SOUND *WAVES*

Vintage Radio and Phonograph Society, Inc. July 2007

From the President.....

Jim Sargent

Hard to believe that it is already July. So much to do, so little time to do it. Guess what they say about a slow housing market is true. As I write this, Beverly and I have still not been able to sell our home in Mesquite, thus, we have not started building our new house in Granbury…but almost all of our 'important' things (the realtor calls it clutter…how dare him…) are in storage in Granbury, awaiting our arrival. Have been slowly moving the major portions of my collection into storage, so if no sale soon, depression might begin to set in.

Oh well, on to more pleasant thoughts. We have been having excellent meetings and presentations this year and continue to pick up new members along the way. Our organization is healthy. The 2007 convention is around the corner and your directors have been meeting and making plans for another terrific event. You will see reminders of the convention elsewhere in this issue of the Soundwaves. I encourage you to make your hotel reservations now and avoid the rush.

One other thought before I close. Every year about this time I try to encourage you to attend an antique radio event not necessarily associated with the VRPS. You should do this for several reasons, but here are two of my favorite reasons. The networking that is done with other collectors is a wonderful way to expand your knowledge, parts supply, and leads on desired radio items. Equally as valuable is the opportunity to see how others conduct their radio meets/conventions. You might pick up on something that you think will be beneficial to our own events. The VRPS does not have a lock on all the good ideas. You can be our eyes and ears. Until next time, good hunting!

2007 VRPS CONVENTION
NOVEMBER 16,17,18

IT'S TIME TO START MAKING PLANS FOR THE 2007 VRPS CONVENTION! THE THEME THIS YEAR IS TEXAS RADIO. GET THOSE CONTEST ENTRIES READY AND MAKE YOUR HOTEL RESERVATIONS EARLY! THE INFORMATION IS ON THE BACK PAGE! THE HOTEL HAS SET UP A LINK FOR THOSE WHO WISH TO MAKE THEIR RESERVATIONS ONLINE.

2007 OLD EQUIPMENT CONTEST CATEGORIES

1. Wireless Apparatus
2.Crystal Receivers
3.Battery Receivers-Regen. and non Regen
4.Receivers AC 1929 or Earlier
5.Homebrew Battery Receivers-1920-1930
6.Art Deco Radios
7.Radio Receiver Accessories
8.Table Receivers-AC
9.AC/DC Receivers
10.Loudspeakers-Horn and Cone
11.Console Receivers
12.Phonographs-All Types
13.Test Equipment-Pre 1950
14.Microphones
15.Vacuum Tubes
16.Novelty Radios-Tube or Transistor
17.Amateur and Military Transmitters and Receivers-Pre 1950
18.Transistor Radios-Pre 1965
19.Open Category- Not Fitting Other Categories
20.Replicas of Old Radios or Related Equipment
21.TEXAS RADIO-ANYTHING HAVING TO DO WITH TEXAS RADIO OR RADIOS

By Randy James

April 2007 Meeting

The meeting for April was attended by about 18 members. President Jim Sargent started the meeting by delivering his messages. He reminded everyone that in May the Swap Meet would take the place of the monthly meeting and he talked a bit about his upcoming auction.

Program Chairman Mike Grimes was not able to attend, so Vice President Cleo Cherryholmes conducted the meeting, which was about Thomas Edison. He started out by showing a video about Edison which had been shown on the TV show Modern Marvels. The video was cut short because of time limitations but he said he would show the rest at a later date. The video mentioned Edison's astounding 1093 invention patents and talked about his hearing loss which was probably due to a childhood illness. He was a roaming telegrapher, and in 1868 he got his first patent - the voting machine (it was rejected by Congress because they were afraid it would eliminate the filibuster). He invented the stock- ticker and had the first R&D facility in Menlo Park, New Jersey, where he invented the electric pen in 1875 which later lead to the development of the mimeograph machine. Within three months he became world -famous. During the next ten years he was obsessed with developing the electric (incandescent) light bulb. He tested more than 300 materials to use as a filament and finally settled on carbonized cotton.

The rest of the meeting was for the members to show the Edison-related items they had brought. Jim Sargent started off by showing his collection of replica light bulbs, a replica of an Edison Bi-Polar motor dated 1920 (possibly a salesman's sample), a mimeograph machine dated 1894, a set of "Inventors Series" light bulbs, a bust of Edison, a large coin from the 1920's with Edison's image, and some very early books and magazines. Next up was Gary Reeves, who talked about his trip to Fort Myers ,Florida (Edison's summer home) and he demonstrated his very nice Edison Standard phonograph with a cylinder called "In the Clock Store". After that, Jon Butz Fiscina showed some Edison Diamond Disk records and a photograph of an Edison console radio he had purchased at a yard sale. It was too bulky for him to bring to the meeting, but he promised to furnish us with a story and photos of the radio for a later issue of the Soundwaves. He related a story about Edison that told about his hatred of radio because he was afraid it would cut into his sales of phonographs. George Potter was next with a collection of Edison light bulbs and books. He talked about the early manufacture of Edison bulbs and the design of the bulb bases. George promised a future story and photos of Edison light bulbs for the Soundwaves. Cleo Cherryholmes brought some Edison motors for the Dictaphone and some photos of Edison's phonograph dolls (which is a story in itself). Last, but not least, Eric Kirst showed us his Edison Standard Dictating Machine and gave us some history about Edison's invention of the process to revolutionize the mass manufacture of phonograph cylinders and showed his Gold Moulded Record cylinder dated 1901.

Thanks to our very knowledgeable members , we now know a little more about "The Wizard of Menlo Park".

Thomas Edison

Cleo Cherryholmes

Gary Reeves

George Potter

2007 MONTHLY MEETING PROGRAMS

MEETINGS BEGIN AT 2 PM AFTER THE MONTHLY SWAPMEETS AT THE SENTER EAST BUILDING IN IRVING (UNLESS STATED OTHERWISE)

JULY 21

Annual Radio and Phonograph Repair Session. Starts at 9 AM at the **Senter Building, Irving. Bring your difficult problems for our "experts" to help solve.**

There will not be an afternoon program.

Also, again this year we will offer **free public appraisals** of vintage radios and phonographs. Please help get the word out. 9am to 3pm.

AUGUST 18

Summer "tailgate" swap meet.... starts at 7am at the **Senter East Building, Irving. Veteran members know that many people start arriving at dawn and that everything is about over by 11:00 or so.**

SEPTEMBER 15

This month we will continue our program about **Thomas Edison Part II** as a follow-up to the introduction in April. We will finish Modern Marvels: **The Man and His Inventions: Edison,** followed by a "show and tell" with emphasis on his **Electric Motors**. Please bring your "artifacts" of collected items to share.

OCTOBER 20

For October, we will have a "show and tell" of **"unknown or little known Radio Manufacturers."** Please bring radios that cannot be identified (by most common references) and/or their company cannot be identified. Share your experience.

NOVEMBER 16,17,18

ANNUAL VRPS CONVENTION

VRPS Annual Convention, Hampton Inn and Suites, Mesquite, TX.

As usual we will need some volunteers for the auction staging. Thanks in advance for volunteering.

DECEMBER 1

ANNUAL CHRISTMAS PARTY

Jaycee Center for the Arts, Irving, TX; beginning at 6:30 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 will need volunteers in organizing other programs, so consider presenting a program yourself. Call me anytime or send me an email.

Mike Grimes

eMail: k5mlg@verizon.net

972-384-1133 (home)

972-898-7251 (cell)

Jim Sargent

Eric Kirst

Jon Butz Fiscina

Notes from the June 16, 2007 Meeting

President Jim Sargent conducted our meeting, which was attended by about 20 people. He reminded us to get our reservations in for the Convention. He informed us that we could sign up for a just-released new book "The Golden Age of RCA, 1919 to 1929 - RADIOLA". Several members signed up for this book, and we look forward to getting our copy!

Program director Mike Grimes introduced our program on restoration. He used a Philco 60 to illustrate the process of evaluating the restoration challenges it might present. Following are observations about the set.

The set was a little rough in appearance, needing some veneer and fretwork repairs on the front. The sides, top and bottom were in fair-to-good shape.

The knobs were all missing. They can be found for this model.

The chassis showed no signs of rust and would clean up quite well.

The under-chassis was fairly clean, with some early repairs obvious (a digital camera can record the exact configuration of things before you start removing parts).

The original electrolytic condensers were still in place and could be left installed for appearance's sake or could be used to contain new, modern capacitors.

The dial was OK, but the escutcheon was missing. A dial could be bought for this model, but is somewhat an investment considering the value of the radio. The escutcheon would be more difficult to find as a loose item (but possible, with patience). A junk cabinet might be a more likely source.

The wiring was OK, unlike some radios (e.g. later AK's) that have crispy rubber on the wire that crumbles at the touch.

Mike brought up the possibility of combining another set of this same model, one having a good chassis or dial and the other a good cabinet. Of course it's up to the individual how much time and money he wants to put into a radio restoration. If nostalgia is involved, or the joy of a challenge, it can be well worth it to the owner. After all, it may always remain in the restorer's collection as a "keeper". Mike said that as far as restoration goes, first of all, clean it up. This is easier with the tubes removed (you may want to test them, anyway). A good blowing out with compressed air is good, if available (or a can of dust-off for computer keyboards). Then use cloth, brushes, toothpicks, Q-tips, sucker sticks, old toothbrushes or whatever to clean everything. Water is best, but don't get it into the I.F. cans, coils or transformers. Mike says that one thing that works well is automatic transmission fluid! (In the author's experience, a radio that's greasy must have been in a kitchen near the stove. Naphtha works well to remove grease – automatic transmission fluid probably does the same thing, but it might even leave a very thin protective film on the steel parts). He told us about a website that has a large number of radios that are catalogued and pictured as thumbnails. You can click on the thumbnails and see a larger picture. The site is – http://www.radioatticarchives.com.

Mike then introduced member Mike McCarty, a returning presenter. (Mike talked to us about vacuum tubes in January).

This time, he presented a program about the basic functional blocks of a typical radio and the process of restoration once you understand what those blocks do. His discussion focused on the most commonly encountered radios, the 5 or 6 tube superhet AC/DC radios. He emphasized safety – first of all don't just plug it in! This is for the safety of the radio, as well as

yourself.

Diagrams were used to illustrate the functional blocks, or stages, of a radio:

1. A pre-selector (sometimes two in 6-tube sets) to select the frequency of the desired broadcast station - this consists of the first, and possibly second, tuned circuits, including built-in antenna loop or ferrite-rod antenna. The local oscillator may be combined into this first stage, yielding the I.F. frequency signal that couples to the next stage through the 1st I.F. transformer. The oscillator function relies on a separate coil assembly to create its tuned circuit. The pre-selector and oscillator frequencies are tuned by the ganged tuning capacitor (two or three gangs).

2. An intermediate frequency (I.F.) stage that works at a fixed frequency - this stage amplifies the signal and narrows the frequency band that will pass through to the following detector (This is what gives the superhet its good selectivity) - The frequency is generally about 455 kilohertz, but other frequencies are used, also, especially in older radios. This I.F. stage drives the 2nd I.F. transformer, which couples the amplified intermediate frequency signal to the detector/filter stage.

3. A detector/filter stage - this stage usually makes use of a multi-function tube (e.g. 12SQ7) that has diodes for converting the radio-frequency (R.F.) signal to an audio signal (the detection function) and also a triode section that serves to amplify the audio signal. A capacitor is used to filter out the R.F. component from the detected signal. The triode section amplifies the detected signal to a higher level.

4. A power amplifier stage- the audio signal from the triode is coupled to this amplifier tube (e.g. 50L6) via a capacitor (it's very important to replace this capacitor!). This amplifier couples to the audio transducer – speaker or phones, via an output transformer that converts the impedance to match the driven device and get the best power transfer from the tube to the device.

5. A power supply stage - the radio is powered with basically two kinds of B+ voltage, a higher voltage for the power output stage and a lower voltage for the amplifier/detector stages. "Filter" capacitors are used to smooth the otherwise-pulsating D.C. for each supply. Any residual pulsation is called "ripple". The higher voltage doesn't need to be as ripple-free because the signal level is very high. The lower voltage needs to have very low ripple or it will result in hum at the power frequency. Typically, a resistor and second filter capacitor provide very smooth (low-ripple) power for the lower voltage supply. The resistor drops both the voltage and the ripple. The capacitance values determine how low the ripple levels are. If the electrolytic capacitors have dried out over time, their actual capacitance will be down and the radio will have that all-too-familiar hum.

Mike described and demonstrated some techniques for troubleshooting a typical AC/DC set. Some people like to use a variac to "sneak up" the voltage while checking voltages in the radio. Mike prefers to use a test lamp setup that has been used by many people in the past (the author's father used this method for many years). Mike's arrangement consists of a box with an outlet, a switch and a light bulb socket, powered with a cord having a polarized plug (one with a wide blade). From the "hot" side the lamp is connected in series with one of the outlet sockets and the switch is connected so as to short out the lamp, when desired. This arrangement lets you limit the input current to the radio to safe levels using different sizes of lamp – 40 and 100 watt lamps generally suffice. An analysis showed that, with the 40 wall lamp, 16 watts is the maximum power that can be delivered to the radio. You get useful clues from the brightness with which the lamps burn or glow. A radio with problems, especially shorts or overloads, will make the lamp burn brightly and remain bright. A healthy radio will cause the lamp to start out fairly bright when the tubes are cold and then dim down to a dull glow after the radio warms up. Mike demonstrated this and showed us that a healthy radio would actually play with the 40 watt lamp in series with it (The 100 watt lamp barely glows). Throwing the shorting switch makes it a little louder because the radio then gets full voltage.

Mike demonstrated some voltmeter measurement techniques that are useful. First of all, DC voltage measurements of the two supply voltage mentioned earlier will reveal a lot about the radio. There are quite a few parts that can be eliminated as possible trouble spots if these voltages are normal. They will be approximately 130 volts for the high and 90 volts for the low, depending on line voltage of course. If they aren't, then a check of the filter capacitors is in order, or the rectifier tube. If the low voltage is low, very often the culprit is the series resistor that feeds it from the higher voltage supply. Another useful tip is to measure the ripple voltages on the two supply voltages. This must be done with a meter that blocks any DC voltage from affecting the reading. One of Mike's meters did but the other didn't. (Note: Many old Simpson multi-meters have a jack labeled "OUTPUT" that connects the test voltage through a capacitor that blocks the DC – when the capacitor is good, that is. You can use a good film-type capacitor of about 0.5 microfarad to do your own blocking). On his demonstration radio, Mike noted ripple-voltage readings of 4 Vac on the higher voltage supply and 0.23 Vac on the lower. If these voltages are high, the

filter capacitors need replacing, as they usually do.

Mike stressed the issue of safety in working on hot-chassis radios. The often-discussed question was brought up about why those radio power switches are wired to switch one side of the power cord directly to the chassis, instead of breaking the circuit at the side feeding the filament string and rectifier. Theories from the audience included the idea that hum from the switch might couple into the volume control, but the consensus is that it saved labor and material costs in a very competitive manufacturing business. Mike said that he re-wires the radio power switch to place it in the "hot side" and uses line cords that have the polarizing feature (one wide blade). He also put forth the ideas of keeping one hand behind your back when turning on or measuring, wearing rubber-soled shoes, using a rubber mat under the radio and keeping your meter right beside the radio so you don't lose sight of what your hands are getting into. Another measure he takes involves the use of a simple neon-lamp tester that is sometimes available at auto parts and hardware stores. This is a test lamp with two separate tipped leads that can be plugged into an outlet or touched to an object to see if there is power. If one test lead is connected to the "hot" side of the line cord or outlet (narrow slot), you can touch the other lead and the lamp will glow dimly from your body capacitance. This means you can tell if something is electrically "hot" or not. Mike uses this check to make sure the chassis is "cold" with the radio plugged in. He emphasized safety as though he has had a pretty good jolt at some time.

Author's note: I use a similar technique to Mike's, using the same type of neon tester, which I have had for about 50 years. This works with the old style plugs that have two narrow blades. With the radio unplugged, I turn the radio ON (with the volume control). From then on, I leave it on, until I have a special reason to turn it off, such as for checking the switch action or volume control. Then I plug the radio in, briefly, with one lead of the neon tester already on the chassis and the other held between two fingers. If the lamp glows, I reverse the plug, plug it back in briefly, and see that the lamp does not glow. If it doesn't, I reverse it, briefly, to confirm that it will glow (It's always dangerous to rely on a "null" test). Then I put a piece of tape on the plug identifying the "safe" orientation. During the repair and troubleshooting, I always plug it in the "safe" way. I wear rubber-soled shoes and make sure I have only one hand on anything when I turn the radio OFF. I'm sure an isolation transformer reduces the risk of shock from the AC power line, but it won't keep you from getting big jolts when you get across parts of the radio, especially the early ones with more than 300 volts running around inside. For the most part, "respect" these voltages before they demand respect!

See you at the Repair Session July 21st (in rubber-soled shoes).

Bill McKeown

Radios Manufactured in Texas

DALLAS:

Watterson

Dalbar

Aldingson

Talk-a-Radio

Davis

Texas Instruments (Regency)

HOUSTON:

Texan

Watterson

Dalbar

SAN ANTONIO:

Sferics

Alamo

Radioette

CLEBURNE:

Rangeaire

ATHENS, DALLAS, HOUSTON:

Curtis Mathes

CAPACITOR MARKINGS AND UNITS

Capacitor markings are not what they used to be. In vintage radio restoration most often our schematics refer capacitor (condensers) units in terms of microfarad or micro microfarad followed by the voltage. Modern manufacturers use a different code, thanks to the microelectronics industry. If you run across three-digit number on a capacitor that ends something like 203 or 203K(EIA code), it means 20,000 *p*F (picoFarads) or 0.02*u*F(microFarads). The first-digit, and second-digit are the first significant figures. The third-digit is a multiplier. This numeric unit value is in picoFarads. This is the rule. Tolerance is often given after the numeric value by letter code: F=+/-1%, G, H, J, K, M, Z, P. +/- 2, 3, 5, 10, 20, -20/+80, -0/+100, respectively. For instance, 102K means 1,000 *p*F or .001 *u*F... or 104K means 100,000 *p*F or 0.1 *u*F. The "K" indicates a tolerance of +/- 10%.

Often you need to know the units in microFarads. Since there are 1 X 10^{12} *p*F/F and 1 X 10^{6} *u*F/F; then there are 1 X 10^{6} *p*F/*u*F. Thus by example: 1 X 10^{5} *p*F is equal to 1 X 10^{-1} *u*F or 0.1 *u*F. By 10^{5} *p*F/ 10^{6} *p*F/uF = 10^{-1} uF. Sometime nanofarads are specified(IEC code). Also, sometimes, nanofarads are useful with modern digital capacitor meters which have scales in nanometers. Since there are 1 X 10^{9} *n*F/F and 1 X 10^{6} *u*F/F, then there are 1 X 10^{3} *n*F/*u*F. Examples of these values: read 100nF or 100n is equal to 0.1*u*F. Or 10nF or 10n indicates 0.01*u*F. Simple huh.

micro = 10^{-6}; nano = 10^{-9}; pico (also micromicro) = 10^{-12}

Try these:

EIA is the most common from our suppliers.

(EIA Code)ELECTRONIC INDUSTRY COMMISSION

code:	**333K**	**101J**	**104K**
read:	**33000pF**	**100pF**	**100,000pF**
read:	**.033*u*F**	**.0001*u*F**	**.1*u*F**

Of course, there is never just one standard. And occasionally the manufacturers mix several standards together! The IEC interprets to nanofarads and is easy enough to figure out from these examples.

(IEC Code)INTERNATIONAL ELECTROTECHNICAL COMMISSION

code:	**4n7**	**n22**	**100n**
read:	**4.7 nF**	**.22nF**	**100nF**
read:	**.0047*u*F**	**.00022*u*F**	**.1uF**

Mike Grimes

VRPS CONVENTION 2007

NOVEMBER 16,17,18 2007

It's time to make hotel reservations for the 2007 VRPS Convention. Call Hampton Inn now to make reservations. State you are a member of VRPS or Vintage Radio and Phonograph Society to get the $79.00 room rate or if you want a suite, they are $102.00.

THE HAMPTON INN & SUITES

1700 RODEO DRIVE

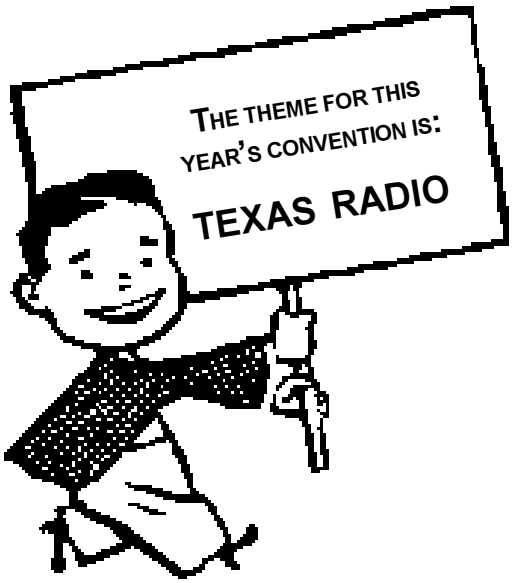
MESQUITE, TEXAS 75149

Reservations Call:

1-800-Hampton or (Local) 972-329-3100

If you would like to make your reservation online:

http://www.hilton.com/en/hp/groups/personalized/dalhshx_vrp/index.jhtml



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