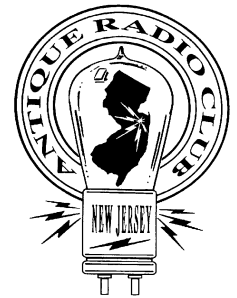


The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2008

Volume 14 Issue 7



MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

THE ON-LINE BROADCASTER

The New Jersey Broadcaster is now on-line. To date, 94 of your fellow NJARC members have subscribed, saving the club over \$1600 a year. Interested? Send your e-mail address to:
mbeeferman@cs.com

Be sure to include your full name.

By a unanimous vote at the June meeting and following ten continuous years of exemplary service, Phil Vourtsis has passed the NJARC presidential baton to Richard Lee. Harry Klancer, a huge InfoAge supporter, has taken over the duties as vice president, formerly performed by Richard. Since we had no candidates for sergeant-at-arms (West), this position will be held on a rotating basis by John Tyminski, Bill Zukowski, Darren Hoffman, Rob Flory, Joe Croe, Mark Bizuga and Marv Beeferman. Phil Vourtsis will now assume the position of trustee per the club's constitution. Phil has posted a farewell message in this month's *Broadcaster*.



Changing of the guard.



MEETING NOTICE

The next meeting of the NJARC will take place on Friday, July 11th, at 7:30 PM at the David Sarnoff Library in Princeton, NJ. Contact President Richard Lee at (845)-359-3809 or visit us at <http://www.njarc.org> for directions. At our July meeting, Ray Chase and Harry Klancer will offer an InfoAge presentation made at this past summer's AWA (Antique Wireless Association) convention. The club's Museum of Radio Technology/Broadcaster's Hall of Fame has been open for the last two years and is soon to be joined by similar areas operated by other member organizations. At the meeting, you'll learn about the history of this science and learning center, the current state of the project and plans for the future. Over 100,000 square feet of new space will be coming on line in the near future, so come to our next meeting and find out all about these exciting times for InfoAge.

Executive Board members are requested to meet at 6:30 prior to the club's regular meeting.

Webmaster Dave Sica gave a talk on two unique additions to the Early Television Museum. One is an RCA television remote van that was originally purchased in 1948 by KDYL (Salt Lake City), purchased in 1969 by WGSF (Newark Ohio) and donated to the Ohio Historical Society. The van is now on loan to the television museum to be put on display in January. The van has most of its original equipment including TK-30A cameras and its microwave system.



The second addition is a CRT Color Champion Rebuilding Plant. State of the art in the 1960s, the outfit was designed for a mom and pop repair shop with limited space, one CRT at a time. With only one company left that rebuilds CRTs for old sets, the museum is very excited about this find; soon, there will be no replace-

ments. Already, 3KP4s are nearly impossible to find and good 7JP4s are rare. There are plenty of 10BP4s, but 12K/LP4s are getting scarce. Let's hope that the museum is successful in restoring this very important piece of equipment.



The vertical lathe, used to rotate the CRT shell as the new neck and stem are attached.

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 \$20 per year and meetings are held the second Friday of each month.

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

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Again, some very interesting show & tell items engaged the membership's interest:

- Scott Roberts talked about his very ambitious project to create an authentic reproduction of a WW II, B26 radio rack including an ARC 5 transmitter, receiver and all support accessories. Using photos from the internet and Smithsonian, Scott spent many late hours in his workshop to get this impressive piece ready for display at the Reading Air Show.

- Ray Chase showed some colorful displays of some very rare "crystal set" postcards (meant to actually receive stations) and "Radio Fantasy" postcards. Ray explained that fantasy (varied imagination in everyday life) postcards were very popular between 1900 and 1920 and issued mainly by English, German and other European publishers.

- Your editor (Marv Beeferman) talked about his Heliphone "pocket" crystal set which was sold by the Gardner-Rodman company for \$5 in 1922. Garod-Rodman was later to become the better-known Garod Corporation which manufactured both radios and televisions.

- Our new president, Richard Lee, proudly displayed a crystal radio that he helped his daughter build as a Science Fair project. Directions came from Alfred Morgan's "The Boys' First Book of Radio and Electronics" and the radio was built from "bits and pieces found around the house." The color is truly a young lady's inspiration as opposed to the bland designs of us "men." It will pick up about 5 stations on the lower end of the broadcast band (instructions don't tell how many turns for the tuner, just 130 feet of 26 gauge wire).

- From far away Texas, Jon Butz-Fiscina imported a 1921 Mengel type M.R. 101 crystal set. Earlier versions of this set used a flexible wire for the tickler and later models used a more ridged armature. The radio was also marketed as the Shamrock Radiophone "Crystal" Model A and the "Diamond" by the United Metal Stamping & Radio Co. Jon also showed numerous Foote crystals (Foote Radio Corp., Philadelphia) in their original display boxes. The crystals came from a seller whose grandfather drove a truck for the Foote Mineral Company.

- Sal Brisindi displayed a Radio Tube Trick game by the A.C. Gilbert Co. Players are challenged to "get tubes in

sockets, black base downward." Sal also showed off his gleaming Dynaco ST-70 amplifier rebuilds. Sal explained that with reproduction chassis now available, it's not that difficult to wind up with a great looking restoration.

- Sarnoff Library Executive Director Dr. Alex Magoun is always on the search for RCA artifacts. His Stromberg Carlson intercom phone with its very conspicuous RCA logo will find a new home in the library's David Sarnoff office.

- John Acacia demonstrated a very cute transistor radio where two protuberant lips move in time to the station's music.

- Dumont made only one transistor radio, the 1956 RA-902, and Mark Bizuga is lucky to have one of the few remaining examples (including its manual). It looks almost exactly like the RA-354 4-tube "Beachcomber" with only the word "transistor" distinguishing it. This six-transistor rarity was made in Clifton, New Jersey.

- Rob and Martin Flory were proud to talk about "granddad's" Aeriola Jr. crystal set. The set was one of RCA's first offerings made by Westinghouse (RCA had no manufacturing plants during the 1920s). Introduced in June 1921, it used a Perikon detector (with two minerals) and sold for \$25 with a pair of Brandes headphones.

- Walt Heskes showed a two-transistor (2N109/2N322) which he based on a Heathkit circuit. On its first trial, significant feedback indicated that part placement was critical. A choke shield made from HVAC tape solved the problem. The radio also features a switch to select a different capacitor for the low end of the broadcast band.

- Anthony Napoli displayed two home-brew crystal sets, one which was based on a circuit in Davidson's "Radio Receiver Projects."

- Rich Skoba received a call following one of the club's radio exhibits. The result was a beautiful Bendix 526 Catalin which Rich said he accepted at a very "reasonable price."

- No, not a new hair style (see photo), but one of the many souvenirs that Rich Hurff brought back from Uzbekistan. Of more serious interest was his 1918 DeForest BC-14A crystal receiver. The radio was featured on the June 2008 cover of Antique Radio Classified and offered for \$3,800 at Radio XXXIX in Westford, Massachusetts.

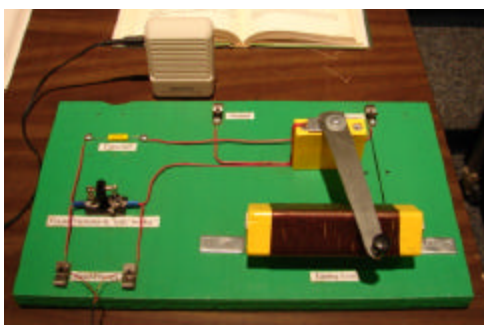
SHOW & TELL



Ray Chase



Richard Lee



Jon Butz-Fiscina



Sal Brisindi



Rich Hurff



Martin & Rob Flory



Anthony Napoli





Walt Heskes



Mark Bizuga



Alex Magoun



Scott Roberts



Rich Skoba



John Acacia



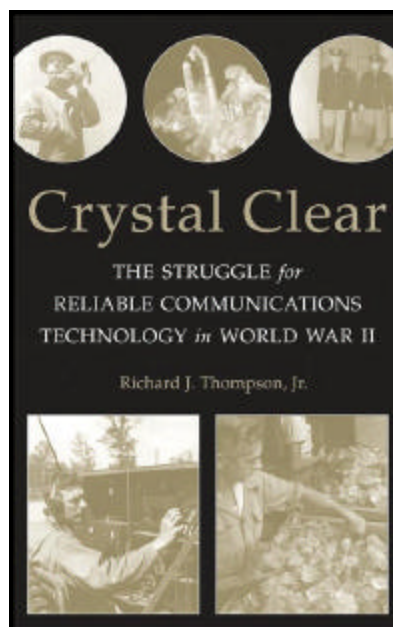
See page 6 for the story on this crystal set.

Crystal Clear: The Struggle for Reliable Communications Technology in World II
by Richard J. Thompson

Reviewed by
Dave Sica

I had the good fortune to attend a lecture at InfoAge by the author of this book. Richard Thompson exhibited a remarkable enthusiasm for the subject and his presentation was both informative and entertaining. With a PhD in astronomy and astrophysics, Professor Thompson was perhaps an unlikely documentarian of a story of a geological and electronic nature. Thompson was drawn to the subject of quartz crystals through personal contact with one of the key players in this never-before documented World War II-era drama. Crystal Clear is the story of the triumph of some of the best American military, industrial, scientific and human efforts along

with a few of the worst! A copy of the book, autographed by the author, was donated to the InfoAge library and I had the pleasure of reading it after attending the lecture.



With a lifelong interest in radio technology and radio history, the admittedly narrow focus of this book was something I found interesting. I, along with apparently many others, had never really wondered much about the crystals that ran the ham radio transmitter of my youth, or their descendants, which regulate the operation of so many devices today including not only radio equipment but also televisions, computers, timepieces and much more.

I'm hardly a WWII-era radio technology expert. Someone who is, NJARC member Ray Chase, immediately informed me that there were a few glaring factual errors in the book (notably photographs of radio equipment that doesn't actually utilize crystal control!) But despite the occasional minor misstep, Prof. Thompson manages to present what is generally a carefully (and exhaustively) researched story from both a technical and a dramatic point of view. Although the book is well-written, it's not a literary classic. In fact, I wouldn't be surprised if

the average non-technical reader might abandon it early. But if you have any interest in the subject at all, you will undoubtedly find the many twists and turns of the story to be fascinating.

Thompson stresses the point that the quartz crystal was one of the “unsung heroes” that helped us win the war. He states “They played as important a scientific role as radar or the atomic bomb.” Quotes from some of the players directly involved in the crystal drama include “We were heavily armed and we had crystals” and “Without crystals, you have radio; with them, communications.” From today’s perspective it’s difficult to imagine a time when reliable instant communications was something difficult, often even impossible, to achieve.

Prior to World War II, the science behind quartz crystal resonators was so incompletely understood that making them was actually more of an art than a science. There was no need for mass production and they were made mostly by hand, in very small quantities, for a relatively undemanding market. One of the great struggles Thompson documents in his book is that there were three separate major crises that had to be resolved in order to supply crystals during the war.

First, an industry had to be built. Unlike, say, the automotive industry, there simply was no existing industrial infrastructure for the country to ramp up in order to manufacture the vast quantity of crystals that would be needed to support the war effort. The story of how that industry was created essentially from scratch was informative, entertaining and occasionally a bit unsettling. One apocryphal story states that a plumber showed up one day to fix a drinking fountain and left with a contract to supply 50,000 crystals!

Second, once the crystal manufacturing infrastructure was in place, the industry had to be supplied with raw materials. Did you know that useable quantities of radio-quality quartz crystals were found only in an isolated area of Brazil? The political drama alone involved in securing an adequate supply of quartz must have been enough to keep those running the program awake at night.

Finally, once the new crystal industry began turning out vast quantities of product for the military, a problem surfaced that almost destroyed the usefulness of the entire effort. Crystals began to exhibit a phenomenon known as “aging” in which

they drifted off their specified frequency or even stopped working completely. The research into the problem had to begin at the ground level, and there were missteps, false starts and even some nearly treasonous self-interest involved in the process that caused it to take longer than necessary – at a time when any delay was literally costing lives! The improved manufacturing techniques that put an end to the aging problem were quickly disseminated throughout the industry and from that point on dependable crystal control was a reality.

It might be hard to believe from today’s perspective, but at the beginning of World War II, there was hardly unanimous agreement that crystal control was the best way to go for radio communications. Factions within the Signal Corps who believed that crystal control would either not work, or that the necessary quantity of crystals would not be able to be supplied posed, significant opposition to the effort. Although experience proved both fears to have some validity, the alternative of difficult-to-tune, inherently unstable communications gear (much of it unable to even be operated when troops were moving) would have been, in hindsight, a handicap of the highest order.

With the rich history of electronic communications research at Fort Monmouth, InfoAge was an especially fitting location for Professor Thompson’s IEEE-sponsored talk. It was an interesting lecture, well worth attending. If you missed it, we’ll have a copy in the NJARC video library and, if you’re an InfoAge member, the book is available there.

A PRESIDENT'S FAREWELL MESSAGE

By Phil Vourtsis

Well, it's hard to believe that it has been 10 years since I was elected to this post. Since founding President Tony Flanagan held the office for 4 years and our 2nd President, Jim Whartenby, held it for 2 years, I never expected to man the helm for 10 years. But I'm glad it worked out this way because I think some great things were accomplished.

Swapmeets

For the first few years, our swapmeets were held at the Hightstown Country Club. Sounds pretty ritzy, but it was anything but. Some of our meets were held outside on wooden tables and, in bad weather, the meets were inside. But as the years passed, the outside tables fell into disrepair and lighting inside the building was poor. Ultimately, the place was torn down so obviously we had to move on.

We had a few meets at the armory in Freehold until they changed the rules about how much insurance the club had to carry; it became a prohibitive amount. We then had quite a few meets at the Hazlet firehouse until the rent was jacked up so high we could only afford to do it on Sundays. Soon, the number of tables the firehouse could offer became limited. We also had several Summer meets in the Dover VFW; a nice roomy place with a reasonable rent but with stairs that were difficult for sellers to negotiate.

Now we hold two meets a year in Parsippany at the PAL. The rent is on the high side but it is a good location and they provide the table setup. In the Summer, we have “tailgate” meets at InfoAge in Belmar. Over the years, we have managed to zig and zag in order to continue to find places that please both buyers and sellers.

Shaky Moments

Meeting Place: Ten years ago, we were meeting at the Freehold Presbyterian church on Main Street. It seemed like an ideal location at the time. Unexpectedly, we were told to find another place in 2002. We found a hall off Route 18 in Old Bridge which seemed like it might work. The VFW Post 177 hall was on the 2nd floor above a bar on the 1st floor. But after a few months, we arrived one Friday night and opened the 2nd floor door only to find that the bar had been moved upstairs and there was quite a crowd that night. Now how do you tell all those club members who had traveled quite a few miles to get to the meeting that it is cancelled? After talking with the bartender, we decided to have the meeting anyway and hoped the bar crowd would not be too rowdy. To our surprise, they remained quiet and actually started listening and taking part in our meeting. The tech segment that night was a theramin

performance by Scott Marshall. It went over very well with both crowds and we actually got a few new members that night! Although it was a fun evening, we decided we better find another place to hold our meetings. Club member and David Sarnoff Library Executive Director Dr. Alex Magoun came to the rescue and offered the use of the Sarnoff Library facilities in Princeton. This has turned out to be a wonderful meeting place for the past 5 years.

New Jersey Tax: At one point, our swap-meets caught the attention of the New Jersey State Taxation department. As most of you know, a vendor who makes a living on selling "things" must have a tax id number and pay state sales tax. Most of our members are not in this category and only sell once in a while. I received a phone call from the tax department and they said they would be coming to our upcoming swapmeet to make sure we were following the rules. This usually leads to confrontations between the tax man and the vendors and tempers do not bring a desired result. I decided to try the amiable approach and after 20 minutes of conversation, the tax rep changed his mind and sent us some informational fliers instead.

Over the years, the club has stayed financially healthy and seen its ranks grow to over 200 members. We have added new activities such as Repair Clinics and Crystal Set Seminars. To our tube, capacitor, and schematic programs we have added resistor and fuse programs. Through our partnership with InfoAge, we have our own Radio Technology Museum - 3,000 square feet of radio, television, and recorded music history with the center core occupied by the National Broadcasters Hall of Fame. In the basement of the "Marconi Hotel" is a club workshop filled with facilities and equipment for bringing our beloved artifacts back to life.

Our museum address? **2201 Marconi Road.** Our meeting address? **The David Sarnoff Library.** This club has been truly blessed!

Although I have been at the head of this healthy, speeding train, there are a core group of members who continuously serve the club and make it what it is. They include:

Al Klase, Marv Beeferman, Sal Brisindi, Ray and Edith Chase, Gary D'Amico, Marty Friedman, Walt Heskes, Darren

Hoffman, Harry Klancer, Richard Lee, Aaron Hunter, Bob Pilcher, Alex Magoun, John Ruccolo, John Tyminski (Jr. and Sr.), Marsha and Jerry Simpkin, Dave Snellman, Rick Winegarten and probably many more whose names will come into focus when I see their faces at the next meeting.

I am hoping I can remain active in the club for years to come, even though I will be traveling between NJ and Myrtle Beach. Good luck to the newly elected officers; I'm sure, under their guidance, the club will continue to grow and fulfill the expectations of our membership for years to come.

Regards to all,
Phil Vourtsis

NJARC CRYSTAL SET SEMINAR

June 14th was another pleasant day at InfoAge as the most basic form of radio technology graced the Telephone Exchange Building; a pleasant day and a perfect venue. Both young and old were brought together under the watchful eye of Al Klase to discover the amazing results one can get from the utter simplicity of a crystal radio. After a brief introduction from Al explaining the challenge and technology of receiving weak, distant signals without amplification, attendees rolled up their sleeves to turn theory into practice.

The feedback was more than appreciative; Dave Sica commented:

"I hit the second annual Crystal Set Seminar at InfoAge today with my 17-year old daughter. I missed it last year and promised myself I'd get there this time, ending a 41-year hiatus in my crystal radio building career. I suspect that Rebecca may have been humoring me slightly by agreeing to attend, but she ended up having a great time and left with a working radio that she built herself - coil winding, schematic reading and soldering included! A big "thank you" to Al Klase for conducting this event. Al has, if anything, an even better talent for explaining this kind of stuff to young people than for giving presentations to us "old guys" at our monthly meetings."

From Nick Senker came the following:

"Dave beat me in extending thanks to Al Klase and everyone else involved in the crystal set seminar. It was clear to anyone attending that a lot of work and effort was involved. I had always considered crystal radios as a "toy" or curiosity for science-minded kids but Al's presentation took the crystal radio to new heights and performance. I was quite amazed at the performance of this simple design. One can also make enhancements to this design to get even better performance which is something I plan to do at next year's seminar...if not sooner."

And finally, from John Ruccolo:

"Hi Dave...I had a great time too, and I give your daughter a lot of credit. Most 17-year-olds wouldn't want to be caught dead at something like that with their dad. Maybe it was an early Father's Day gift! 25 or 30 years from now, when your daughter has teenagers of her own, she'll be able to take out that Pretty Good Crystal Set and show it to them and say 'See what Grandpa and I built way back in 2008.' It will be a source of found memories.

As for me, results with the tuner last night were disappointing. My PGXS (Pretty Good Crystal Set) seems to work better without the tuner than with it. This was not the case at InfoAge; more experimentation is required.

Folks - Al does a wonderful job with his crystal set presentation, as well as providing the crystal set kits. I highly recommend the Seminar, even if you have only a casual interest in the sets. Give it a try!"

The Seminar was not only devoted to building. Your editor tried out his "Heliphone" displayed at Friday's show & tell and couldn't get even a crackle out of the headset. A few continuity checks showed a high resistance at every connection point which should have been expected after 85 years. A little of Nick Senker's emery cloth provided a quick cure and at least two stations came in loud and clear. I wasn't as lucky with Rich Hurff's DeForest BC-14A (also shown at Friday's show and tell). Again, continuity checks also showed some high resistance connections but I decided to leave their resolution to the owner of this high-end antique.



Tech Talk



Coil Winding



Assembly (in some cases, with a little help from dad)



Testing



The sweet smiles of success!



The "Heliphone" had to be disassembled and touched up with emery cloth to restore continuity. The DeForest BC-14A may need a little additional work.


 CONNECTIONS

Free exposure for buyers and sellers! Unless requested otherwise, each ad will run for two months in both the *Jersey Broadcaster* and the *Delaware Valley Oscillator*. All buying and selling transactions are the responsibility of the parties involved.

Are you aware that NJARC now has a resistor program which includes many commonly needed replacements? Contact Walt Heskes at any club meeting for details.


 FOR SALE

Check out NJARC's capacitor program for those most commonly needed replacements. Contact John Ruccolo at any club meeting or call him at home (609)-426-4568 to find out what's available. All proceeds go to the club.

The NJARC tube program offers clean, tested, boxed tubes at very reasonable prices with availability at any club meeting (no dealers, please...not for resale). Proceeds go to the club. Of course, donations of radio-type tubes in any condition are welcome. See Gary D'Amico at the next meeting.


 WANTED

Output transformer for use with 45 push-pull circuit. Self-bias circuit, 5000-ohm center tap, 4 or 8 ohm output, about 12 watts. For use with 12 inch speaker voice coil in 1931 model 20-23 Majestic radio. Dick Hurff, 856-546-7192

Need parts for Philco models 118 and 19/89. Cash for old chassis, IF and tuning parts. Will pick up at a reasonable distance. Robert Haworth, 112 Tilford Rd., Somerdale NJ 08083 856-783-4175

WANTED: Radio repairmen and restorers. Run out of your own radios to work on? The club and InfoAge have received a quantity of radio donations, some of which would look good in our museum. Others will be set aside for traveling displays, trading or resale as fundraisers. Many of these radios only need a good cleaning and polishing and a minor electrical checkout. Take one or two home with you and practice your skills...even if you just want to clean them up. Contact Ray Chase at our next meeting, at 908-757-9741 or enrpnr@erols.com.



New Jersey Antique Radio Club Summer Tailgate Swap Meet

NJARC's at InfoAge - 2201 Marconi Road, Wall, N.J. 07719

Saturday, July 26th, 2008

8:00 AM to 1:00 PM - Open to the Public - Vendor Set-up at 7:00 AM



A great old fashioned tailgate swapmeet at what was once the 1914 Marconi Belmar Wireless station. Bring your own tables, food and radios and relax under the trees in the picnic-like setting of this historic site. Take a tour of the Marconi "hotel" where the ghosts of the former age of wireless still roam the halls. Visit NJARC's over 3,000 sq. ft. Radio Technology Museum including the National Broadcasters Hall of Fame. Visit the Project Diana site where the 1946 "Moon Bounce" experiments were conducted and see the huge Talos satellite dish where the first satellite weather images were received. And much, much more!

A single space is \$20 for members and \$25 for non-members. Additional reserved spaces are \$15 (\$20 non-members). There is a \$5 club donation entrance fee for buyers. For directions, visit www.infoage.org, our club website at www.njarc.org or "mapquest" 2201 Marconi Road, Wall, NJ. 07719-4081.

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