



# The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

December 2014

Volume 20 Issue 12



## MEETING/ ACTIVITY NOTES

Reported by  
Marv Beeferman

### The ON-LINE Broadcaster

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

I won't mention any names, but when you can elicit "I really enjoyed that talk" from a certain NJARC member, you know the speaker hit a home run. That was certainly the case with Al Klase's discussion at the November meeting covering the early days of short-wave radio. Starting with the work of Sir Oliver Lodge and touching on the advances contributed by Marconi, Armstrong, Appleton, Round and others, Al presented a concise but clear and definitive overview of the advances in short-wave radio listening through about 1930.

Included in Al's talk was a description of AT&T's HF system, the 3rd International Radio Conference, the introduction of the screen-grid tube and a review of some early shortwave receivers such as the Pilot Wasp and "Super Wasp" and the National SW-5 "Thrill Box." As part of local interest was a 1920 "roller chair" equipped to receive wireless "telephone and telegraph" signals from Western Electric's Foxhurst station (Deal Beach) as the passenger rolled merrily along the Asbury Park boardwalk.

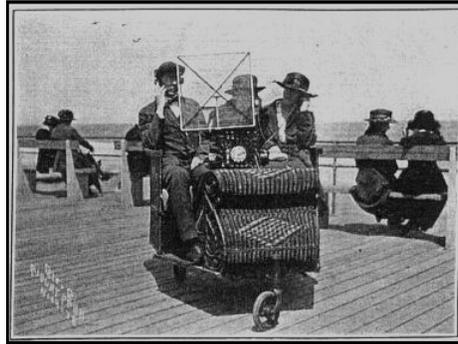
Thanks again to president Richard Lee and member Aaron Hunter for adding that extra touch of interest to the meeting by tracking down some auction items from some local cleanouts. A Philco "Baby Grand" was hammered down at \$30 and a very nice Freed Eisemann NR-5 neodyne went for \$55. The club also needs to give a vote of thanks to webmaster Dave



## MEETING NOTICE

**NO MEETING THIS MONTH - MAKE YOUR RESERVATION FOR THE NJARC HOLIDAY PARTY ASAP! EMAIL/PHONE RESERVATIONS ACCEPTED.**

**[mbeeferman@verizon.net](mailto:mbeeferman@verizon.net), 609-693-9430**



**Rolling on the Asbury boardwalk.**

Sica for getting the the NJARC website back on line after a major outage. Not only did the outage affect our club website but also had a major impact on Dave's work website. If you're not familiar with the great work that Dave does in maintaining a first class NJARC asset, go to <http://www.njarc.org> and find out. At the April meeting, Dave is scheduled to present an overview of the site and how to navigate it.

In last month's *Broadcaster*, we covered the sale of Bill Corkutt's collection, the majority being homebrew sets. Although most of sets were sold, we were very lucky to obtain the remainder as a donation by Bill's daughter Ursula to the NJARC Radio Technology Museum at InfoAge. Last month, Ursula and her husband personally delivered the radios to the museum and she was happy to see that some of them will be preserved in a section devoted to homebrew radio. The remainder will be sold at an upcoming NJARC auction.

I hope you have finalized your plans and made your reservations for our upcoming Holiday Party on Dec. 13th. If you decide at the last minute, contact me anyway as we always plan for a few stragglers. ([mbeeferman@verizon.net](mailto:mbeeferman@verizon.net), 609-693-9430). If you are planning to



**Phil Vourtsis gives a tour of the RTM to Bill Corkutt's daughter and her husband following their donation.**



**President Richard Lee sits next to part of the Corkutt donation. Richard was instrumental in helping price the sale and obtaining the donation of unsold pieces for the club and museum.**

attend, please remember your Mystery Grab Bag gift. If you're new to our game, go to the club website and you'll find the rules. We're not sure about the final attendance number but if you have trouble parking at the Freehold Elks, there is additional parking at the Amboy Bank diagonally across the street.

For the holiday season, you might enjoy InfoAge's Holiday Spectacular & Train Display sponsored by the Garden State Central Model Railroad Club. Dates are Dec. 6, 7, 13, 14, 20 & 21 from noon

**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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until 5 PM. A \$5 adult and \$1 kid donation is requested. Unfortunately, Santa (aka John Dilks) may not be attending our holiday party since, if he is able to recover from a bad toothache, he and his reindeer will be dealing with the Christmas lists of wide-eyed children at InfoAge. We'll miss you John.



**Santa might have more important duties on the day of the NJARC Holiday Party.**

During the last month, we ran a repair clinic at InfoAge and our Fall swapmeet at Parsippany. Winter weather and Thanksgiving probably contributed to poor attendance but many vendors who made reservations for the swapmeet just did not show up. You can see some of the action on Bob Bennett's "Radiowild" on YouTube but the photo shoot was taken early in the day and panned many of the "no-show" tables. All-in-all, we had a good buyer turnout and made a small profit. The swapmeet was discussed at our recent Board meeting and some good suggestions were proposed and will be acted on to improve buyer and seller attendance. For the meantime, enjoy the pictures in this month's *Broadcaster*.

NJARC member and auctioneer-in-residence Pete Grave is on the mend from hip replacement. I heard from him about a week ago and he's presently using a walker and doing great. Pete noted that he needs to get the OK from his doctor but is looking forward to attending our Holiday Party. Great to have you back Pete!

Start making your preparations for this year's Broadcast Band DX Contest. We'll start with a DXpedition following the January meeting with the contest running from January 17th to January 25th. Contest rules are included in this month's *Broadcaster* and on the club website.

I first heard about the Survivor Library on NPR. Basically, it's a compendium of the technological and industrial

knowledge from 1800 through the early 1900s. It contains the knowledge, in downloadable book form, needed to rebuild a technological and industrial infrastructure from scratch when the modern infrastructure ceases to function. Even if you're not a survivalist, you might enjoy access to some 25 books on early radio. Included are such early books as "Wireless Telegraph Construction for Amateurs - 1914" and "Wireless Telegraphy and Telephony -1906." Go to <http://www.survivorlibrary.com> and click on the "radio" section.

Finally, see president Richard Lee if you're interested in placing an order for club jackets and hats. T-shirts are still available in all sizes.

**Upcoming Events**

January 9th - Monthly meeting at InfoAge; DXpedition and Members-Only auction.

January 16th - January 25th: BCB DX Contest.

February 13th: Monthly meeting at Princeton; Dick Hurff discusses Tesla.

February 21st: Winter Repair Clinic at InfoAge.

March 13th: Monthly meeting at Princeton; Mike Molnar discusses Edward Weston.

March 21st: Spring swapmeet at Parsippany PAL.

April 10th: Monthly meeting at InfoAge; Dave Sica and Al Klase talk on the NJARC website and Reflector.

May 1st: Monthly meeting at InfoAge; Homebrew and Basket Case Restoration Contest (tentative).

May 8-9th: Kutztown swapmeet.

June 6th: Spring Repair Clinic at InfoAge.

June 12th: Monthly meeting at Princeton; Show & Tell.

Sept. 18-19th: Kutztown swapmeet.

## INFOAGE REPAIR CLINIC

By  
**Marv Beeferman**

Attendance was not overwhelming at our November Repair Clinic but we all had fun nonetheless. I guess it can be easily summed up by comments posted by member Dave Sica:

"I had a great time at the Repair Clinic last Saturday. Despite the thirty or forty

years I've been monkeying around with antique radios, I had never dug into a twenties-vintage battery set."

"Marv Beeferman, who has probably forgotten more about that area of collecting than I will ever know, kindly spent the entire day with me and we quickly got a homebrew 1-tube regen set going. That set is my first and only "really early" working radio. We then spent the rest of the day on a 5-tube Sonora TRF. The exact schematic for that set wasn't available, so we spent a lot of time figuring out the circuit and attempting to identify the power connections."

"This resulted in some 'spirited conversations' about how the set might have been designed. Other experts weighed in too, notably Al Klase. I am entirely self-taught in radio theory, and as they say 'a self-taught man has a fool for a teacher.' So it's nice when a real engineer can either validate or shoot down your theory. We didn't get it going by the end of the day, but I learned a few things and as always, it's a lot more fun doing detective work on this stuff with knowledgeable friends than in the solitude of your own workshop."

Among the other active restorers was Aaron Hunter who attempted to join two GE F40's into one. One chassis had various parts disconnected while the other showed life after IF adjustments were made. The final product still needs recapping and the replacement of brittle wires.

Dick Hurff worked on two similar Masterwork Galaxy AM/FM portable German transistor radios. Friend Aaron Hunter repaired the dial string on one ("a very tedious job") while Dick fixed a sticky set of pushbuttons and replaced corroded wires on the battery section.

Ray Ayling attacked a 1956 RCA Orthophonic 6HF-5 record player. Ray changed all the capacitors, broke down the changer for a good cleaning and lubrication, changed resistors and finished up with a final polishing.

Phil Vourtsis replaced the filter capacitors and a 12AT7 tube on a Philco AM/FM table radio. He also replaced the line cord on a Magnavox AM/FM radio and adjusted the spindle and tonearm on an RCA 45 player.

Finally, Harry Klancer worked on repairing a museum display of a Westport Electric frequency meter and counter. This is an early digital frequency counter that dates to the late 1950s. Actual numbers are not displayed in the readout; Nixie tube displays are a series of ten "dots" that are arranged like a clock face and spin and lock in place.



Dave Sica searches for that elusive station.



Jerry Dowgin attacks a tough cathedral problem.



Could that be Dick Hurff behind those Foster Grants?



Harry Klancer works on a museum project while Ray Chase looks on.



Ray Ayling works on a 6HF-5 record player.



Phil Vourtsis discusses a client's problem.



Aaron Hunter finds dial re-stringing a "tedious job."



Group therapy.



**Mr. 45 (Phil Vourtsis) works on another classic record player.**



**Al Klase and Jules Bellisio track down a tricky power supply problem on Dave Sica's 5-tube Sonora TRF.**

## REVIVING A RADAR WORKHORSE

By  
**Marv Beferman**

In a dimly lit room in one of the newly renovated sections of InfoAge, NJARC member Ray Chase is hard at work restoring one of the workhorses of our radar heritage. The AN/TPS-1 was a light-weight portable search radar developed during World War II to provide early warning of enemy air attacks and later by the United States Air Force Air Defense Command (DEW Line). It broke down into 10 individual packages for easy delivery to forward areas by ship, cargo plane or truck. If necessary, the separate packages could be carried to very remote locations on foot or by pack animals, then quickly assembled for use.

AN/TPS-1s were used to defend many beach-heads in the Pacific during the war and were among the first portable radar

units to go into operation following the invasion of Iwo Jima and Okinawa. Later versions of the radar saw considerable postwar service. Ray said that the TPS-1 was "probably the most prolific radar" developed by the U.S. during the war.

A significant number of upgrades and additional design work to this radar were performed at Camp Evans (InfoAge). These included changes to the antenna assembly, indicator, power unit and PPI oscilloscope. Design changes were also developed to increase power output and testing was performed to determine if the d-c generator could operate properly in humid, tropical countries.

The example that Ray is working on to return to operation is a mix of models TPS-1D and TPS-1G. Ray has all parts at his disposal including four spare units. He is only missing the antenna but he has his eye on one that is available in Pennsylvania. Here's a report dated November 10th that Ray has submitted covering his recent progress:

"Inspected the spare indicator unit and found it to be in good condition. On Saturday, the units were swapped and the second indicator unit was energized and seems to be working well. While this unit is from an FPS-36 radar configuration, it is 99% identical to a TPS-1D/G configuration. A few mechanical modifications need to be done but these should be no problem. Presently, we have progressed nearly half-way through the 'fire-up' sequence. An inoperative cooling fan in the power supply unit needs looking into. So far, the 400 cycle power inverter has been holding up well."

The AN/TPS-1D/G is being worked on in a temporary area that is slated to hold a permanent radar tube display and the preliminary display of early radio vacuum tubes.



**Part of the AN/TPS-1D/G search radar being returned to operation by NJARC member Ray Chase.**



**The 400 cycle power inverter.**



**A Bendix AN/TPS-1B radar in its cold weather enclosure at the National Museum of the United States Air Force.**

## NOVEMBER SWAPMEET





**The 2015 NJARC BCB DX Contest - January 16 to January 25**

In the 1920's and 1930's, some radio listeners would compete with each other for the reception of the most distant stations using the same receivers that we now restore and cherish. We can recapture some of the excitement that the early DX'ers experienced in our own contest.

**Official Contest Rules**

**THE OBJECT:** To use vintage radio receivers to receive broadcast-band (BCB) signals from the greatest possible distance. Performance will be judged by the total mileage for your ten best loggings during a 24-hour session. You will be competing against other NJARC members using similar receivers.

**ELIGIBILITY:** The contest is open only to members in good standing of the New Jersey Antique Radio Club.

**CONTEST PERIOD:** The contest period will be from 12:00 Noon, local time at the receiving location, Friday, January 16th through 12:00 Noon, Sunday, January 25th.

**SESSIONS:** Contestants may submit logs for any two, 24-consecutive-hour sessions (Noon to Noon) during the contest period. You may use only one receiver during a session. That means you may not "bird dog" a simple radio with a more complex radio. You may submit logs for two different receivers. They need not be in the same category.

**FREQUENCIES:** The broadcast band, as defined for this contest, will be from 530 to 1600 kilocycles. No stations on the new extended band, 1610 to 1710 kilocycles, will be counted since many early radios did not over those frequencies.

**RECEIVER CATEGORIES:**

- A - Crystal radios.
- B - Primitive tube or transistor receivers, including homebrews - 1 to 2 tubes or transistors, plus power supply.
- C - 1920's battery sets, including homebrews - batteries or modern power supply are OK.
- D - Other tube radios sold for home entertainment.
- E - Amateur, commercial or military tube-type communication receivers.
- F - Any radio of your choosing.
- G - "Light-weight" - Any radio weighing less than one pound (454 grams).

**SPECIAL AWARDS:** Best performances by first-time contestant (please note this status on your log sheet).

**ANTENNAS:** Anything you like.

**LOGS:** Submit a log for each of your contest sessions (maximum of two). Each log header should include contestant's name, address, e-mail address if applicable, phone number, category, and description of receiver and antenna. Please include your listening address if it is different from your mailing address.

Make a log entry for each station you claim to have heard. Stations must be positively identified. (This is being done on the honor system, and is somewhat a variable concept. If you hear Boston weather on what you know is 1030 KC, then go ahead and log WBZ. However, just because you heard a signal on 1160 KC doesn't mean you heard KSL in Salt Lake City.) The contest committee reserves the right to disallow what it feels are outrageous claims. Each entry should include time, frequency, call letters, location and optional comments. Although we're only judging your ten most distant loggings, submit as complete a log as possible. The committee may make special awards for most stations, most interesting log, etc. as it sees fit. Logs must be postmarked no later than midnight Monday, February 2nd, 2015. Logs may also be submitted as email attachments.

**SCORING:** Distances to stations will be calculated by the committee and will be based on great circle distances from Freehold, New Jersey for listening posts within a 100-mile radius of Freehold. We will calculate mileage for other entries based on actual listening location. In all cases, please note your ten best loggings to make our job easier.

**Special Rule #1:** A contestant may claim only one of the Cuban time stations, Radio Reloj, regardless of how many are actually heard. All will be scored as 1279 miles (Havana).

**SUBMIT LOGS TO:** Tom Provost, 19 Ivanhoe Dr., Robertsville, NJ, 08691, tprovost@ppl.gov

**QUESTIONS?:** Al Kase 908-892-5465, ark@ar88.net  
Tom Provost 609-243-2508

# TESTING FOR TUBE SHORTS

## PART I

By  
Marv Beeferman

*Much of the following information is based on the article "The Problems of Tube Short Testing" by A. Overstrom found in the January 1963 issue of Electronics World.*

At a recent NJARC repair clinic, one of our members found difficulty in interpreting the meaning of the flickering neon bulb short indicator of the tube tester he was using to check a suspect tube in a radio he was working on. In most cases, this isn't a problem since one can always try another working identical substitute. However, sometimes a substitute is not immediately available. In other cases, it's not easy to discard a pricey tube like a 45 just because of a suspicious short test result. Finally, if you sell tubes to other collectors, it would be nice to know if you are providing the buyer with a fully functional product. But determining this information is not that easy; there is much confusion concerning what a tube tester is actually checking when it indicates a "short."

Let's start our discussion by considering the meaning of the sensitivity of a short check. Sensitivity may be defined by the maximum value of resistance that a test device can detect, which corresponds to the smallest amount of leakage between tube elements. This definition can be expanded to include not only the resistance of the short but its duration in time. This can be as brief as a few microseconds. Although such time durations are difficult to detect, they are directly related to the effective severity of the short.

Consider, for example, a continuous short, sometimes called a "solid short," where there is positive contact between the tube elements involved. This condition could burn out associated circuit components causing costly repairs. On the other hand, the "flicker" or "temporary" short causes trouble only when the tube or equipment is jarred. However, a temporary short may become a solid short if, for example, the tube is tapped.

The sensitivity required to detect a short generally increases as the time duration of the short gets smaller. In other

words, the resistance of a solid short would be very close to zero; that of a short of long duration would be rather small; and the resistance of a momentary short would be greater. It is well to remember that any type of tube short is a potential source of trouble.

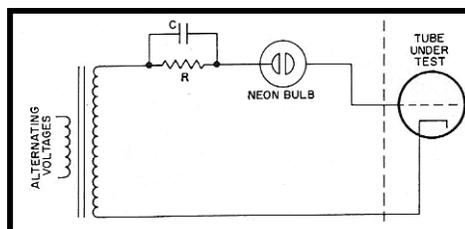
Most tube tester short detectors use small neon bulbs as indicators. In some cases, one bulb may be used for each element of the tube under test. Sometimes various combinations of lights are used. (If you have a tube tester and want to know exactly what elements of a tube are indicating shorts, you can try a shorting bar between various combinations of pins in its tube sockets. By making a notation of the light arrangements used, you can subsequently identify shorts at a glance.)

In other types of tube testers like my Hickok 752, a leakage switch connects the various elements of the tube under test across a test voltage. In certain positions of the leakage switch, tubes having inter-element leakage (short) paths will complete the test circuit and cause the pointer of the tube tester meter to move up scale.

Although there are various kinds of short detectors, for simplicity, only the commonly used a.c. and d.c. types will be discussed.

### A.C. Short Detectors

In one popular method, alternating



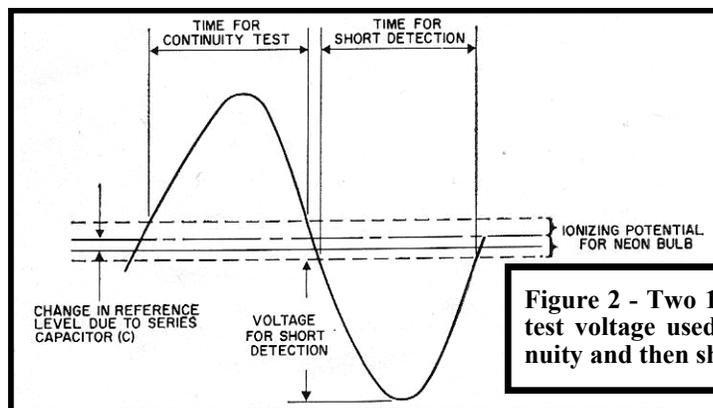
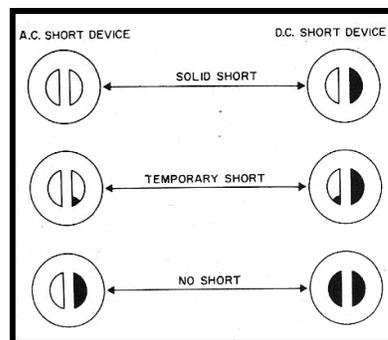
**Figure 1 - An A.C. short detector. In the lamps at the right, the white area (A.C. SHORT) indicates a glow.**

voltages are applied to the tube elements through a neon lamp as shown in Figure 1. In addition to indicating shorted elements, this has the advantage of providing a continuity test that reveals whether an element is properly connected or open. (Although not shown in the simplified circuit, heater voltage is also applied.) Each element is tested with respect to the cathode. In this case, the test is between grid and cathode.

When the a.c. applied to the electrode is going positive as shown in Figure 2, there will normally be conduction due to rectifier action and one side of the neon lamp will glow. If the bulb does not ignite at all, the grid or other element under test is open. Thus continuity or its absence is established.

If the tube is good, it will not conduct on the negative half-cycle of the applied a.c., and the other side of the neon lamp will not glow. With an open electrode, both sides of the bulb will remain dark (this condition is not shown). If the electrode under test is shorted solidly to the cathode, continuity during the negative half-cycle will permit neon bulb ignition and both sides of the lamp will glow. A continuous glow on one side with intermittent or partial glow on the other indicates a "flicker short."

Next month, we'll discuss d.c. short detectors, how to determine short sensitivity and how to deal with excessive sensitivity.



**Figure 2 - Two 1/2 cycles of an a.c. test voltage used to indicate continuity and then shorting.**

# NJARC Holiday Party

**Date:** Saturday, December 13th, 2014  
**Time:** 5:00 PM – Cocktail Hour  
 6:15 PM – Dinner  
**Place:** Freehold Elks Lodge  
 73 E Main St  
 Freehold Township, NJ 07728

**Members:** \$25 each  
**Non-Member Adults and Children over 12:** \$25 each  
**Children under 12:** \$5 each

**Cocktail Hour, Dinner Buffet, Mystery Grab Bag, Surprises**  
 A wonderful evening of fun, good food and fellowship with a radio theme.

**\*\*\*\*\*RESERVATIONS REQUIRED \*\*\*\*\***

If you plan to attend, please fill out the attached coupon, detach it and mail it with a check to:

**Marvin Beeferman**  
**2265 Emerald Park Drive**  
**Forked River, NJ 08731**

by December 5<sup>th</sup>. Everyone who plans to attend must send back a response form with the name(s) of attendees. Reservations must be made via the form below; please refrain from telephone or email reservations unless absolutely necessary! Payment must accompany the form.

-----Cut here -----

Name(s): \_\_\_\_\_

Telephone or email: \_\_\_\_\_

Number of **Members**: \_\_\_\_\_ X \$25 = \$ \_\_\_\_\_  
 Number of **Children** under 12: \_\_\_\_\_ X \$5 = \$ \_\_\_\_\_  
 Number of **Non-Members**: \_\_\_\_\_ X \$25 = \$ \_\_\_\_\_

**TOTAL:** \$ \_\_\_\_\_

Make checks out to **NJARC**, enclose with this form and **mail before 12/05/14.**

**NOTE: Extra parking is available at the Amboy Bank, diagonally across from the Elks.**