

# The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

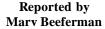
**July 2013** 

Volume 19 Issue 7









#### The ON-LINE Broadcaster

The New Jersey Broadcaster is now on-line. To date, over 120 of your fellow NJARC members have subscribed, saving the club and your editor a significant amount of money and work. Interested? Send your e-mail address to mbeeferman@verizon.net. Be sure to include your full name.

An NJARC semi-annual Board meeting was held at InfoAge on Tuesday, June 18th. It was agreed that the Club's Reflector was to be used by members only but occasional inquiries were acceptable. It was also agreed that the club will no longer subsidize the majority of costs of our annual Holiday Party and attendees will be charged \$25 per person. Finally, as a result of two Board resignations, president Richard Lee has appointed Harry Klancer as club treasurer and Sal Brisindi as vice president until general elections are held in June, 2014.

The status of the power situation at InfoAge is quickly changing and Ray Chase has provided the following update:

As most of you know, InfoAge lost its primary power transformer the day after Christmas last year, probably due to Sandy related interruptions. This closed us down for three months and caused some damage due to freezing pipes. InfoAge pursued replacing the transformer on its own (although that would entail a long-term loan) but the town, who owns the property, said no; they would take care of the problem. Unfortunately, town bureaucracy grinds slowly. Eventually, they loaned us a diesel generator that supplied power to three buildings so we could open



## **MEETING NOTICE**

The next NJARC meeting will take place on Friday, July 12th at 7:30 PM at Princeton's Bowen Hall (70 Prospect Ave.). Member Walt Heskes will present a talk about the popularity of ultra-light radio Dxing.

for business again. Diesel power is expensive, but it was not too bad as long as we were open for short periods of time.

Then, another opportunity presented itself. Many charities, church groups and other Non-Government Organizations (NGO's) are involved in Sandy recovery and restoration and still need a place to centralize their administration as well as provide lodging for a continuous stream of volunteer workers. Sandy recovery in the area will go on for another year or two. These organizations have offered to fund renovation of half of one "H" building for dormitories as well as to rent space in the hotel and parts of other "H" buildings. This will give us a cash flow and a major boost in getting buildings ready for museum expansion when the Sandy recovery effort is completed. Concurrently, the town has obtained insurance money and FEMA funding to the tune of over \$150,000 to repair most of our remaining leaking roofs. Meanwhile, the renting out of offices in the hotel means that the generator must run longer and is reducing the cash flow from the rents, so it is imperative that the transformer be replaced as soon as possible.

As I said, the town has to do things according to law so a bid package for the transformer finally went out in May. Three contractors picked up bid packages, but when bids were opened in the middle of June, no one responded; the bid spec was worded such that the contractors would be at peril so they declined. A new, more reasonable bid package is about to go out and hopefully will be acted upon, but this means that a transformer will not be ready until August or September at best. Meanwhile we are maintaining our regular museum hours and as many programs as we can. Last

year, our traffic was steadily increasing and then we lost most of our momentum after Sandy. It is starting to build up again so we are optimistic.

For the long term, the town realizes that we cannot continue with this electrical infrastructure as it currently exists and is taking long term steps to put us on normal pole distribution direct from the power company with metered service to each major building.

So, as the saying goes, "when you get lemons, make lemonade". Sandy hurt our operation but Sandy recovery initiatives will get us back to better than we were before. The museum is staying where it is for another year or so and we have to move our storage area as soon as new roofs are installed in other buildings, but we are making progress. I'll try to keep you up to date as the situation further develops.

Al Klase reports that the NJARC Tube Program is being revitalized under his leadership. Al will chair the tube committee assisted by Darren Hoffman, Matt Reynolds, Phil Vourtsis and Ray Ayling. It is the program's intention to have a stock of common tubes available at most every meeting, as was done in the past. Also, requests for specific tubes will be accepted and delivered to the next meeting or left in a "will-call" box at the museum for pickup. Tube requests may be submitted by email to tubes@njarc.net. Tubes will not be shipped.

The program is open only to members of the NJARC in good standing; tubes are for use by members and are not to be sold at a profit. (This is something of a variable concept. Most of us do not keep every radio we restore. If you want to retube an All American Five (AA5) with

#### 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.

#### PRESIDENT:

Richard Lee (914)-589-3751

#### VICE PRESIDENT:

Sal Brisindi (732)-308–1748

#### SECRETARY/EDITOR:

Mary Beeferman (609)-693-9430

#### TREASURER:

Harry Klancer (732)-238-1083

#### **SERGEANT-AT-ARMS (WEST):**

Darren Hoffman (732)-928-0594

# **SERGEANT-AT-ARMS (EAST):** Rotating

#### TRUSTEES:

Ray Chase (908)-757-9741 Phil Vourtsis (732)-446-2427 Walt Heskes (732)-205-9143

#### TECHNICAL COORDINATOR:

Al Klase (908)-892-5465

#### TUBE PROGRAM CHAIRMAN:

Al Klase tubes@njarc.org

#### SCHEMATIC PROGRAM:

Aaron Hunter (609)-267-3065

#### **CAPACITOR PROGRAM:**

Matt Reynolds (567)-204-3850

#### RESISTOR PROGRAM:

Walt Heskes (732)-205-9143

#### WEB COORDINATOR:

Dave Sica (732)-382-0618 http://www.njarc.org

#### MEMBERSHIP SECRETARY:

Marsha Simkin 33 Lakeland Drive Barnegat, N.J. 08005 (609)-660-8160 tubes from club stock and sell it at the next meet, go right ahead. If you're flipping a hi-fi amp and need a 5AR4, a pair of 6L6GC's and a couple of 12AX7's, then expect to pay the club a fair price.)

The basic price for a tested tube is \$3.00. This should apply to 90% of what you need. Some tubes are becoming legitimately scarce and others are tainted by audiophile lunacy. We may eventually publish a price list, but for the noment, we're going to consider things like the price list at Jim Cross's site "http://www.vacuumtubesinc.com/ and apply some "Kentucky windage." Al says that "we'll do our best to solve your problem at a reasonable cost; don't be afraid to ask."

So far, we have prepared a good stock of octal and miniature AA5 tubes; we'll add the loctal equivalents shortly. The next step will be to organize the octal and miniature 6volt "radio" tubes followed by the big pin AC tubes. We're soliciting input from the club regarding priorities, e.g., should we spend time sorting seriesstring TV tubes (3AU6, etc.)? Feel free to start a discussion on the reflector or send private comments to tubes@njarc. org.

In the meantime, our tube building at InfoAge is sufficiently organized so that we should be able to go down on a Wednesday and pull and test almost anything you request. Our preference is to conduct most of this business via email, but if you find this too difficult, Al's number is posted to the left.

The Board has also updated our upcoming events through the end of the year. Please note in particular our Summer tailgate swapmeet at InfoAge on July 27th (see flyer on page 8) and our Repair Clinic on August 3rd.



This beautiful Majestic radio/ phono combination sold for only \$10 at our June meeting's auction. It's always a good idea to consider transportation that can handle great buys like these.

#### **Upcoming Events**

July 27th: Summer tailgate swapmeet at InfoAge

August 3rd: Repair Clinic at InfoAge August 9th: Monthly meeting at Princeton - Compilation of radio-related movie shorts

September 13th: Monthly meeting at InfoAge - Tech-talk by Al Klase (to be announced)

October 11th: Monthly meeting at Princeton - Talk by Steve Klose on Armstrong plaque project (tentative)

November 8th: Monthly meeting at Info-Age - Talk by Joe Taylor on the history of the moon bounce project (tentative)

December 7th: Holiday Party at InfoAge (no meeting this month)

# MORE ON THE "RADIOLIER" RADIO LAMP

### By Mary Beeferman

Last month, I included an article on the Radiolier radio lamp described in a 1922 stock offering by the Shepard-Potter Corp. In closing, I noted that "It is difficult to say whether the Radiolier was ever put into full production or any examples exist today."



Radio News for August 1922 described the radio lamp shown at the New York Radio Exhibition as one of "the usual array of freak receivers."

Well, my conclusion seems to have been a bit premature. At the June NJARC meeting, member Ray Chase told me that he has seen at least one at a past auction or contest. Then, I received an e-mail from Tube Lore author Ludwell Sibley noting that he remembers seeing a restoration article for one in a 1985 ARCA Gazette. This article noted that the manufacturer was the Capital Phonolier Company (not Shepard-Potter) which led me to a reference in Alan Douglas' Radio Manufacturers of the 1920's, Vol. III. Finally, I came across an ad for the Chicagoland Antique Music Extravaganza where the ad included a photo of the Radiolier. Interestingly, the photo shows a phonograph, not a radio, in the lamp's interior.

As best as I can determine, the Shepard-Potter Co. was originally organized as the Capital Phonolier Company and manufactured their lamp radio as the "Radio Phonolier" - it sold for about a year. When Capital went bankrupt and reorganized as the Shepard-Potter Co., it appears that the radio was renamed the "Radiolier" (what seems like a more relevant name) as advertised in the company's stock offering. However, with no exa mples of published advertising using the "Radiolier" name, it appears that production ended quite abruptly, perhaps because of a \$300 price tag (without tubes and batteries). Later, Shepard-Potter went on to form the Thermiodyne Radio Corp. of Plattsburgh, N.Y. that went bankrupt in 1926.

The Phonolier is described as a TRF set using a UV201 RF amp, a UV200 detector and two UV201 audio amplifiers. It is battery-powered with the base of the lamp acting as a horn speaker.

Although this history verified its commercial production, the Phonolier still remains a bit of a mystery. First, why doesn't advertising exist for the renamed Radiolier; did sales drop so quickly after Shepard-Potter took over? Second, did a phonograph version of the radio lamp actually exist and, if so, why wasn't it specifically named and advertised as the Phonolier? It all still seems a little confusing!

Anyway, an interesting Phonolier restoration article follows that was written some 28 years ago. It serves to illustrate the extent that a collector will go to preserve the history of the radio (no matter what strange direction it took) and that taste remains in the eye of the beholder.

# A BLUE RIBBON BEAUTY The Capital Radio Phonolier

#### By John Milton Williams

The following article appeared in the Winter 1985 issue (Vol. 13, No. 4) of the "Antique Radio Gazette," that was originally issued by the now defunct Antique Radio Club of America. It is reprinted here with the kind permission of the Antique Wireless Association.

I was not too surprised when the judges at this year's Antique Wireless Association Conference awarded a blue ribbon to my 1922 Phonolier radio-lamp. After all, it was a magnificent example of early radio's first attempt at elegance, and probably the first effort to incorporate a radio into a functional and decorative piece of living room furniture. As you know, the radios manufactured in 1922, and before, were mostly rectangular boxes with a lot of switches and dials. These magic boxes, connected by an untidy slew of wires and batteries, mysteriously plucked wonderful sounds from the air and played them through headphones or primitive loud speakers. As wonderful as it was, the ladies of the house did not appreciate this "junk" in the living room. I suspect this was Capitol's thought when they decided to market their radio-lamp.

As certain as I was about winning a blue ribbon, I was totally unprepared for the reactions of my fellow collectors and their wives when the doors to the contest room opened.

"That's the silliest-looking radio I've ever seen," blurted one old-timer to his silver-haired spouse. "Maybe so," the wife said, "but it's the only one of these old radios that I'd want in my living room."

"It's absolutely beautiful," exclaimed one charming lady as she posed beside it for a photograph her mate was taking. "Now you'll take one of me next to it," he instructed. "I want my grandchildren to see me with it, or they won't believe me."

"They never made such a receiver in those days," growled one member who was obviously older than the radio. "If they had, I would have seen it."

Fortunately, the overwhelming majority of the radio collectors there agreed that it was, indeed, a rare and beautiful radio of historical significance. I deeply appreciated their enthusiastic comments. Almost everyone who spoke to me about the radio asked, "Wherever did you find it.?"

So, for all of those nice people, the following tale is told:

I had first seen the Phonolier radio at Jim Riley's Antique Shop in Norwich, Connecticut, a year or so before. He was hoping to trade it for some nice phonograph, which is what he collects. The Phonolier was in terrible shape and the once-lovely shade was completely rotted away, except for the woven metallic trim.

I assumed the radio must have been manufactured around 1925 or so. At first I was not overly-impressed with it, but the more I looked at it, the more I saw its potential for restoration. I thought it over for a whole year, and dropped by Jim's place on the way home from the summer Antique Radio Club of America meet at Bob Merriam's fantastic Wireless and Steam Museum in East Greenwich, Rhode Island. I had taken along a rare, early cylinder phonograph that I'd had for years, with the thought of trading for the Phonolier, if Riley was agreeable. This time the radio-lamp looked even more interesting than before, and I was able to make the swap with Jim. (Both of us old horse traders were thoroughly convinced we out-witted the other, so we were truly happy as I loaded the radio into my car.)

As fate would have it, my frustrating lower-back problem was acting up that day, and by the time I got home I could hardly walk. Instead of unloading my car, I went right to bed. It was several days before I could get up and around.

John Drake came by to see me, and I asked him if he'd be kind enough to unload my car. When he carried the Phonolier in, he told me that he had seen a picture of it in an early Radio News, and he thought it might have been in 1922. We both inspected the radio and were impressed with its uniqueness. However, when we took the radio panel off the set, it was immediately obvious that the original coil had been replaced with later versions and both tap switches had been disconnected from the circuit. worry," John said. "If I'm not mistaken, the Capitol Radio Company made a variocoupler that fits this receiver, and I have

one at home!"

So John removed the panel with the parts and took it home to replace the coil for me. He later called to say he had replaced the coupler and rewired the tap switches. He told me that the loud music I heard in the background was my radio playing!

The "All-Wave" coupler John had found was the heart of the Radio Phonolier. This vario-coupler was patented by the Capitol Radio Company, and they sold it separately for \$15.00. Apparently, they sold very few of their radios, because they didn't seem to advertise after 1922. Their basic three-tube, bronze-plated one sold for the extravagant sum of \$300 (without tubes or batteries)!

There were not too many people around then who could afford a lampradio that cost as much as a 1922 automobile. It appears as though the Capitol Radio Company might have sold out to the Shepard Potter Company of Plattsburg, New York. In 1924, that company put out an identical All-Wave coupler in both junior and regular models under the their brand-name, ""Shepco." (Ed. Note: Short for "Shepard" in Shepard-Potter.) They also manufactured a Shepco receiver that used their All-Wave coupler.

Now that the radio was complete and working, I decided to totally restore the lamp-radio to its original splendor. My

first step, since the finish had oxidized completely, was to have it replaced and lacquered to preserve the silverplate. (Ed. Note: The base, that contained the speaker driver, was solid copper and came in bronze, silver or gold.) Then came the hard part! I thought it would be a fairly simple task to find someone who could make a shade for it that would look like the original. I contacted every known lamp-shade maker on the East Coast and could not find a single one who could do the job. In desperation, I called the Clifton, New Jersey editorial offices of Home Lighting & Accessories Magazine, a beautifully produced publication for the retail lighting business. Peter Wulf, the editor, was kind enough to speak with me. When I explained my problem, he thought my best chance of getting an authentic lamp shade made would be Irma Jabali Inc. of North Hollywood, California. Mr. Wulf also said he would run a story on the radio-lamp in his magazine.

By now, I was too deep to back out on my restoration attempt, and the lamp was much too rare and interesting for a halfhearted attempt. I called the Irma Jabali Company and had the good fortune to reach Sandy Esparza on the other end of the line. I explained that I had gotten her company's name from the magazine editor and that I hoped that she could help me with my restoration problems. She was so kind and helpful, and seemed to understand exactly what needed to be done. She as ked me to send her a photo of the radio and the wire cage that had the rotted shade on it, which I did.

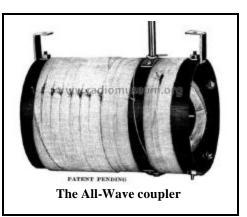
Sandy called me back as soon as she received my package, saying that yes, she and her team of experts could do the job. They could use the original brocade trim, and they had on hand a treasure of antique silk - in the same color as the original and dating from the same period of the radio - to replace the original shade.

It was costly, but it was magnificent! I was thoroughly pleased with her beautiful restoration, and the purple-rose color was just right. At every stage, this company was a joy to do business with.

So, with many thanks to Sandy Esparza of the Irma Jabali Company in Hollywood, Peter Wulf of *Home Lighting Magazine* in New Jersey, John Drake in Madison, Connecticut and the noble judges at the AWA meet in Canandaigua, New York, the lamp was a tremendous success.

Fortunately, the overwhelming majority of those who have seen it have agreed that the Phonolier is, indeed, a rare and beautiful radio-lamp with improved historical significance. A few hated it, many loved it, but everybody had some reaction and some comment to make about this radio. That was, as I recall, the purpose for which the radio club was founded.





The Phonolier also utilized a unique tube socket and rheostat combination called a "Socostat" where the filaments could be individually controlled by turning a Bakelite ring around the nickel-plated tube socket. It was manufactured by the Fedders Mfg. Co. of Buffalo, N.Y. The Fedders Company is the same one that now makes air conditioners.

#### SHOW & TELL







Once you get past an "Electronic Set" and some other items, the focus of Jon Butz-Fiscina talk gets a little complicated. A friend from Texas called him about a 1926 Stromberg Carlson neutrodyne that contained a note that implied that John had worked on the set. Indeed he did in 1993 (while living in Three Bridges) for a New Jersey resident who later gave it to his son hoping for a good home. When his son (who had no interest in the radio) moved to Texas and finally unpacked it, he had no desire to keep it and sold it to John's Texas friend. Now, after some 20 years, it is back in New Jersey where it probably belongs.



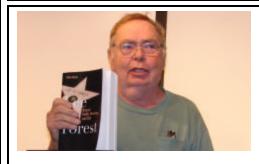
Richard Lee initially thought that the small box he found at a yard sale held fishing tackle. Big things do come in small packages as he described over 15 items of contents contained within this Master Deluxe Radio Cabinet Repair Kit. Club members seemed to have a unique interest in one component called a French emulsion.



Bill Zukowski reads from a verv informative color handout describing his Volksempfänger (people's radio) VE-301. People's radios were an important part of the propaganda campaign of the Third Reich. However, with six variations built by 28 manufacturers, Bill found it somewhat difficult to find a viable schematic to correct all the problems that the previous owner Ultimately, Bill was introduced. able to rectify all wiring errors and replace defective and incorrect components, but still could get no output. The culprit was finally traced to a very weak RES 164 tube. Unfortunately, the high cost of the RES 164 has limited Bill to a substitute until a reasonably-priced original can be located.



Dave Snellman's 1964 T1000 AM/FM/ LW shortwave radio was designed by Dieter Rams and is in the permanent collection of the Museum of Modern Art in NYC. The German government gave out these radios to members of its diplomatic corps. It originally sold for \$500 but you'll have to plan on spending at least \$1000 today for a decent example.



Richard Hurff complimented Mike Adams on his Lee deForest history, documented by 41 pages of end notes. He noted that this period in radio development involved "a lot of people spending a lot of time suing each other." On the other hand, Richard felt that the book could have benefited by a good editorial review.



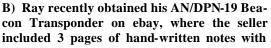
Mary Beeferman showed this transistor radio disguised as a key and sounder.





Paul Hart displayed a somewhat rare Stewart Warner model 1271 "Bond" radio that sold for \$300 in 1933. I have not found any references to the reason for the "bond" designation, but the radio is fully described at radiomuseum.org. It is a 5-tube superhet receiving AM with at least two SW bands and a 6A7, 6D, 75, 41 and 80 tube complement. Paul also described his first restoration attempt, a Transoceanic that he purchased for \$60. Paul said that although working, the radio is still awaiting additional TLC including recapping and tuning tower lubrication.

A) Ray Chase recently purchased his 1924 Northern Electric R4 receiver from Hugo Picciani of Brooklyn, NY who was featured in last month's *Broadcaster*. It uses six rare 215A miniature tubes. Although suffering from original and missing parts problems, it is an important example of an early superhet produced in Canada.







partial schematics explaining its theory of operation. The transponder was used to assist missile tracking radar and possibly supply telemetry data. It was manufactured between 1953-1955, had a power output of 50 watts and covered 2800 to 2925 MHz. It was used at the White Sands Missile Range for X-17 rocket research (nose cone testing and effects of nuclear explosions outside the atmosphere).

# ARMSTRONG PLAQUE DEDICATED

## By Richard Lee

After almost three years, the dream of Englewood Cliffs New Jersey resident Steve Klose has come to fruition! On Monday, June 17th, the elders of the Yonkers City Council, including Mayor Mike Spano, unveiled the commemorative plaque to Major Edwin H. Armstrong. As you probably know, "The Major" was a resident of Yonkers during his formative years between 1898 to 1920. Attending the ceremonies were over 60 interested parties and two of Armstrong's ancestors, grand nephew Steve McGrath and great grand nephew Adam Brecht. Mr. Brecht spoke anecdotally of stories he had overheard as a young boy about the grand house at 1032 Warburton Ave. that was demolished in 1983.

The location of the plaque is a fitting

tribute to Armstrong's enjoyment of trains at an early age, located at the elevated entrance to the Greystone station of Metro North. By looking to the extreme left (about 75 yards) of the plaque, you can see where the Warburton Ave. house once stood, now an apartment house. Looking over the concrete abutment on which the plaque is mounted, you can see the Alpine Tower, built in 1937, standing majestically over the Palisades and Hudson River. We can only speculate how, as a young man, Armstrong envisioned building a tower and station (W2XMN) for his experimental FM transmissions, just across from his boyhood home!

The unveiling festivities started at 1 PM with a flurry of political speeches celebrating Armstrong's accomplis hments and the pride the city of Yonkers has for their most noted former resident. Media coverage was thick. Radio station WFDU FM's Barry Schect was there with a video crew for webcasting, as was Hudson Valley local news channel 12. Long time Armstrong admirer Steve Hemphill's low band FM license for 42.8

MHz and homebrew transmitter allowed him to broadcast the ceremony from the Alpine tower; it could be heard for those of us with older FM band receivers. In addition, NJARC's technical coordinator Al Klase showed off his DJ'ing skills with vintage experimental FM recordings and commentary. NJARC member Dave Terwilliger stayed up late the night before and got his 1941 low band FM Pilot model T301 receiver in good working order to the delight of the attendees.

Steve Klose's opening statements about the funding of the Armstrong plaque gave credit first to the NJARC and then to the HARPS followed by the Armstrong foundation and individual donors. The event closed with Steve Klose inviting everyone for refreshments provided by his wife Marie. What could be more appropriate than to have a piece of cake with Armstrong's portrait imprinted on it!

Why it took a New Jersey history buff so long to awaken Yonkers to the commemoration of Edwin Armstrong is a story yet to be told, and we hope to have Steve Klose tell it at a future NJARC meeting.



Dignitaries and Yonkers city council members unveil the plaque.



Steve McGrath, Armstrong's grand nephew.



Al Klase "DJ's" from the temporary WA2XMN studio in the transmitter bay beneath the Alpine tower.



"What refreshment could be more appropriate (prepared by Steve Klose's wife, Marie) than a cake with Armstrong's portrait imprinted on it!" The portrait is a replica of the one that appears on the plaque with the Alpine tower in the background.



Chief engineer Steve Hemphill prepares the remote pickup equipment.





NJARC president Richard Lee discusses the day's activities with Steve Klose. Dave Terwilliger delighted the crowd with his 1941 low band FM Pilot T301 which picked up WA2XMN's broadcast.

# ARMSTRONG DAY AT INFOAGE

The year 2013 marked the 101st anniversary of the development of the regenerative radio circuit by Edwin Howard Armstrong, an electrical engineering student at Columbia University. This invention not only greatly improved the performance of radio receivers, but would also become the basis for modern radio transmitters, making voice transmission, and radio as we know it, a reality.

The NJARC Radio Technology Miseum will host an observance of the occasion on July 27th and 28th from 1 to 5 PM. The observance, organized by the club's technical coordinator Al Klase, will include a display and demonstration of a

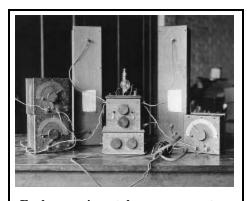
wide range of vintage regenerative eceivers with a formal presentation at 2 PM. The other InfoAge museums will be open as well. Admission is free although a five-dollar donation to InfoAge is suggested.

In addition, the club will be holding its Summer Radio Swap Meet on the 27th starting at 8 PM. This should make Saturday a red-letter day for NJARC members and their families and all other old radio fans.

Working receivers on display will include a mock-up of Armstrong's original circuit receiving a simulated spark radiotelegraph transmission, a WWI era naval receiver, early regenerative broadcast receivers, more sophisticated "regens" that dominated amateur radio and the early phases of the short-wave broadcast craze in the 1920's and 30's, and a naval RAL receiver that served throughout WWII.

Armstrong is arguably the greatest

radio inventor since Marconi. His regenerative receiver was followed in 1918 by the superheterodyne, the basis for nearly all modern radio receivers. During the 1930's, Armstrong developed high-fidelity FM broadcasting. His FM technologies found their way into two-way mobile radio and radar.



Early experimental regen apparatus.







# 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 27th, 2013



**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! Contacts:

<u>President</u> Richard Lee (914) 589-3751 radiorich@prodigy.net Vice President Harry Klancer (732) 238-1083

klancer2@comcast.net

Secretary
Marv Beeferman
(609) 693-9430
mbeeferman@cs.com