



The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2016

Volume 22 Issue 7



MEETING/ ACTIVITY NOTES

Reported by
Marv Beeferman

The ON-LINE Broadcaster

The *Jersey Broadcaster* is now on-line. Over 130 of your fellow NJARC members have already subscribed, saving the club a significant amount of money and your editor extra work. Interested? Send your e-mail address to mbeeferman@verizon.net. Be sure to include your full name.

It is with great sorrow and regret to announce the passing of long-time member Jerry Simkin. Jerry was a wonderful fellow radio enthusiast, friend, neighbor and husband. I know it's probably not enough to do Jerry full justice, but a small tribute may be found on page 3 of this month's *Broadcaster*.

At the June meeting, we had an interesting presentation by member Dave Sica describing the progress that the Early Television Museum has made in rebuilding CRT's. Dave noted that the last remaining picture tube rebuilder in the United States, Hawkeye, closed its doors in 2010 and that RACS, the last rebuilder in Europe, ceased operation in 2013. Now that they are gone, there is no place to get CRT's for vintage TV sets rebuilt. More importantly, the techniques for rebuilding these tubes may be lost forever.

After reviewing the basic CRT rebuilding steps, Dave compared the differences in rebuilding B&W tubes versus color tubes and prewar tubes versus postwar tubes. Dave noted that it appears that electrostatic tubes like the 3KP4 and 7JP4 were never rebuilt and they remain a "work in progress." Dave then described the problems involved in getting the museum's project up and running including obtaining equipment, fundraising, training, obtaining parts and the first successful rebuild in 2016.

As potential clients of the Early Television Museum's success, we should all



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>). The topic for this month will center on oscilloscope use presented by Al Klase and Alan Wolke, W2AEW. Alan is an RF Field Applications Engineer for Tektronix, Inc. and will utilize the All-American Five demonstrator from the RTM to illustrate radio troubleshooting. We'll also be holding a small radio auction - see details on page 8 of this month's *Broadcaster*.



Using a wire heating device to crack the neck glass of a CRT.

praise their efforts in filling a needed void and provide them with as much support as possible.

In addition to Dave's talk, member Sal Brisindi offered a primer on deciphering the code markings on capacitors and a simple method for determining the outer-foil end of capacitors. Sal explained that while it is true that polarity on a non-electrolytic capacitor doesn't matter with regard to signals, the outer foil can be used as a shield against electric field coupling into the capacitor. The proper way to connect the outside foil is to the low impedance side of the circuit, which, in the case of coupling caps, will normally be the plate of the previous stage. If it is a bypass cap to ground, the outside foil is connected to the grounded side. If it is a bypass cap from a signal to B+, connect the outside foil to B+. The outside foil will act as a shield against electric field coupling into the capacitor, so you want it to have the lowest impedance return path to ground.

Sal also showed the club a method to determine the outside foil end if unmarked. A scope is set up to its most sensitive vertical scale and connected to the capacitor. The capacitor is then grabbed tightly with the fingers and the

amplitude of the induced 60 Hz AC signal noted. While still holding the capacitor tightly, the scope leads are reversed and a dramatic difference in the amplitude of the induced AC signal should be noted. The orientation with the lowest induced signal is the one you want, and the ground lead of the scope is connected to the outside foil in that position. (Note: ceramic disks, multi-layer ceramics, silver micas, some high voltage film capacitors and Orange Drops have no "outside foil.")

Finally, president Richard Lee has announced that honorary NJARC member and tube guru Ludwell Sibley has nominated the Radio Technology Museum for the prestigious AWA Houck Award for historic preservation.

Upcoming Events

- July 23rd: Summer tailgate swapmeet at InfoAge; joint NJARC/OMARC/MRCA meet
- August 6: Summer Repair Clinic at InfoAge
- August 12: Monthly meeting at Princeton; History of Pirate Radio (tentative)
- August 17-20: AWA Convention
- September 9th: Monthly meeting at InfoAge; topic TBA
- Sept. 16-17: Kutztown Antique Radio Meet
- October 14: Monthly meeting at Princeton; Mike Molnar talk on Cooley Ray Photo TV kit
- October 22: Fall Repair Clinic at InfoAge
- November 5th: Fall swapmeet at Parsippany PAL
- November 11th: Monthly meeting at InfoAge; Show & Tell
- December 10th: Holiday Party, West Lake Country Club, Jackson NJ

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.

PRESIDENT:

Richard Lee
(914)-589-3751

VICE PRESIDENT:

Sal Brisindi
(732)-308-1748

SECRETARY/NEWSLETTER EDITOR:

Marv 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
Bill Zukowski (nocusr@optonline.net)

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:

(To be announced.)

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

RESTORING AN RCA DYNAMIC DEMONSTRATOR

By
Bill Zukowski

Dynamic demonstrators were developed as practical and efficient tools for the teaching of radio theory, operation and maintenance and many were used in technical schools, colleges and for training during WW II. Some were representative of an entire radio and others broke down the radio into its major modular units like the power supply, oscillator, etc. Radios were not the only subject of dynamic demonstrators; the NJARC RTM (Radio Technology Museum) has one that teaches the major components of CRT operation.

The RCA Dynamic Demonstrator was introduced in the October 1941 issue of "RCA Radio Service News." It represented a five-tube superheterodyne radio and was initially intended to give RCA tube and equipment distributors a new tool for selling test equipment to school and college customers. A later model included an FM i.f. section (see photo).

A description of each component, its symbol and its value was printed adjacent to each demonstrator component. Insulated pin jacks were provided for quick, easy access to contact points for connecting test equipment and jumpers. Colored blocks identified various circuit sections. Several switches on the back of the demonstrator were available to the instructor to create conditions such as shorted coupling capacitors...Ed



While walking through the RTM a few months ago, I noticed an RCA "Transistor Radio Dynamic Demonstrator" hidden away in a corner. NJARC president Richard Lee said that it wasn't working so I volunteered to attempt to bring it back to life.

The demonstrator was manufactured in the early 60's and the assembly manual offered the following information:

"The RCA WE-93A(K) Dynamic Demonstrator kit, when assembled, is a complete AM superheterodyne transistor receiver. This Demonstrator has been designed specifically as an aid in learning and understanding transistor radio circuit operation and servicing techniques."

According to the original advertising, the demonstrator had "special silver-plated spring connectors" that were supposedly rust proof (see photo on next page). Well, I guess they never anticipated that these units would still be around 50 years later, so the silver plating was minimal and the connectors indeed rusted! So, the first issue was to find a suitable substitute for these connectors.

The original part was long out of production, so an alternative was necessary. The most obvious choice was fahnestock clips, but they would not line up with the wiring diagram. In addition, I wanted to keep the display as true to the original as possible. After numerous internet searches, I eventually found a site that had very similar springs but they seemed to have no means to be able to fasten them to the display board. I took a chance and ordered 90 springs, depleting the vendor's entire stock. After some thought, I came up with the idea of soldering the springs to the head of a screw.

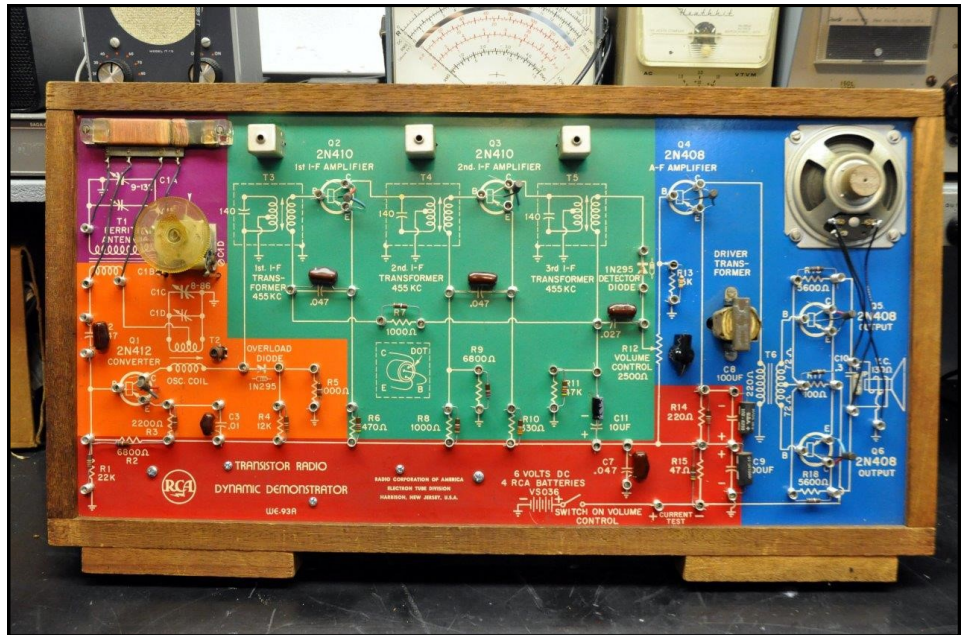
When the springs arrived, I went through my hardware assortment and found that a 4-40 screw had a head that would snugly fit inside the spring. It's impossible to buy a box of 4-40 screws at the Home Depot or Lowe's; only plastic bags of 10 are sold. A few years ago, I discovered a treasure trove of hardware at Screws Unlimited on Route 88 in Brick, NJ and the store came through again with the screws I needed plus matching washers and nuts.

I spent about two hours soldering the springs to the screws and they came out as good as the original. I then disassembled the demonstrator, cleaned the board and attached all 78 connectors. Checking all components, I found one resistor out of tolerance and one leaky capacitor. The original battery holder was a cardboard tube with screw caps, but it was severely deteriorated. I found a plastic battery holder for the four D cells and mounted it on the rear of the display where the original battery was mounted.

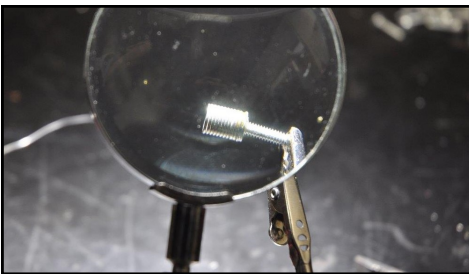
The demonstrator was powered up and found dead. Some quick troubleshooting

revealed that the oscillator was not running. I HATE oscillator problems! All associated components checked good as did the voltages. However, I didn't check the oscillator coil. When I did, I found an open winding and my heart sank. On a whim, I checked the soldered connections at the base of the coil with a magnifying glass. It was my lucky day - a wire was disconnected at one of the terminals. I gingerly soldered the wire and the radio came alive - sort of. I ultimately traced the problem to the detector diode; it was connected in reverse. I did note the direction of the diode when I removed it, but, instead of having the simple line that designates the cathode end, it had numerous colored bands, so I may have connected it incorrectly.

So we now have a working transistor radio dynamic demonstrator on display in the RTM.



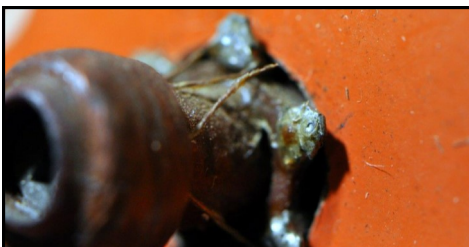
The completed, working demonstrator - courtesy of Bill Zukowski.



Substitute spring connector with soldered 4-40 screw.



"I spent about two hours soldering springs to screws, and they came out as good as the original."



"It was my lucky day - a wire was disconnected to one of the oscillator coil terminals."

JERRY SIMKIN PASSES

It is with deep sorrow and regret to report the recent passing of long-time NJARC member, friend, neighbor and devoted husband Jerry Simkin; our condolences go out to his wife Marsha, also an NJARC member. Jerry was a founding member of the club and had a major interest and extensive knowledge of books focusing on radio history, radio pioneers and radio-themed juvenile literature, all reflected in his very comprehensive, personal library. In many cases, Jerry was the radio collecting community's "go-to" guy for sources of research, including your *Broadcaster* editor, all graciously offered.

Most of us remember Jerry as a permanent fixture at our meetings, offering a diverse variety of radio books and magazines for sale. He was a major seller at Antique Wireless Association conventions and other swapmeets and he could always be found combing the aisles for that elusive and unique "title."

Recent postings following the announcement of Jerry's passing could only partially touch on how people felt about him:

"So sorry to hear of Jerry's passing. I met he and Marsha many years ago at a meeting of the Mid-Atlantic Antique Radio Club in Maryland. He may have visited my home and saw a Walton set

that I was so proud of. Next time I saw him he gave me some sheet music from the Waltons to go with the radio. Very thoughtful and very nice fellow."

"I always appreciated Jerry's helpfulness, with and without his devoted Marsha. How he found the books and publications he offered without using the internet is a marvel and mystery of human ingenuity. Together, he and Marsha were warm companions at the Antique Wireless Association meetings, and they were not only founding members of the NJARC, but the first paying Friends of the David Sarnoff Library, for which I was deeply grateful. Thank you Jerry, for all that you've been and done."

"My thoughts and prayers go out to Marsha. I will remember Jerry for his vast knowledge of radio history and for the old books and magazines he collected."



Jerry and Marsha showing off some of the items that they brought to the Philadelphia Antiques Road Show.



Jerry was almost a permanent fixture at AWA meets, offering a wide variety of books and paper ephemera dealing with radio history and radio pioneers.



Jerry and Marsha were instrumental in getting InfoAge off the ground and categorizing the Broadcaster's Hall of Fame collection.



In 2003, Jerry and Marsha presented a very nice radio display at the Barnegat Library which they titled "Radio in the Home - the 1920's." Although space was limited to one cabinet, the display offered representative pieces of all aspects of our hobby, including crystal sets, tube sets, speakers, sheet music, advertising, components, books, etc.



Jerry was honored at the club's anniversary celebration as a founding member.



Jerry always participated in our Holiday Party "Mystery Grab Bag." If his choice was made out of paper, Jerry was in his glory.

DX'ING BARNEGAT BAY

PART I

By
Marv Beeferman

At the June meeting, member Rich Skoba loaned me a package of material that he felt would provide the basis for an interesting *Broadcaster* article. He was certainly right. The material was given to him by his South Plainfield neighbor Robert McClary. McClary's father worked in various radio shops in New Jersey in the 1920's (and perhaps later) and was a 1925 participant in a test off the New Jersey coast of a radio specifically designed for small boat use. Among the material was the original, typed report of the test results, copies of the articles based on these tests published

in *Motor Boat* magazine and some photos taken during the test.

The set was designed by the Malone-Lemmon company of Plainfield, New Jersey and made by the Carloyd Electric and Radio Company of Madison Ave., New York. As far as I can see, it was the first commercial radio of the mid-1920's specifically designed to brave the deleterious and extreme conditions of a small boat rolling, vibrating and being buffeted by seawater. If any member has any similar examples, I'd appreciate hearing from you.

The Early Days of Marine Radio

Dozens of discussions in the early radio press suggested ways of using the radio - on the beach, in the car, camping and in the boat. Since music was prominently featured on the air in the early days of radio, especially before the rise of the comedy programs, music played an important role in the championing of radio and its early uses. From the May, 1925 issue of *Motor Boat* magazine comes the following:

"The growing popularity of radio, particularly that form of the art which takes advantage of the various forms of entertainment being broadcast throughout the country, is bound to appeal to the yachtsman during the months of the year when he enjoys his boat. It is perfectly natural that the yachtsman who becomes accustomed to entertainment daily by radio will want to continue receiving his favorite programs on the boat."

Between 1919 and 1920, Zenith offered their MBR-2 "Motor Boat Receiver." This TRF set used a cylindrical audion detector and had a range from 180 to 700 meters. The set was no more rugged than standard sets of the day and the designers were more interested in appearance than seaworthiness. "...special care has been given to the appearance of the cabinet and panel in order that they may correspond with the usually highly finished interior of a motor boat." Published advertising mainly stressed the usefulness of the MBR-2 in obtaining weather reports from naval station transmitters during long trips "It is no longer necessary to employ a long wave receiving set to receive these reports, inasmuch as all naval stations now broadcast weather at intervals on a wave length of 600 meters and by the use of our set, a motor boat should always be able to copy at least one of these many stations..."

In 1920, De Forest offered the OT-10

"Radiophone" Apparatus for Yachts and Motor Boats. This transmitter/receiver could receive spoken words or dots and dashes with equal facility. It was advertised to provide "sustained and reliable telephone service over distances up to 30 miles (with possible service from 500 to 1,500 miles depending on conditions of installation and transmission)." However, the OT-10, like the Zenith MBR-2, had no design provisions to deal with an angry sea and was considered more of a communication than entertainment device.

As the years progressed, more and more "portable" radios were advertised for use on small pleasure boats. A typical ad for the Radiola 26 from 1925 is attached. However, they were not considered permanent installations and thus limited to their capability of reception and volume within the confines of the cabin of a boat and could not take advantage of an antenna that a larger boat's mast could provide. Finally, similar to their 1920 predecessors, the portables were not built to meet the extreme conditions of a moving boat awash in humidity and seawater .

The Problems of A Seagoing Set

In 1925, Malone-Lemmon Laboratories of Plainfield, NJ recognized the fact that marine equipment must be built especially to meet marine conditions. Wishing to produce a radio receiving set designed particularly to meet conditions afloat, a comprehensive survey of conditions on vessels of various sizes and services was conducted. Mr. Lemmon had been interested in radio since the early "wireless" days and had considerable experience at sea. He was, for instance, chief radio operator on the S. S. George Washington when the ship was used by President Woodrow Wilson during and after the WW I peace conference and he was in charge of all the president's transmissions. The Malone-Lemmon survey brought answers from naval architects, boatbuilders, boat owners, marine supply stores and repair yards. The survey brought out the following:

- Many radio sets on small and medium sized craft had given trouble of one kind or another. One difficulty was due to the motion of the boat causing reception to "swing" or "fade" as the boat rolled or sheered.
- Another trouble was caused by corrosion of the metal parts caused by the sea air and dampness.
- Another difficulty was the loss of signal strength due to the condensation of moisture on the coils and other sensitive parts



of the radio.

- A further trouble was with the tubes. Microphonic noises caused by the vibration when under way was common as were tube failures or an adverse affect on tube life.
- Most radios cabinets used glue to hold them together and the glues of the day had no place on a boat - joint failures were common.

The Malone-Lemmon Marine Receiver was designed to resolve the above problems.

The Malone-Lemmon Marine Receiver

The Malone-Lemmon company/Malone-Lemmon Laboratories (trade name) was a distributor of neutrodyne radios manufactured by the Carloyd Electric and Radio Company (342 Madison Ave, New York, NY). Besides the "Marine Receiver," the company offered a Power Six (1925), an ML400 panel set without a cabinet (1925), a five-tube neutrodyne (1925) and an earlier, 1924 version of the 1925 model. The company also used 130 Waynewood Place, Plainfield New Jersey in its advertising but it is believed this was just a contact address, not a manufacturing location. The company is mentioned as early as 1922, offering a "Control-O-Meter" wave trap and variable condenser made by Stephenson Laboratories. Its existence seems to be short-lived; it was no longer listed in the August 1926 edition of the McGraw-Hill Radio Trade Catalog. However, Morgan McMahan's *Radio Collector's Guide* has an associated reference to "Raycraft" for 1926 with 11 models listed. No references to this company

could be found.

The Malone-Lemmon Marine Receiver incorporated design features which attempted to address some of the problems associated with the severe conditions of sea life that were noted above. The cabinet was built from solid, seasoned walnut (no veneer) with rabbeted joints and no glue. The front panel sloped back at a slight angle ("making tuning easy for the DX fan") and the lid swung down to the front so it could be used as a desk ("a useful feature on a small boat where space is always at a premium"). This lid closed against a rubber gasket, supposedly providing a watertight fit "that will resist a stream of water from a hose." All joints were also advertised as watertight to keep out damp air and prevent corrosion. "In addition, other means are taken to protect the metal of the set from corrosion and its evil effects." The coils and "all vulnerable parts" were said to be impregnated with a "special" moisture proof compound.

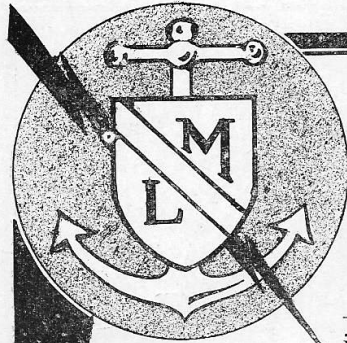
The cables used to connect the set to its battery box, speaker, antenna and ground were also advertised as "watertight" and entered the set through watertight plug connectors. The receiver was built on a base secured to two aluminum cantilever supports which gave rigidity and minimized vibration. To also help minimize the effects of vibration, the platform on which the tube sockets rested were suspended from these two cantilevers by what was described as a "special" sponge rubber shock absorber similar to the kind used on naval vessels ("...whose radio sets must operate at all times, even during target practice when the great guns are being fired.").

Finally, although not related to its physical construction, the Marine Receiver

May 25, 1925

MOTOR BOAT

49



RADIO

Can you think!

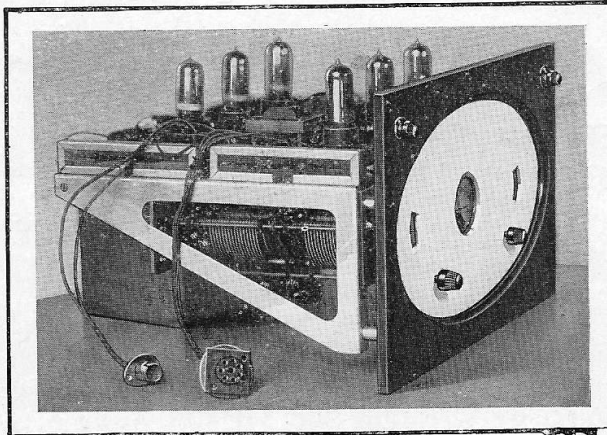
—of any place where a real radio is of greater value than on a boat—
isolated from shore—hours dragging slowly—and yet invisible
concerts, jazz and ball games passing right across your bow all
the time.

But it must be a *real* radio—to be worth while—it must not fall
apart when the seas pound and the engine shakes every deck beam.

Its delicate mechanism must not
corrode and lose adjustment after
a few weeks use—and you want
to be able to select your entertain-
ment at will—pull it right out of
the air from near or far!

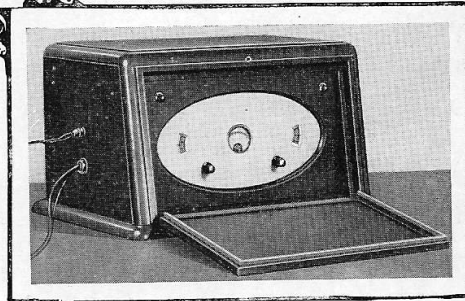
All of these things are now
made possible for *you* by the very
latest step in radio—

THE MALONE - LEMMON MARINE RECEIVER



The upper photo shows the interior mech-
anism with the waterproof cabinet removed.

The lower photo shows the waterproof cab-
inet with lid open for tuning. Only two sim-
ple controls are needed to bring in any station
within the broadcast range.



This new Malone-Lemmon Marine Radio
Set is being distributed through the marine
trade only—Boat builder—Marine supply
dealers. Write immediately for our special
proposition.

Please send me full information on your
Marine Radio Set. The length of my boat
is.....feet.

.....
.....
.....

Department B.

MALONE~LEMMON PRODUCTS INC.

ENGINEERS AND MANUFACTURERS

*Radiocast Receivers
and equipment*

130 Waynewood Place
PLAINFIELD, NEW JERSEY

Telephone
PLAINFIELD ~ 3551

er was designed to be a very sensitive set and required a relatively short antenna. This was the rule on the average motor boat or auxiliary.

On April 27th, Robert McClary and a crew only identified as Messrs. Simpson, Levy and Mathews, left the dock at Bayhead, NJ aboard the yacht *Elbeejay* captained by L. Johnson Sr. The crew erected a 30-foot antenna and used the motor for ground. It was immediately noticed that it was "impossible" to receive anything while the engine was in operation due to interference from the ignition system. This answered a major question - the radio was only useful while adrift or at anchor. According to McClary: "Cruised down Barnegat Bay to Barnegat Pier where thru the kindness of a Captain Wooley, the supply of coffee, etc. was replenished. We then cruised 3-1/2 miles south of Barnegat Pier and moored for a test."

In Part II of this article, we'll follow along on Mr. McClary's Barnegat Bay adventure and learn about the results of his test.



Phil Vourtsis attacks a record changer.



Kevin McDermott helps a new member, Kasha, with her record changer.



Nevell Greenough works with Matt Reynolds on his Pilot TV-37; what you might call a "neverending story."

PETE OLIN DONATION TO BE AUCTIONED

As the result of an upcoming move, member Pete Olin has donated a portion of his radio collection to the NJARC. At the upcoming July meeting, five of these items will be auctioned.

Not shown is an HP 8640B RF Signal Generator. It is in working condition but Pete says that the counter reads the wrong harmonic of the output (counter decoder problem?). It includes a manual on CD and schematics. If you have a counter, you will still have a high-end signal generator. The options are unknown but the base unit covers from 500 kHz to 512 MHz and the device can over range above and below these points (450 kHz to 550 MHz). The base model also has two modulation frequencies, 400 Hz and 1 kHz.

Other items will be auctioned at future meetings and noted in the *Broadcaster*. Thanks Pete for your generosity and thoughtfulness.



American Bosch 5A, excellent condition, works fine.



Atwater Kent 30, inoperative.



Grebe Sychrophase, no chain, bottom card missing but terminals marked, works fine.



Philco 91A, near showroom condition; recapped, works fine.

MAY 7th REPAIR CLINIC

Your editor missed our May 7th Repair Clinic at InfoAge but president Richard Lee was able to supply some photos of the day's activities.



Paul Hart works with a client on his Philco 37-60.



Jules Bellisio works on a client's Stromberg Carlson console.



**New Jersey Antique Radio Club and
Ocean Monmouth Amateur Radio Club
— Summer Tailgate Swap Meet —
NJARC and OMARC Joint Venture**



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



Saturday July 23rd, 2016



**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

CLUB DONATION



Vendors Make Your Reservations Now!

Contacts:

President

**Richard Lee
(914) 589-3751**

radiatorich@prodigy.net

Vice President

**Sal Brisindi
(732-857-7250)**

salb203@aol.com

Secretary

**Marv Beeferman
(609) 693-9430**

mbeeferman@cs.com