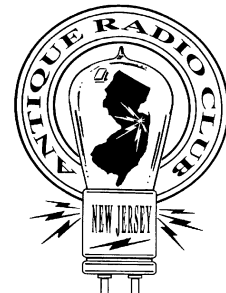


# The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

July 2007

Volume 13 Issue 7



## MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

### THE ON-LINE BROADCASTER

The New Jersey Broadcaster is now on line. To date, 80 of your fellow NJARC members have subscribed, saving the club some \$1,400 per year. Interested? Send your e-mail address to:  
**mbeeferman@cs.com**  
**Be sure to include your full name!**

June has been a very hectic month for the club and it would have been nice to have an additional four Broadcaster pages to cover it all. We're lucky we have two great resources, our club web page and the NJARC Reflector, to take up the slack. You should visit these often to keep up-to-date on club and InfoAge activities.

Part II of the Miller auction went quite smoothly as a result of the tireless effort by Ray Chase and crew in cataloging, moving and auctioning the items. Thanks to Dave Sica, we were also successful in presenting our first meeting/auction streamed out live on the web. We had two members who "virtually" attended the meeting; Phil Vourtsis from North Carolina and Jon Butz Fiscina from Texas. Although not quite ready for primetime, the club is toying with the idea of this becoming a semi-regular feature.

Some typical winning auction bids are captured on page 7 of the Broadcaster. On the same page, you'll find some photos from the InfoAge 1st annual Antique and Classic Car show held on June 16th. The show partnered with the Military Technology Museum of New Jersey and included music, food, door prizes, awards and trophies. On page 5, we also captured the activities at our members-only radio repair



## MEETING NOTICE

The next meeting of the NJARC will take place on Friday, July 13th, at 7:30 PM at the David Sarnoff Library in Princeton, NJ. An Executive Board meeting is scheduled for 6:00 PM. Contact President Phil Vourtsis at (732)-446-2427 or visit us at <http://www.njarc.org> for directions. This month we're asking members to amaze or amuse their fellow radio enthusiasts with something from their collection, a recent acquisition or a recent restoration. This meeting will allow our allegedly grown-up members to share their secret pleasures with the same enthusiastic spirit of "Show-and-Tell" that we all remember from grade school. A mini auction of the Vad Stein estate is also planned with a few offerings shown on page 6.

clinic that was held on June 2nd.

Kudos go out to Al Klase for organizing the club's first crystal set seminar at InfoAge. Everyone I talked to, including your editor, had a wonderful time and recognized the amount of work that Al dedicated to this effort. Hopefully, the photos

and talk with some very interesting visitors. We will provide you with some written training materials, a training video is in the works and Steve Goulart is always around to provide you with helpful information and support. Contact Harry at [klancer2@comcast.net](mailto:klancer2@comcast.net).



**The "NJARC" table at the 2007 InfoAge "Wall of Honor" reception. See page 4 for more details.**

on page 6 reflect some of the enthusiasm of the attendees. This is definitely an activity we want to repeat in the future, with some new blood taking the handoff from Al. We're looking forward to a write-up of Al's impressions and suggestions for fine tuning the seminar.

Harry Klancer reports that another month is with us again and people are needed to staff the museum. Your help is only requested from about noon to 4 PM on Sundays, and you often get to meet

Ray Chase reports great progress at InfoAge. A new roof and gutters have been installed on the "L" building; no more fear of leaks in the museum. The "A" section of the building has been totally cleaned out and now offers 4000 square feet of space for meetings, indoor flea markets, exhibitions, etc. The MARCH group just finished a two-day Retro Computer Fest with participants from throughout the US and even Germany. The keynote speaker delivered his address from Sri Lanka via an internet/video projector hookup. Steve Rosenfeld is working on organizing some of the

voluminous archives that are in our possession. On the Army side, we should have lease access to the rest of the property within weeks with final turnover by year's end.

Finally, on June 25th, the new season of the History Detectives started with an episode about the lost recordings of the Amos n' Andy show. NJARC VP Richard Lee provided a Philco 38 as a prop and John Dilks reports that it looked great and the club was listed in the credits.

**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.

**PRESIDENT:**

Phil Vourtsis  
(732)-446-2427

**VICE PRESIDENT:**

Richard Lee  
(845)-359-3809

**SECRETARY/EDITOR:**

Marv Beeferman  
(609)-693-9430

**TREASURER:**

Sal Brisindi  
(732)-308-1748

**SERGEANT-AT-ARMS (WEST):**

Dave Snellman  
(215)-345-4248

**SERGEANT-AT-ARMS (EAST):**

Rick Weingarten  
(732)-370-8206

**TRUSTEES:**

Ray Chase (908)-757-9741  
Gary D'Amico (732)-271-0421  
John Ruccolo (609)-426-4568

**TECHNICAL COORDINATOR:**

Al Klase  
(908)-782-4829

**TUBE PROGRAM:**

Gary D'Amico  
(732)-271-0421

**SCHEMATIC PROGRAM:**

Aaron Hunter  
(609)-267-3065

**CAPACITOR PROGRAM:**

John Ruccolo  
(609)-426-4568

**RESISTOR PROGRAM:**

Walt Heskes  
(732)-205-9143

**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

## PHILCO'S "CONE-CENTRIC" TUNING

By Marv Beeferman

*NOTE: Reference numbers in parenthesis to the drawings on page 3.*

I recently was asked by a friend at work to look at a Philco model 38-7 table radio that had a sticking tuning mechanism. He told me that the radio was working and, although it was in poor shape, he wasn't interested in having the cabinet restored. This appeared to be a quick fix and a good candidate for our June 2nd repair clinic at the Sarnoff Library.



The Philco 38-7

When the chassis was removed, I was confronted by a very interesting tuning mechanism. The radio immediately solicited quite a bit of interest from members Al Klase, Walt Heskes and Marty Friedman; at first sight, there was even some speculation that the tuner was motor-driven. We were able to eventually figure out some of the mechanism's features, but it took a trip to the Philco "Repair Bench" web site (<http://www.philcorepairbench.com>), as suggested by Al Klase, to eventually get all the details.

Besides the magnetic-based Philco Automatic Tuning Dial on some 1938 models which was introduced the previous year, a new "conical indexing" type circular dial mechanism was introduced on three 1938 models - the 38-4, 38-7 and 38-22. They were the only models to use what Philco named a Cone-Centric tuning dial. It featured a large, round dial with a tuning knob positioned on the edge of the dial.

The Cone-Centric tuning system employed up to 15 small metal stop cones

(12) that were locked in place in a circular slot at selected station positions. Two small holes near the apex of the stop cone allowed the insertion of a special tool through the hollow center of the tuning knob. This permitted each cone to be loosened, moved along the slot and tightened in the desired position in a single operation as the dial was adjusted to tune on a desired station. Station selection was accomplished with accuracy by rotating the tuning knob to one of these preset stations. This would center a conical depression on the tuning arm (16) (mechanically linked to the tuning condenser) over the preset cone. Pushing in on the tuning dial would lock the station in place. A manual vernier knob was also provided for minor fine-tuning adjustments once the tuning arm was locked on to one of the cones.

The tuning knob had three positions - Out, In, and Intermediate. The "Intermediate" position was used for ordinary standard and short-wave tuning by moving the knurled tuning knob around the outer circumference of the dial to select the frequency of the desired station. The "In" position, used for fine (vernier) tuning, was accomplished by pressing in and revolving the large, flat friction-drive knob underneath the tuning knob.

The "Out" position was used for "automatic" tuning or "silent" manual tuning. For automatic tuning, the tuning knob was pulled to the "Out" position and rotated until the dial pointer pointed to the desired station. The knob was then pushed in and the station was locked in place. Since the mechanism was based on a cone-shaped indexer fitting into a reversed-shaped notch, the dial pointer did not have to be rotated exactly to the pre-selected station. The indexer and notch, when firmly meshed with the dial pushed in, would ultimately determine the tuning condenser position. If the dial pointer was pointed too far off a pre-selected station so the stop cone could not mesh with the indexing plunger, the set would remain silent via a muting switch when the tuning knob was pushed in.

The muting (shorting) switch was also activated when tuning to suppress static and booming audio when passing through stations. This switch consisted of a spring contact (21) that connected to

a continuous, circular flat copper strip on the back of the dial. The contact was moved by a pawl (11) operated by the indexing plunger (16), which also operated the shorting switch (29). The shorting switch was electrically linked to the secondary of the speaker output transformer.

Silent tuning could also be invoked in the non-Cone-Centric tuning mode - the tuning knob could be pulled to the "Out" position, rotated to the desired station on the dial and then pushed in to the "Intermediate" position. If the dial pointer was pointed too far off a pre-selected station, the set would remain silent when the tuning knob was pushed in.

Philco models with Cone-Centric tuning were also provided with special "local" dial cards that were obtained from the local Philco dealership when the set was originally purchased. A dealer technician brought the set to the owner's home and offered the owner a choice of one or more dial cards with station presets printed on them. These were regional dial sets distributed to Philco dealers nationwide. The technician then inserted the dial, removed the factory generic paper

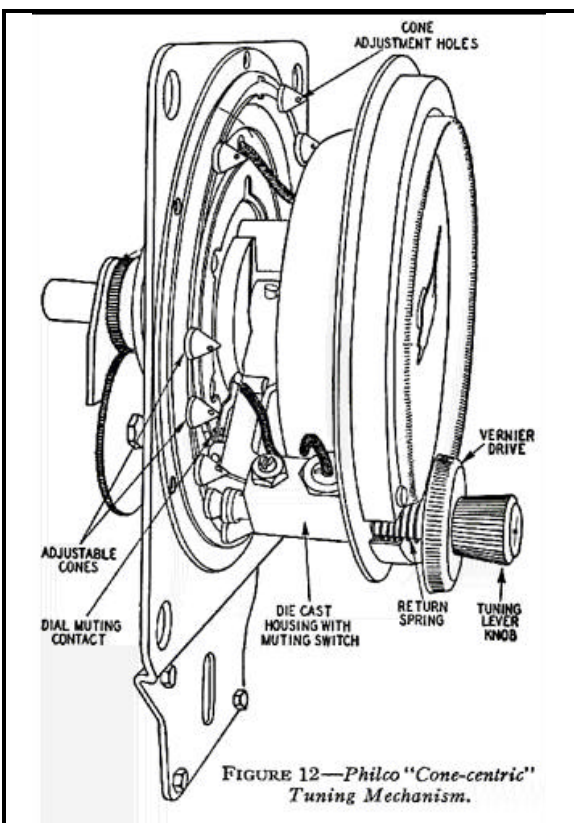
dial and set the cones to the pre-printed station preset positions. Replacing a card was a somewhat complicated operation and probably added to the cost of the radio.

The receivers, as originally shipped, also had their cones closely spaced together at the right side of the dial. It was up to the dealer technician to set them for local stations. This could also be a time-consuming operation. First, a signal generator was set to the exact IF frequency of the radio. Then, the station nearest 1500 on the dial was aligned. A special wrench that engages two holes in the cone was used to loosen the cone, move it along its track to the desired station and then lock the cone in place. The exact cone position was set by tuning the desired station to resonance at the cone position. The remaining stop cones were set similarly. If a stop cone was not carefully tightened, the station could be detuned in the process. In this case, the cone had to be loosened again and repositioned for zero-beat.

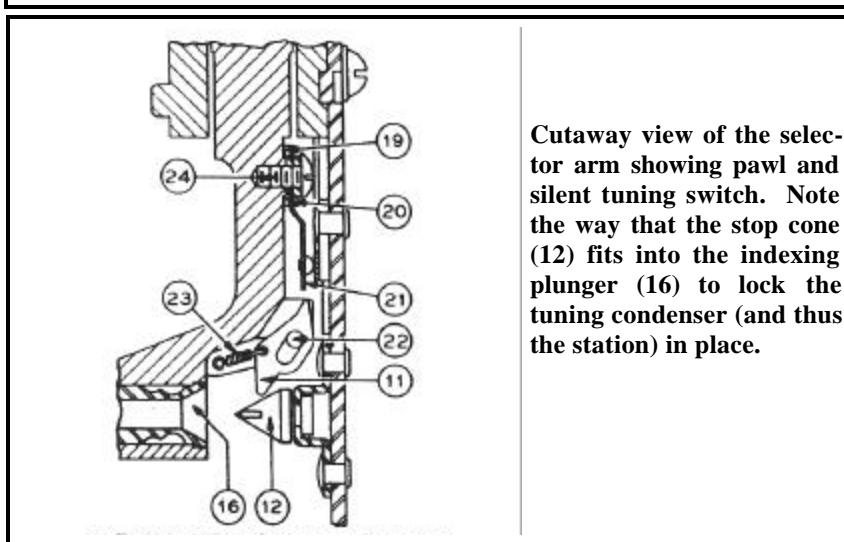
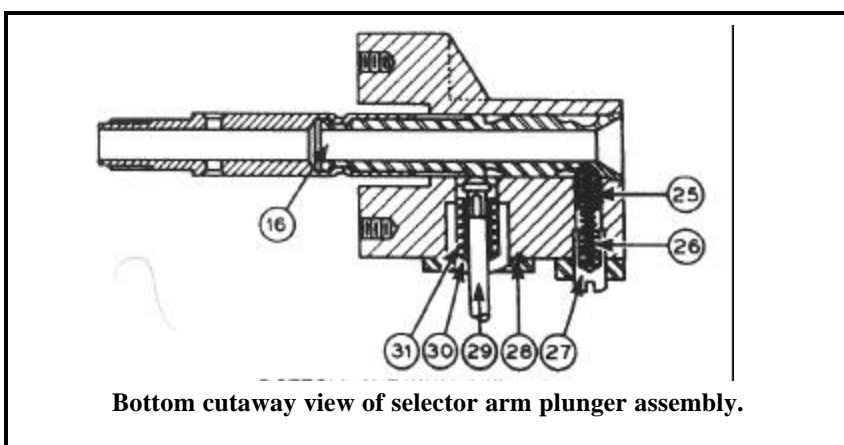
It was easy to see why Cone-Centric tuning did not last long. Although credit

must be given to its simple ingenuity, the time required and added cost to set it up for a specific location was probably too much for the consumer and technician to invest. In addition, as component values aged, stop positions probably drifted off their desired frequencies and re-adjustment would be required. Finally, by 1939, Philco decided to discard all previous automatic tuning systems in favor of pushbuttons for favorite standard broadcast stations. All in all, with manual and pushbutton tuning being simple, reliable and hassle-free, Cone-Centric tuning was a short-lived oddity.

But what about my friend's 38-7? Well, it would be nice to bring this unique tuning mechanism back to life. I did notice that the wire to the silent tuning switch had been cut (probably to eliminate a very tricky mechanism to maintain) and a bit of under-chassis work had been undertaken. As far as setting the stop cones, a facsimile of Philco's cone setting tool that engage the two holes in the cone is available. If I decide to undertake this project, I'll keep you posted in a future *Broadcaster*.



The complete tuning mechanism with the stop cone fitted to the indexing plunger. The wire from the muting switch is item 29 on the plunger assembly.





## INFOAGE "WALL OF HONOR" RECEPTION

By Marv Beeferman

On Saturday, June 2nd, InfoAge held its second annual Wall of Honor reception at the Marconi hotel. The honorees were radar pioneer Dr. Harold Zahl, electronics warfare pioneer Max Adler, radar systems engineer Harold Tate and mathematician Ms. Mary Tate. The reception was a lavish event with a full table of NJARC members in attendance and live music provided by our own Bob Pilcher and the Bob Pilcher Quartet. The stories that these pioneers and their representatives had to tell were alone worth the donation, although fabulous food, an open bar and good music didn't hurt. In the end, a total of \$14,000 was raised to help secure InfoAge's future.

**Max Adler** passed away in 2004 and his road to Ft. Monmouth was difficult. He escaped from the Nazi horrors of World War II through Holland and was reunited with his family in New York. He began his career at Ft. Monmouth in the Radio Branch of the Signal Corps Labs in various aspects of electronic warfare (EW) and countermeasures. Mr. Adler was later to become a leader in establishing the importance of EW protection of Army aircraft. He laid the foundation for many of the current programs being executed today, with many of his original systems still in the field protecting our aircraft.



Mrs. Adler and son accepting.

Several Middle East conflicts changed the role of EW, with pilots being the biggest advocates for this important equipment. Due to Mr. Adler's technical and

management skills, major equipment was delivered in record time and he received the Army Meritorious Civilian Service Medal for his work. In 1978, he was promoted to the Deputy Director of the Electronics Warfare Lab and then Director in 1979.

Mr. Adler retired in 1984 and perhaps the greatest testament to his success was the young pilot who commented that "two IR missiles missed my aircraft because of the EW protection equipment."

**Harold and Mary Tate** were childhood sweethearts who grew up in Goldsboro, NC and together contributed almost 80 years of their lives to the service of the United States Army at Fort Monmouth's Evans area.

After graduating in 1942 with a BS in Electrical Engineering, Mr. Tate was employed by the Army's Signal Corps Engineering Labs as a junior Engineer at Fort Monmouth. In the same year, he received a direct commission as a 2LT in the Electronics Training Group and in 1943 he became an officer in the Signal Corps. After further training at Harvard and MIT, he went on to serve as a radar officer at Camp Davis, NC.



After the war, Mr. Tate returned to the Evans Area and, among many other successes, was instrumental in the development of many critical Army radar systems. Most notable was the AN/TPQ-36 and 37 and the AN/MPQ-4 predecessor. These systems played a major role in protecting US forces in Vietnam and their descendants have done the same in Iraq. During his years at Evans, Mr. Tate worked with such radar notables as Dr. Harold Zahl, Dr. Fred Daniels and Dr. Donald Swingle. Upon retirement, he was the Director of the Radar Division.

Mary Tate graduated from college in 1945 as a mathematician and joined her husband at Fort Monmouth. In 1948, she was hired by the Army and, as her career progressed, was assigned to Top Secret

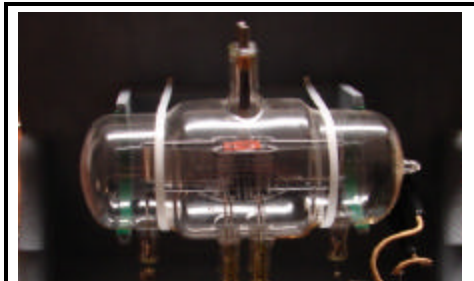
work in the Applied Physics Division. She was the only woman in her group and eventually became a Team Chief. Her work was vital to the Army's efforts during the Cold War; she and her team had the responsibility to measure and interpret seismic events taking place in Russia as part of underground nuclear testing activity.

**Dr. Harold Zahl** was a creative, enthusiastic scientist and prolific author who vividly wrote about his experiences during his 35-year career - most of it as Director of Research at the Fort Monmouth Signal Corps Research and Development Laboratories.

Dr. Zahl had an early interest in electricity and wireless. At 12, he received a check for \$3 for a Radio News Magazine article and his amateur radio spark transmitter went on the air under the call letters 6BHI. In 1931, after receiving his Ph.D. from Iowa University, he started work at Fort Monmouth developing a submarine warning system. But with the threat of war in Europe, the development of an enemy aircraft early warning system became vital. The secret, high priority project, called RPF (now called RADAR) got underway.

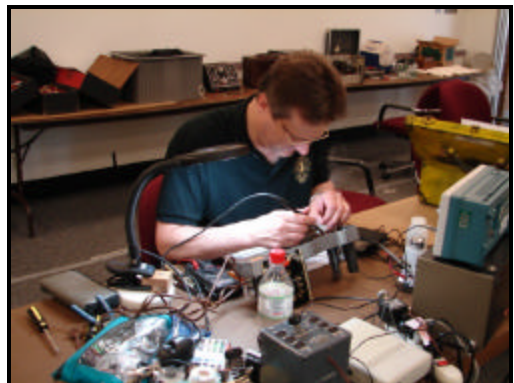
One of the vital parts of the system was a high power electron tube that was designed and built by Dr. Zahl. In November, 1939, the new radar easily detected aircraft out to 138 miles and became the first radar in America.

Dr. Zahl was the Director of Research from 1948 to 1966 at Fort Monmouth's Camp Evans. He wrote many scientific papers, articles and two books on the history he was part of. InfoAge has a number of Dr. Zahl's personal files in the InfoAge archives and his writings have provided a more personal point of view into the history of Camp Evans. InfoAge Director Fred Carl accepted for Dr. Zahl.



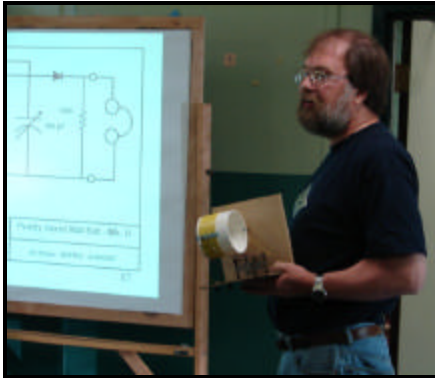
A VT-158 WW II radar transmitting ("Zahl") tube used in the Marine Corps AN/TPS-3 radar.

MEMBERS-ONLY REPAIR CLINIC





# CRYSTAL SET SEMINAR





## Vad Stein Mini-Auction Preview



## InfoAge Antique/Classic Car Show



Your editor had a great time; unfortunately, the camera distorted my legs just a little.



## Miller Auction (Part II): Selected Results



- |   |  |
|---|--|
| 1. McMurdo Silver 15-17 chassis with speaker: \$450 | 10. Pathe crank victrola: \$45                                 |
| 2. Thermodyne TF-6 battery set: \$120               | 11. Vintage sheet music: \$45                                  |
| 3. GE/RCA AA1520 RF amp: \$70                       | 12. Willard wet cell 24 volt "B" battery: \$70                 |
| 4. Hallicrafters SX-28A receiver: \$50              | 13. Chelsea Radio Co. 1-tube set: \$30                         |
| 5. RCA Radiola "drop-in" panel set: \$70            | 14. Magnovox R3 horn driver (base only): \$30                  |
| 6. O'Neil ornate cone speaker: \$70                 | 15. Weston 689 ohmmeter with original Ray-O-Vac "D" cell: \$30 |
| 7. Kellogg RFL AC set: \$70                         | 16. Tubes, box lots (see June Broadcaster):                    |
| 8. RCA Radiola II with open filament WD-11: \$45    | Lot 18: \$50 Lot 57: \$30                                      |
| 9. RCA "red" book service manuals: \$5-\$20         | Lot 19: \$30 Lot 57A: \$40                                     |
|   | Lot 23: \$65 Lot 59: \$100                                     |



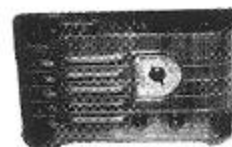
# New Jersey Antique Radio Club's

===== Summer Tailgate Swapmeet =====



**"On the shady grounds of the InfoAge  
campus at the NJARC museum"**

**2201 Marconi Road, Wall, NJ 07719**



## Saturday, July 28, 2007

**Walk-around auction  
starts at 11:30 am**

**Bring in your  
attic treasures  
for free appraisal**

**Open to the Public**

**(8:00 am to 1:00 pm)**

**Vendor setup at 7:00 am**

**Free admission**

**Refreshments available**



**Expert Antique Radio  
repair available**

**Plenty of tailgate space**

**Bring you own tables**

**\$20.00 for members**

**\$25.00 for non-members**

### Directions

**Visit our website: [WWW.NJARC.ORG](http://WWW.NJARC.ORG)**

**Or MapQuest**

**2201 Marconi Road, Wall, NJ 07719**

### Vendors:

**Make your reservations now!**

**Vice President**

**Richard Lee**

**(845) 359-3809**

[radiatorich@prodigy.net](mailto:radiatorich@prodigy.net)

**President**

**Phil Vourtsis**

**(732) 446-2427**

[pvoirtsis@optonline.net](mailto:pvoirtsis@optonline.net)

**Trustee**

**Ray Chase**

**(908) 757-9741**

[enrpnr@erols.com](mailto:enrpnr@erols.com)