

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2015

Volume 21 Issue 7



MEETING/ ACTIVITY NOTES

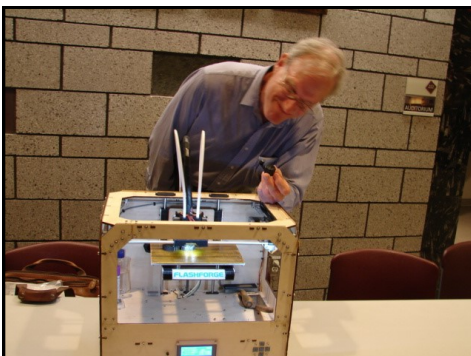
Reported by
Marv Beeferman

The ON-LINE Broadcaster

The New Jersey Broadcaster is now on -line. The majority of your fellow NJARC members have already 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.

The Show & Tell at our June meeting brought out what might be described as an eclectic collection of items that proved to be both entertaining and informative. We've captured the still pictures in this month's *Broadcaster*. But if you have YouTube access, and thanks to the hard work of member Dave Sica, you can watch a video of the proceedings on the internet. Just Google NJARC "ESR/DAMeter" or "Jersey City Special" and you'll get to the required links.

We were all impressed by Nevell Greenough's demonstration of the creation of a Hallicrafter S-39 knob using a 3D printer. Nevell explained that the process was relatively simple with free software available on the web. Basically, one starts with a flat plane and extrudes cylinders, one on top of another, until the basic shape is achieved. Then, the shaft hole, chamfers, etc. are added to design the completed knob.



MEETING NOTICE

The next NJARC meeting will take place on Friday, July 10th, at 7:30 PM at Princeton's Bowen Hall (70 Prospect Ave.). Directions may be found at the club's website (<http://njarc.org>). This month's meeting will feature a video presentation and talk by Dave Sica on his participation at the Early Television Convention in Ohio.

Member Joe Devonshire, our Maine contingent, reports that our own Al Klase received a photo mention on page 43 of the July issue of *CQ* magazine. The article is an interesting read about clandestine radios built and used in POW camps and occupied Norway. The reference is to Al's canteen radio that can be seen in our Radio Technology Museum at InfoAge or at the following website: <http://www.skywaves.ar88.net/SPY/spy.htm>.

Joe also recommends the site Radio-Electronics.com for all sorts of electronic/radio information including antennas & propagation, circuit design, components, formulae and radio history.



Corbett Klein couldn't bring his June show & tell contribution into the Bowen Hall auditorium for obvious reasons. No, it wasn't his 1940 Buick but the original AM radio that came with the car. Unfortunately, Corbett uses an FM converter.

For those AM DXers, Rockland County's WRCR (1300 Spring Valley, NY) is testing on its new frequency of 1700, moving up from 1300 to the top of the expanded AM band. The station broadcasts with 10,000 watts of power during the daytime and 1,000 watts at night. Any takers?

Make a note that July 25th is the date for our outdoor, Summer Swapmeet under the cool, shaded skies of InfoAge. This year's event will be a joint venture between the NJARC and OMARC (Ocean-Monmouth Amateur Radio Club) so expect plenty of ham gear for both buyers and sellers. We expect the meet to be well-attended since it will be advertised in quite a bit of media throughout the area. You might also want to think about bringing the wife and kids and a small portable grill to enjoy a nice picnic lunch; the museums will be open so there will be plenty to do other than radio talk.

It's also not too early to start thinking about and making plans for the Antique Wireless Association's convention in August, Kutztown in September, our Fall swapmeet in November and our Holiday Party in December which is tentatively scheduled to be held back at InfoAge.

Upcoming Events

July 25th: Summer Tailgate Swapmeet at InfoAge (NJARC/OMARC joint venture)

August 8th: Summer Repair Clinic at InfoAge

August 11-15th: AWA Convention

August 14th: Monthly meeting at Princeton's Bowen Hall; member Charles Blanding will talk about his history with local NJ radio broadcasting.

Sept. 11: Monthly meeting at InfoAge; Bob Tevis presentation (T.B.A.)

Sept. 18-19th: Kutztown swapmeet.

October 9th: Monthly meeting at Princeton's Bowen Hall; Mike Molnar presentation (T.B.A.)

October 24th: Fall repair clinic at InfoAge

Nov. 7th: Fall swapmeet at Parsippany PAL.

Nov. 13: Monthly meeting at InfoAge; Al Klase presentation (T.B.A.)

Dec. 12th: Holiday Party

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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BUYING A RADIO IN 1926

By
Ray Chase

In going through my files of radio-related ephemera, I found a sales agreement for a radio transaction conducted on December 22, 1926. Buying a quality radio in 1926 was somewhat akin to buying an automobile today and the particulars of the sale are somewhat similar.

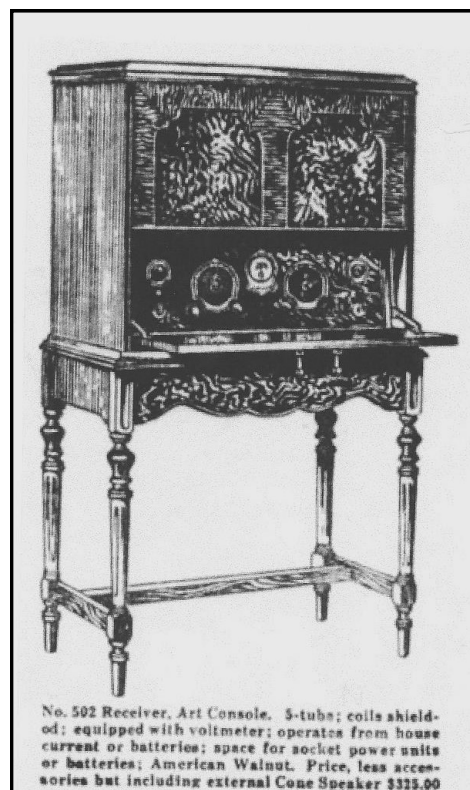
The sales form for the radio is actually both a bill of sale and time payment agreement. Interestingly, the agreement is assigned to a Mr. Lewis H. Flamerfelt of Peapack, NJ but is signed by Ada J. Flamerfelt. The December 22nd date suggests that perhaps the purchase was a Christmas present.

The radio itself is a Stromberg-Carlson Model 502 "Art" console with a total price of \$438.25. (See "Editor's Note" below.) That equates to \$5854.00 today according to my inflation calculator. A "carrying interest" charge of \$23.30 was also added. With a down payment of \$50.00, the remaining cost came to 12 monthly payments of \$34.30. But the seller, George Brooks & Co., did commit to free service for a year, "exclusive of material."

Referencing Alan Douglas's *Radio Manufacturers of the 1920's, Volume 3*, the Stromberg-Carlson 502 is a "top of the line" floor model set less speaker and power supply (batteries or "B" eliminator). Based on the price, it can be assumed that the sale was for a complete working set. The Flamerfelts may have regretted their purchase a year or so later when A.C. operated sets came on the market. It's a lot like buying an electronic product today just to see it go obsolete as soon as you walk out the door. But it seems that nothing in life really changes except for the date and dollars involved!

Editor's Note: The base price of the Stromberg-Carlson 502 "without accessories" was \$290.00. It was advertised in the "Brooklyn Daily Eagle" of Dec. 12, 1926 "less accessories but including external Cone Speaker" for \$325.00. The 502 was designed as a "Universally Powered Receiver" (D.C. tubes) which offered indirect A.C. operation with a "B" eliminator and Unipower or complete D.C. operation with batteries where house current wasn't available. The

Flamerfelt's were probably charged for an external speaker and batteries (or "B" eliminator) which brought the price to \$438.25.



No. 502 Receiver, Art Console. 5-tube; coils shielded; equipped with voltmeter; operates from house current or batteries; space for socket power units or batteries; American Walnut. Price, less accessories but including external Cone Speaker \$325.00

The Stromberg-Carlson 502 as it appeared in a *Brooklyn Daily Eagle* advertisement from Dec. 12, 1926.

A DAILY ELECTRONIC RADIO NEWSLETTER

By
Ray Chase

Several times a year, I run into a friend of mine who lives in New Jersey and who publishes an internet newsletter for the radio broadcast industry. Anyone can access the newsletter at no cost.

"Tom Taylor Now" covers all aspects of present day broadcast radio - station news, the internet, satellite, the FCC, how radio is faring in Congress - you name it! I subscribed some time ago and read it occasionally. I usually see Tom at post card shows and recently asked him how many reporters he has on his staff. His answer was "one, just me!"

Tom cranks out 4000 words of copy



each and every day, 5 days a week, and he has done this for almost three years. (Compare this with trying to get a single 100-word article from a membership of close to 200...Ed). Tom did admit that he has a salesperson and business manager, but that's it. He has been involved in the radio broadcasting trade for many years and obviously has many contacts.

The newsletter is always interesting and has the latest information on what is happening in the industry. I also enjoy the "You Can't Make This Up" section that relates humorous events or inappropriate flubs that occur in the running of a radio station. A recent posting is typical:

"It was my second job in radio, and while I was there, a long-running jock at the station died while he was on the air. After a few minutes of dead air (no pun intended), listeners called the police. When the cops showed up, they found the guy slumped over on the control board. With the mic still open, anyone listening could hear one of the cops say 'Yeah, he's dead, all right.'"

"Fast forward a few years, when I was working at the same station and doing the same shift. I had to go out to my car to get my inhaler. Without thinking, I let the door shut, and I was locked out. Panic, and then I used my tire iron to pry the door open. But just like before, listeners heard the dead air and called the police, thinking I had bought the farm, too. As far as I know, my PD never knew what happened. But a few of the other jocks did, and I had to hear about it from them, endlessly."



with your name and email address and you'll receive a confirmation email. Once signed up, you'll also be able to view or print current and past issues.

"Tom Taylor Now" is not a newsletter for everyone, but if you want to know what is going on in the radio broadcast industry, it's the place to watch. Just Google "Tom Taylor Now," fill in the signup form

DAYTON DAYS

By
Robert Forte

The Dayton Hamvention, held this year from Thursday, May 14th through Sunday, May 17th, is the largest amateur radio convention in the U.S., if not in the world. Held in Dayton Ohio at the HARA arena, with over 400 volunteers to assist in a smooth operation, this is a "must-see" for those not only interested in all ham radio activities, but also for those interested in antique radio, radio-related issues, license training, satellite demonstrations as well as those interested in buying old parts and seeing what is commercially available.

The flea market is my primary interest with over 1000, 9' x 17' spaces to choose from. Mendelson's, a local liquidation outlet, offered a huge tent loaded with many small parts, hardware, resistors and capacitors of all types as well as numerous other sundries. It was like having New York City's Cortlandt Street all under one tent. Patience is primary, since it will take hours to carefully make a single tour of the flea market.

Inside the HARA Arena, all the commercial vendors are busy explaining and selling their wares and giving advice. And of course there is "stuff" that you will buy that you never realized you needed in the first place. Various radio clubs from all over the world have table space: ARRL, British, Israeli, etc. Dinners are held every night; forums and lectures abound. This year, NASA Astronaut Mike Fincke, KE5AIT, participated in a meet and greet. Mike operated ham radio equipment from aboard the International Space Station as part of the Expedition 9 and 18 crews, making radio contacts with students, teachers and the general Amateur Radio community.

Among the numerous lectures offered, I attended "Clandestine 'Spy' Radio Operations during WW-II" by ENIGMA machine guru Tom Perera, W1TP. Tom described, to a packed, standing room only crowd, the desperate attempts by the resistance to build radios to keep informed about the progress of the

war...and by spies to communicate critically important intelligence information back to the Allies while being ruthlessly hunted by German S.S. direction-finding teams.

Cost to attend is \$25 for all three days. Food is limited to the basic "fast" selections, but after walking around this huge event and you're hungry, who cares? I ran into one NJARC member, Vince Lobosco, who is always ready with a funny quip...small world. Transportation to Dayton by plane is a one hour, twenty minute trip while a road trip will take about ten hours. Hotel rates are inflated for this event and rooms sell out fast.

If you decide to go and can afford an extra day, try to pay a visit to the Wright-Patterson Air Force Museum, also located in Dayton. Admission is free and the museum houses the largest collection of all types of U.S. airplanes, including three presidential carriers: JFK's Boeing VC-137C that brought his body back from Dallas, Harry S. Truman's VC-118 "Independence" and Roosevelt's Douglas VC-54C "Sacred Cow," complete with the enclosed elevator used to lower the crippled president from the plane to the ground. Also on display is the B-29 "Box Car" that dropped the atomic bomb on Nagasaki.

Whether a ham, electronic hobbyist, collector, tinkerer or radio enthusiast, the Dayton Hamvention is an experience that will satisfy anyone's needs and interests and is worth at least one visit during your lifetime. If you get the opportunity...GO!



A Collins beauty.



The 2015 Hamvention continued with the 2014 “Makers” theme by expanding, in a similar vein, the “Homebrew” aspect of the hobby.



Even some “apples” made their appearance.



Quite the “do.”



Vendors abound.



Radios and blue grass...a great combination.



The Martians have landed!



Tom Perera’s “spy radio” talk was standing room only!



Hi Vince!



What it’s all about...the flea market.



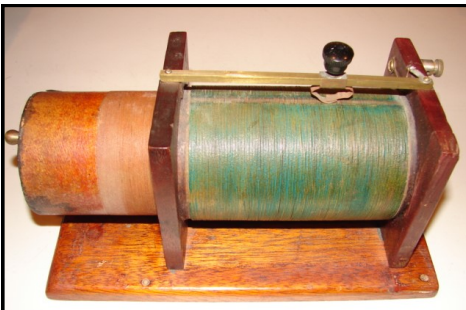
See you in 2016!

JUNE SHOW & TELL BRINGS OUT THE BEST

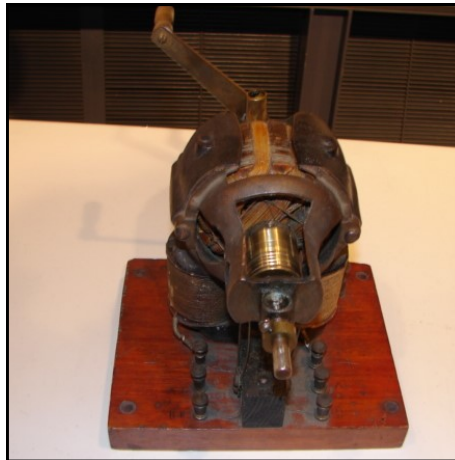
By Marv Beeferman

Lots of “oohs,” “ah’s,” and the usual kibitzing greeted an eclectic collection of show & tell items at the June meeting. Selections ran the gamut from Nipper toilet paper to an 1899 dynamo. Thanks to all who participated and thanks for all the interesting commentary from our members in providing a very enjoyable evening.





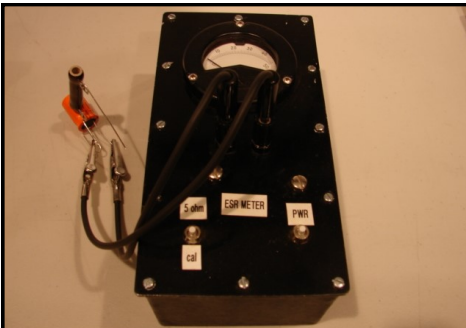
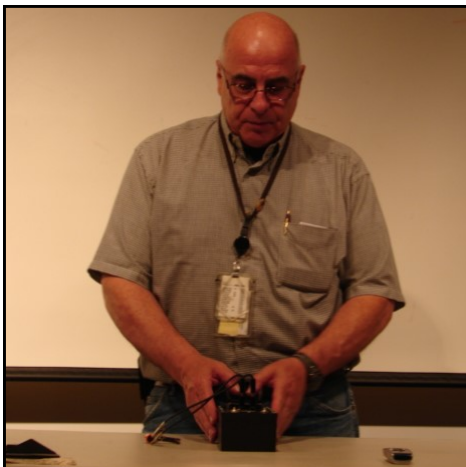
Your editor, Marv Beeferman, talked about his "Queen Acme Portable Testing Set" from 1916. This instrument provided the choice of using a Murray Loop or Wheatstone Bridge to measure cable resistance. Also shown was a homebrew Navy coupler and RCA logo tie with CRT clasp.



Professor Mike Littman obtained this working 1899 dynamo at a Kutztown swapmeet. It is signed by Charles L. Clark who worked as Edison's chief engineer. What is interesting about it is that the commutator has only four contacts and four slip rings. Dr. Littman believes that the device might be a demonstrator but is still researching it.



By building his "Jersey City Special" crystal set, Al Klase attempted to reproduce the early crystal-based communication receivers of some 100 years ago. Like these early sets, Al's homebrew is double-tuned with a single-tuned capability to "look around" the band. Logging some 18 stations from Jersey City, Al uses an audio transformer-coupled sound-powered headset to increase sensitivity. Al's advice: "Crystal sets are magic...build them while you can!" His presentation may be found on YouTube under "Jersey City Special."



Guest Larry Guttadora described his homebrew capacitor DA/ESR tester, an important piece of test equipment when critical circuits are involved.



Monoscopes were special forms of video camera tubes which displayed a single still video image. They were used to generate TV test patterns and station logos. Typical was the widely used "Indian Head" test pattern. Dave Snellman displays a model 1699 which is the same as the 2F21 except for a station specific logo. The exact pattern will not be visible until the tube is energized.





After displaying a NIB service caddy, John Tyminski took us through a dinner highlighted by RCA-themed accessories. Included were grilling tools, eating utensils (spoon, fork, knife) and cigar holder all emblazoned with the RCA logo. Not too shy in displaying probably the most important component at the “end” of a good meal, what else but “his master’s voice” printed on each sheet of a roll of toilet paper.



Phil Vourtsis showed three variations of the All-American Five, showing the evolution of design from resistor line cord to a complement of tubes that added up to 120 volts. The colorful radio to the right has a pair of 25F5’s for push-pull output and excellent sound.



Robert Forte talked about typical German radios of the Nazi period (VE-301) and in particular his 1938 DK-38. Using only two tubes (a rectifier and triode/tetrode) and named the Deutscher Kleinempfaenger (“German small radio”) it is one of the simplest tube radios that you will ever come across. This two-band radio has two

knobs. One knob varies the degree of regeneration (feedback) in the receiving circuit while the other adjusts the input coupling. The tuning knob has a 0-100 scale in white (200-600 meters) and one in red (800-2000 meters). By turning the tuning knob to the red part of the scale, the radio switches from medium to long wave.



Darren Hoffman described one of the first pocket-size tape recorders. The Model Er-1 was manufactured by Mohawk Business Machines of Brooklyn, NY around 1953, a company that NJARC member John Acacia worked for. It used one miniature tube and a special battery, 1/4” tape cartridges and a crank for rewinding to conserve battery life. It sold for \$229.

Charles Blanding explained that in the early 1960’s, the Japanese decided to export a radio that could compete with the All American Five. They decided to produce a unit that substituted transistors for tubes but still maintained two full-size IF stages and a push-pull output. The radio had great performance, sounded terrific, looked beautiful but unfortunately had no cord! Perhaps it was the necessity to replace the six “D” cells or our inability to accept a “cordless” radio, but these types of radios lasted only about two years.



Jon Butz Fiscina talked about a pot-pourri of items which included a countertop crystal display filled with boxes of crystals. (As a pilot, John was able to check the interior of each box using an airport X-ray machine without disturbing the fragile boxes.) Also shown were a group of batteries with the WLS logo, a scrapbook of newspaper clippings featuring radio repair shops and a lamp used in a decommissioned ground navigation system.



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WHEN DID THE OHM BECOME THE OHM?

Compiled By
Marv Beeferman

After looking more closely at my Queen Acme Portable Testing Set from 1916 that I had brought to the June Show & Tell, I noticed the following conversions listed in the instructions:

1 B.A. ohm = 0.9866 ohms
1 true ohm = 1.01350 B.A. ohms
1 Legal ohm = 0.99718 ohms
1 true ohm = 1.00283 Legal ohms

What the heck is the difference between a B.A. ohm, a true ohm and a Legal ohm? Isn't an ohm an ohm? Are there "Illegal" Ohms? I found my answers in Wikipedia which is the major source for the rest of this article. Although a little technical, it was interesting to note that even the lowly ohm was once as controversial as some of the soap box issues you find in Congress today.

The ohm is defined as a resistance between two points of a conductor when a constant potential difference of 1.0 volt, applied to these points, produces in the conductor a current of 1.0 ampere, the conductor not being the seat of any electromotive force.

The rapid rise of electro technology in the last half of the 19th century created a demand for a rational, coherent, consistent and international system of units for electrical quantities. Resistance was often expressed as a multiple of the resistance of a standard length of telegraph wires; different agencies used different bases for a standard, so units were not readily interchangeable. As a result, electrical units defined this way were not consistent with units for energy, mass, length and time and conversion factors were required for use in calculations relating energy or power to resistance. Some typical units were as follows:

Jacobi: A specified copper wire 25 feet long weighing 345 grains

Matthiessen: One mile of 1/16 inch diameter pure annealed copper wire at 15.5°C.

Varley: One mile of special 1/16 inch diameter copper wire.

German mile: A German mile (8,238 yards) of iron wire 1/6th inch in diameter.

Historically, two different methods of establishing a system of electrical units

were available to scientists. In one, various artifacts, such as a length of wire or a standard electrochemical cell, could be specified as producing defined quantities for resistance, voltage, etc. Alternately, in an "absolute" system, electrical units could be related to mechanical units (mass, time and length) by defining, for example, a unit of current that gives a specified force between two wires. In this system, dimensional analysis of the relations between potential, current and resistance shows that resistance could be expressed in units of length per time - a velocity. In fact, an early definition of a unit of resistance was "one quadrant of the Earth per second."

Absolute units had the great advantage of simplifying the equations used in the solution of electromagnetic problems and eliminated conversion factors. Unfortunately, the CGS (centimeter-gram-second) units turned out to have impractical sizes for practical measurements. As a result, various "artifact" standards were proposed as the definition of the unit of resistance.

In 1860, Werner Siemens proposed a column of pure mercury, one square millimeter in cross section and one meter long. However, this unit was not coherent with other units. One proposal was to devise a unit based on a mercury column that would be coherent - in effect, adjusting the length of the column to make the resistance one ohm. But not all users had the resources to carry out metrology experiments to the required precision, so it became clear that working standards based on the physical definition were required.

In 1861, Latimer Clark and Sir Charles Bright presented a paper at the British Association for the Advancement of Science (BAAS) suggesting that standards for electrical units be established and suggesting names for these units derived from eminent philosophers "Ohma," "Farad" and "Volt." In the same year, the BAAS appointed a committee, including Maxwell and Thomson, to report on "Standards of Electrical Resistance." Their objectives were to devise a resistance unit that was of convenient size, part of a complete system for electrical measurements, coherent with the units for energy, stable, reproducible and based on the French metric system.

In the third report of the BAAS committee of 1864, the resistance unit is referred to as a "B.A. unit or Ohmad." By 1867, the unit is referred to as simply an "Ohm." The B.A. ohm was intended to be 10⁹ CGS units, but owing to an error in calculations, the definition was 1.3%

too small. This error was significant for the preparation of working standards.

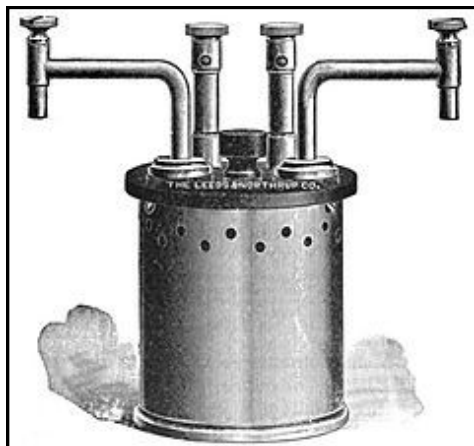
On September 21, 1881, the International Conference of Electricians defined a practical unit for the ohm that was based on CGS units using a mercury column at 0°C, similar to the apparatus suggested by Siemens.

A "legal ohm," that became a reproducible standard, was defined in 1884 as the resistance of a mercury column of specified weight and 106 cm long. This was a compromise value between the B.A. unit (equivalent to 104.7 cm), the Siemens unit (100 cm by definition) and the CGS unit. Although called "legal," this standard was not adopted by any national legislation.

In 1893, at the International Electrical Conference in Chicago, the "international ohm" was defined as a mercury column 106.3 cm long with a mass of 14.4521 grams at 0°C. This definition became the basis for the legal definition of the ohm in several countries. In 1908, the next Electrical Conference confirmed this definition.

But the mercury column method of realizing a physical standard ohm turned out to be difficult to reproduce owing to the effects of the non-constant cross section of the glass tubing. As a result, various resistance coils were also constructed to serve as physical artifact standards.

The mercury column standard was maintained until the 1948 General Conference on Weights and Measures, at which time the ohm was redefined in absolute terms instead of an artifact standard. Since 1990, the quantum Hall effect has been used to define the ohm with high precision and repeatability. The math is somewhat complicated, but an exact definition of the ohm had been finally been established.



An early standard resistor.



**New Jersey Antique Radio Club and
Ocean Monmouth Amateur Radio Club**

Summer Tailgait Swap Meet

NJARC and OMARC Joint Venture



**InfoAge Science History
Learning Center and Museum
2201 Marconi Road
Wall, New Jersey 07719**



Saturday July 25th, 2015



40 Spaces Available

\$25.00 for members

\$30.00 for non-members

Bring your own tables

Refreshments Available

Open to the Public

8am to 12 noon

Vendor Setup at 7:15 am

\$5.00 ENTRANCE FEE

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