

# SOUND *WAVES*

VRPS FALL 2011



## From the President

I am normally not so excited about the end of summer, but this one has been so hot and so dry in Texas that I am not sorry to see it go. I know there are folks reading this that have had a “normal” summer weather pattern,

but my guess is they do not live anywhere near Texas. But enough about the weather. As Will Rogers once said, “...we can’t do anything about it...”, so let’s catch up on other stuff more pleasant. It was nice to see several of you at the ARCI Radiofest in Willowbrook, Illinois, in early August. Cooler temperatures were welcomed, but the rain put a slight damper on the Saturday morning flea market. I guess that is one reason I like our convention format so much - we never get rained out. But then, I sure love their flea market. I have been going for years, and I still have a fondness for it and the friendly folks that are there. Maybe next year you can make it as well. Closer to home, we held our summer swap meet in mid-August, and I considered it a great success. Many folks turned out for this bi-annual one-half day event.

Sadly, we lost two friends from our radio family this summer, Shirley Denney (August) and Ray Story (September). Shirley was the widow of our long time member, Walton, who passed away last year. Ray, another long time member, had recently moved to an assisted living facility in Irving. Look for more about Ray elsewhere in this issue.

Also, in this issue you will find the registration packet for our 36th annual convention to be held in November. This will be another great event, and we look forward to seeing you there. Make your hotel reservations early and avoid the rush, as we usually sell out of booked rooms. Our Banquet entertainment will be a little different this year. One of our members, Cecil Miles, recently appeared on the television show American Pickers. We will show a video of that program and Cecil will be there to tell us all about it. Details will be found elsewhere in this issue.

We still have a meeting in October, so I will have another opportunity to see you. Until then, good hunting.

Jim

## NOTES FROM THE BENCH

By Randy James

Everyone who works on old radios knows (or should know) the dangers associated with AC/DC sets.

The problem is that with no power transformer, the AC line goes directly to the radio and, in many cases, one side of the AC line is connected directly to the chassis. Contact with the chassis can result in a nasty or even a fatal shock. Often, the danger was lessened by insulating the chassis with plastic knobs and covering the open backs to reduce the chance of direct contact with the metal parts or by using a "floating" common ground. An isolation transformer should always be used when working on an AC/DC radio.

After the radio is repaired, it is not likely that an isolation transformer will be utilized when it is operated so you need to reduce the chance of being shocked. One solution is to replace the line cord with a new one with a polarized plug. What you are doing is rewiring the circuit so that the hot side of the line is being switched, leaving the neutral side connected and keeping the chassis at a safe potential.

The procedure for this is as follows:

1. Remove the old cord. Usually one wire will go to the power switch. Mark the connection point of the line that did not go to the switch (usually the rectifier socket).
2. Disconnect the remaining wire from the switch (usually goes to a floating ground point or to the chassis).
3. Connect the neutral wire from the new line cord (the one that is connected to the wide blade of the plug) to the chassis or ground bus where the switch wire was previously connected, removing the wire that formerly went to the switch, if necessary.
4. Connect the other wire from the new line cord (hot lead) to one lug of the power switch.
5. Connect a length of wire from the other lug of the switch to the point where you made a mark in step 1.

The problem with this procedure occurs if the power outlet you are using is wired incorrectly. You can purchase an inexpensive tester that will tell you if your outlets are wired correctly. As I stated earlier this is only a way to reduce your chances of being shocked. Never assume that a radio plugged in to an AC outlet is perfectly safe!



Mike Grimes at his bench



## NOTES FROM THE SEPTEMBER 17, 2011 MEETING

Bill McKeown

The club met at the Senter East Building in Irving, TX. Prior to the meeting President Jim Sargent conducted an auction of parts and equipment that our late member Ray Story had donated to the club. There was a lively attendance, and all of the items were sold, with all proceeds going to our club. At the meeting, Jim welcomed the group and called for a round of introductions. He reminded us to get our reservations for the November convention and to get our entries ready for the Old Equipment Contest. He noted that we will have surveillance cameras at this year's event to watch over the auctioned items and the contest entries. He announced that there will be a joint HVRA / VRPS - SWAP MEET Saturday November 5, 2011 at the home of Cecil and Fran Miles near Grapeland, Texas. Cecil's collection of radios, cars, farm equipment, etc. was seen on the TV series American Pickers. Go to hvra.org or elsewhere in this issue for more information and directions.

Mike Grimes outlined our future programs and asked members to bring early radio and TV remote control artifacts to the October meeting. He introduced our program presenter for the meeting.

Mike McCarty presented a wealth of information about the functional blocks of radios and the history of their development. Interesting parts of the history are the inventions that were involved and the competitive process of getting patent protection for them. Mike started by describing the very basic functional blocks needed to construct a radio receiver – an antenna (to acquire the signal), a selector (to choose the desired station), a detector, (or demodulator - to capture the audio modulation waveform), and some sort of transducer to produce sound from the audio signal. Those basic blocks are found even in the simple crystal set. His discussion followed the history of improvements to those basic blocks with new inventions advancing the performance and utility of radios. First, he stated that the signal selection process is most often accomplished with a variable capacitor and antenna coil combination. Then he covered many different types of detection schemes and their inventors and origins. First were the simple direct detectors such as the galena and pyrite ones used by most crystal radios sold to the public in the early days of radio broadcasting. There were also the coherer (invented by Lodge - useful only for telegraphy), the electrolytic, the electro-thermal (Fessenden) and Marconi's magnetic detector. The regenerative detector was discussed, including its history of controversy between inventors. Getting into vacuum tube sets, Mike discussed the tuned radio frequency (TRF) sets that use amplification before and/or after the detection stage. He discussed various circuits, including reflex arrangements, and their advantages and disadvantages. The reflex circuits introduce distortion of the intermodulation type, because both the audio and RF signals pass through the same stages of amplification. The regenerative detector sets provide amazingly good sensitivity, but during the tuning and adjusting process, they oscillate and radiate signals that interfere with other radios. They had to be eliminated from use whenever many people began to own radios. The super-regenerative circuit design provides even much higher sensitivity by rapidly and repeatedly increasing the feedback to the point of oscillation. The circuit does this by causing a variation of bias at a relatively low frequency (but higher than the audible range). Because of design constraints, this design is useful only at shorter wavelengths. It has the interesting inherent property of detecting FM signals directly. Mike stressed that the main disadvantage of all the TRF sets is that their selectivity changes greatly over the normal ratio (about 3 to 1) of frequencies that lie within the tuning range. The Superhet (condensed from Supersonic Superheterodyne) eliminates that problem and provides a way to design-in the bandwidth that suits the application. The selectivity is constant because the intermediate frequency (IF) amplification is fixed at the constant difference between the local oscillator and station frequencies. The superhet's overall performance is much better, but there can be problems related to the creation of harmonics in the process of mixing the frequencies - the radio has an undesirable "image" response to frequencies other than the one of interest. The superhet can also radiate interference from its local oscillator. An RF amplifier stage can help reduce the radiated output, since it is located between the antenna and the mixer/oscillator. But most AA5 radios do not have an RF stage. Mike gave demonstrations of the features and problems associated with various radio circuits. His bench setup included a radio using a regenerative detector, a portable superhet and an R.F. signal generator. With these he was able to demonstrate the interference caused by the regenerative set, as well as the radiated leakage from the portable superhet. The process of direct detection was also demonstrated.

Mike Grimes passed out copies of the schematic diagram for his early David Grimes "Inverse Reflex" receiver, using three 301's, a crystal detector and "reflexing" two of the tubes in order to get two additional audio amplification stages. The schematic shows the 3 R.F. coils as well as 3 audio transformers. This radio was advertised as giving 5 tube performance.

Author's notes - My first tube radio, thrown together from junk parts, had very poor selectivity and picked up only one station – the local WHFB about 2 ½ miles away. The antenna was 100 feet long, 20 feet off the ground. You don't need a "selector" if you are really close to a

station. Very simple receivers use the natural resonance of the tuning coils, with their distributed capacitance, along with the antenna capacitance, to provide some degree of selectivity to "tune in" stations. They are provided with taps and/or sliders to change the coil properties.

It was surprising to learn that there are still many applications for direct detection, without any I.F. section, such as for remote control devices. This has become possible with very frequency-stable oscillators.

Our late member Ray Story related to us that, as a boy, he made his own crystal radio using wire from a scrap object, an old telephone earpiece and his own crystal which he made by putting lead and sulfur into an iron ladle and setting it on fire. He was a true "Renaissance" boy!

Sometime during the late 1940's, I made a one-tube (type 27) super-regenerative set designed for 2.5 meter wavelength from plans in a radio magazine. I was amazed at hearing an airline pilot contacting LaGuardia airport during his approach – about 900 miles east of my location in Michigan! I am pleased to learn more about that set from Mike.



## MONTHLY MEETING PROGRAMS

NOTE: Programs will be held at various locations in Irving, Texas. Make note of the location as they change from time to time. Senter East, 228 Chamberlain St.; Garden and Arts, 906 S. Senter Rd; and Heritage Park, 217 S. Main St.; will be the locations. Refer to the WEB site ([www.vrps.org](http://www.vrps.org)). Programs start at 2pm. unless otherwise noted. Call us on the cell tellie if you get lost: 972-898-7251 or 972-742-8085.

### **OCTOBER 15, 2011** (Garden and Arts Bldg)

From the time radio and TV became commonplace, effort was made to enhance "convenience" and simplify operation. From reduction of the "three dialer," to the chair-side, to remote controls, designers envisioned ways to allow the user control with the least amount of effort.

This program will review and demonstrate early, vintage attempts at providing radio and TV remote control. Please bring your own early examples to share and show.

### **NOVEMBER 18-20, 2011** (Hampton Inn, Mesquite, TX)

Annual VRPS Convention: Auctions, Contest, Flea Market, Banquet.

### **DECEMBER 3, 2011** (Garden and Arts Bldg)

Annual Christmas Party. 5pm to 11pm.

### **JANUARY 21, 2012**

TBA

Programs are subject to change, contingent on scheduling conflicts. As always, your suggestions for programs/content are welcome. If the programs do not fit your needs and you want something different, let me know. I need volunteers to organize other programs, so consider presenting a program yourself.

Call me anytime or send me an email. Mike Grimes 972-898-7251 (cell), or [K5MLG@verizon.net](mailto:K5MLG@verizon.net).

# HVRA—VRPS Combined Swap Meet Nov. 5. 2011 9 AM

Location: Cecil & Fran Miles  
 23253 State Hwy 21 E.  
 Grapeland TX 75844  
 (near Weches TX)  
 936-687-5536

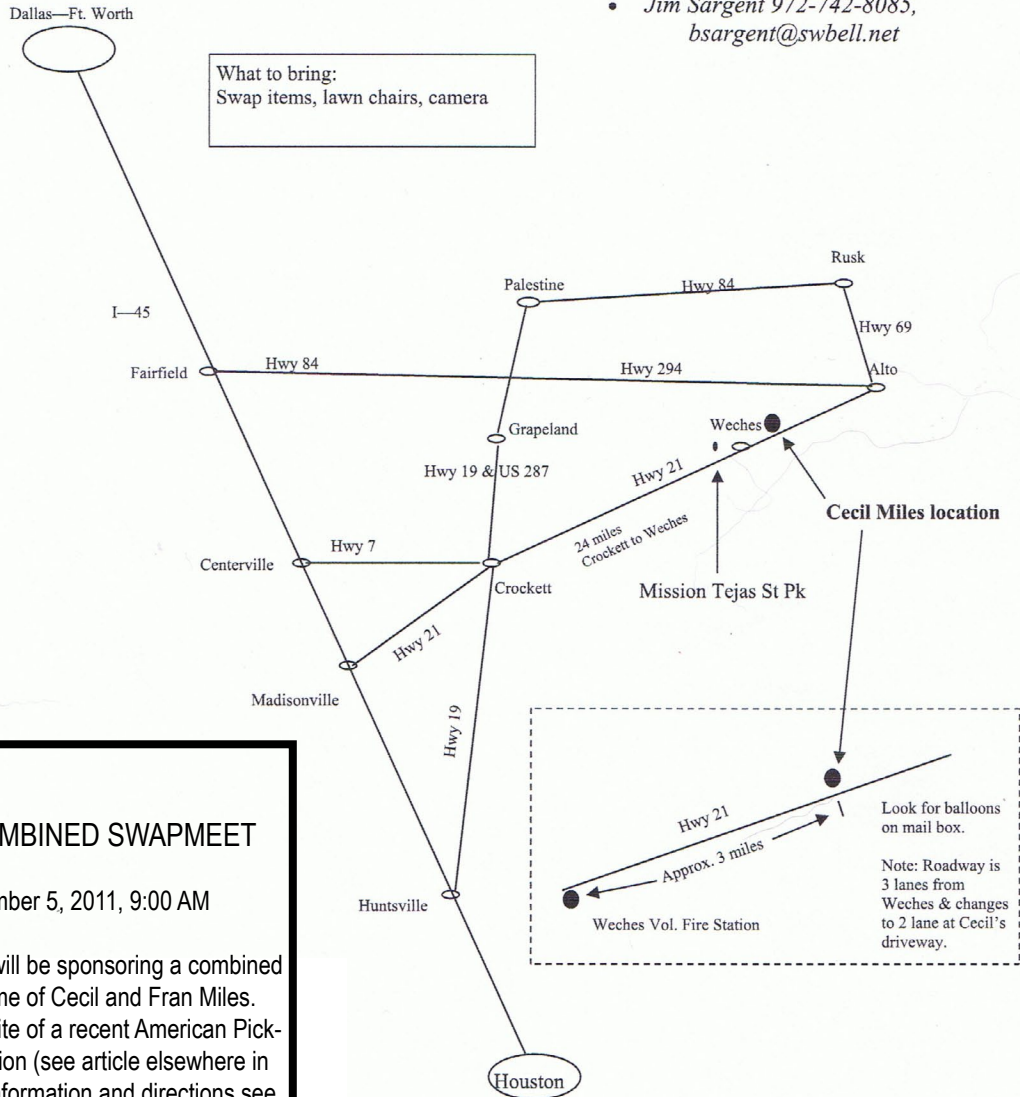
A real American Picker  
 Come see Cecil's eclectic museum

**BBQ & drinks provided by HVRA**

If you plan to attend—please call -

- David Moore 281-705-3402, wd11@swbell.net
- Jim Sargent 972-742-8085, bsargent@swbell.net

What to bring:  
 Swap items, lawn chairs, camera



**HVRA/VRPS COMBINED SWAPMEET**

Saturday November 5, 2011, 9:00 AM

The HVRA and VRPS will be sponsoring a combined swapmeet at the home of Cecil and Fran Miles. Cecil's home was the site of a recent American Pickers episode on television (see article elsewhere in this issue). For more information and directions see the back page or check out our website [www.vrps.org](http://www.vrps.org) or the Houston website at [www.hvra.org](http://www.hvra.org). For other questions contact Jim Sargent at [bsargent@swbell.net](mailto:bsargent@swbell.net), 972-742-8085 or Randy James at [randy-jeannine@sbcglobal.net](mailto:randy-jeannine@sbcglobal.net), 817-292-7435. The HVRA will be furnishing food and drinks. To enable them to estimate how much will be needed please contact Jim Sargent (see above) or David Moore at [wd11@swbell.net](mailto:wd11@swbell.net) or 281-705-3402 and let them know if you will be attending.