



The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

May 2016

Volume 22 Issue 5



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.

At the April meeting, the club was treated to a wonderful presentation by member Bill Zukowski that he titled "Can You Hear Me in the Back? - A Short History and Physiology of Microphones." With numerous examples from his own collection, Bill conducted a class on the history, properties, construction and applications of carbon, condenser, electret condenser, crystal, dynamic, and ribbon microphones. Bill annotated his talk with bits of "microphone nostalgia" including Elvis Presley's use of the RCA Model 77-DX which presently commands a price of \$1200+ and the Beatles use of the Reslo microphone. Bill also pointed out the advantages and disadvantages of each type of microphone. For example, the extremely low mass of the ribbon microphone's element allows an excellent frequency response and adds "warmth" to its tonal response by accenting lows. But its sensitivity makes the ribbon easily damaged by wind and "low accenting" sometimes produces a "boomy" bass (proximity effect).

Bill's presentation was an excellent example of the scope of interests and depth of talent of the club's membership. You can find a copy of it by accessing DropBox at the following address: <https://www.dropbox.com/l/s/u98aHsC4Yyg83v9d6Olnhr>. You'll need to sign up for a DropBox account and provide a password and email address.



MEETING NOTICE

NOTE DATE CHANGE!

The next NJARC meeting will take place on Friday, May 20th at 7:30 PM at InfoAge. The change in the meeting date is to avoid a conflict with the Kutztown radio meet. Directions may be found at the club's website (<http://njarc.org>). This month's program will include a Radio Scavenger Hunt described in this month's *Broadcaster*. We'll also have a small auction of some assorted items.



Bill supplemented his talk with examples from his extensive microphone collection.



Bill fields questions from a highly motivated membership.

As announced in last month's *Broadcaster*, a "scavenger hunt" was held in the Marconi Hotel basement prior to the April meeting. Offered for a \$5 entrance fee was residue from the former repair shop and an accumulation of donations that will not be needed by the museum. Member Ray Chase, who organized the "grab and go," was very happy with the results. More items than anticipated were carried away, we made some money for the club, and hopefully what was



originally considered as "junk" was put to better use either as a source for parts or an ebay sale. More importantly, we made a good dent in cleaning up the basement.



What the heck is this? Some of the items in the scavenger hunt required a little scrutiny to determine their function. Members Darren Hoffman, Matt Reynolds and Jon Butz Fiscina carefully evaluate an item.

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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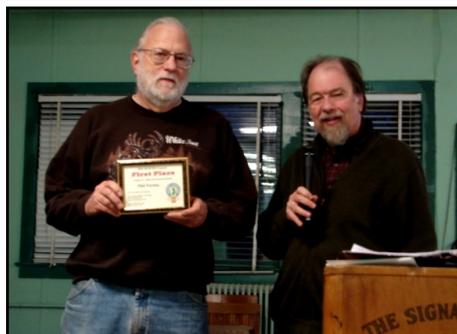
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Also at the April meeting was the presentation, by Technical Coordinator Al Klase, of awards for the winners of the Broadcast Band DX Contest.



Your editor was the winner in category B (primitive tube receivers) and C (1920's battery sets).



Phil Vourtsis was the winner in category D (other tube radios sold for home entertainment).



Dave Snellman was the winner in category F (any radio of your choosing) and G (light weight).

(Camera shy - Nevell Greenough, winner in category A (crystal radios).

Besides overseeing our contests and arranging the technical programs for our monthly meetings, Technical Coordinator Al Klase has also been quite busy adding his creative touch to some new exhibits at the Radio Technology Museum. Recently, he was "caught in the act"

by member Phil Vourtsis in gathering the materials for a telegraph exhibit that traces the early origins of this form of communication. From the below photo, you can pretty much guess where Al's theme is headed (no, he's not into wood carving).



The Antique Wireless Association's convention at the RIT Conference Center has been scheduled for August 17 to 20 with dual themes; Pre-Broadcast Wireless and Zenith Radio. The flea market opens on the 18th and remains open continuously. The auction opens at 8:00 on the 20th. Approximately 18 member presentations are scheduled covering every area of communications history. New displays will be open for viewing at the Museum including a Western Union Museum Office, expanded teletype and telephone exhibits and the new Voice of America Station exhibit.

Finally, from a recent *New York Times* article, comes the use of a radio that's a new one on me - "criminal possession of a weapon:"

Guard Accused Of Using Radio To Beat Inmate

By MICHAEL SCHWIRTZ

A New York City correction officer has been arrested on charges that he used a radio to brutally beat an inmate in a holding cell at the Bronx County Courthouse, officials said on Thursday.

The officer, Bradford Jones, an eight-year veteran of the Correction Department, was arraigned on Wednesday evening on four assault charges, as well as criminal possession of a weapon and official misconduct. He was released after posting \$40,000 bail.

Upcoming Events

May 7th: Spring Repair Clinic at InfoAge
 May 7th: AWA Spring Meet and Auction
 (see www.antiquewireless.org)

May 13th-14th: Kutztown Antique Radio Meet

May 20th: Monthly meeting at InfoAge;
 Radio Scavenger Hunt

June 10th: Monthly meeting at Princeton;
 capacitor nomenclature, CRT rebuilding,
 radio power supplies

July 8th: Monthly meeting at Princeton;
 agenda TBA

July 23rd: Summer tailgate swapmeet at
 InfoAge

August 17-20: AWA Convention

Sept. 16-17: Kutztown Antique Radio
 Meet

December 10th: Holiday Party

"RADIO SCAVENGER HUNT" AT MAY MEETING

By
Marv Beeferman

The idea of a radio scavenger hunt was first suggested by member Marsha Simkin many years ago and we've conducted a few over the years. We've not had one for some time and it was decided to bring back this fun game at the May meeting. Basically, members compete in various radio-related categories by bringing in the strangest or most unusual item in a maximum of three categories. The membership then votes for their first choice of the one item in all the categories that best represents the theme. The item with the most votes wins a nice prize.

The game's idea becomes a lot more simple when you review the available categories:

1-Most unusual item in the shape of a radio that really isn't a radio.

2-Most unusual item not in the shape of a radio that really is a radio.

3-Most unusual "wearable" radio-related item.

4-Most unusual radio-related toiletry, cosmetic or personal care item.

5-Most risqué radio-related item.

6-Most unusual radio-related game or toy.

7-Most unusual radio-related greeting card for a holiday other than Christmas, Valentine's Day or New Years.

8-Ugliest or gaudiest commercially produced radio.

9-Strangest or ugliest looking tube.

10-Most unusual novelty radio.

11-Most unusual radio accessory other than a speaker, headphone or battery.

12-Most unusual commercially produced crystal set.

13-Most unusual radio advertising item.

What do we mean by "radio-related?" Well, in general, the item must have a word, picture, etc. that has a radio theme. For example, you might enter category 4 (most unusual radio-related toiletry, cosmetic or personal care item) with a bar of "radio soap" or category 6 (most unusual radio-related game or toy) with a BINGO game where the player spells out the word RADIO instead of BINGO.

Here's the way we'll play:

1-Take an index card for each entry (maximum of 3).

2-On one side of each card, print the category number and a short description of the item. (Example: "9 - Large, ugly water-cooled transmitter tube.")

3-On the opposite side of the card, print your name.

4-Place the card next to your entry with the category/description side up.

5-We'll give members the chance to vote on the one entry that they feel is the strangest and most unusual and that best represents the category. Members will vote for only one entry in all the categories by placing an "X" on the front of the index card.

6-You may vote for another member's entry but you can't vote for your own.

This can be a fun game but it totally depends on the participation of members attending the May meeting!

RADIO REPAIR DETOURS: METAL OR GLASS? STAY OFF THE PHONE!

By
Bill Zukowski

These are the type of great stories that I love to receive and I'm sure you will enjoy reading. With a membership of close to 200, there must be at least five or so a month that meet the same criteria. It doesn't take long to write down your repair experiences and I'm sure your fellow members would be happy to hear about them. Your editor would much rather publish this type of article than some of

the boring space-filler needed to fill eight pages. While you're at it, don't forget to take a few pictures to supplement your story just as Bill did. ...Ed

I had just completed the repair and restoration of a Fada model 148, an octal all-American five. The owner of this radio and his brother grew up with the same model in their childhood home. While reminiscing with his terminally ill father, who has only months to live, the subject of the radio came up. When he noticed how emotional his father got when talking about it, the son thought that bringing a duplicate to his bedside would cheer him up.

The son went to ebay but was outbid on his first attempt. A short time later, he was lucky enough to find one.

The son contacted NJARC president Richard Lee who in turn referred to me. Explaining his story, he asked if I could repair the radio to working order and I agreed. The radio came to me with the typical cut line cord and covered with the usual accumulation of oily dust on the chassis. It was also missing the dial cover. I had the radio done by the next weekend but the road to this repair was met with two interesting detours.

I initially brought the radio up on a variac and light bulb combination and the expected 60 Hz hum of a bad electrolytic immediately was evident. After replacing the electrolytic, I had a dead radio but no hum.

I pulled the tubes to clean the chassis and found that the glass 12SQ7 (2nd detector/1st audio) was missing three quarters of its base (the part of the base around the glass body was metal, with the octal Bakelite base holding the pins). I replaced a few out-of-tolerance resistors and paper capacitors and the 12SQ7 with one from my "box-o-tubes." The result was "kind of" a functioning radio but with some audio distortion.

I continued with the repair, did an alignment and now the radio worked great but still had distortion. I re-checked my work and everything looked good. Was my chassis cleaning the culprit? Then, AHA! I had replaced the glass 12SQ7 with a metal one. I put the original 12SQ7, with its broken base, back in and the distortion was gone.

I then went through some of my radios and found one, not yet repaired, with a glass 12SQ7. I installed this tube, turned on the radio, but while waiting for it to heat up, I received a phone call. I got back to the radio a few minutes later, and it worked great! I then reinstalled the radio in its case, figured out the charges

and emailed the customer that his radio was ready.

The AM band really stinks here, especially in the afternoon, plus there is quite a bit of local interference, so I figured I'd give the radio a final test in the evening, upstairs, out of the basement. I turned it on about 10:00 PM and was greeted again by the typical hum of a bad electrolytic (the hum was loud, even with the volume turned down).

I went back to the basement, turned the radio on, and there was no hum...the radio worked great. I then did the next logical troubleshooting step - I shut the radio off and went upstairs to watch TV!

The next morning, I turned the radio back on. It hummed immediately, but it went away after about 30 seconds. At this point, I had the volume all the way down so the problem had to be after the volume control. I checked the newly installed filter capacitors...all OK. I checked the 50L6 and associated components...all OK. I then grounded the grid of the 50L6 and the hum was gone. Was it my second replacement of the 12SQ7? I re-installed the original tube with the broken base and all was well. After thinking about it, I realized that my second glass 12SQ7 replacement tube was also bad and caused the radio to hum when first energized. However, the initial hum resulting from this bad tube was not noticed since I left the radio to warm up while I answered the phone. By the time I got back, the hum had died down and it appeared that the radio was working properly.

Well, the guy got his radio back with all the original tubes in place. The moral of the story? Don't replace a glass tube with a metal one (or at least expect the possibility of a problem) and don't answer the phone when repairing a radio!

I must admit that the way the owner expressed his thanks and appreciation made me feel differently than I ever felt for any other repair. As my wife says, I did a "mitzvah" (Hebrew for a meritorious or charitable act). Not bad for a nice Catholic boy!



Fada 148 prior to cleanup and repair.



Fada 148 following cleanup and repair.



Fada 148 brown Bakelite, typical of the one that Bill repaired.

NEW NJARC MEMBER HAS AN INTERESTING CAREER

By
Marv Beeferman

At the April meeting, the club was introduced to new member Richard Phoenix. Rich described his more than fifty-year career in the radio industry and some of the details are both historical and engaging.

Mr. Phoenix earned a BA in Speech and Telecommunications from Kent State University with post-graduate work at the University of Houston and Rutgers. He currently holds a General Commercial Operator's License, is the North Plainfield Borough Clerk and Chief Operator of the town's emergency radio station WPQJ970 (1630 AM). He is the president of the New Jersey Radio Museum and programme (British spelling) host/technician for The Album Zone. In the past, Rich was the program director and program host for WERA Radio and WRAN Radio, a radio personality for WCTC and a studio engineer for the ABC radio network.

Richard says he is greatly indebted to radio for allowing him to become acquainted with the greats of the 20th century. "One of my earliest encounters of note was backstage at Kent State with Louis Armstrong and Ray Charles. The business permitted me to meet and interview Paul and Linda McCartney as well as Denny Laine on their first British Wings tour at Oxford in 1973."

As president of the New Jersey Radio Museum, Rich is responsible for maintaining its mission to preserve Northern New Jersey radio history. One important museum project is to arrange a massive reunion for all current and former employees of NJ radio. Another is to produce a CD of radio jingles and airchecks that would be sold to help produce funds for the museum. Finally, another project is the addition of a broadcast station complete with 70's-era radio studio equipment.

In the late 1990's, Rich, as an avid shortwave listener, caught Johnny Reece and James Barclay doing a Merlin Network One show on the BBC transmitters. This resulted in him sending an audiocassette "audition" to North London and he became an AlbumZone Programme Presenter. As the sole US Programme Presenter (live from New Jersey!) of six other presenters, Rich offers two-hour programs based on an extensive library of over 22,000 albums covering over 70 years of music. Various stations around the world rebroadcast these programs, mainly on the Internet, but also on local FM and AM stations in Central Europe and the USA. Currently, Album Zone programs air on RTI, Radio Heatwave, Radio Caroline, Radio City and ReplayRadio.

Perhaps "Radio Caroline" (<http://www.radiocaroline.co.uk>) rings a bell? Richard notes that many of the station's present staff consist of the original shipboard personalities from the renowned England-based shipboard "pirate" station on which the popular feature film "The Boat that Rocked" was based. The station was named after Caroline Kennedy to represent free radio of the mid-'60s when most British radio shunned the music of the popular "Invasion" groups that dominated U.S. airwaves of the time. Caroline sat in international waters and aimed and tailored programming at the British Isles and the Continent.

The club welcomes Richard to the NJARC community and I'm sure there we'll be in store for many interesting stories in the future. It's also nice to know that one person's take on the history of popular music is being broadcast throughout the world by a "Yank" from New Jersey.



Richard Phoenix talks about his broadcast experiences at the April meeting.

FOR THE BEGINNER: SELECTING A VINTAGE VTVM

By
Marv Beeferman

The following article is based on a piece from the March 1969 "Electronics Illustrated" by John S. Richards titled "Meet the VTVM."

If you already own a modern, high impedance digital multimeter and aren't interested in using vintage test equipment for your troubleshooting, then this article is probably not for you. However, if you find that there is something very "natural" about working on a 30's or 40's radio using a vintage VTVM or VOM, then read on.

When it comes to making critical voltage measurements in electronic circuits, a vacuum-tube voltmeter (VTVM) is a must. That old standby, the VOM, just won't cut the mustard when sensitivity is important and can cause more problems than it solves.

The biggest disadvantage of an older VOM is that it is a relatively low-resistance load (that changes according to the range selected) on the circuit to which it is connected. This causes voltages in the circuit - and the accuracy of the readings - to go haywire. In addition, the VOM responds meaningfully only to sine-wave AC signals. This limits its usefulness if you also want to use it to measure complex, non-sinusoidal signals.

The vintage VTVM has four important advantages over its vintage cousin, the VOM: 1) high input impedance in all range switch positions; 2) high sensitivity and accuracy; 3) protection against overload, and 4) wide frequency response - valuable when making AC measurements.

A good, general-purpose, service-grade VTVM should have a high input impedance that remains the same regardless of the range to which the instrument is set. It may be from 10 to 25 megohms, depending on the model, although 10 megohms is most common for those from the 60's and later. In addition, the DC probe contains a 1-megohm resistor to provide isolation between the probe tip and the capacitance of the connecting cable. This 1-megohm resistor enables the VTVM to measure DC voltages in RF circuits without loading and detuning.

Lower-price, service-grade VTVMs have an AC input impedance lower than the DC input impedance. The nominal minimum AC input impedance is usually around 1 megohm. However, higher-price VTMs have an AC input impedance about as high as the DC impedance. The instrument's AC probe does not have a built-in isolating resistor.

Service-grade VTVMs have AC and DC voltage ranges which start at about 1.5 V to 5 V and may extend to 1,000 to 2,000 V. Supplementary probes are available to extend the instrument's range up to 30,000 V. Better models include a 0.5 VDC range - a valuable feature when you have to make measurements in transistor equipment.

In selecting a VTVM, try to find one where the meter needle can be zeroed at the center of the scale on the DC ranges. That is, instead of the pointer being set at the normal zero mark, it can be set dead center. This permits instant determination of whether a voltage is positive or negative. While rarely used for conventional voltage measurements, this feature is valuable when aligning FM detectors, where you are interested in seeing easily how much a voltage is above and below zero.

The heart of every VTVM is the balanced bridge circuit and we won't go into the details here since they are basically the same from VTVM to VTVM. However, AC operation requires a little discussion.

For making AC measurements, older VTVMs usually have a simple, half-wave shunt rectifier circuit whose average output is negative DC. When the VTVM is

set to measure AC, this circuit is connected between another input voltage divider and the range switch. Depending on the rectifier's design, its output can be either the peak or the average value of a half cycle of the input signal. Since the peak or average value of a sine-wave signal is of little interest, the meter scale is **calibrated** to indicate rms voltage.

While this circuit is satisfactory for sine-wave voltage measurements, it will produce a meaningless output when you try to measure complex, non-sinusoidal waveforms, such as square waves. And, if a complex waveform is not symmetrical about the zero axis, what may be a significant half cycle will be eliminated by the circuit and will not be reflected in the rectifier's output. For narrow pulses, the meter indication may be considerably less than the peak value of the pulse.

While it is possible to calibrate the meter for a square-wave signal, it would not be possible to calibrate it for a non-symmetrical (about the zero axis) waveform such as would be found in a TV set. In other words, an average-value meter, even if calibrated for peak voltage, would produce incorrect indications because average voltage depends on both peak voltage and width of the pulse.

Some older or low cost VTVMs are touted as having a peak-to-peak (P-P) calibration. But if you read the fine print, you'll discover the P-P calibration holds true only for a sine wave. Since you can **calculate** the P-P value of the sine wave ($2.828 \times \text{rms}$) from the rms calibration on a meter scale, this feature is of little value.

For true P-P measurements of complex waveforms, the VTVM must include a special AC rectifier input circuit such as shown in Figure 1. Capacitor CB is a blocking capacitor that keeps DC out of the circuit and allows AC to be measured in the presence of DC. On the positive half-cycle, V1A conducts (charge path is through V1A, C1 and CB) charging C1 to a peak positive voltage. (C1 charge is negative at the junction of V1A and V1B.) On the negative half-cycle, V1B conducts (charge path is via C2 and V1B), and the applied negative peak voltage **and** the voltage on C1 combine to charge C2 to the P-P voltage. The voltage appearing

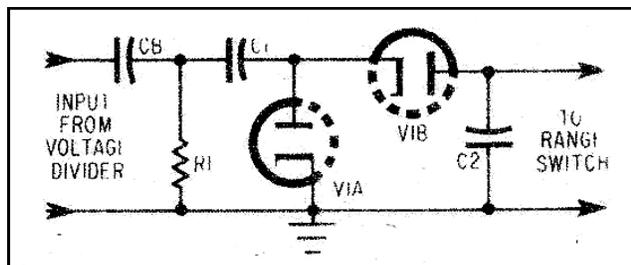


Figure 1: Rectifier circuit used in VTVMs that respond to and indicate the peak-to-peak voltage of a complex wave is really a full-wave doubler.

across C2 is passed on to the meter, which indicates true P-P voltage.

The Audio Problem

While VTVMs can be used for audio service, you often have to measure extremely low AC voltages as found in amplifiers and tuners. Since most non-laboratory type VTVMs cannot measure accurately below 0.1 volts, they are useless for measuring, say, a four millivolt (0.004 V) signal from a phono cartridge. What's needed for audio work is a specialized VTVM called an AC VTVM.

The experimenter-grade AC VTVM is simply a high-gain audio amplifier with a voltage-divider input and a meter connected to the output. Full-scale indication generally starts at about 0.001 with 300 or 500 V at the top end. In addition, AC VTVMs are calibrated directly in decibels so gain measurements can be made without the need for computations to convert voltage change to db gain or loss.

Keep in mind, however, that AC VTVMs respond accurately only to sine-wave signals. Not only do they indicate incorrectly when measuring a complex waveform but they give erroneous indications if the sine-wave signal contains a modest amount of distortion.

If you're interested in doing audio work in addition to radio work, you should back up your standard VTVM with an AC VTVM.

Using and Purchasing Your VTVM

There are numerous uses for the VTVM in troubleshooting work but these go beyond the scope of this article. However, besides the technical and user's manual for the one you decide to purchase, which is a must, there are many inexpensive "how to" books available that are aimed at repairing old radios, audio equipment and TV's. One of my favorites is "The V.T.V.M." by Rhys Samuel (1956) but others include:

- 101 Ways To Use Your VOM and VTVM by Robert Middleton (1959)
- Best Ways To Use Your VOM and VTVM by Allied Radio Technical Staff (1965)
- Know Your VOM-VTVM by Joseph A. Risse (1963)
- Troubleshooting With the VOM and VTVM by Robert G. Middleton (1962)

If you don't own a vintage VTVM, are considering upgrading or want a spare or two, as a general rule, the standard AC/

DC ohmmeter VTVM should be your first choice because it can be used for most of the experimental and troubleshooting service you're likely to get involved with. However, it is practically useless for **extensive** tests on audio equipment because it does not measure down into the millivolt-AC region. Probably, the greatest problem you'll have with a standard VTVM is deciding on whether to get one with or without true P-P measurement capability.

If you want to work on equipment that handles complex signals in addition to just old radios, it is best to bypass models without **true** P-P calibration. You should also consider models with a large meter scale, better accuracy, and long-term stability.

Most VTVMs fit in the above categories, especially "kit" types such as Heathkit, Eico and Knight. I built my Heath IM-28 in 1969 and it's still going strong today. In addition, if you can manage to get a copy of the assembly manual, repair and maintenance is that much easier. The B&K 177 is very popular and RCA's "Volt-Ohmyst" (WV77, WV98 and WV99) is an excellent choice. What might be considered a "Cadillac" of VTVMs is the Hewlett-Packard 410B. Unfortunately, it is a little bulky with four built-in leads (common ground, ohms, DC and AC) and a tube in the AC probe. Therefore, make sure you purchase your VTVM with all the proper probes and ensure they use shielded coaxial cable.

Following purchase of your VTVM, check all capacitors and change out any that appear to be suspect. Clean the calibration pots and switch contacts for ease of calibration and use. Most people do not use their VTVM as an ohmmeter, so to avoid battery leakage, remove it. Finally, allow a long warm-up prior to calibrating or using your VTVM - tubes do drift and take a while to settle in.



The Heathkit IM-28. It has an easily read 6" meter face and a combination AC-OHMS-DC switching test probe and ground lead that connects to a single jack. DC accuracy is +/- 3% of full scale. Unfortunately, the accuracy of the AC function of the meter is very poor for complex waveforms.

**INFOAGE AUCTION
A HUGE
SUCCESS**

**By
Marv Beeferman**

The 5th InfoAge Radio/Electronics auction was held on Saturday, April 30th and was a huge success thanks to the hard work of member Ray Chase and NJARC volunteers. As advertised, the items that were sold were donations to InfoAge and the NJARC and surplus to the needs of the Radio Technology Museum.

On the Wednesday prior to the auction, all 340 auction lots were moved from several InfoAge locations to the auction area in building 9032A using a fleet of cars and trucks. As Ray Chase noted, "willing hands (and no injuries)" collected and moved all the lots in record time. "You (NJARC volunteers) totally blew my estimate of the magnitude of the task and did in a little over two hours what I thought might take four times as long...a great effort much appreciated."



Just some of the auction items that required relocation to building 9032A. Member Steve Rosenfeld directed traffic and sorted out material tagged by Ray Chase to go on the block.



Some of the NJARC crew who ferried items between buildings. The use of trucks and cars allowed the task to be completed in record time.



This load may have been a little too much for president Richard Lee.



Ray Chase and Harry Klancer unload what else?...a stack of Riders.

Cledis and John Estes, noted radio auctioneers from Ohio, volunteered their services and did a fantastic job, concluding the auction in a little over four hours and adding a bit of humor to what is usually a strictly "business" event. NJARC members Marsha Simkin, Edith Chase and Dave Snellman handled the check-in and check-out office and Steve Rosenfeld and Aaron Hunter provided clerking. All-in-all, their efforts made for a very smooth and efficient operation. Breakfast and lunch were handled by the Country Kitchen, one of the club's lunch "hangouts" on Wednesday workdays.

Bidding was brisk throughout the day with tubes going for their usual, exceptionally high prices. What probably helped their selling price was Ray Chase's thorough catalog descriptions and test data. Some of these included:

- Pair WECO 300B, test just at low edge of Gm, clear clean tubes, printed yellow base - \$1,000
- Pair WECO 300B, just below spec on Gm, clean clear glass - \$1300
- Mullard 12AX7/ECC83, 10 tubes, NOS in cartons - \$250
- Pair Cunningham globe CX-345, test good - \$150
- WECO 350A and 422A, test strong - \$350
- Pair RCA globe UX-250, test good - \$300

However, there were a few good buys in the tube department. Your editor paid \$30 for a NOS WD-11 and \$30 for three good 199's.

In other areas, a WECO A-596-D loud speaking telephone (tweeter) and 597A dynamic tweeter both brought in their expected high prices. Audio equipment and communications equipment sold very well but an RCA CT-100 console (with some parts missing) and a Heathkit un-built solid state 24" color TV kit brought in bids that were lower than expected. Your editor picked up a very nice piece of old test equipment - a L&N lab model deflection potentiometer for \$30 and a large box of *Radio & Television News* from the 50's for \$10.

A quick accounting of realized prices indicates that a nice amount was made for both InfoAge and the club. Besides those already mentioned, thanks go out to the following for their help in making the auction a success (hope I didn't leave anyone out): Matt Reynolds, Paul Hartman, John Ruccolo, Mel Nusbaum, Bill Zukowski, Vince Lobosco, Phil Vourtsis, Pete Grave, Darren Hoffman, Al Klase, Richard Lee, Paul Hartman, Jon Butz Fiscina, Harry Klancer, John Tyminski and Len Newman. Most of all, a big hand goes out to Ray Chase who spent hours upon hours sorting and tagging items, testing tubes, printing a catalog, advertising, and arranging for an auctioneer and food service.



Ray Chase welcomes bidders.



Auctioneer Cledis Estes.



Dealing with a lighting problem prior to the auction. How many NJARC members does it take to screw in a lightbulb?



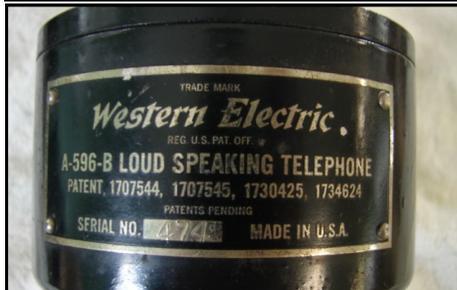
Marsha Simkin, Edith Chase and Dave Snellman handled the check-in, check-off office.



Aaron Hunter and Steve Rosenfeld provided clerking.



This RCA CT-100 console TV (first commercial color TV) with missing parts sold for \$200.



This WE "loud speaking telephone" with open voice and field coils sold for \$1700.



This large, homemade battery radio with AK variometers was a great buy at \$75

This corner speaker enclosure with a WE 597A dynamic tweeter sold for \$3,000.



This Stromberg Carlson 7-tube tombstone was hammered down at \$105.



A little dusty, but this L&N deflection potentiometer was a good buy at \$30.



A Dynaco PAT-4 stereo preamp and Dyna FM-3 FM tuner sold for \$110 and \$70 respectively.

