil inductance with fixed silver coated mica capacitors in the base. The adjustable coil allows for tuning the parallel coil / capacitor arrangement to the manufacturer's resonant frequency that is usually 455 KHz in most 117 V. AM radios. Americans are a nostalgic lot. We remember and treasure items that bring back memories of our youth and what we look back upon as simpler times – yes, we tend to forget the cold war, missile crises, riots, Korean War, etc. Those days of listening to the music of our youth on that favorite radio that belonged to our parents or we had in our bedroom, ignites that nostalgia flame bringing back those good memories of bygone days that supersede the bad. Now those bygone days are causing major problems.

Let's begin with some simple chemistry that precipitates a physics problem. The fixed silver coated mica sheet capacitors are subject to corrosion that turns them dark brown to black in color due to the formation of silver sulfide. The reaction takes years – perhaps decades to take its toll and the reaction goes like this in simplified chemistry: $2Ag$ (silver) + SO_2 (sulfur dioxide) = Ag_2S (silver sulfide) + O_2 (oxygen). The reaction doesn't stop there as the silver ions tend to migrate as the reaction progresses forming a short circuit across the mica separator now acting as a resistor / diode in parallel with the coil winding. The symptoms of this include distortion, motor boating, noise, arcing to ground, intermittent reception that may be weather related, etc. I added weather as increased humidity or temperature may have an effect on conductivity through the Ag_2S corrosion. Where does the sulfur dioxide come from? It comes from the burning of fossil fuel from heating, transportation, industry, etc. and is the same stuff that causes your silverware to tarnish. You see, silver is not such a noble metal after all!

Can those transformers be saved and the radio brought back to life? Most of the time the answer is yes if the coil can be successfully disassembled, the corroded capacitors removed, and replaced with new fixed value capacitors. Replacement capacitors for AM radios are usually in the range from 62 pF to 100 pF and FM sets 30 to 33 pF. I mention FM sets as this problem affects them as well. Voltage requirements are low so capacitors C1 & C2 (fig. 1) can be quite small in the 100 to 200 volt range. Overhauling small i.f. transformers take patience and a steady hand as wires the diameter of human hair have to be unsoldered



(fig.1) This is an electronic representation of how black plague (B.P.) would affect the output section of a second stage i.f. transformer as a diode / resistor across the fixed mica capacitor.

and re-soldered, small rivets carefully drilled out, and the coil re-assembled minus old capacitors. Then new ones are installed and the coil re-assembled the way it came apart. I will explain the repair procedure in the next "G.L." issue.



Zenith Model Y825 AM FM radio from the 1950's that came in for repair. Preliminary diagnosis revealed serious black plague in all IF and discriminator coils. Repair cost was considered prohibitive due to time required in rebuilding all of the coils.

HVRA Event Schedule:

Location for all events: Bayland Park Community Center, 6400 Bissonnet, Houston, TX Coffee & snacks available at regular meetings.

Saturday, July 27, Monthly meeting, 9 AM. Program, auction, Class VIII. Low B+ Contest, Coffee, juice, and snacks.

Tuesday, Aug. 13, Board of Directors Meeting 6:30 PM, Pizza served!

Saturday, Aug. 24, Monthly meeting 9:00 AM, Program, auction, Class IX. Coffee, juice, and snacks.

Tuesday, Sept 10, Board of Directors Meeting 6:30 PM, Pizza served!

Saturday, Sept 28, Monthly meeting 9:00 AM, Program, auction, class X. Coffee, juice, and snacks.

Tuesday, Oct. 8, Board of Directors Meeting 6:30 PM, Pizza served!

Saturday, Oct 26, Monthly meeting 9:00 AM, Program, auction, Golden Ears Contest, Coffee, juice, and snacks

Saturday, Nov. 2, Swap 'n Shop—BBQ, Grapeland TX, Cecil Miles house

Tuesday, Nov. 12, Board of Directors Meeting 6:30 PM, Pizza served!

No Meetings in November or December, 2013

Related Events —

AWA Convention — Aug. 20-24, Rochester NY

ARCI — RadioFest, Aug 1-3, Willowbrook IL

**Yankee Steam Up—Sept. 21; East Greenwich RI
New England Wireless & Steam Museum**

HVRA Swap 'n Shop, BBQ—Nov 2, Grapeland TX

**VRPS Convention—Nov. 15-17, Mesquite TX
Vintage Radio and Phonograph Society, Dallas**

Non-Radio Items for Sale in HVRA Storage Unit

There are some non-radio items that we need to liquidate from one of our storage units at 10615 S. Gessner.

These items were left over from both the late Bob Wood and Richard Collins Estates that we had to clear out.

Three items among them that come to mind are a good working lab type vacuum pump on platform with casters, and two nice solid wood chest of drawers. If interested, contact Bill Werzner, www.werz1943@gmail.com (713) 721 – 2242.

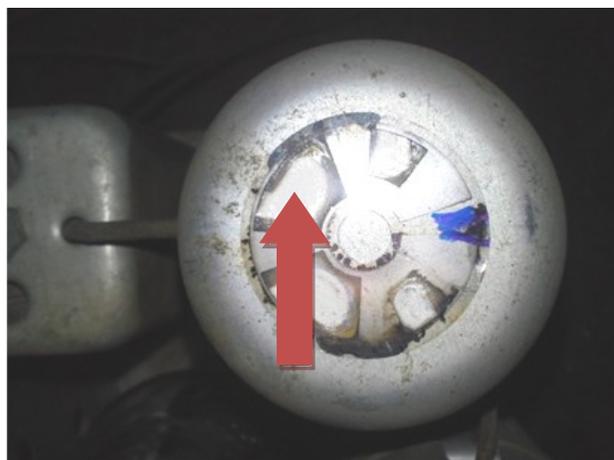
Come by, take a look and leave HVRA a monetary offer that the Board will consider. Plan to view the storage unit items Saturday morning, Aug.3, 8 to 9 AM by appointment only, and leave a sealed bid on the items to be offered for sale.

We need to clean out one of the units as these items are too large or cumbersome to transport to our monthly auctions. The money paid will go directly to the HVRA treasury.

Troubleshooter Article continued



Zenith radio viewed from the back showing the seven (seventh not shown) transformers that would require rebuilding.



Expanded view of the 4 section silver mica capacitors removed from the discriminator coil assembly. Note the black periphery around each of the silvered areas.

The Grid Leak

July—August 2013

Monthly Meeting— August 24

Bayland Park 8:30 AM
Low B+ Amplifier contest

Monthly Meeting— Sept. 28

Bayland Park 8:30 AM
Election of Club Officers

www.hvra.org *(Check out the fresh new look)*

Notice on renewing your membership!

Please check the expiration date by your name in the address label.



August meeting

Low B+ amplifier contest:

Amplifier must be working and provide a reasonable volume, use vacuum tubes with a low plate voltage. The winner—amplifier that meets the requirements and uses the lowest plate voltage.