

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

June 2017

Volume 23 Issue 6



MEETING/ ACTIVITY NOTES

Reported by
Marv Beeferman

The ON-LINE Broadcaster

The *Jersey Broadcaster* is now on-line. Over 150 of your fellow NJARC members have already subscribed, saving the club a significant amount of money and your editor extra work. Interested? Send your e-mail address to mbeeferman@verizon.net. Be sure to include your full name.

We captured all the entries in last month's "Radio Scavenger Hunt" in this month's issue of the *Broadcaster*. Thanks to all who participated. Also, thanks to Bob Bennett of YouTube "RadioWild" fame who gave us an update on the Kutztown swapmeet. Bob got a great buy on a working "drugstore" type tube tester which he generously donated to the club for use at our repair clinics. Dave Sica summarized his visit to the Early Television Convention and provided us with an article starting on page 5.



Member Bob Bennett, aided by his better half Sharon Bennett, gives an update on the Kutztown swapmeet.

If you're interested in old oscilloscopes, member Bill Zukowski suggests taking a look at the oscilloscope museum:

<http://www.oscilloscopemuseum.com/>



MEETING NOTICE

The next NJARC meeting will take place on Friday, June 9th, at 7:30 PM at Princeton's Bowen Hall (70 Prospect Ave.). Directions may be found at the club's website (<http://njarc.org>). Dust off those unusual pieces in your collection and show them the light of day during our "Radio Show & Tell," scheduled for this month. We're asking you to not only "show" them but "tell" us a short story behind your selections. Nothing new to talk about? How about participating in a discussion and demonstration of those "hints and kinks" that have simplified your repair and restoration experiences?



In anticipation of our upcoming 25th anniversary on July 16th, Dave Sica was able to inspire the attendees at our May meeting to get together for a group photo. In case you're interested, your editor is in the last row to the right, second over, with the tree branch growing out of his head.

The museum is dedicated to the preservation of vintage oscilloscopes and the education of their functionality and uses. The collection is organized alphabetically by manufacturer.

The website provides some important information regarding what to do if you happen to come across an interesting, vintage specimen:

"All oscilloscopes contain parts which have a limited life expectancy, especially capacitors which are prone to be bad after a couple of decades. Other parts like transformers and just simply some of the cable may be deteriorated. Obviously, bad insulation of wires can create shorts. Bad capacitors can create shorts, overheat and explode. The risk of destroying the scope and jeopardizing your health is not worth taking the chance of just seeing a green trace on the CRT. Even if a trace appears, the scope is highly unlikely to work properly. No one will use a vintage scope as a serious piece of test equipment. So, don't plug it in, it does not benefit anyone. What you

can do, though, is to look for anything related to the scope. There might be probes, manuals, other equipment, which belonged to the scope. Pulling the housing and taking pictures of the chassis is much more informative than knowing if it "works".



Upcoming Events

July 14 - Monthly meeting at Princeton; topic TBA

July 22nd - Summer Tailgate at InfoAge

August 15-19 - AWA Annual Convention

THE JERSEY BROADCASTER is the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are \$25 per year and meetings are held the second Friday of each month at InfoAge or Princeton University.

The Editor or NJARC is not liable for any other use of the contents of this publication.

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SHOUT-OUT TO THE RADIO TECHNOLOGY MUSEUM

The June 2017 issue of QST had a very nice piece in the "Letters from our Members" section which in part commented very positively on a trip to the NJARC's Radio Technology Museum at InfoAge. To the museum's board and volunteers...keep up the good work!...Ed

Tuned Circuits

Last December, I spent a day at the Radio Technology Museum in Wall Township, New Jersey. At the museum, Al Klase, N3FRQ, showed my brother, my wife, Karen, KG6CUK, and I many artifacts from the first 100 years of radio. Reflecting on that experience, I was struck by the contrast between the early radio technology, the technology of today, and where things are heading in the future - specifically, the role of tuned circuits.

In the early days of radio, tuned circuits were everywhere. To achieve the best sensitivity, one had to adjust the tuned circuits in each of the receiver's RF amplifier stages to resonance. The superheterodyne receiver simplified operations by reducing the number of tuned circuits that had to be manually adjusted, but transmitters still required the tweaking of a tuned circuit to match the final amplifier tube to the antenna. Solid-state transmitters employing broadband output transformers eliminated that last tuned circuit, just as frequency synthesizers had eliminated the tuning capacitor in receivers.

In the next 100 years of radio, receivers will evolve, and there will be no place for the tuned circuit. Once this happens, I think that some of the magic of radio will be lost. Luckily, there will be places like the Radio Technology Museum, where people can experience the magic of tuning in a radio signal by adjusting a variable capacitor in a tuned circuit with their own hands.

Joseph E. Pingree, WB2TVB
 Los Angeles, California
 Life Member



The NJARC Radio Technology Museum at InfoAge...have you visited recently? Volunteers are always welcome.

RADIO SCAVENGER HUNT AT MAY MEETING

**By
Marv Beeferman**

The basic concept of a "radio scavenger hunt" was described in last month's *Broadcaster* where members compete in various radio-related categories by displaying their choice of a maximum of three of the strangest or most unusual items in thirteen categories. But rather than searching for items around a house, yard or neighborhood, the "hunt" is conducted in member collections.

This year's turnout was a little weaker than past years when display tables surrounded our meeting place, but we still had enough entries to provide some fun. Perhaps lack of entries from constant participants Marsha Simkin and Edith Chase were a factor but we're sure they will be up to the challenge next year.



Continued on page 3.



When radio parts and sewing materials share the same house, what else do you do but create a "radio rabbit" with a vacuum tube used as the body form. Sharon Bennett took first place with this entry although placing it in one of our 13 categories was a bit difficult. Sharon sold this bunny's brother for \$15 on ebay.



Ray Chase entered this AN/DPN-19 Radio Beacon in category 2 (most unusual item not in the shape of a radio that really is a radio). This S-band beacon enhanced the radar return from the Lockheed X-17 three-stage solid fuel rocket that, in 1957, was used to test the effects of high mach atmospheric reentry. In 1958, the X-17 was also used as the booster for Operation Argus, a series of three high-altitude nuclear tests conducted in the South Atlantic.



John Ruccolo entered this tube in category 9 (strangest or ugliest looking tube). With a filament rating of 120 volts @ 1.6 amps, this coaxial cermet UHF transmitting tetrode can produce 2KW at 900 MHz (forced-air cooling required). Measuring 5 X 7-1/4 inches, it was introduced in 1952 for UHF television transmitters.



Max Theis entered these leggings in category 3 (most unusual "wearable" radio related item). On loan from Mrs. Theis and covered with radio and radio/TV images, Max said that his wife wears them for "support" when he works on his radios. Most members didn't believe him.

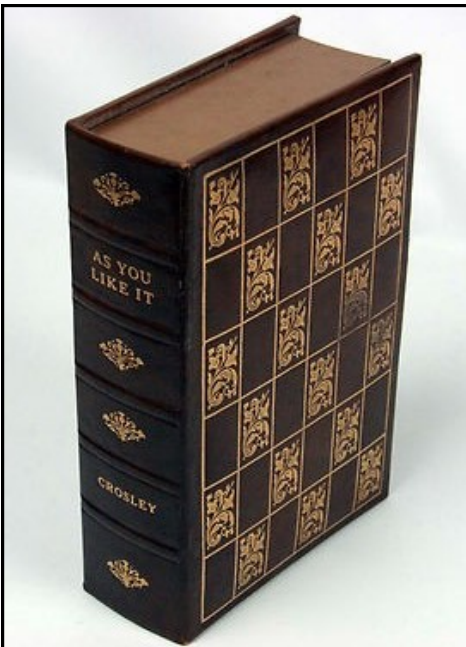


Ray also entered this group of greeting cards in category 7 (most unusual radio-related greeting card for a holiday other than Christmas, Valentine's Day or New Years). These British cards, featuring children in birthday and Easter motifs, are part of Ray's extensive (and perhaps largest) collection of radio-related postcards and greeting cards. An interesting part of this collection are postcards that are actual working radios.



Continued on page 4.

Category 9 seemed to be somewhat popular. Another entry by Frank Feczko was this 9140H ultra sensitive, ultra violet phototube manufactured by the Arthur Thomas Co.



The second photo of this Crosley "book" radio came from the internet but I wanted to show you what the radio looked like when closed. Entered by Frank Feczko in category 2 (most unusual item not in the shape of a radio that really is a radio), this model JM-8BN uses 1V6, 1AH4 and 1AJ5 tubes and two 2N109 transistors. It requires a 3.75 and a 45 volt battery.



Another category 9 entry, this WW II reflex klystron was entered by Bruce Ingraham. A klystron is a specialized linear-beam vacuum tube invented in 1937 by American electrical engineers Russell and Sigurd Varian. It is used as an amplifier for high radio frequencies from UHF up to the microwave range. A reflex klystron is an obsolete type in which the electron beam was reflected back along its path by a high potential electrode and used as an oscillator.



Al Klase's "mystery tube," again an entry in category 9, was the subject of an article that was carried in the May NJARC *Broadcaster*. Its "strange" configuration and still undiscovered purpose makes the tube a perfect example of category 9.



Your editor displayed entries in categories 1, 10 and 11. Being held is a novelty transistor radio in the form of a telegraph key that not only picks up broadcasts but makes a spark/buzzer sound when the key is depressed. Next is a Christmas ornament in the form of a transistor radio. Finally, an "Armstrong" antenna eliminator was the subject of a bidding war when purchased at auction. These items were in abundance in the 20's but the majority of them were useless.

THE 2017 EARLY TELEVISION CONVENTION

By
Dave Sica



For the 14th year in a row, the Early Television Convention was held at the Early Television Museum in Hilliard, Ohio, a suburb of Columbus. This year's event continued the tradition of scholarly seminars, auctions, a swapmeet, technical training, a dinner, museum tours and the annual meeting of the Early Television Foundation. The CRT rebuilding facility was open and conducting demonstrations during the convention.

Attendance at the event continued at near-record levels, with over a hundred registered participants. The CRT rebuilding project continued to make progress, although there is much work still to be done. The first picture tube was successfully rebuilt last year, and that tube is still operating, so it has been demonstrated that the process of rebuilding a tube can be done. This year, master CRT craftsman Nick Williams, who as part of the Early Television Foundation's CRT project, apprenticed at the last commercial CRT rebuilding facility in the world a few years ago. He came in a week early this year to put the equipment through its paces, and hopefully to rebuild a "roundie" color tube. Sadly, all attempts to weld new glass to the CRTs met with failure in the form of fractured glass.

The process of working with glass is intrinsic to the CRT rebuilding process, and working with glass is at least as much art as it is science. In every case, the glass cracked as it was being heated, or as it cooled. Further research will be conducted to determine if the failures were due to inadequate equipment performance or to inconsistent technique in applying the flame. (No actual CRTs were harmed in the course of these experiments.)

A highlight of the auction was a pre-war television, an RCA TRK-12 "mirror-

in-lid" model which sold for just over \$5,000. Other higher-end collectible sets sold briskly during the auction and several which did not meet their reserve sold privately afterward. More common collectible sets sold during the live auction on Saturday morning and the silent auction on Saturday evening, as well as the many pieces of equipment that changed hands during the swapmeet. Values seem to be holding at modest levels, off considerably from their peak of ten to fifteen years ago, although desirable items in good condition are once again beginning to trend upward in price.

Seminar presentations included "Conversations with Zworykin" in which NJARC member Mike Molnar utilized excerpts from never-before-seen interview footage of Vladimir Zworykin recorded in the late 1970s by Early Television Foundation (and DVHRC) member Chuck Azar. Weaving a story that provided insight into Zworykin's path to becoming the technical leader of television development, through his research career, and also touching on his vision of the future, Molnar's presentation offered a unique look into the mind of the man who championed and guided the invention of electronic television at RCA. Mike has offered to reprise this presentation at an upcoming NJARC meeting.

Attendees were also treated to exhaustively researched and highly detailed in-depth looks at television as it developed from its infancy through its adolescent years. "From Baird to Belle Isle: A Brief History of Television in South East Michigan" told the story of the evolution of television from its mechanical scanning disc origins through the development of some idiosyncratic (to say the least!) local programming, to the beginning of the more refined network affiliate system. Similar evolutions took place at the various markets throughout the country, and this in-depth look at this one particular market held a magnifying glass to some of the hurdles that early television had to conquer. It also explored some of the quirks that arose along the way as various programming ideas were tried and then either discarded or allowed to evolve.

Similarly, "A Look At The Early History of Los Angeles' W6XYZ/KTLA and the Influence of Klaus Landsberg in Creating This Television Facility" provided a detailed examination of how the outsized influence of one talented man helped shape the development of west coast powerhouse KTLA.

Highly specialized reports included "Progress on an All-Glass 15GP22."

Early Television Foundation researcher John Yurkon reported on his progress to convert the unusual construction of the glass-and-metal first-generation picture tube to an all glass form in order to banish the inherent weakness of this quickly-discarded design that makes these tubes from the earliest sets so prone to failure.

Noted television camera historian Chuck Pharis reported on "History and Use of the 1952 RCA TK-40 Prototype" in which he traced clues via photographs and archival documents to try to determine if one of the cameras in his collection was in fact one of the first prototype color television cameras. The evidence was deemed strong, but inconclusive.

A behind-the-scenes look at the development of the CBS/Motorola EVR (Electronic Video Recorder) system was offered by a member of the engineering team that developed the technology in the late 1960s. The EVR system used movie film similar to 8mm home movies to provide a video signal that could be displayed on home televisions with single-frame playback capability. Although the original system was black-and-white only, a color system was quickly developed. Hampered by internal company technical and marketing decisions, the EVR system was not a commercial success. Consumer acceptance was slow due to its "play only" capability, and it proved to be another flash-in-the-pan of failed video systems as the public was quick to adopt later tape systems that offered recording and playback capability.

A workshop was also presented in which various component failures were simulated in a fully-functional television in order to demonstrate the effect on the function of the set to aid newer collectors in developing their troubleshooting skills.

Notable beyond simply the number of attendees is the fact that they were of a wide range of ages and backgrounds, with younger people being represented in growing numbers over the past few conventions. This bodes well for the future of the hobby and for continued work in documenting television history.

The Early Television Foundation's museum owns a fairly complete collection of artifacts that encompasses examples of most types of equipment throughout television history and throughout the world. Membership numbers, donations of cash and equipment and ad revenue are all trending upward. The organization is financially self-sufficient at this point, no longer relying on support by founder Steve McVoy, although he continues to contribute. It now operates as a 501(c)(3) nonprofit governed by a board of direc-

tors. The Foundation will take possession this year of the building in which the museum is housed, which is being donated by McVoy. Traffic at the museum, while modest, continues to grow, and with plans to begin advertising locally and nationally in the form of brochures, television commercials and on the Internet, attendance is expected to continue to increase.

The Early Television Museum is open on weekends and by appointment. The Early Television Convention takes place during the first weekend of May and sponsors a swapmeet at the convention plus one in the fall. For more information: www.earlytelevision.org



HINTS AND KINKS

Assembled by
Marv Beeferman

In anticipation of our "hints and kinks" session scheduled for the upcoming June meeting, I thought I might add some examples that would inspire your participation and perhaps be useful in dealing with your own repair and restoration issues. My source for the group that follows were typically found in the "Tips and Techniques" columns of such electronic hobby magazines as *Popular Electronics*, *Electronics Illustrated*, *Radio & Television News*, etc.

1. Troubleshooting Equipment with Can-Type Capacitors

Hard-to-troubleshoot cases of hum and oscillation, especially in kit-built equipment, have often been traced to can-type capacitors that have developed resistance to ground at their mounting tabs. If the problem cannot be corrected by remounting or replacing the capacitor, it's a good idea to solder one lug to the chassis or connect a grounding wire to one of the tabs.

2. Soldering Plug Pins

Sometimes a restoration project results in the need to resolder suspect connections to the pins of multi-cable connectors. This job can be a little tricky. Part of the trouble is due to the fact that solder does not easily adhere to nickel-plated pins. To get the best possible solder joint with this type of connector, use a vise, a small drill and a bit slightly smaller than the diameter of the pins to position the connector and ream out the inside of the pins. This will expose a clean surface of brass which can be readily tinned, assuring a solid connection. The method also works well when resoldering the connections to big pin vacuum tubes.

3. Removing Enamel from Fine Wire

The enamel insulation on the fine wire used in r.f. coils is very difficult to remove without breaking the wire. To remove the insulation from this tiny litz wire without breaking the strands, dip the wire in nail polish remover. After the solvent has had time to soak in (about five minutes), you can gently pull the enamel off with your fingernail. When you solder

these small wires, use flux and heat sparingly - excess heat will weaken the wire.

4. Knobs for Slug-Tuned Coils

Small, solderless connectors used in electrical work make neat miniature knobs for the threaded shafts of slug-tuned coils. These are especially useful for coils and transformers in miniaturized transistor radios. Ordinary knobs usually do not fit the threaded shafts of these components.

5. Warm that Spray Can

If you want your spray can of service chemicals to go further and apply easier, set the can in a pan of warm (not hot) water before using. This will make the chemical less viscous and it will spray much easier. Of course, avoid overheating the can or heating it with a direct flame!

6. Hair Drier Cleans Radio

A small hair drier will blow away the dust from electronic equipment in quick order. The dryer's "cold" position allows cold air to be used for dust and the "hot" position for coils which may have absorbed moisture.

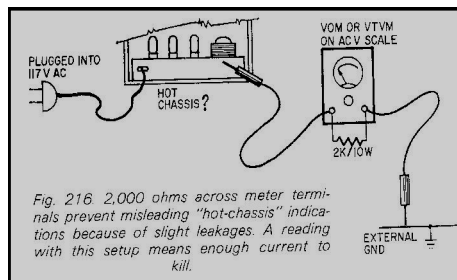
7. Checking for a "Hot" Chassis - Two Methods

Depending on which way their original unpolarized plug is plugged into the wall socket, the chassis of early radio sets have a 50/50 chance of being "hot" if turned on and a 50/50 chance of being "hot" if simply turned off. On or off, the chassis will be hot at some point and you will get a bad shock if you simply touch the insides of the radio. To make matters really deadly, if the grommets that insulate the chassis from the outside case are in bad shape, you will get electrocuted just touching the radio. Some All American Five (AA5) radios are safe to use without using a polarized plug only if they were designed with an isolated bus. But just looking at the schematic, it is hard to tell if such a bus exists, and just looking at the chassis won't tell you anything unless you really know what to look for.

One way to tell if your radio has a hot chassis is to take an ohmmeter and set its scale to read 20 K ohms or greater. Unplug your radio, but turn the on/off switch to the on position. Measure the resistance from a blade of the power cord to the chassis. After you get a reading, read from the other blade to the chas-

sis. If both readings are greater than 20K ohms, then your radio has an isolated bus, is intrinsically safe and you don't need to install a polarized plug or rewire it. But if you get a low reading on either blade to chassis, your radio is dangerous. If your radio failed this test but already has a polarized plug installed, put the on/off switch in the off position, change your ohmmeter to the lowest scale (usually the 200 ohm scale) and then measure the resistance from the wide blade to the chassis. If the reading is high (more than a few ohms), your radio is dangerous. On the other hand, if the resistance from the wide blade to the chassis is only a few ohms with the radio on and only a few ohms with it off, somebody has already wired it up for safety.

Another method to test for leakage is by using the setup below. With the meter "desensitized" as shown, small, harmless leakages, as through a 1-megohm resistor, will not register on the meter. But if there is enough leakage current to be lethal, the 2,000-ohm resistor will not affect the voltage reading.



8. Using Barrier Terminal Strips

When assembling and testing experimental circuits, the holes on solderless breadboards may be too small to accommodate the larger diameter leads found on the vintage components that many of us deal with. By using inexpensive barrier terminal strips, as many as six components can be connected to one set of terminals. Circuits can be assembled very rapidly, and if it necessary to change components, a twist of a screwdriver does it.

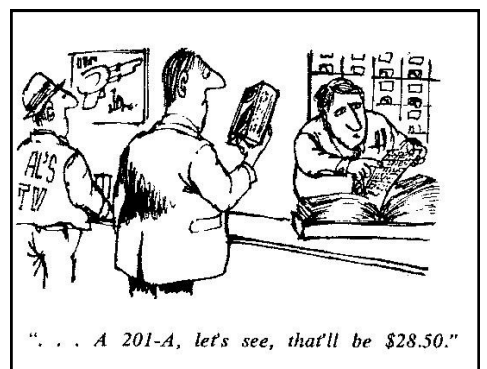
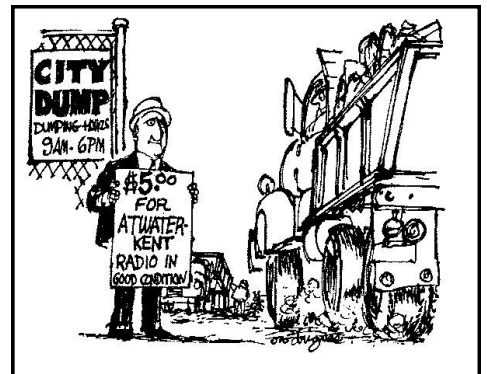
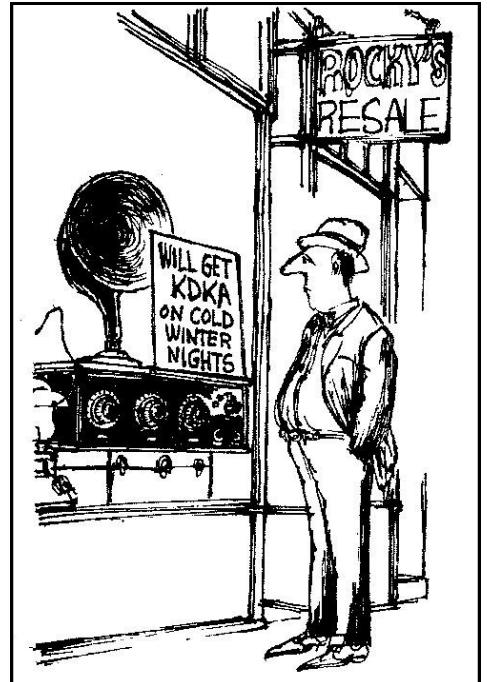
9. Battery Holder

Vertical-mounting holders for type "C" or "D" dry cells can be made from capacitor mounting rings. Use 1" diameter rings for type "C" cells and 1-3/8" diameter rings for type "D" cells. A narrow strip of thin cardboard, about 1/4" shorter than the circumference of the cell is used as a shim between the ring and the cell.

10. Handy Mounting Brackets

Some types of angle-brackets used for hanging vintage, roll-type window shades, come in handy for mounting such parts as volume controls, toggle switches, ferrite loopsticks, single-hole-mounting variable capacitors, etc. Holes in the brackets can be enlarged to fit the component's requirements.

RADIO HUMOR





New Jersey Antique Radio Club's

Summer Tailgate Swap Meet



**InfoAge Science History
Learning Center and Museum**

2201 Marconi Road

Wall, New Jersey 07719



Saturday July 22nd, 2017



Refreshments Available

40 spaces available

\$25.00 for members

\$30.00 for non-members

Bring your own tables

Open to the Public

8am to 12 noon

Vendor setup at 7:15 AM

\$5.00 ENTRANCE FEE

CLUB DONATION

For Directions

**Visit our website: www.njarc.org
or Mapquest**

2201 Marconi Road, Wall NJ 07719

Vendors Make Your Reservations Now!

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