

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB



October 1999

Volume 5 Issue 10

MEETING NOTICE



Reported by Mary Beeferman

Opening discussions at the September meeting covered a wide variety of topics including vendor tax liabilities and the AWA (Antique Wireless Rochester Association) annual conference. If you have been following the exchanges on the AWA web page with regard to the September conference, you can tell that this medium is providing fertile ground for sowing the seeds of difference of opinion. This appears like a positive development. For years, the AWA has conducted business in more-or-less of a vacuum...a great environment for tubes but not one conducive to an organization numbering in the thousands and conducting business in the 21st century. Let's hope that. if nothing else, the AWA Board of Directors is at least listening and understands that decisions are open to the scrutiny of the membership.

Speaking of a vacuum that has awaited a long time in filling. congratulations goes out to NJARC honorary member Ludwell Sibley for winning the prestigious Houck award at the AWA annual conference. Lud received the award "for the documentation of radio history in the book *Tube Lore* and the ongoing material on vacuum tube history."

The NJARC Fall swapmeet is scheduled for Saturday. December 4th at the Hightstown Country Club. A flyer (suitable for reproduction and distribution) is included in this month's *Broadcaster*. The initial search for a new location proved elusive. A firehouse in Jackson in an excellent location turned out to be too expensive -\$800. A second firehouse in Freehold, at a reasonable \$250, was too small. But the Board is still open to suggestions for future The next meeting of the NJARC will take place on Friday, October 8th at 7:30 PM in the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold. Contact Marv Beeferman at 609-693-9430 or Phil Vourtsis at 732-446-2427 for directions. Guest speaker William Terbo, Grand Nephew of legendary figure Nikola Tesla, will provide his perspectives on this controversial figure and share some interesting anecdotes. An NJARC Board meeting is scheduled prior to the regular club meeting at 6:00 PM and all Board members are encouraged to attend. Contact Phil Vourtsis prior to Friday if you won't be able to make the Board meeting.

meets and willing to investigate any opportunities offered by the membership.

NJARC's first all-day radio troubleshooting/repair workshop is scheduled for Saturday. October 30th at our meeting location. the Grace Lutheran Church. The workshop. starting at 9:00 AM, will include a basic primer on electricity and



Your editor works diligently at his desk preparing the next *Broadcaster* edition - another "Gindoff original."

electronics so no experience is necessary to attend. Five work stations are planned with test equipment and basic replacement parts being provided by the club and club members. Please contact Al Klase at 908-782-4829 so we can get a headcount of how many to expect. Bring a radio requiring a little TLC (please clean it first) and we guarantee you'll bring it home humming (hopefully not at 60 cycles).

Ray Chase reports that as part of the 100th anniversary celebration of Marconi's reporting by wireless of the Americas Cup vacht races off Sandy Hook in 1899. InfoAge is hosting a display of related information and artifacts at the Marconi Cottage across the road from Camp Evans on Sunday. Oct. 3rd. More extensive events were planned for the Marconi Hotel itself but turnover has been held up pending completion of the environmental cleanup. This month's Broadcaster features a related Asbury Park Press article marking the 10th year anniversary of Rutger University's Wireless Information Network Laboratory (WINLAB) held in conjunction with the Marconi celebration.

As mentioned in the Meeting Notice, guest speaker William Terbo, Grand Nephew of Nikola Tesla, will address the club at the October meeting. He will be sharing some interesting anecdotes about his uncle that are not common knowledge and will provide some new perspectives on this great pioneer.

Tesla's work in wireless transmission and reception is sometimes considered a precursor to that of Marconi, which is misleading. In fact, in his book "The Complete Patents of Nikola Tesla," editor Jim Glenn combines any patents associated with electromagnetic radiation under the heading of "The Radio Patents." Many of Tesla's ideas were undemon-

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THE JERSEY BROADCASTER, published a minimum of ten times each year, 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 with special emphasis on contributions made by the state of New Jersey. Dues are \$15 per year and meetings are held the second Friday of each month at the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold N.J. The Editor or NJARC is not liable for any buying and selling transactions or for any other use of the contents of this publication.

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strated conceptions and predictions such as ground-wave transmission and the resonant frequencies of the earth. His coils did generate low-frequency radio waves that were precursors to the field of extremely low and ultra low frequency radio. He wrote in 1899 that he had radioed signals 600 miles from his Colorado Springs "magnifying transmitter" laboratory but also exclaimed in the same year that he had received radio pulses of extra-terrestrial origin which earned him derision in the press and among many in his profession. But underlying all his work, often confused with "radio research," was the desire to . transmit usable electrical power through the earth or its atmosphere. Unfortunately, this ambition was unrealizable since it was based on mechanical and electrical standing waves which could not perform useful work.

The remainder of September's meeting was filled with another show-and-tell session featuring the following presentations:

- For those not attending the AWA Convention, Frank Feczko showed off his Philco literature and service award display that took 2nd place in category 8, Advertising and Company Documents. Frank also took 2nd place in category 3, The 1930s, for his Philco "Mystery Control" radio exhibit.
- Mark Mittleman displayed a unique antenna tuner with a tuning mechanism that opened and collapsed similar to the blades of a hand-held fan.
- Steve Walko described a 1941 Philco PT-2 table model radio and accompanying Life magazine piece featuring Frank Sinatra with a PT-2 in the background. He also displayed a 1949 AM/FM Fada found in Massachusettes but originally sold in Belleville, New Jersey.
- Bernard Gindoff displayed an Omnigraph code practice mechanism which his brother purchased in 1934 for \$12 to practice to meet his 13 word per minute license requirement. (Bernard's brother, at 88 years old, is still a practicing ham.) The Omnigraph functions much like a

- Ray Chase talked about his RCA BCX35 obtained at the Krantz auction with AM/FM/VHF/UHF capabilities. The interesting feature of this radio is that its control markings are in Braille.
- Ben Tongue described and provided copies to club members of an article on the theory, construction and performance of the 1N34 diode. Ben found the article while thumbing through a February 1946 copy of *Electronics* at an antique bookstore in Morristown.
- Phil Vourtsis showed a pristine Tandberg "Stereo Quadruple" tape recorder with an optional amplifier and original documentation which sold for \$484 when first introduced. This was one of the first stereo tape recorders to be manufactured. Phil also displayed a 1948 RCA Berkshire 45 RPM record player accessory sporting its original tag. a cherry enclosure, brass decorations, a magnetic cartridge. a capacitance start motor and special shielding. This was truly a high-end unit meant to supplement its similarly expensive (\$4000) Berkshire console.
- Beeferman displayed a Marv "Simpli-Trol" portable electrocardiograph manufactured by the Cambridge Instrument Co. An embossed tag on the unit indicated that it was made for Bernard C. Hecht, M. D. The electrocardiograph used a light source for recording on photosensitive paper and could be selected for a 1mV or 3mV output. A notice included with the unit provided some indication of circa -"Due to rubber shortages, we are not permitted to furnish straps for use with Electrocardiograph Electrodes made of this material."

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NEW JERSEY ANTIQUE RADIO CLUB



ANTIQUE RADIO INDOOR SWAPMEET

SATURDAY, DECEMBER 4th, 8:00AM - 3:00PM*

HIGHTSTOWN COUNTRY CLUB (new location)

NJARC has temporarily moved its Fall swapmeet back to Hightstown, NJ with vendors displaying a spectrum of collectible old-time radios, military and civilian communication equipment, audio equipment, phonographs, and associated parts and literature. The swapmeet is **all-inoors** with spaces guaranteed to the first 50 reservations. Weather permitting, outdoor spaces will also be available.

DIRECTIONS: From N.J. Turnpike Exit 8, go east on Route 33 about 200 yards (past "Mom's Peppermill" restaurant). Stay to the left and turn left at the first traffic light on the center divider, crossing Route 33 west. Continue to the end of the block to Monmouth Street and turn left. The Country Club is on the left with a Ramada Inn across the street.

RATES: NJARC members \$15/space; non-members \$20/space; \$2 buyer admission charge. **CONTACTS/RESERVATIONS:** Marv Beeferman, 2265 Emeralda Park Drive, Forked River, NJ 08731 (609-693-9430). Phil Vourtsis, 13 Cornell Place, Manalapan, NJ 07726 (732-446-2427)



*Vendors set up at 7:00; no early admittance!

Formed in mid-1992, NJARC has a membership above 150. The club meets at Grace Lutheran Church, corner of Route 33 and Main Street in Freehold, on the second Friday of each month at 7:30 PM. Visitors are welcome. The club publishes the monthly *Jersey Broadcaster* and has a program providing members with replacement tubes and capacitors at moderate prices. Technical, restoration and historical presentations are provided by members at each meeting. Contact Phil Vourtsis (732-446-2427) for additional information. October 1999

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IMPROVE YOUR AM RECEPTION

The following is based on articles appearing in the September 1999 issue of the DVHRC "Oscillator" by Al Klase and the October 1977 issue of "Nuts & Volts" (Build a LAB by Larry Ball)...Ed

Very often, it seems that the best AM radio stations are either too far away or suffer from poor reception for a variety of other reasons. But the problem is easily solved by the simple law of mutual inductive coupling in the form of a coil loop antenna booster. This device can produce a dramatic improvement in reception, and, being highly directional, can block out stronger stations which interfere with weaker stations. Most of all, it doesn't need batteries or an AC outlet to perform its magic.

The desire for improved AM reception is not out of the question for many of us. Perhaps you have a good vintage radio with an internal loop antenna that goes unused because, although performance is good on strong, local stations, everything else is plagued with noise. Maybe you've found some weak stations you'd like to receive more clearly or wondered what stations are out of reach on your AM dial. Or perhaps you're a night owl who enjoys listening to sports or late-night talk shows on distant AM stations.

There are few commercial antenna boosters on the market that work well, but after adding postage and handling charges. cost becomes a factor. The "Phantom of the Airways." offered by TERK at \$49.95. is a sleek unit which guarantees to amplify "even the weakest, noisiest stations by a factor of 75X; making them clear, strong, and listenable." Another model, offered by Fala Electronics and recently advertised in Antique Radio Classified, looks a little like a video cassette box. The model 1601 covers 530-1600 kHz (\$45) and the model 1701 covers 530-1700 kHz (\$54). But with the investment of a few hours or one evening, depending on the type of coupler you choose to build, compatible products



reasonable cost.

A simple, non-tunable device offered by Al Klase (DVHRC Oscillator, Vol. 7. No. 9) allows an external antenna to be utilized without modifying the radio. Its construction is shown in Figure 1. The form is cut from 1/4-inch plywood and rests on a 3/4-inch wood base. The coil is wound using 13 turns of #22 hook-up wire. The 75 ohm coaxial "F-connector" may be replaced by any connector of the builder's choice including binding posts for a wire antenna and ground.

To use, simply connect the antenna and place the coupler an inch or two behind the radio. If the set uses a ferrite rod antenna. the coupler should be oriented perpendicular to the end of the rod.

A tunable booster (460-1800 kHz) is just as simply constructed. It consists of a coil of wire, a variable capacitor, and a DPDT switch. Fifty-nine feet of 22 AWG hook-up wire, a 10 pF to 532 pF variable capacitor and a DPDT switch combine to form a small tunable loop antenna. The switch allows several of the coils to be removed from the circuit so the entire AM frequency band can be covered.

CONSTRUCTION

Assembly is simple, but for durability. neatness is important. The tuning components should be placed in a box which is compact but large enough to comfortably solder all connections. A 4-

can be produced at a much more 1/2" X 2-1/2" X 1-1/4" plastic project box should do nicely.

> Hole placement is shown in Figure 3. The holes in the ends of the project box (for the wires to enter and exit) should be 3/8" in diameter to accommodate both the wires and the spiral cable wrap. Be careful that the three holes for C1 are drilled accurately in relation to each other. After cutting the holes in the project box, mount S1 and C1.

Coil Assembly

There are several ways to assemble the coil, but the following seems to be the easiest.

1. If the terminals of the DPDT switch aren't marked as shown in Figure 2. go ahead and mark them. This will greatly simplify construction.

2. Cut two pieces of wire, one 34' long and one 29'. The extra length gives some leeway when winding.

3. Construct a temporary form to wind the coil. Use a heavy board, such as a two-by-four and hammer two large headless nails exactly 31-1/2" apart as shown in Figure 4. Allow the nails to protrude about 1" above the board.

4. Place the project box in the center of the board, with the open cavity facing you. Solder one end of the 34" wire to terminals 1 and 5 of the switch. Thread the wire through the 3/8" hole on the left side of the box, around the nail on your left, and around the nail on your right. Then, thread the wire back into the box through the 3/8" hole on its right side.

5. Repeat this process as neatly as possible, until you've made six moderately tight loops.

6. <u>Temporarily</u> solder the end of the 34" wire to terminal 4 of the switch. Although the circuit diagram shows this wire connected directly to the capacitor, do not make this connection yet. The capacitor lead is too fragile to survive the tugging it will be subjected to while winding the coils.

7. With the 29' piece of wire, begin at terminal 3 and repeat the loop making process as before, but this time make five loops. End the last loop at terminal 6.

8. Cut a piece of spiral cable wrap 80" long and tightly wrap several inches of it around the coil on the left side of the box. Slide the spiral cable wrap through the hole and about 5/8" into the project box.

9. Tightly wrap the spiral cable wrap around the wire until you reach the nail on the left.

10. Slip the coil off the temporary form and continue tightly wrapping the wire until you reach the right side of the project box. Cut the spiral cable wrap long enough so that you can insert about 5/8" of it into the side of the box.

The Capacitor

The coils are now ready to connect to the capacitor. To identify leads, look at the back of the capacitor. All six of the leads on the back edge of the capacitor are trimmer connections and not used. On the front edge of the capacitor, there are two leads on one side and a single lead on another side. The single lead is the common lead of two 266 pF variable capacitors and will be used as one connection.

The two leads on the other side are the other external connections of the two 266 pF capacitors. Solder these two leads together to make a single 532 pF capacitor. This will be the second capacitor connection.

De-solder the wire which was temporarily connected to terminal 4 of the DPDT switch and connect it to the first capacitor connection. Finally, connect terminal 2 of of the DPDT switch to the remaining lead of the capacitor.

Dial and Dial Plate

Trace or photocopy the dial plate image and glue it to the project box for convenient tuning. To make a frequency adjustment knob, use a thin, easily cut plastic such as the cap from a 35 mm film canister. Cut out a 1" diameter disc, make a 1/8" hole in its center and draw a line to bisect the disc. Turn the capacitor fully clockwise and attach the disc with its bisecting line parallel to the line which separates the high range and low range. Attach the disc with a small washer on both sides and tighten the center screw enough to keep the disc from slipping.

OPERATION

Tune an AM radio to a weak station and place the booster against its case. Select the proper frequency range with the DPDT switch and adjust the tuning dial until you hear a difference in reception. At this point, both the radio and booster are tuned to the same frequency. Experiment with the booster's position while fine-tuning C1 to insure the best possible reception. Stations with good reception will improve little, but weak stations and stations experiencing interference from stronger (or closer) stations, should improve dramatically.

If the booster fails to work, check all connections. A sensitive VOM can differentiate between the six loop coil and the five loop coil. If the booster will only tune to its highest frequencies, and you suspect that one coil is wound opposite the other, swap the connections on terminals 3 and 6 of the DPDT switch.

Enjoy your booster and remember, it is ripe for experimentation. Possibilities include larger coils, smaller coils or simpler designs for a narrower band of frequencies...or perhaps even a single frequency.

PARTS LIST

C1 - 5 pF to 266 pF AM tuner capacitor (two sections)

S1 - DPDT switch

MISC. - 63' of 22 AWG stranded hookup wire, enclosure, spiral cable wrap, capacitor mounting screws (M2.5x0.45 x4mm), capacitor shaft screw (M2.6x0.45 x4mm)







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The completed unit

End I Maderes

rotating at 3,600-revolutions per minute. Unlike Marconi, Feher explained, his production is merely a simulation, as it is now illegal under Federal Communications Commission regulations, to send such powerful electronic impulses into the airwayes. "It would interfere with radio and TV transmissions for miles." he said. As an alternative, he explained, he has wired a light bulb into the circuit to capture and consume the impulses, which was blinking in time with his key strokes. Feher also provided a special events ham station operating from Twin Lights almost all day using the call WA2GM, the call of the local Quarter Century Wireless Association (Marconi Chapter) of which he is president.

Marconi's equipment. 100 years ago. was used to receive and re-transmit news of Cmdr. George Dewey's victory in the Pacific during the Spanish-American War. Marconi was at the Twin Lights under the auspices of the New York Herald newspaper to provide live reporting of the America's Cup races being held offshore, when he was asked to send the report concerning Dewey's fleet. On September 30, 1899, the first wireless telegraphy messages via Morse code were sent to report on the progress of the fleet. These transmissions were the first demonstrations of practical wireless telegraphy in American history.

The demonstration, along with commemorating Marconi's historic deed, was also in recognition of the 10th anniversary of the founding of Rutgers University's Wireless Information Networks Laboratory (WINLAB), the group which sponsored the event. WINLAB, according to interim director Roy Yates, has the mission of advancing the future of wireless communications through education and research, and ultimately owes its existence to Marconi's work.

Before coming to Twin Lights, the group also received presentations on wireless technology from experts in the field at the Oyster Point Hotel in Red Bank. A dinner ceremony at Bahr's Restaurant following the Twin Lights demonstration afforded Mike Feher to demonstrate a commercial coherer receiver and a Ruhmkorff coil transmitter.



Electronics pioneer Guglielmo Marconi's first ever land-based wireless transmission was reenacted on its 100th anniversary on September 30th at the Twin Lights Museum and Historic Site. Using his own collection of vintage wireless equipment, Mike B. Feher, president of the Quarter Century Wireless Association, Inc., Marconi Chapter, assisted by his wife Kathy, cranked up the high voltage on his 1912 vintage Marconi-based rotary spark gap station, transmitting 8,000-volts of electric power to a rotary spark gap which shot lightning-like streaks from its splines,

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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.

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.

7JP4 CRT. good filament. screen looks OK. make offer. Alton Dubois Jr., 67 Peggy Ann Road, Queensbury, NY 12804 (518)-792-3130.

Radio schematics and service data. \$2.50 plus #10 SASE (price is for 1 to 5 pages of data per model; over 5 pages, copy charge is 20 cents per page). US & Canadian models 1920s to 1960s. Questions/quotes answered with a SASE. Steve Rosenfeld, PO Box 387, Ocean Gate, NJ, 08740. Phone (732) 269-2022 Fax (732)-269-2897, srosenfeld@ems.att.com

Assorted: 3 homebrew amplifier chassis with UTC and Acrosound transformers tubes-and meters (Sec: http://www.netaxs. com/-am004d/equipment for pictures), Amprobe RS3. AKG D109 mike. EV 660A mike. Sony VP2011 3/4U matic-NR, Simpson 371 AC voltmeter, Simpson 260 manual, RCA T2K radios (2), 12" Jensen speaker from floor console radio/with field coil. Triplett frequency counter Model 7000. Mike Muderick. (610)-449-6970 or Mike'a.Muderick.com

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The ever-handy reference *Tube Lore* gives 186 pages of insightful scoop on about every North American tube there is. Reviewed by Eric Barbour in *Vacuum Tube Valley* as "an instant classic." Available from Ludwell Sibley, 102 Mc-Donough Road, Gold Hill, OR 19725-9626 for \$19.95 postpaid in the U. S. and Canada. \$24.95 by air overseas. Clubs get a discount on multiple copies.

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.

Parted out Stromberg Carlson 19-20 (AC). Power transformer appearsOK: IF's are O.K. Electrodynamic speaker is electrically OK (needs cone repair). Make offer. Alton Dubois. Jr., 67 Peggy Ann Road. Queensbury. NY 12804. (518)-792-3130. The May 1966 issue of *Electronics Illustrated.* Richard C. Yingling, 2 S. Locke Ave., Yeagertown, Pa. 17099 (717)-242-1882

Information on "Lang" radios: literature, pictures, pricing, etc. Charles J Dreitleio, 515 Elizabeth St., New Milford, NJ 07646 (201)-384-3862

Gernsback's Official Radio Service Manuals: 5.7.8. RCA Victor Service Data: '47, '48, '49, '51. Mike Tannenbaum, PO Box 386. Ambler PA 19002. (215)-540-8055 Fax (215)-540-8327 or k2bn *a* agtannenbaum.com

Emerson AU-190 chassis: FADA 659 dial glass: Chelsea ZR-4 audio transformer: Sentinel 400 Television: Plastic CRT cover (front) for 17" Philco Predicta: Pilot TV-37 tuning knob (wood). Frank Johnson, 530 Elford Rd., Fairless Hills. PA 19030-3624. (215)-943-8295

WANTED

Cast aluminum lid for Eveready #2 radio. circa 1928. Good photo would help if lid is not available. Need two. four-inch black No. 488 dial knobs for Fried Eisemann NR-6. Alton Dubois, Jr., 67 Peggy Ann Road, Queensbury, NY., 12804. (518)-792-3130.

WWII military television receiver, camera and dynamotor with numbers CRV, AXT, ATJ, ATK, purchased from Denson Electronics. WWII Navy transmitters and receivers. Maurice Schechter, 590 Willis Ave., Williston Pk., NY 11596 Phone/fax: (516-294-4416)

Japanese tubes: UF134, UZ135, UF109A, UF111A, UY133A, Lewie Newhard (610)-262-3255 Sales literature, service manuals, and equipment for theatre sound/broadcast use by RCA Photophone. Century Sound, Motiograph. Altec, Western Electric, etc. Theatre catalogs by Jay Emmanual Publications. Philadelphia. Scott Stillwell, 2328 Cambridge Circle, Hatfield, PA 19440. (215)-393-1833 Pager: (800)-717-9306

Chassis and speaker for Sparton 517B (Machine Age to Jet Age, pg. 187) or Sparton 527-2 (Machine Age to Jet Age II pg. 283). Joe Bentrovato, 84 E. Munson Ave., Dover, NJ 07801, (973)-361-7392

Buying European Radios! Grundig, Telefunken, Saba, Normende, Blaupunkt, Phillips, Goplana, etc. Must be in good to fair condition. Richard Brill, P.O. Box 5367, Old Bridge, N.J. 08857, (732)-607-0299. Fax: (908)-679-8524 or rgbent/a aol.com

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