The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2010 Volume 16 Issue 7

MEETING/ ACTIVITY NOTES

MEETING NOTICE

The June meeting will take place at Princeton's Bowen Hall (70 Prospect Ave.) on Friday, July 9th, at 7:30 PM. Directions are posted on the club's website (http://www.njarc.org). This month we'll feature a continuation of the auction from June with a listing of items and pictures in this month's *Broadcaster*. In addition, make a note to bring in some of your favorite "Hints and Kinks" to share with the membership.

Reported by Marv Beeferman

I was unable to attend last month's meeting, but it was reported that a last-minute auction (too late to be noted in the June *Broadcaster)* and Al Klase's talk on IF/RF alignment were well-received.

The July meeting will feature a continuation of the June auction with a listing of items and photos in this month's issue. We'll also be looking forward to a new feature that will be added to our meeting activities - "Hints and Kinks." (A "kink is defined as a clever, unusual way of doing something.) But its success does not depend on one individual; it depends on just a little effort by each member. So organize a demonstration of a few of your best repair/restoration/troubleshooting hints and kinks for a fun and informative evening.

As many of you know, there are some interesting and amusing postings on the NJARC Reflector. However, not all members have or desire access and the "delete" button relegates them to the electromagnetic graveyard for eternity (perhaps to be someday enjoyed by Kraal on the planet Kreplach). Here is one by John Tyminski that I thought was well deserving of being reported and archived in the *Broadcaster*:

Monday afternoon I received a phone call from my father. He was driving to a customer's house and noticed a console radio that was put out at the curb. He wanted to know whether I wanted him to turn around and go back to take a look for me. I paused for a moment and thought I really do not need another console. Then, I came to my senses and said "Ok Dad, go back and take a look at it."

My father called me back and told me the console was a Zenith and it had a big black round dial. Then, he took a look in the back and said he did not want to load it into the back of his car. My father said there where two chassis and two speakers in the console. I was sold at that point and knew this radio was something special!

My father said he may have to go home and clean his truck out to fit the console. I said "Whatever you do, don't leave that radio! Put it on the roof rack if you have to!"

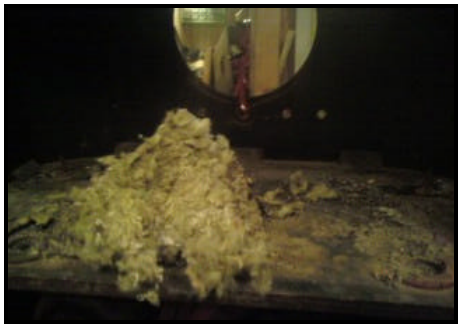
Dad managed to get the radio loaded up and brought it home. As I examined it, I saw that it was a Zenith with two chrome-plated chassis and a large woofer and tweeter. At this point, I suspected it might be a Stratosphere. I sent some photos to Joe Cro and asked him to look up the model number for me. I definitely needed to make room for this radio in my workshop. Soon after getting my new find moved in, Joe called me and said I did indeed have a Zenith Stratosphere!

The radio works, but it has had a hard life. It is missing the dial surrounds. Amazingly, there is only one chunk of veneer missing on the top of the cabinet. Mice where living inside of the cabinet; luckily, the mice did not chew anything up. The radio is working with all its original capacitors. It has 16 tubes; the power supply has four 5Y3 rectifiers and the output has four 6F6 amplifier tubes. The radio sounds wonderful and easily tunes in distant stations. Now I just need to find someone who has a the same model 16A61 Stratosphere so I can make a copy of the dial surrounds. Once I make a copy, I can have a metal smith reproduce a copy to make this rare unit complete.

Maybe next time I will find a Nocturne !

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 has just returned from a recent trip to the Isthmus of Panama. He was Dxing the shortwave bands with his Kaito 1103. Richard reports that WBCQ on a frequency of 7.415 from Monticello Maine came in load and clear.

On Saturday, July 24th, the NJARC will hold its Summer Tailgate Swapmeet at InfoAge. Hours are 8:00 AM to 1:00 PM with vendor setup at 7:00 AM. A single space for members is $20; additional reserved spaces are $15. For reservations, contact Richard Lee (914-589-3751, radiorich@prodigy.net) or Harry Klancer (732-238-1083). Bring your own tables, food and radios and attend one of the most relaxing, no-frills meets of the season with access to our Radio Technology museum and some great military displays in the Marconi "hotel."

JULY AUCTION CATALOG

Compiled by Richard Lee

1. Empty Crosley cabinet
2. Empty Philco Jr. cabinet
3. AirCastle tombstone; missing knobs; with tubes
4. G.E. radio/78-phono; model H-639; with tubes
5. Zenith chassis & glass escuchon; model 661? with tubes
6. Airline tabletop BC/SW missing knobs & dial glass with tubes
7. EICO 5" scope; model 460 with trace
8. Lafayette VTVM
9. RCA audio generator; model WA-44C
10. RCA 45 attachment player; model 45-J-2
11. RCA 45 player/amp.; model 45-EY
12. RCA Radiola 33 metal box with tubes
13. Tube tester; Maxon Electronics model 161
14. Zenith TransOceanic; model H-600; with tubes
15. Stromberg Carlsen end table radio model ? with tubes
16. Atwater Kent model 42; with tubes
17. Atwater Kent model 40; with tubes
18. Box lot 1970's Radio & Electronics magazines; approx. 50
19. Box lot radio books
20. Box lot misc. parts
21. Box lot misc. air caps.
22. Box lot misc. tubes
23. Box lot misc. panel meters
















NJARC VACUUM TUBE PARTY

On June 5th, a crew of NJARC members gathered at InfoAge to get a handle on the club's tube inventory. Over the years, through many generous donations, the club has accumulated quite a large amount of tubes. Unfortunately, the quantity was obvious but not the quality. Gary D'Amico has done a fabulous job of maintaining the club's tube program after taking over the reins from Lud Sibley by testing and boxing tubes so that they were readily available for member use. But the amount of unsorted tubes eventually became overwhelming and the majority was moved to InfoAge. Now it is up to the membership to lend a hand.

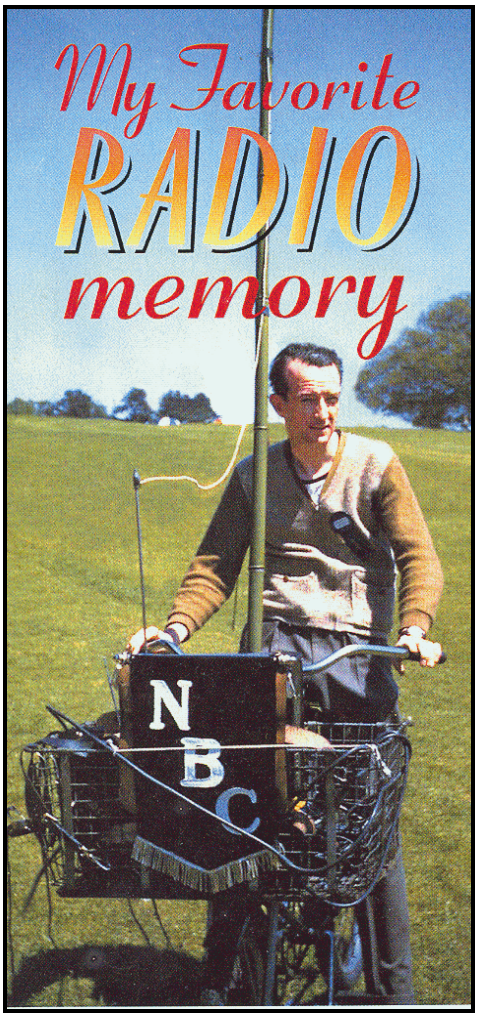
The purpose of the "vacuum tube party" was to take a first cut at sorting. Tubes were divided into early big pins, Octals, Loktals, 7-pin and 9-pin miniatures, nuvistors, transmitting tubes and other oddballs. Obvious important tubes were also segregated. With the help of Steve Goulart, we also gathered together a few tube testers and started to determine the quality of some of the more important tubes for radio work.

All-in-all, it was quite a productive day with only a few tubes being subjected to the "drop" test. (Unfortunately, none survived.) During the next party, we plan to do some more testing and filtering out of the tubes that will never be used for radio or early TV restorations. Please consider joining us; you might learn a little about basic tube applications and nomenclature in addition to be treated to a nice pizza lunch and lots of good fellowship.

PEDAL POWER

From time-to-time, a friend of mine brings to my attention postings from the "My Favorite Radio Memory" section of *Reminisce* magazine. The magazine features vintage photographs and real-life memories of the 20's, 30's, 40's and 50's. I thought that this one from the April/May issue sent in by Bob Vermeulen of Glendora, New Jersey was worth noting:

"My grandfather, Walter Mullaney, was an engineer in radio and television for NBC. This 1946 picture shows him at Georgia's Augusta National Golf Club for the Masters Tournament. He had all of his equipment, including a long antenna, attached to a bicycle so he could go from hole to hole for the broadcast."



ANOTHER "MARVIN" REFERENCE

Being the only Marvin in the club, you become an immediate target for every "Marvin" reference in the antique radio world. Perhaps you remember the *Broadcaster* story about the Marv-O-Dyne radio which caught the eye of member Ray Chase at one of the many auctions he attends and who determined that I "had to have it." During a past Christmas, I was again surprised by Ray who sent me a Kellogg (RX-401) tube manufactured by the Marvin tube company.

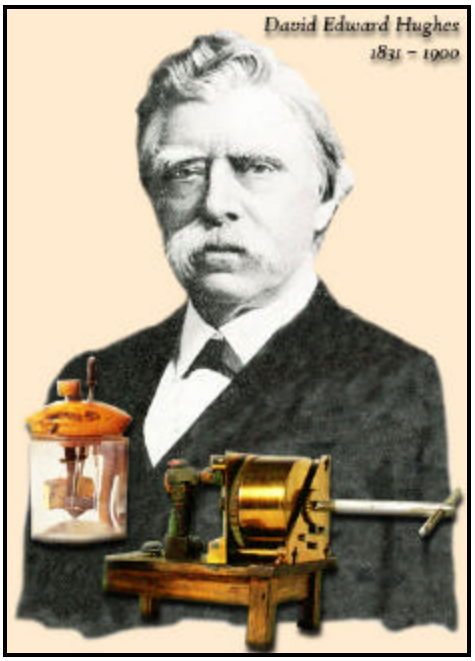
Recently, Sal Brisindi discovered an ad in the October, 1929 issue of *Radio Engineering* featuring the Marvin Radio Tube Corporation of Irvington, New Jersey. With the location in hand, I began an extensive web search for some information about this company. However, after about four hours of using every possible search combination, including New Jersey Corporations and the history of Irvington, I came up with nothing. Did this factory even exist or was the "Marvin" label pasted on someone else's product (as was the usual case at the time)? It appears that I'll have to contact Irvington's historical resources directly, unless anyone out there has any other leads. I'll keep you posted of my progress.

RADIO HISTORY'S NEAR MISS…

DAVID EDWARD HUGHES

Compiled By
Marv Beeferman

There were no submittals from the membership this month so we return to the Broadcaster archives. The following article appeared in the February, 2005 issue...Ed



The story of David Edward Hughes is a story of one of those very rare instances in which a man with a limited scientific background happened to stumble across a scientific principle of great significance. The tragedy of the story is that the experts of his day did not recognize Hughes' experiments for what they were - a valid demonstration of electromagnetic waves. Had they been a little less discouraging regarding a subject in which they were not authorities, the early history of radio communication might have taken a very different turn.

Hughes was born in London in 1831, and died there in 1900. He spent the early part of his life in the United States, becoming Professor of Music at St. Joseph's College in Bardstown, KY and also holding the Chair of Natural Philosophy at the college. Although a professor of music, he clearly enjoyed inventing and had a flare for new technology. He took out a patent in 1855 for a type-printing telegraphy instrument that went into extensive use in America and Europe. He also built a microphone formed of a carbon rod resting in the grooves of two carbon blocks, wired in series with a battery and telephone. This was the forerunner of the carbon microphone, which was to come into widespread use with the telephone. In Dunlap's 1944 "Radio's 100 Men of Science," Hughes is given the title of the "Pioneer of the Microphone."

Although Hughes' wireless experiments took place between 1878-1880, no account of the experiments was published in any form until well after Hertz's experiments. In 1892, Sir William Crookes published a far-sighted article called "*Some Possibilities of Electricity*," in which he speculated on the future uses of wireless waves. His article talked about the possibility of world-wide communications, the penetration of wireless waves through fog and buildings, and about tuning to specific radio wavelengths and the need for the confidentiality of messages carried by wireless waves. In this article, he pointed out that "*This is no mere dream...*", and he alluded to events witnessed several years earlier, when he had *"assisted at experiments where messages were transmitted from one part of a house to another without an intervening wire...* "

In his researches for his 1899 book "*A History of Wireless Telegraphy*," J. J. Fahie followed up on Crooke's report. Crooke referred him to Hughes, who had carried out these experiments. In correspondence with Fahie in 1899, Hughes described his 1879 researches. While experimenting with a microphone, he had found that a loose contact was responsible for generating a sound in a telephone receiver, even though this receiving circuit was disconnected and several feet from the source. Hughes investigated further, searching for the "*best form of a receiver for those invisible electric waves, which evidently permeated great distances, and through all apparent obstacles, such as walls, etc.*"

Hughes then set about making all sorts of equipment to further pursue his investigations. Most ingenious, perhaps, was a clockwork transmitter that interrupted the circuit as it ticked, allowing him to walk around with his telephone, now aided by a specially built receiver, to test how far each version of his equipment would send a signal.

At first, Hughes transmitted signals from one room to another in his house on Great Portland Street in London. But since the greatest range there was about 60 feet, Hughes took to the streets of London with his telephone, intently listening for the clicking produced by the tick-tock of his clockwork transmitter. He noticed that the sounds seemed to slightly increase for a distance of 60 yards and then gradually diminish, until they could hardly be heard at 500 yards.

Hughes invited several eminent scientists and electrical engineers of the day to observe his results, including Crookes, and in February 1880 Spottiswoode (President of the Royal Society) and Professors Huxley and Sir George Stokes (Secretaries of the Royal Society). "*They all saw experiments upon aerial transmission...* " Hughes was able to demonstrate reliable signaling up to 500 yards and, from the variation in signal strength with distance, apparently observed standing waves.

In his 1899 account of the 1879-80 experiments, Hughes talks about "aerial electric waves" or "aerial transmission," but admits that Hertz's experiments were more conclusive than his own, although, not having a coherer, Hertz's receiver was much less effective. Although Hughes' 1899 account talked about waves and aerial transmission, a later examination of his notes made at the time indicate that he thought conduction through the air was the mechanism.

Unfortunately for Hughes, the eminent scientists, in particular Stokes, pronounced that it was all due to induction, not waves, and assured Hughes that his demonstration was nothing remarkable. This so discouraged Hughes that he never published his results, and abandoned further experimentation in this area. Hughes was to later write:

"*Stokes commenced maintaining that the results were not due to conduction but to induction...Although J showed several experiments which pointed conclusively to its being conduction, he would not listen, but rather pooh-poohed all the results from that moment...* "

Note that Hughes uses the term "conduction." Based on the language of

the day, the strange effects that seemed to be observed in an inductive circuit when the current was interrupted was generally referred to as "conduction through air" or "extra current" as opposed to an induced current. It was not realized in those days that the so-called "extra-current" was an oscillatory transient of high frequency.

As a result of the publication of Hughes' 1899 comments in The Electrician, J. J. Munro called on Hughes and inspected his apparatus and notebooks. Munro then confirmed Hughes' claims: the systematic work of developing a coherer receiver system and performing long distance (several hundred yards) transmission and reception of wireless signals:

"*Prof Hughes had step by step put together all the principal elements of the wireless telegraph as we know it to-day [1899], and although he was groping in the dark before the light of Hertz arose, it is little short of magical that in a few months, even weeks, and by using the simplest means, he thus forestalled the great Marconi advance by nearly twenty years*!"

Commenting on the bad advice given by Sir George Stokes, Fahie says in his "History of Wireless Telegraphy" : "*but in this case, as events show, the great weight of his opinion has kept back the clock for many years. With proper encouragement in 1879-80 Prof Hughes would have followed up his clues, and, with his extraordinary keenness in research, there can be no doubt that he would have anticipated Hertz in the complete discovery of electric waves, and Marconi in the application of them to wireless telegraphy, and so have altered considerably the course! of scientific history.*"

The story takes up again in 1922, after Hughes' widow died, bequeathing some of his remaining notebooks to the British Museum. A.A. Campbell Swinton (Swinton had given Marconi his original letter of introduction to Preece in 1896) examined these notebooks and was able to recover even more of Hughes' original equipment and further notebooks which had been stored and forgotten about in a furniture depository in central London since 1900. The resulting report from Swinton included the following: *"They [the newly discovered notebooksJ prove that Hughes undoubtedly noted some of the effects now known to be due to high frequency waves. He used a small spark coil as a generator, and a Bell telephone and a battery generally connected in series with a microphone as a receiver. The microphone apparently acted sometimes as a coherer...He received signals up to distances of about a hundred yards...nine years before Hertz's memorable discoveries.*"

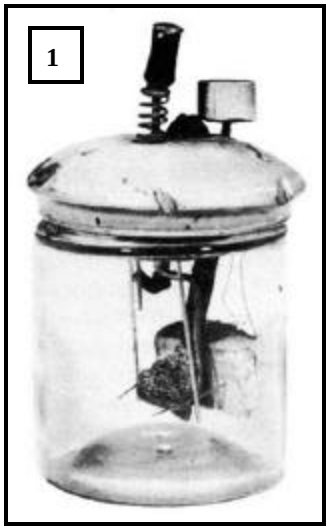
Where does this leave the Hughes saga? From Hughes' 1899 account of his 1879 work, where phrases like "aerial telegraphy" appear, and also from Munro's 1899 interview with Hughes, the claim of being the first to generate and detect electromagnetic waves would seem very well-founded. There is now no dispute about the successful demonstration of wireless generation and detection over hundreds of yards, nor of Hughes' early discovery and refinement of what became known as the coherer. However, Hughes had no suspicion that he was generating waves; he thought, as was pointed out previously, that the mode of transmission was conduction through air. This is an extreme contrast to the work of Hertz and Lodge, who had set out explicitly to try to confirm Maxwell's wave theory. Remembering that Hughes was a professor of music, Hughes in 1879 had almost certainly never even heard of Maxwell's theory.

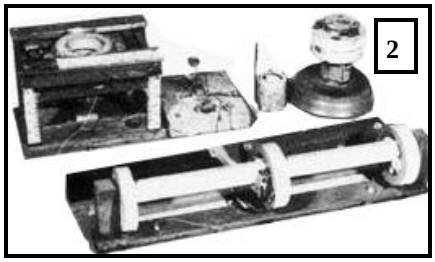
The tragedy is that the experts of the day...Stokes, Huxley and Spottiswoode... did not recognize Hughes' experiments for what they were - a valid demonstration of electromagnetic waves. Stokes' interpretation as "induction" was as far off the mark as Hughes' own interpretation of "conduction through air." This reflects how Maxwell's theory was far from accepted, in fact little understood, by contemporary scientists.

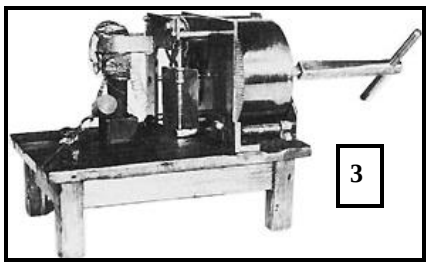
Hughes clearly did demonstrate generation and detection of electromagnetic waves nearly a decade before Hertz (and in the process discovered the coherer), but neither he nor contemporary experts recognized the experiments as such.

References:

1. G R M Garrat, "The Early History of Radio from Faraday to Marconi," IEE History of Technology Series 20, London.
2. Darrel T. Emerson, "The Stage is Set: Developments before 1900 Leading to Practical Wireless Communication," National Radio Astronomy Observatory.
3.http://chem.chhuji.ac.il/~eugeniik/history/hughes.html
4.http://www.privateline.com/PCS/history3.htm (Early Radio Discoveries)







While working in his laboratory, Hughes noticed that his microphone (1) was picking up sounds from a faulty circuit in his induction balance (2) while being completely unconnected to it by wires. His microphone consisted of a steel needle in contact with a piece of coke. Acting as a crude detector, and together with a battery and telephone earpiece, it formed part of Hughes' receiver for signals sent out from his automatic (clockwork) spark transmitter (3).

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. **Send your ad to mbeeferman@cs.com**

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 replace ments. 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.

You can't possibly need all that stuff that you collected over the last 20 years!

YOUR "FOR SALE" AD HERE!

WANTED

Now that you've disposed of some of that old stuff by using our FOR SALE section and have plenty of empty space, or just need a few parts to complete that restoration…

YOUR "WANT" AD HERE!

New Jersey Antique Radio Club
Summer Tailgate Swap Meet

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

Saturday, July 24th, 2010

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.

Contacts:

Richard Lee, (914) 589-3751. E-mail: radiorich@prodigy.net

Harry Klancer, (732) 238-1083.