

# SOUND WAVES

VRPS Spring 2014

## *From the President*



Wow! April and it looks like ole' man winter has finally made an exit. Was it just me or did it seem like that winter just wanted to keep on giving? Enough weather reports - let's turn our attention to the business at hand...radio collecting. As I write this, we are just a few days past the spring auction. It has been a while since we had so many nice items to choose from in this annual event. A couple of estates did not hurt either. But the best part of the auction was not the number of good items...and there were many, the best part was seeing so many folks in the audience. The room was packed. We had to put out more seats. We picked up 8 new members...well, okay not all of them were new. John and Marie

Mielke re-joined our merry band of collectors after a few years hiatus. Welcome back, John.

We added a new wrinkle at this year's spring event. For the first time we allowed buyers to pay with credit card when checking out. Since I have been in the club...hummm, that would be 1977, we have only allowed cash or good checks. Tapping into the resources of my auction business, Sargent Auction Service, we managed to get a Wi-Fi connection (that was the hardest part because of the building's metal structure) and utilize our little machine to swipe credit cards. Guess it all worked out okay, because eight buyers took advantage of the opportunity. We will be doing this again at the fall convention. Forty years and still innovating...neat! Don't let that last comment get by you too quickly. This is our 40<sup>th</sup> year. Look around you, find others with an interest in our hobby, even if just in passing or on one of the fringe collection areas, and invite them to a meeting. We will do the rest. We love new members, and this hobby has something for everyone. You might want to check out the swap meet in Midwest City, Oklahoma, on April 19. While this is a small event, it is always exciting to see what is in the next box pulled out of trunk of a car or back of a pickup. Jim Collins and gang do a great job. Join them if you can. If not, then see you at the April meeting. Remember the May meeting is not a meeting, it is an early morning swap meet. Good hunting.

Jim

## Notes from the January 18, 2014 Meeting

We viewed the Modern Marvels DVD "Out of Thin Air." Here's a summary from the DVD: To some it was a miracle. Others derided it as a triumph of illiteracy. The introduction of the radio changed life in America nearly overnight. In the age of TV, radio is a second-class citizen, but for a few brief decades it was king. MODERN MARVELS™ tells the story of the dawn of the electronics age, when the wireless was a stunning phenomenon. Meet the men who took the work that had been done on the telegraph to the next step, and hear some of the earliest broadcasts. Radio personalities like Casey Kasem and Larry King explore the unique qualities of the medium, and reflect on its current renaissance. And historians explore the dramatic and lasting changes that the coming of the radio made on society. Don't touch that dial this is a compelling saga of invention and sweeping cultural changes, the history of the first mass broadcast medium that started us on the long road to the "global village."



Next, NOS member John Hervey displayed one of his collection of stand-alone loop antennae. He asked for members to send him pictures or examples of these antennae as he is planning a book about them. He also collects cartoon glasses, which he published a book about: *Collector's Guide to Cartoon and Promotional Glasses* (still available on Amazon). He also collects DeLorean parts, which he resells as a business. He is pictured above with his DeLorean and three of his loop antennae.

-Editor

## Notes from the February 15th, 2014 Meeting



The meeting was a show and tell of unusual test equipment.

- First up was Ed Janssen with an early tube tester that tested tubes such as the OA4 and the O1A.
- Next was John Selvidge with several pieces of equipment including a grid dip meter, an early Hickok tube tester, a Hickok AC 4600, which was the second commercial tester produced by Hickok, a working 1935 Hickok tube tester, a 1928 wave meter, and a Dayrad tube tester.
- Billy Smith brought a square wave generator for calibrating oscilloscopes.
- Larry Lindsey brought a Tung-Var battery charger
- Jim Sargent brought a Jewel wave meter circa 1920-22, a Bruton tube emission checker (pre1930), a Van Horn tube checker (pre 1930), and an early galvanometer—tangent type w/ vane indicator.
- Tony Quinn brought a selective meter with a 300 Hz—3.5 MHz tuning range.
- Mary Ann Caruth brought a blue EICO sweep signal generator in which the speaker was part of the tuned circuit, used to vary the frequency.
- Mike McCarty brought a lab grade impedance bridge made by General Radio, which used a carbon button oscillator to drive the bridge.
- Mike Grimes brought an NRI signal tracer with tuned front end—an actual TRF radio, a broadband signal injector, an “A” hand held battery tester with adjustable pins to fit test fittings on certain radios, and an inductive amplifier for testing audio signal wiring.
- Cleo Cherryholmes brought several pieces of Sterling equipment , including a tube rejuvenator/tester, a Sterling “Professional” tube tester, a tester for AC and DC radio set and tubes, a 1930s tube tester with adapter for any tube. Inside the lid is a list of all tubes testable. He bought it for \$4 with his earnings of mowing lawns for 15 cents. Ask Cleo for the whole story. He also brought several ads for Sterling equipment.
- Andy Murphy brought several Simpson items: 215GE VOM (pre 1940) with reflective scale that was made for only 3 years, a 215 VOM (after 1940) , and a 260 VOM.

- Dennis Brady brought an Electronic Mfg. Co. [EMC] spot frequency generator [175, 262, 370, 455, 465, 600, 1400, 1000, 2, 5 7.5 20 M.C. ] with AF mod switchable.
- A member brought a Hallicrafters receiver And brought himself as test equipment.
- Kurt Ehrlich brought an HP Lab AF signal generator 200 C illustrating the user of a light bulb as a non-linear resistance element.
- A member brought a Hickok T-53 tube tester from the late 30s or early 40s.

Please excuse any omissions and errors—notes contributed from several members, as esteemed note-taker Bill McKeown was not present, due to illness in his family. We are sorry for your loss, Bill.

We note with sadness the passing of Valerie McKeown, wife of Bill McKeown, on February 15. She had been ill for some time. Valerie loved coming to our VRPS annual conventions and Christmas parties and it was especially good to see her this past December.



## Antique Radio Cake Recipe

### Ingredients

- 1 package German chocolate cake mix (regular size)
- 3 teaspoons instant coffee granules, divided
- 3/4 cup butter, softened
- 4 cups confectioners' sugar
- 6 tablespoons baking cocoa
- 1 teaspoon vanilla extract
- 1/8 teaspoon salt
- 1/4 cup water
- 2 miniature peanut butter cups
- 1 ounce white baking chocolate
- Black or brown paste food coloring
- 1/2 cup semisweet chocolate chips

### Other

- 15- x10-inch board or piece of corrugated cardboard

Blue gift wrap to cover board  
Lace fabric or place mat

### Directions

1. Prepare cake batter according to package directions, adding 2 teaspoons coffee granules. Pour into three greased and floured baking pans, two 8-in. square and one 8-in. round. Bake at 350° for 30-35 minutes or until a toothpick inserted near the center comes out clean.
2. Cool cakes for 10 minutes before removing from pans to wire racks. Cool completely. Cut round cake in half, forming two semi-circles.
3. For frosting, cream butter and sugar in a bowl. Add cocoa, vanilla and salt. Dissolve the remaining coffee granules in water; add enough to the creamed mixture to achieve desired spreading consistency.
4. Place one square cake on the covered board. Place the cut edge of a semi-circle cake touching one side of square cake. Frost the top of both cakes. Stack remaining square and semi-circle cakes on top. Frost the top and sides smoothly. Set remaining frosting aside.
5. Unwrap peanut butter cups. Place each cup about 1-1/2-in. from the bottom and sides of cake for radio dials as shown in photo.
6. In a microwave-safe bowl, melt white chocolate. Spread on waxed paper into a rectangle about 6 in. x 1-1/2 in. x 1/16 in. Let harden for 5 minutes. Using a sharp knife, cut into a 5-in. x 1-in. rectangle.

**Note from the Editor: Articles Needed! You see what it is coming to!**



**Radio Detective Mysteries:  
The Case of the Puzzling Power Transformer  
(With Solution)**

by Mike McCarty

Recently, I had occasion to work on a nice 1950's era European radio for which I had absolutely no service material. I replaced all the paper capacitors with modern films, and the electrolytics. I did a preliminary check of the power supply to make sure that it wouldn't catch fire, and brought it up with a dim bulb and a variac. The radio played on all bands (AM/FM/SW), but I immediately noticed that the dim bulb looked brighter than it should, and the power transformer was getting as hot as a pistol.

I powered the set off, and removed all the tubes as well as the dial lamps. In this state, the radio should not draw enough current to light a 40W bulb at all. Instead, the 40W bulb was brightly lit. Just to make sure that there wasn't a short circuit elsewhere in the wiring, I disconnected one end of each of the secondary windings. Still lights up a 40W bulb pretty brightly; there's a problem in the transformer, likely a few shorted turns in the high voltage winding. Although the radio plays fine, the transformer is a ticking time bomb waiting to go off. One day it's going to get just too hot, and really short. This set is fuse protected, so it's not going to catch fire and burn someone's house down, but this transformer's days are definitely numbered, and it needs to be replaced. How to go about selecting a replacement transformer with no service material?

My first step was to get the complete tube line up. This set has four tubes, and uses a solid state bridge rectifier for the B+. The tubes are:

ECC85/6AQ8	FM converter (twin triode)
EF89/6DA6	Remote cutoff RF amp (IF amplifier)
ECL82/6BM8	Audio triode + Power audio pentode
(unmarked)	possibly 6BE6 style AM converter, uncertain

There are four windings on this transformer. There are two primaries, wired in parallel, a 6.3VAC heater winding, and a B+ winding. The two primaries are provided so that they can be wired in parallel (as in this set) for 120VAC operation, or in series (for the European market) for 240VAC. For the replacement transformer I'll look for just one 120VAC primary.

The 6.3VAC winding shows proper voltage, but the high voltage secondary has a short, and I can't rely upon what it's putting out now, which is probably somewhat low. However, the original filter capacitor is a 250V unit, which gives me a big clue to what B+ should be, i.e., a little bit less than 250V. Since the filter capacitor charges to the peak of the AC waveform, which is 1.414 times the RMS voltage rating, I divided 250V by 1.414, to get a putative 177V secondary voltage. I should shoot for somewhat less than that as the voltage on the replacement transformer. So I now know how many windings I need (three) and what their voltage ratings need to be: 120VAC for the primary, 6.3VAC for the heater, and a little less than 177VAC for the high voltage secondary.

Just knowing the voltage ratings for the windings is not enough, however. I also needed to know the current ratings for each of the secondaries. I got that from the tube manual specifications for the tubes. For the heater winding, I simply added up the heater currents for the tubes. For the B+ rating, I needed to add up the screen and plate requirements. I didn't know what one of the tubes was, since the markings were long gone, but one tube obviously missing from the functional list is the AM converter. Given that all the other tubes are 6V heater tubes, a reasonable guess is a 6BE6. Even if that's not the exact tube, the one the radio needs probably has similar requirements. Using the 6BE6 as the putative AM and shortwave con-

verter, and 250V for B+, I got these requirements from a tube manual:

Tube	Heater	Plate	Screen	B+	Notes
6AQ8	0.435A	10 mA 5.2 mA		10 mA 5.2 mA	RF amplifier unit oscillator unit
6DA6	0.2A	9 mA	3 mA	12 mA	IF amp
6BM8	0.78A	3.5mA 35 mA	7 mA	3.5mA 42 mA	Triode unit Pentode power amp
(unknown)	0.3A	2.9mA	6.8mA	9.7 mA	AM/SW converter (from 6BE6 )
Lamp x 2	0.3A				remember the dial lamps!
<b>Total</b>	<b>2.015A</b>			<b>82.4 mA</b>	

So, I now had my specifications:

- Primary 120VAC
- Heater 6.3VAC @ 2A
- High Voltage approximately but less than 177VAC @ approximately 82mA

Perusing a catalogue, I came across this transformer:

- Primary 120VAC
- Heater 6.3VAC @ 2A
- High Voltage 150-0-150 @ 90mA

This is an excellent match, except for one thing: the high voltage secondary for the original had no center tap, and used a full wave bridge configuration for the B+ rectifier, whereas this transformer is intended for a full wave center tapped supply. A little examination of the circuit showed that I could rewire the rectifier to take a center tapped secondary. One issue is that in the full wave center tapped configuration the rectifiers must withstand twice the voltage as they do in a bridge. I gave the rectifier a check that it could handle the voltage using a capacitor reformer I have, and it passed. Had it failed, I'd have had to replace it with some 1N4007 rectifier diodes I have.

One last check was that the candidate new transformer would physically fit. It was smaller, but had different mounting requirements. A quick look showed that there was space for some new holes drilled in the chassis, so an order was placed. A few days later, the new transformer arrived, and after a bit of work, the radio was playing again like new.

SOUNDWAVES IS PUBLISHED QUARTERLY BY THE VINTAGE RADIO AND PHONOGRAPH SOCIETY, INC.

PRESIDENT—JIM SARGENT (972) 742-8085 BSARGENT@SWBELL.NET

VICE PRESIDENT—RANDY JAMES (817) 292-7435 RANDY-JEANNINE@SBCGLOBAL.NET

NEWSLETTER EDITOR—MARY ANN CARUTH MCARUTH@ATT.NET

WEBMASTER—MIKE GRIMES K5MLG@ATT.NET

VRPS WEBSITE WWW.VRPS.ORG.

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## Highlights of the Spring Auction

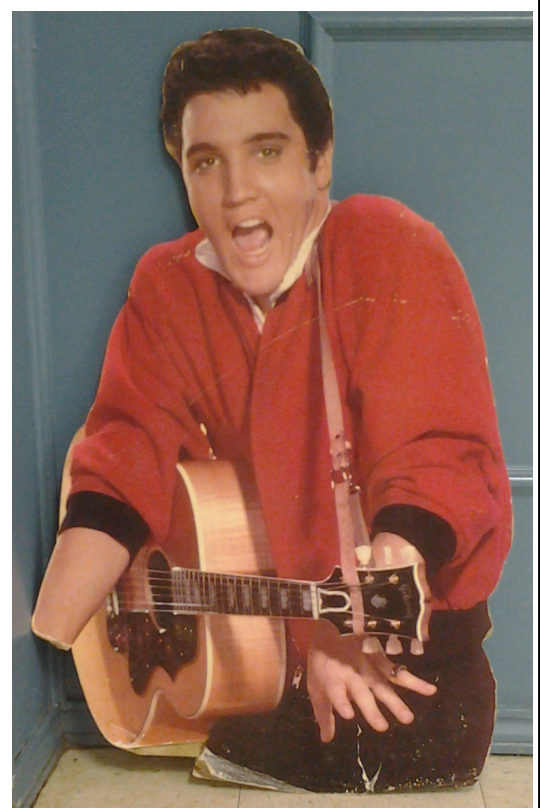
by Jim Sargent

As much as anything a highlight from the sale would have to be the 66 bidders and wives attending this annual event. Nice to see such a good turn out.

Here are some selling highlights:

- Small wood Firestone, nice shape and ready for display - \$190
- Guild Tea Kettle radio with rare base - \$60
- Radiola RA - \$100 and companion DA unit - \$130 we rarely see them at sales
- Really nice mantle speaker, manufacturer unknown - \$70
- DeForest Everyman crystal set did not get a high enough bid to sell.
- Crosley Dynachord speaker, really nice - \$50
- Charlie McCarthy was a hit at \$260. The cabinet had the usual breaks, but was definitely restorable.
- InfoCaster broadcasters manufactured in Garland were a hit, selling for \$110 and \$130.
- A really nice 1940 Zenith console sold for \$190. I had expected this one to quite a bit higher.
- Radiola 106 power/amp and speaker in really nice condition sold for \$65...a real bargain.
- Sparton horn speaker, working, sold for \$160.
- Three pieces of McIntosh audio gear from an estate brought some of the best dollars at the sale: The tube type tuner model 67 brought \$350; tube amplifier MA-230 \$575; solid state amplifier, MA-5100 \$300.
- Atwater Kent cathedrals still hold their value with a model 944 bringing \$80.
- Grebe Syncrophrase MU-1 sold for \$75.
- Dave Moore brought a number of his prized horns as he begins to downsize in preparation for a move to Oklahoma. A Magnavox R-3D \$120; and unknown horn speaker but small in statue \$160.
- Kellogg battery set, quite large and with tubes only brought \$40.
- Wood Arvin model 702 in nice condition - \$95.
- Crosley model 515 cube shaped wood radio - \$90.
- Hallicrafters novice transmitter model HT-40 - \$45
- Boxes and caddies of tubes brought anywhere from \$10 to \$220 depending on what was seen in the boxes by the bidders.

In all, the 350 lots sold for almost \$10,000. All in all, a very good auction with some items going way too cheap and others reaching their value.



VRPS, INC.  
P.O. BOX 165345  
IRVING, TX 75016

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## MONTHLY MEETING PROGRAMS 2014

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, 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.

### APRIL 19, 2014 SENTER EAST BUILDING

A revisit of common parts that plague the repair of our old tube radios. Review of types and configurations of capacitors, resistors, and inductors. Their function, description, and symptom of failure will be discussed.

### MAY 17, 2014 SENTER EAST BUILDING

Swap Meet/tailgate sale, parking lot. 8am to Noon.

### JUNE 21, 2014 GARDEN & ARTS BUILDING

Radio repair discussion will be continued with examples and circuit description/location. Common types, tolerances and "how to" replacement for repair will help the novice and experienced repairman as well. These programs should prepare one to tackle a troublesome set for the next month Repair Clinic.

### JULY 19, 2014 SENTER EAST BUILDING

ANNUAL Repair Clinic Session. Bring your items for help in repair and restoration. Our "experts" will be on hand to help. 8am to 2pm. No afternoon program.

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.