

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

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Volume 11 Issue 1

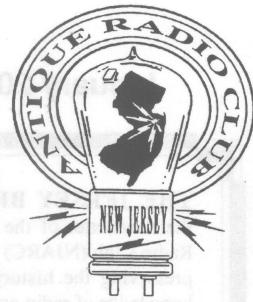


MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

Happy New Year! 2004, under the leadership of President Phil Vourtsis, was another banner year for the New Jersey Antique Radio Club; here are a few of the highlights:

- We ended the year with a total of 211 members and, with reduced *Broadcaster* costs, well in the black.
- The "Jersey Broadcaster" kept members informed on a monthly basis of upcoming activities and local radio events with a few restoration, technical and historical comments thrown in for good measure.
- The club's web page, with Dave Sica at the helm, continues to grow as a valuable source of information and club events.
- The NJARC Reflector was always there to quickly canvass the membership for those difficult technical questions.
- InfoAge and the National Broadcaster's Hall of Fame has become a reality.
- The club sponsored a Broadcast Band DX contest and Home-brew Radio Receiver Contest.
- Members were treated to lectures and demonstrations on such diverse topics as Radio Building Blocks, The Autodyne, RCA's WWII Military Television Development, Beyond the Triode, Radio Shopping in Greece and The Case Against Philo Farnsworth.
- Repair clinics were hosted by the David Sarnoff Library in January, March and July.
- The club sponsored swapmeets in April, July (with an "open house" at the Ben-



MEETING NOTICE

The next meeting of the New Jersey Antique Radio Club will take place on Friday, January 14th, at the David Sarnoff Library in Princeton, NJ. Contact President Phil Vourtsis (732-446-2427) for directions. Our January meeting will include a new feature approved by the Board of Directors in 2004 - a "Members Only Auction." All the details are included in this month's issue of the *Broadcaster*. This meeting will also provide the opportunity to save postage and follow-up requests by paying dues for 2005. A \$20 check (made out to NJARC) or cash would be appreciated (unless you are an honorary member as designated by an "H" on your mailing label).

trovato's), September (InfoAge tailgate), and November.

- Mini-auctions (including a rare National NC-33 in kit form) and show-and-tell



Marsha and Jerry Simkin accept a special "thank you" award and gift from President Phil Vourtsis on behalf of the NJARC for their many years of service to the club.

sessions kept our meeting attendance strong throughout the year (our meetings average 1/4 of the membership - a statistic to be proud of!).

- Our tube and capacitor programs maintained their bargain prices; we also added a resistor program near the end of the year.
- Our holiday party was a great success, attracting close to 80 members.

I'm sure that many more items can be added to the list, since each person seems to find their own individualized benefit from being a member of the NJARC. But what is probably a common thread for all of us is the fellowship of sharing a mutual interest with good friends. Is it worth \$20 (\$25 for a joint membership)? If you think it is, then please take a few minutes to send this year's dues (make out checks to NJARC) to our membership secretary at the address below or plan to pay at the next meeting...we've got a great 2005 planned for you!

**MARSHA SIMKIN
33 LAKELAND DRIVE
BARNEGAT, NJ 08005**

Note: Your mailing label reflects your dues expiration date (i.e., "1/05"). An "H" code designates an honorary member with no payment due.

Our holiday party was another great success and major credit has to be given to Marsha and Jerry Simkin and Shari and Gary D'Amico for their hard work.; it gave the party a very professional flavor. Also, thanks to David Sarnoff Library Executive Director Alex Magoun for his generosity in allowing use of both the auditorium and the library area.

As part of the evening's program, Phil

THE JERSEY BROADCASTER is the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are \$20 per year and meetings are held the second Friday of each month.

The Editor or NJARC is not liable for any other use of the contents of this publication.

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Vourtsis presented a special award to the Simkins for taking the lead at our past parties and supporting the club in many of its activities over the years. I recently received a "thank you" card from them on behalf of the club and Marsha asked me to share their thoughts with the membership:

"We would like to thank the members of the NJARC for the special thank you that you honored us with at the holiday party. We find working on the various NJARC projects very rewarding and look forward to continuing in the future"

"We would also like to thank all the people who volunteered and helped to make the party so enjoyable. It was truly a group effort. Thanks to: Marv Beeferman, Sal & Daniella Brisindi, Edith and Ray Chase, Gary & Shari D'Amico, Jerry Dowgin, Owen Gerboth, Steve Goulart, Pete and Jan Grave, Walt, Aaron & Max Heskes, Darren Hoffman, Aaron & Janet Hunter, Joe & Lynn Kajewski, Al Klase, Richard Lee, John Ruccolo, Nick Senker, Dave Sica, Dave Snellman, Phil Vourtsis and our host at Sarnoff, Alex Magoun. I hope I remembered everyone."

"Thank you again and our very best wishes for a happy, healthy, peaceful and prosperous new year."

Our next Repair Clinic will be held at the David Sarnoff Library on Saturday, January 29th with mentors expected at 9:00 AM. If you're new to the club, contact Al Klase at 908-782-4829 or Phil Vourtsis at 732-446-2427 for details. It is also important that you give Al or Phil a call and tell them what items you plan to bring so we can get an idea of what to expect and prepare schematics if necessary. All attendees, either novice or advanced, are expected to bring their own basic electronic repair tools. Test equipment, tube testers and replacement parts will be made available at the clinic.

YOUR TEST BENCH

By Steve Goulart

We sell a lot of signal generators, meters and signal tracers during NJARC swapmeets so I hope that there is interest in the subject of test equipment in general. Since I am something of a fanatic, let me comment on the basic instruments and why (and if) you need them.

First, you will need to evaluate what your interests are. If you are the absolute audio nut, there is a separate bench of equipment compared to that needed by the normal crazed sort of person who just repairs the occasional radio. If you get carried away, you may start adding impedance bridges and ultra low-frequency audio generators just in case. Cost is an issue for most of us but even very good equipment is available for realistic prices and the basics are cheap, so an excellent bench setup can be built up over time. My own personal prejudice is that in general, the lower the original cost, the lower the current usability and reliability.

How much equipment is really necessary (this comes up at my house when the oscilloscope count exceeds 20)? Do you need to saddle yourself with a piece of equipment that you may use only very occasionally or can you wait to borrow it? There are many personal philosophies on the amount of equipment needed - some of the group's experts are minimalists, using a pen sized signal insertion tool and lots of experience; others look like NASA at launch time.

This relates (in part) to the degree of accuracy that you feel you need. An example would be the warnings in the manuals for boat anchors reminding you not to try to do RF alignment on a communications receiver without a laboratory grade signal source. Even 1930's Hallicrafters should be calibrated with a signal generator capable of accuracy around a couple of kHz. Nothing by Heath or Eico is going to provide this by itself. On the other hand you can inject a buzz into a radio by touching a grid cap with a finger.

In terms of quality, there are several broad categories with the lowest being hobbyist grade. These are often kits, which may be in need of major rework due to construction problems as well as normal aging. These are the lunch box sized objects from Heathkit, Eico, Paco, etc. I notice that most of our members are infatuated with this class of test equipment, possibly due to its small size and familiarity.

Generally, you can get service manuals and parts so they are maintainable but not especially reliable or usable.

The second grade would be TV or service equipment, which includes equipment specifically for TV repair work - sweepers, marker generators, etc. - of little use to the average user. Overall, these still represent a better choice unless you know that the hobbyist grade equipment is working now and was initially well-built. Names like Sencore, RCA, Precision, and Simpson are in this class.

Other than tube testers, laboratory grade equipment such as Tektronix, Hewlett Packard and General Radio seem to be almost completely ignored. Admittedly, in older equipment, there is a size problem (think of the Tektronix plug-in oscilloscopes) but the performance is light years ahead. Also, although lab grade equipment is much more complex, it was built of premium components and designed to work forever (almost). Because of this, most of this equipment is more likely to work and remain easier to repair in spite of potential parts problems.

Military Surplus

Most military equipment is built to very high standards. In performance quality, it varies between TV grade and Lab grade depending on the original use (field or depot maintenance). Some of this equipment was a sort of condensed lab grade, which means more compact (nice for bench space) but it can be tougher to work on due to parts density. I had a low-end W.W.II signal generator (purchased at a NJARC meet for \$2) which was much better and smaller than any of the hobbyist or TV grade equipment.

Basic Tools - Isolation Transformers and Variacs.

First, the basic tools (never buy cheap tools) including a good set of screwdrivers, needle nosed pliers, diagonal cutters, a wire stripper and a decent soldering iron (Radio Shack has a two-power stand set for about \$20). Beyond these are solder suckers, nut-driver sets, allen wrenches, rf alignment tools and other items as you feel the need.

If you work on AC/DC, sets the very first item to buy is an isolation transformer to protect yourself from serious harm. It also makes it easier to use any test equipment which is not battery powered. I worked on someone's digital clock once where for "safety" they had (incorrectly with hot side to ground) added a three-wire cord. Luckily, the ground lead on my scope

had a large clip lead since half of it vaporized, leaving me with a strained expression and sooty fingers. Note: an isolation transformer will also prevent shocks due to leaking line bypass caps found on some older transformer equipment and radios, so all of us can use one of these.

Variacs are probably one of the most overrated and popular bench items. The theory is that as you raise the AC voltage, you are also raising the stress on the radio's components at a known rate. Since the rectifier tube output is dependent on filament voltage (and the quality of the tube), the effects are non-linear and unpredictable. If you really want to be sure of the health of your electrolytes and the condition of other capacitors, a better bet is a metered and variable 0-500 volt B+ supply. The variable supply allows you to bring up the B+ in a controlled state (the radio is not plugged in for this test) and by watching the current you can see if the capacitor is reforming (or shorted). Typically I run the voltage up until the electrolytes are drawing about 50 ma; if the current immediately begins to drop, I stay at that voltage level till the current reduces (I would say drops to zero but I'm daring and impatient). After a couple of runs, you get to the working voltage of the capacitors. At this point, I generally leave the power supply connected overnight. Make sure you either shield the radio or warn people not to approach your work-bench. Lord knows what happens to my homeowners if someone decides to rob the house during a 450 volt soak test.

VoltOhm Meters and VTVMs

If you have only one piece of test equipment, this is the one. There are some general things to do initially to check basic operating condition (this would be at a yard sale or flea market); if possible get a return privilege. It is important to look for obvious physical damage including the meter movement. Problems in meter movements can be checked by twisting the whole instrument in the plane of the meter face - you should be able to see the meter pointer move freely and return to the same point. A better quality meter movement will have the same zero point upright or on its back. Also look at the pointer to see if it is bent (or was by looking for flaking paint).

A quick check of operation can be done by using the AC line which should be about 120 volts. Check the ohmmeter

for full-scale range and zero and accuracy if possible (your personal skin resistance is somewhat constant if you don't have a known resistor). Use a battery to give you an idea on the DC ranges. As soon as possible, test all ranges and functions for accuracy and operation.

There are basically three choices here. The first is the traditional VOM such as the classic Simpson 260. These meters are solid performers with only a few limitations. Most notable would be a DC sensitivity of 20K/volt - they can't be used for some testing, particularly AVC voltages (if I remember correctly). A benefit of these meters are that they are useful for testing solid state devices because the ohms test voltage is high enough to cause a diode to conduct (digital meters generally don't). Quite often, the ohmmeter ranges are inaccurate due to someone measuring AC on the low ohms scale. Surprisingly, this is not an impossible fix. Also, some of the batteries used by the ohms scales are not readily available. Test probe sets and wire are readily available so replacing these aren't generally a problem (special probes are).

The second choice is a vacuum tube voltmeter, especially the RCA Senior Voltohmist. This is generally a very stable instrument and is worth working on. They are less likely (by design) to have suffered range burnouts and they are generally usable with less work. One suggestion is making sure that you get a good main test probe; problems here will mostly be mechanical not electrical. RCA used a switch on the probe to allow the use of a single probe for several functions.

Last are digital meters which are in general much more accurate and reliable than analogs. Again, look for obvious signs of abuse. Since the guts of many of these are a single large chip, they tend not to be readily repairable. I have seen some meters apparently connected to very high voltages where the chip (and visibly the display) are burnt.

Oscilloscopes

Basically, a visual AC/DC voltmeter. This is my first choice of bench equipment since you can see what's happening dynamically. What you pay for is bandwidth and sensitivity - most other features and functions are in proportion to this. For ease of use, a good triggered scope is essential; triggering locks the display so that the image is stable and many older scopes

don't trigger well, if at all. It follows then if you are going to actually use your oscilloscope, don't buy any older kit or TV service grade scope. Beyond this, if you are working on only broadcast band radios, almost any scope would in theory be okay, but 5 MHz would be a minimum. I would suggest 10-20 MHz since there isn't much of a price difference in used equipment. Dual trace is nice for comparison of two different signals, but most of us won't actually use the dual time base features (A delayed by B and so forth) unless you are doing something very specialized. Newer TV service scopes have triggering specifically set up for TV work and would be a good choice if you specialize. Be aware that good scope probes cost almost as much as a used scope if you don't get them with the equipment. To get full bandwidth, you will need the x10 probes even though they reduce your sensitivity by a factor of 10.

Radio Frequency Signal Sources (and frequency Counters)

If you signal substitute any known signal, grid dip meters, etc. should be enough to test with, but if you are looking to verify (or set) alignment, you need a calibrated signal generator. I haven't been to a clinic yet where there weren't several present so you may not need to buy your own but it is always handy. Since these are readily and inexpensively available from NJARC members, you may decide to get one if you do any radio repair. As recently pointed out in the newsletter, a cheap signal generator can be used with a frequency counter to get better accuracy. The downside is that older inexpensive generators have two defects for this use. They are not frequency stable so let them warm up as long as possible before use (this goes for most generators). Also, they are not well shielded so the amount of signal received may not be low enough (particularly for critical IF alignments). Good generators have attenuators calibrated by output voltage and are usable in the microvolt range. Radio manuals containing alignment instructions will give you the setup data you need to use your signal generator.

Audio Signal Generators, Distortion Analyzers and AC VTVMs

Audio testing requires its own set of equipment beyond that already mentioned. A normal requirement would be an audio generator covering a minimum of 20Hz to 20kHz at reasonably low distortion. Two AC VTVMs (one in, one out) like the HP

400D to do frequency response testing and audio loads capable of handling the full output of the amplifier being tested. Distortion analyzers are useful for setting up bias or evaluating amplifier quality. Since these are low demand items, you should eventually find an inexpensive (\$20) one.

Tube Testers

Big mystique and many legends here - the final test is to see if a tube is bad by substitution. That said, most tube testers do find the bad tube. Your first decision is what range of tubes do you need to test since many tube testers don't test earlier or later tube types. For example, most service grade tube testers from the 50s on don't have sockets or test data for any pre-oval tubes. Correspondingly, older tube testers don't test miniature tubes. The better the tester the better the result, but the minimum tests are shorts, gas and conductance (there are several methods and names for this). The best tube testers are currently priced beyond a sane level.

Component Substitution Boxes

Handy items which allow you to have a complete set of resistors and capacitors to substitute during bench testing.

Beyond usability, there is just some test equipment which is beautiful. Don't we all need a wood cased RCL bridge on the shelf somewhere? Feel free to ask my opinion or assistance on test equipment. I attend all of the clinics that I can and am willing to either help you with a trouble (I have manuals and parts for some older HP and Tek) or bring a specialized piece of equipment if I own it. One idea I've considered would be to do an Audio Clinic for our audiophiles - any interest?

MORE ON FESSENDEN

By Dave Snellman

Hi Mary! I was in Virginia Beach just before the holidays and saw an article in the Virginia Pilot ("Music and Voice Ride Airwaves to Norfolk in 1906") detailing Fessenden's Christmas eve broadcast. I wrote the following short article about what was in the newspaper and included it in the DVHRC Oscillator.

Listening to Christmas carols on the radio is nothing unusual in this day and age. Some stations go overboard, starting to play "all" holiday tunes starting just after Thanksgiving. With that in mind, it must be hard to imagine what happened ninety-eight years ago on Christmas Eve, when wireless operators onboard ships off the east coast of the United States were treated to the "first" entertainment broadcast ever heard. That first entertainment was nothing short of a Christmas show. A show presented by a radio pioneer and inventor, Reginald A. Fessenden.

In the October and December issues of the NJARC's Broadcaster, Marv Beeferman presented a two part series on Reginald Fessenden. I had a chance to spend the pre-Christmas holidays with friends in Virginia Beach. When I picked up Friday's *Virginia-Pilot* newspaper, I was surprised to see an article in "the daily break" section on none other than Reginald Fessenden. The article detailed how Reginald Fessenden transmitted voice and music for the first time over the airwaves used by commercial shipping. The article detailed how those lucky enough to hear the broadcast were treated to Christmas carols, religious readings, and assorted holiday greetings.

Diane Tenant, a reporter for the newspaper detailed the story of what took place that night. She also included details of Fessenden's life and his accomplishments. She managed to show the tie-in to the Hampton Roads area with Fessenden's own recollection of reception reports he received from that broadcast and from one on New Year's Eve.

"We got word of reception of the Christmas Eve program as far as Norfolk, VA, and on the New Year's Eve program we got word from some places down in the West Indies."

The article quoted Brian Belanger from the Radio and Television History Museum in Bowie, MD. Of course, many know Brian from MAARC and his many articles in Radio Age.

You just never know where some piece of radio history will turn up.

Happy Holidays,
Dave Snellman

NJARC Member Auction

As the title implies, these instructions cover auctions to be held by the New Jersey Antique Radio Club for the benefit of club members and the club. Buyers and sellers **must** be members of the club. The club will charge the seller a 10% commission on the auction sell price (sellers commission) to a maximum of \$5.00 per item sold.

Example: A radio is sold for \$20.00 – the commission is \$2.00. Another item sells for \$125.00 – the commission is \$5.00. The seller pays commissions to the club. Although the club conducts the auction, payment transactions are conducted between the buyer and the seller.

Sellers:

1. Bring your goods early so that prospective buyers will have plenty of time to inspect them.
2. This is a good time to reduce your collection of radios that are duplicates or that you have lost interest in.
3. You may put a reserve price on any item that is a minimum price below which you do not wish to sell the item.
4. Parts and lower value goods should be grouped into box lots; each auction item should be worth at least a \$5.00 opening bid.
5. There is no limit to the number of items you can bring, but please be reasonable. The club reserves the right to limit items if the member response is overwhelming. Ten to fifteen items would seem to a reasonable maximum.
6. You will be provided with a form to list all the items in your lot and to indicate a reserve price if any. A form is provided in the *Broadcaster* for your convenience. Make a copy of this list or bring your own list of all items in your lot so you can keep track of the sell price and the buyer as the auction proceeds.
7. Bring small bills so that you can make change with buyers. The club Treasurer will assist in making change but he is not part of the buyer/seller transaction.
8. Group your items together in the display area so they are not commingled with other seller's goods.
9. Remain in the area of your goods while they are being auctioned so that questions of reserve amounts can be clarified if necessary.
10. You **must** stay until the end of the auction so that you can settle up your commission payments to the Treasurer.
11. At the end of the auction you must remove any of your goods that were not sold. Anything left unclaimed will be candidates for the dumpster. Unsold item are not charged commission.

Finally, bring some good stuff!!

Buyers:

1. If you intend to bid on any of the items, you **must** use a numbered bidding card. A sign-up sheet will be provided where you can obtain a bidding card.
2. Inspect the auction items carefully; all goods are sold "as-is, where-is".
3. Search out the seller if you want to discuss the condition of any item before the auction commences. Once under way, there will be no time to discuss the merits of an item.
4. Raise your bid card to get the auctioneers attention; we cannot rely on eyewinks or nose twitches to signal your intention to bid.
5. The seller may have placed a reserve price on some items below which he does not wish to sell the item. If bidding has stalled below the reserve price, the auctioneer will announce the reserve price and ask the high bidder if he or she is willing to pay the reserve price. If not, the seller will be asked if he or she is willing to reduce the reserve. If not, the item is not sold.
6. Once the item is sold it is your possession and you are responsible for it. Try to move it to your area so that it does not get mixed with other goods. At the same time, you are responsible to make payment to the seller.
7. Bring plenty of money (smaller bills are nice); you may be able to pick up some bargains or goodies that you've been looking for. (And do not forget to turn in your bidder card before you leave the meeting).

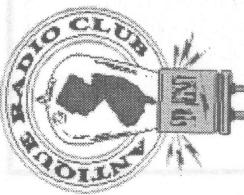
Auction Etiquette

Although an auction can get a little energetic, it can progress quite swiftly and smoothly with the cooperation of everyone. If you do not plan to actively participate, try to keep sideline conversations to a minimum and at a low volume. Respect the bidders. But most of all, have fun!

NJARC Auction Sheet

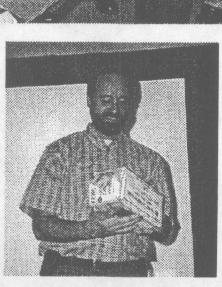
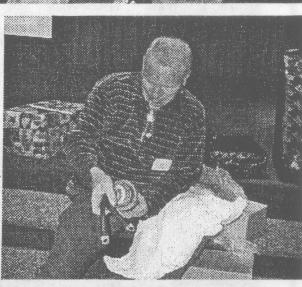
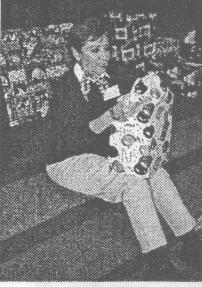
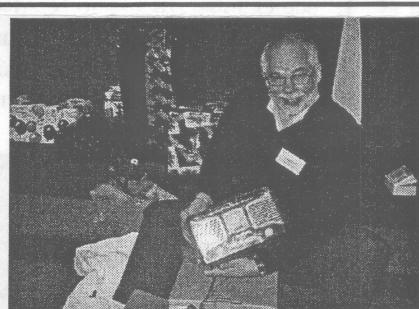
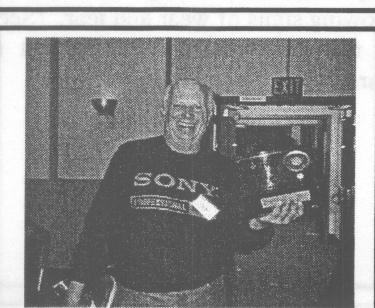
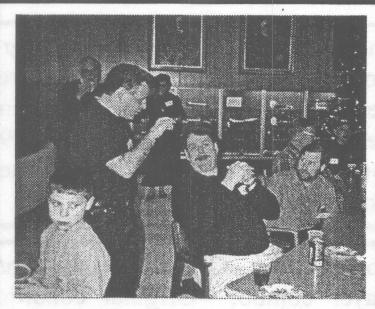
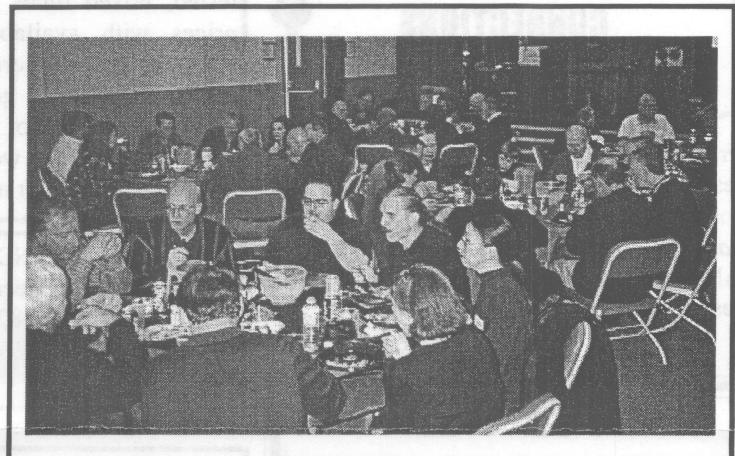
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HOLIDAY PARTY



CONNECTIONS

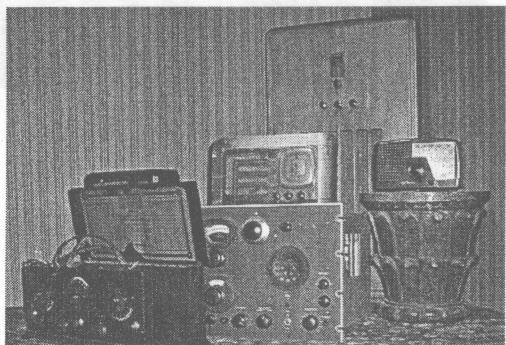
Free exposure for buyers and sellers! Unless requested otherwise, each ad will run for two months in both the *Jersey Broadcaster* and the *Delaware Valley Oscillator*. All buying and selling transactions are the responsibility of the parties involved.

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.

Non-member: Old radio and radio/record player combo. Original condition but showing signs of wear and tear. (See photo to right.) hr.burns@verizon.net (Helen Burns).

In October, Ray Chase paid a visit to Charlie Brown's restaurant in Metuchen, NJ. He notes that like many restaurants that use antiques in their décor, this one originally had its radios mounted on the wall. Its new display, however, featured a corner collection with a WW II ship receiver included. Unfortunately, the console had been "sawed thin" to previously make it wall mountable.



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.

National NC100 ASD with manual. Has been re-capped, needs alignment, \$55. Jack Winans, 609-882-9296, WA2LGE @aol.com.

Non-member: Brunswick Panatrophe console, late 30s, nice veneer but rather plain and boxy, AM/SW/78 turntable, storage space for records, usual amount of scratches, reasonable. Contact John Ruccolo at 609-426-4568 for phone number.



Spring cleaning sale: Shortwave radios - Hallicrafters SX99 \$100, SX130 \$120, SX-43 \$130, Lafayette HA225 \$70, BC348 \$65, Heathkit G4-1680 \$65.

Test equipment - HP 400D AC voltmeters, 1mV to 300V full scale, 4MHz bandwith, great for measuring gain in broadcast band radios, audio work, etc., good operating condition, \$10. Measurements grid dip meter with book, \$50. Tube testers, distortion analyzers, spectrum analyzer, scopes, etc. available - ask. Near recent (1980s?) stereo equipment receivers, tuners, turntables, \$10 each (working).

Parts available: Tek465, Philips 3052 and various other HP and Tek equipment. Steve Goulart, 732-219-6963, sgoulart@att.com

WANTED

Large tuning knob for Pilot TV-37, hand-held remote control for Fisher RK-20, handle and plastic bezel for military Zenith Transoceanic 520/URR, large and small knobs for RCA 110 cathedral radio. Frank Johnson, 530 Elford Road, Fairless Hills, PA 19030, 215-943-8295, fadacat@aol.com.

Since October, thanks to NJARC member Joe Bentrovato, the Morris County Library has been featuring a Novelty Radios display which has received quite a bit of positive comment. Although the display ended in December, Joe deserves some well-earned (although belated) credit.

