SoundWaves

Published quarterly by The Vintage Radio & Phonograph Society, Inc. www.vrps.org

VRPS Summer 2019

From the President

Time slows down for no one…or anything. We have already reached the half way point of 2019. There is so much going on, both within the organization, and in my personal/professional life. The VRPS, celebrating 45 years of collecting, continues to add members and see a good attendance at our monthly meetings. Of course, the latter may have something to do with the great work that Larry Lindsey, program director, does with putting together monthly programs that members find inviting, entertaining, and informative. If it is not your habit to attend our monthly meeting, I would encourage you to change your habit and join us the third Saturday of every month.

Also, when this time of year comes around, I like to remind each of you that, while I am partial to the radio activities we have here in north Texas, I am by no means convinced that we have a lock on good radio events. My wife and I make at least one other radio meet every year…sometimes more. Plan your vacation time around the Illinois, Michigan, Texas, or New York radio meets. You will not regret it. These 3 meets are not the only ones for you to choose from…but, they are a great place to start.

On a personal note, my 3000 sq. ft. auction building being constructed in Granbury is nearing completion. You will want to visit this facility (several of you already have) sometime…possibly in association with an upcoming collectibles auction. As I close this issue, I hope you had the opportunity to catch one of our longtime members being "picked" by Mike and Frank on a recent episode of American Pickers. Tom Burgess showcased both his knowledge and superb collection…managing to lighten the size of his collection at the same time.

That will do it for this issue. Our annual repair session is next up on our agenda. Bring your challenging repair issues to the July meeting and remember, a non-working radio is a terrible thing to waste. See you there!

--Jim

Notes from the April 20th Meeting

With a good turnout, our "Show-and-Tell" meeting program was introduced by Randy James. He turned the meeting over to those who had brought items to show us, to share information about their process of acquiring them, and to describe any restoration work they had done.

Dave Seymour showed us an unusual Atwater Kent radio model – a model 47, along with a matching speaker. His AK is one having a green metal top and a pair of 71's used as push-pull audio output tubes. Dave described his process of restoring it functionally, showing us its pristine appearance inside and outside, mostly as-found except for new grill cloth on the speaker. He told us that this model was the first AK having push-pull output tubes and a low impedance speaker.

Joe Stickland showed a very nice early tube-type monaural Fisher AM/FM tuner. It was made at the beginning of the stereo multiplex era, but it has an MX output jack for possible use with an add-on multiplex adapter.

Crist Rigotti displayed an Emerson 10 inch Bakelite-cased TV, looking like a brand new set. He had done a complete re-capping and resistor replacement. He had also done a complete re-alignment. He said that a good polish for these cabinets is NOVUS brand 1, 2, and 3. These are graded to remove deep or mild scratches and put a good final polish on plastics of most types. The TV back was missing, so he found a good photo of the back of the same model TV, scaled it, and laid out a pattern from which he made a very accurate replica that appears to be original.

Billy Smith showed us a very unusual animated advertizing display device. He had restored it for another collector. It has the Crosley trade name on it and a phonograph turntable, but is not a phonograph! The turntable rotates much slower than a phonograph's. No one in the group had ever seen one before, and there was a lot of discussion and speculation as to its purpose. A popular opinion is that it was used to display a radio so as to let it to be seen from all sides. A "toaster" style

Photos by Mike McCarty

radio might be an example of one that a radio store might want to put in its window as an eye-catching moving display. Billy had cleaned it up thoroughly, put a new lamp in it and gotten it running.

Jim Sargent showed us a RADIO REX novelty made by the John Hugo Manufacturing Company in the early 20's. It is an example of an object that, like many things in the very early days of radio, was given a "radio" name in spite of not being a radio and having nothing to do with radio. (Remember that this was also true of the "Radio Flyer" little red wagon and many other products.) It consists of a miniature dog house and a celluloid bulldog – REX. When REX is put back into his doghouse he is held, against a spring, by a 1-1/2 volt battery-powered electromagnet. When you shout "REX" (or make a loud noise) he leaps out from within the doghouse. This action is initiated by acoustic pressures on a normally closed diaphragm-operated switch contact – momentarily opening the circuit for the electromagnet and allowing the spring force to "boot" the dog out of his house.

Randy James showed us his Pepsi Cola cooler-style radio and also a rare very large Pepsi bottle radio. The bottle radio is 18 inches high and is in very good condition. It tunes by rotating the top cap. Its speaker is in the bottom base. He said it was made in the mid 40's or 50's by Crosley for Pepsi Cola to use as an advertizing novelty display.

Marvin Herring showed his suitcase-style all mechanical, all acoustic phonograph. He said it is probably German-made, and it works well, as-found. He had never had it out of the case to further investigate its origin. He also showed a small AM/FM radio/TV with a very small 1-1/2 to 2 inch screen. Also, he showed a Hallicrafters Sky Buddy II, ca. 1965.

Eric Kirst showed us a small Emerson radio who's case is made entirely of heavy cardboard. He said it would probably need to be mostly re-fabricated , because some of the speaker louvers are broken – a real challenge. No one present had ever seen a paper Emerson before.

Author's Note: I showed a Zenith model H511G, so-called "Racetrack" style radio, having the Zenith "CONSOL – TONE" trade name displayed on its front surface. After re-capping it, it had intermittent changes of volume and popping sounds – revealing that it suffered the dreaded all-too-common problem with the capacitors that are built into its IF cans as silvered mica wafers. (I have a Zenith 6C05, an Arvin radio, a Bendix radio and the 1964 Motorola radio in my old VW Beatle that all had the same issue.) I had to remove the IF cans in this and all the other cases, open them up and remove the mica wafers. I have found that either 100 or 120 pf caps installed either inside the cans or on their outside terminals will provide a good repair, and will always allow 455 kHz IF's to be re-aligned. The caps must be either mica or NPo ceramics, or temperature changes will cause drift of the IF response frequency. This repair process is a bit delicate and time consuming, causing many significant radios to be scrapped. Some IF transformer designs are easier to work with than others. Due to the connection method used in some designs, a piece of insulating plastic sheet needs to be cut and installed in place of the mica wafer to prevent a short between the IF can terminals.

A study of the schematic for this radio revealed the added features to improve the bass response and thus to earn the trade name CONSOL-TONE. As a result, the radio sounds great.

--Bill McKeown

Photo from the May 18th Swap Meet

Photo by Mike McCarty

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Author's Note: I installed a small output transformer from an AC/DC radio in a box with a short cable with its plug that fits

into a transistor radio earphone jack. On the box there is a pair of tip jacks plus a standard 1/4 inch 'phone jack. The transformer is connected opposite to its normal way, so that the high impedance winding is used as the output to the cone speaker jacks. The voice coil winding matches the output of a typical transistor radio fairly well. This box and radio comprise a very convenient and portable way to demonstrate speakers.

--Bill McKeown

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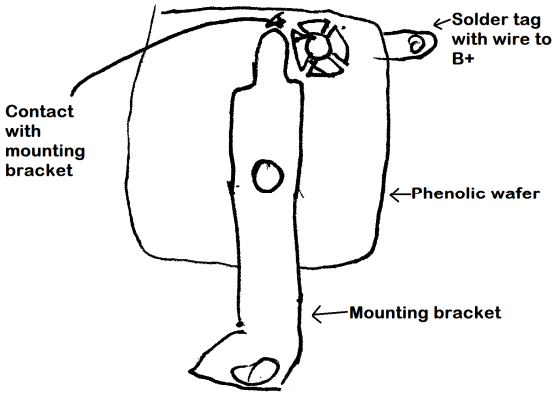

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Photo by Mike McCarty

Notes from the June 15th Meeting

Club President Jim Sargent opened our meeting, which was held at the Irving, Texas Jaycee Park Center for the Arts. With self introductions all around, we welcomed a new member, Jerry Dehoney. Jim informed us that our Arkansas member Tom Burgess was to be featured by the KERA "Pickers" TV program aired on Monday, June 17 at 8:00 pm. Jim also advised us that our annual convention entertainment will feature well known Bobbie Wygant, who was on WBAP radio two weeks before they began TV broadcasting.

Our meeting was dedicated to the display, discussion and demonstration of free-standing cone speakers, which were accessories to early 1920's radios that had no built-in speakers. They made it possible for multiple listeners to hear radio programs – doing away with headphones.

George Potter conducted the meeting, with assistance from Jim Sargent and others who had brought speakers and radios with which to demonstrate them actually playing. George discussed the history, principle of operation and construction of the drivers used in these speakers, using a diagram that he had prepared for the purpose. His diagram illustrated the basic principle of most of them - that of a pin or wire coupled to the cone at its tip, driven at its opposite end by a magnetic armature. The armature usually gets its force from a horseshoe-shaped magnet and coil assembly. The coils are high impedance and therefore work directly in place of headphones. George showed an O'Neal brand cone speaker without its cone, allowing a view of its driver as an example.

As other examples, Mike Grimes showed a Western Electric speaker, which uses a double (face-to-face) cone, a cast iron ship-motif speaker awaiting a new cone, and a pot-metal driver that is suffering from the growth of cracks and swelling. He also showed us a fancy Temple Air-Chrome wood-cased speaker that sold for $17.40 (list price $29.00). It had a featured tension adjustment.

Dave Seymour used his Atwater-Kent radio to demonstrate his ACME dual-cone speaker in operation. He had made a diagram of its clever physical design configuration that balances out any plate current through its two driver coils. The two speaker cones are not back-to-back, but "nose-to-nose" and are driven together (in mechanical push-pull) by what amounts to two drivers that are biased either together or apart by the output tube plate current, if any. There is an adjustment that provides a way to set a spring force that exactly compensates for the plate current, providing the best efficiency and sound from the speaker.

Eric Kirst showed his very fancy round wooden Utah brand speaker made of pressed wood. He has not restored it, as he is cautious about it being easily damaged in the process, so he keeps it as a fine-looking example.

Jim Sargent showed his very ornate Pathé cathedral-style speaker. He said that its maker also produced some models containing stained glass and came with lights to provide illumination behind the glass. He also showed a large (about 18 inch diameter) Metro Cone speaker. He displayed a book published by Buford and Jane Chidester titled "Classic Cones". Many of the speakers on display at our meeting are pictured in their book, in color. It is probably the best cone speaker reference available. The Chidesters are also an excellent supplier of replacement paper cones for our speakers. They are made in exact detail, like the originals - including markings.

Jimmie Conner demonstrated his RCA model 100 "drum" speaker using his Radiola 18 radio along with a loop antenna that he had built. The loop is the classic diamond-shaped arrangement with an added tuning condenser on its base. He built it on wooden dowels with slots cut for the wire windings.

George Potter shared his technique for installing new tip-jack pins on speaker and headphone leads – first wrap fine tinned wire tightly around the tinsel, binding it to the cloth core; then place it into a cleaned-out tip and solder it quickly into place, without excessive heat that could burn the core; then wrap the cord with (usually brown) thread.

The final part of the meeting was dedicated to listening to all of the functional speakers on exhibit, using a large box that Jim Sargent had brought. It has multiple jacks and a rotary switch to select which speaker to play.

The author demonstrated his Tower "Adventurer" cone speaker, made of cast iron, with its popular sailing-ship motif. It has its original finish and a new paper cone purchased from Buford Chidester. The speaker was played using a small transistor Radio Shack "Flavoradio". (See author's note for method of connection). This radio was used to play some of the other speakers on display, as well.

(*Continued on Page 4*)

The Case of the Worrisome Watterson

By Mike McCarty

At the May, 2015 swap meet, I purchased a battery operated Watterson model L-442 with what one might call "condition issues". That is, the only remnant of the case was the bottom, it had no knobs, no dial cord, and the speaker had several splits in it. On the plus side, I gave only $2.00 for it, since no one else wanted it. In September, I got around to replacing the out of tolerance resistors, the paper capacitors, the one electrolytic capacitor, used to filter the C-minus bias, and repaired the speaker cone. It also needed an alignment. I found service literature for the L-440 which is identical except for also having a tone control, which this radio lacks. I put on some knobs I had lying around, and installed some dial cord. I have used it since to listen to late night radio using some 9V batteries in series for the B supply, and a C cell for the A supply. I used it for a presentation on how to read schematics and locate components. All in all, I feel I did OK.

After nearly four years of working fine, last March 11 it suddenly quit playing while I was listening to it. I checked the B batteries, and they were very low. I put some more in, and it resumed playing, then stopped. A quick check showed that the local oscillator wasn't running, so I stuck in an NOS 1A7G, and it perked up, then stopped again, and emitted a burning odor. Clearly, something was wrong. I quickly turned it off, and began my assessment.

The odor was that of an overheated resistor, which I am familiar with. I suspected some short, likely in the B circuitry, since the B batteries got run down so quickly. I removed the batteries, and began checking resistances.

This radio has a 600 ohm resistor from chassis ground to the B-minus return. The B supply current flowing through this resistor develops the C-minus bias used for the grid of the 1C5G power amplifier tube. Since I suspected a B supply short, I began with the resistance from the B-minus connector to the B-minus return resistor. It was 0 ohms, as expected. With the radio off, the resistance from the other (ground) end of the resistor to the B-plus connector was infinite, as expected. When I turned the radio on, this resistance dropped to 0 ohms, a dead short. The 600 ohm resistor was directly across the B battery, and that was what must have emitted the burning odor.

I tagged the B+, B-, A+, and A- wires under the chassis for ease of reference, and began tracing wiring, starting with the B+ line. B+ goes from the connector, inside the chassis, and to a solder tag on the power amplifier socket for the screen. From there, one wire goes to the speaker socket, and another goes to the IF amp screen pin, where things get more complicated. From there, a wire goes to the oscillator coil, and two more go to the IF transformer primaries. Also connected here are a 1 Meg resistor to the first AF amplifier plate, and a capacitor is connected to ground. The short might be in any of these connections, or even in the somewhat overloaded solder tag, since it was bent over close to the grounded mounting ring.

I unplugged the speaker plug first, since it was so simple to do, but there was no change, so I began unsoldering connections at the IF amplifier screen, one by one. First, I unsoldered the ground end of the capacitor, which changed nothing. Next, I unsoldered the wire to the oscillator coil, which cleared the short. The oscillator coil wire, however, shows open to ground. As also does the solder tag on the IF amplifier socket. I cleaned up the solder tag on the socket, and re attached the wire to the oscillator coil, and resoldered the grounded end of the screen bypass cap. The short is gone. Perhaps there was a solder blob under the screen pin solder tag on the socket?

I hooked up the batteries, replaced the original 1A7G, and the set played fine.

I felt slightly uneasy not knowing exactly what the problem was when I fixed this set, but I guessed this one was some problem with a short right on the IF amplifier screen pin.

The next night, late, I was listening to this radio when it quit playing for a moment, then resumed. I picked it up to investigate what might be wrong, and there was a

startlingly loud BANG! and choking smoke came out from under the chassis! Something bounced off my glasses! I immediately put the radio down, and turned it off. After the smoke cleared and I could see again, a closer look showed that the 16 volt rated C-minus bypass capacitor could not take the 90 volt B-plus and had exploded, its case hitting my glasses!

The next day I put my digital multi-meter in "buzz box" mode, where it makes a beep sound in response to a short, and connected it via clip leads between B+ and chassis ground. I quickly verified that the set had a short from B+ to ground. I began heating up my soldering pencil preparatory to removing wires one by one from B+ to track down the short. I thought it remotely possible that the short might be in the IF amplifier tube itself, so I removed it, but that did not clear the short. I turned the chassis over, and had just applied the soldering iron to the IF amplifier screen tag, when the short cleared and the buzz box went silent. I needed to make the short permanent, or at least be able to make it come and go at will.

I turned the radio back over, and set it on the case remnant, and wiggled it around until the buzz box indicated that the short had returned. I then carefully lifted the entire radio, and peered under the chassis to see what might be contacting the case or whatnot. The oscillator coil was in contact with the bottom of the case!

Careful examination of the oscillator coil showed what the problem was. The coil is mounted on a phenolic wafer base, which is attached via an eyelet to a mounting bracket, which is a flat piece of metal about 1/4 inch wide with a right angle bend for attaching to the case. Attached to this phenolic are four solder terminals, also held in place by eyelets. The main mounting eyelet had loosened somewhat, and the phenolic had rotated, bringing the B+ terminal of the coil into contact with the mounting bracket, and thus to chassis ground. I now knew exactly what the problem was, and why it was intermittent. (see illustration, Page 4)

A few days later, I used a dremel tool to grind the end of the mounting bracket to be slightly narrower, and also the eyelet on the B+ terminal of the oscillator coil, creating a significant gap between them. I then mixed up some five minute epoxy, and epoxied the whole length of the mounting bracket to the phenolic base, fixing the base in place so it cannot in future rotate.

A quick check of the 600 ohm resistor showed that it had not suffered damage, so it was left in place. I put a new C-minus bypass electrolytic in, and since that time, I've had no problems listening to this radio.

Case solved.

2019 Contest Categories

The theme for the 2019 convention contest is 100 YEARS of RCA. Here is the list of contest categories.

1. Crystal Receivers Pre 1940
2. One Tube Radios Pre 1928 (No Crystal Detectors)
3. AC Table Receivers Pre WWII
4. AC/DC Tube Radios Pre 1960
5. Transistor Radios Pre 1965
6. Phonographs and Related Accessories Pre 1940
7. Speakers and Microphones Pre 1960
8. Tube Type Ham Radio or Military Equipment (Includes Any Telegraph Items)
9. Novelty Radios-Tube or Transistor
10. Radio Related Ads, Ephemera, and Accessories
11. Television Receivers Pre 1970
12. Table Top Art Deco Radios (Includes Catalin, Chrome Front, Others)
13. Auto Radios-Pre 1960
14. Foreign Radios
15. Sub-Miniature Tube or Hybrid Portable Radios
16. Wireless/Spark Apparatus (Includes Tesla Coils, Van de Graff Generators, and anything that sparks)
17. Contest Theme- RCA (Includes Any RCA Items)
18. Open Category (Radio Related Items Not Belonging In Other Categories)

LOST & FOUND

2 Chassis (D1135) for Truetone case below were left at the March Auction. If you have the case and would like the chassis, please contact: mcaruth@att.net

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MONTHLY MEETING PROGRAMS 2019

NOTE: Programs will be held at various locations in Irving, Texas. Make note of the location as they may change from time to time. Senter East, 228 Chamberlain St.; or Garden and Arts, 906 S Senter Rd. Maps are located on the WEB site, www.VRPS.org EVENTS page. Programs start at 2pm. unless otherwise noted. Call us on the cell tellie if you get lost: 972-898-7251 or 972-742-8085.

- **JULY 20 —-REPAIR SESSION —- SENTER EAST -- 8-NOON**
- **AUGUST 17 -- SIGNAL GENERATORS & TRACERS -- SENTER EAST -- 1-5 PM**
- **SEPTEMBER 21 -- SWAP MEET -- GARDEN & ARTS -- 8 - NOON**
- **OCTOBER 19 -- TBD -- SENTER EAST -- 1-5 PM**

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 anytime or send an email:
Larry Lindsey email: pipilindsey@tx.rr.com telephone: 817-312-8761..

Membership dues of $20 are due November 1st every year. Renewals may be sent to the post office address given at the top of this page: **VRPS, INC., P.O. BOX 165345, IRVING, TX 75016**