



The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

September 2014

Volume 20 Issue 9



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. Be sure to include your full name.

I have to apologize for the somewhat degraded quality of the printed version of the August and the September *Broadcaster*. I have recently moved its preparation to the 2010 version of Microsoft Publisher. When I brought the copy to Staples for printing, some strange quirk in their program version did not duplicate what I saw on my screen and the line spacing resulted in the loss of a few lines of text. I had to have them print out the Adobe pdf version which is not as clear and crisp as the original Publisher version.

A few people have told me they have encountered the same problem, but to this date I still have not come up with a fix other than considering returning to the 2007 version of Publisher. If any of you computer wizards out there have any suggestions, I would greatly appreciate them.

Unfortunately, I was asked to start this column with the following note from our president, Richard Lee:

Dear Members (especially those members who attended our August meeting at Bowen Hall): I was very disappointed to find how some members have gone back to the bad habit of leaving the meeting hall littered with refuse. I don't mind bringing the refreshments to the meeting and setting up...I don't mind dragging in radios, TV parts and books for auctions...BUT I do mind dragging out auction and "free table" items left behind after members



MEETING NOTICE

The next NJARC meeting will take place on Friday, September 12th at 7:30 PM at InfoAge. Directions may be found at the club's website (<http://njarc.org>). This month, the club will be treated to a presentation from member John Dilks, K2TQN, which he has titled "Old Transmissions and Voices from the Past." This talk was the highlight of the ARRL National Centennial Convention in Hartford and the AWA Convention in Rochester. (More on John's talk below.) We'll also be auctioning off some more of Dave Sica's "book haul" (see page 4 of this month's *Broadcaster*.)

have "cherry picked" their auction wins! We are not meeting at the Englishtown Flea Market. The NJARC is so fortunate to have Professor Michael Littman as a member, enabling us to meet at prestigious Princeton University. We need to always make ourselves welcome by respecting the rules of the facility by removing all and anything NJARC related following our meetings.

Just as an aside, we don't appear to be the only club having the problem that Richard has described. In the Fall 2014 issue of *The Michigan Antique Radio Chronicle*, MARC president John Reinicke noted the following:

"At the donation auction, there were several abandoned items at the end that included everything from ratty, disintegrating wooden cabinets to cardboard boxes. There was even a working old computer monitor. There were items where the tubes had been harvested and the hulk left."

"My rant comes from the fact we have to pick up and dispose of these items and after a nice meal at the close of the event the last thing we want to do is pick up after someone. This junk can be hard to get rid of and is hazardous waste in a lot of locations."

"So the bottom line - Take responsibility for your stuff and take it with you."

Thanks to member Dave Sica for his screening of the "world premier" of the video footage he took of Princess Elettra Marconi's visit to InfoAge and the NJARC Radio Technology Museum and for taking us on a virtual tour of Bob Paquette's Microphone Museum in Mil-

waukee. Bob's museum contains over 1,000 microphones plus desk and floor stands, microphone enclosures, transformers, preamplifiers and test equipment. Included are three displays to show the service and re-building process of the early carbon and condenser microphones along with the special apparatus used. Below is a sampling of a few of Dave's photos; more can be found by searching the "Bob Paquette Microphone Museum" on the web.



As a "televisionphile" and collector, this vintage camera was right up Dave's alley. Displays such as this and early radio and wireless make the museum that much more interesting.

THE JERSEY BROADCASTER is the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are \$25 per year and meetings are held the second Friday of each month at InfoAge or Princeton University. The Editor or NJARC is not liable for any other use of the contents of this publication.

PRESIDENT:
Richard Lee
(914)-589-3751

VICE PRESIDENT:
Sal Brisindi
(732)-308-1748

SECRETARY/NEWSLETTER EDITOR:
Marv Beeferman
(609)-693-9430

TREASURER:
Harry Klancer
(732)-238-1083

SERGEANT-AT-ARMS (WEST):
Darren Hoffman
(732)-928-0594

SERGEANT-AT-ARMS (EAST):
Rotating

TRUSTEES:
Ray Chase (908)-757-9741
Phil Vourtsis (732)-446-2427
Walt Heskes (732)-205-9143

TECHNICAL COORDINATOR:
Al Klase
(908)-892-5465

TUBE PROGRAM CHAIRMAN:
Al Klase
tubes@njarc.org

SCHEMATIC PROGRAM:
Aaron Hunter
(609)-267-3065

CAPACITOR PROGRAM:
Matt Reynolds
(567)-204-3850

RESISTOR PROGRAM:
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



These "machine gun" mikes are similar to the one in the RTM.

Don't miss the presentation at our September meeting, Old Transmissions and Voices from the Past, by member John Dilks. As John describes it:

"You will hear early Ship-to-Shore and Ship-to-Ship 500kc CW transmissions, and what some of the early ham and radio pioneer voices sounded like, including the voices of Marconi, Jack Binns, Irving Vermilia, DeForest, Gernsback, Armstrong, Reinartz, Leon Deloy-French 8AB, Elmo Pickerill, Art Cillins, General Griswold and CD Tuska speaking about starting QST magazine."

"You will also hear an actual SOS received by David Ring, N1EA, who was the operator on the Williamsburgh who answered the SOS from the passenger ship Prinsendam in 1980."

Member Ray Chase reports that he has completed his inventory of the Hugo Picciani collection totaling 268 items. His analysis is that there are a lot of meters and old lab items that can be sorted out and sold off. Other items need more

investigation to determine what they are and what value can be placed on them. There is quite a bit of good telegraph and teletype items. Some items need repair and/or restoration, others need consolidation (cabinets without innards, units of complete radio sets that should be put together, etc.). There are a few duplicate items, but clearly the total value of the collection well exceeds our investment!

Ray also reports that he has found some time to investigate and inventory the truckload of items donated by former NJARC president Jim Whartenby in July. Of the 30 items, mostly military, there was "some great stuff for the EW guys." Included was a complete AN/URC-7 Radiotelephone, an R-54/APR-4 Countermeasures Receiver, an IP-41/ARR-27 Radar Scope Indicator and a Collins 374A-3 X-band Radar Receiver/Transmitter for commercial aircraft.

The antique radio community is mourning the passing of Brother Patrick Dowd, W2GK, who became a silent key on August 8th. Most of us are familiar with Brother Pat's tube collection on permanent display in the science and engineering building at the Manhattan College in Bronx, NY.

The collection is one of the most extensive, in both quantity and variety. Starting with a few dozen tubes displayed at the Paramus, NJ Catholic Boy's High School in 1976, science teacher Dowd obtained permission from Manhattan College to use the walls of the college's engineering library to mount display panels of tubes of historical and technical interest. The entire collection, that has grown to over 4,000 tubes, is now on permanent display in 78 wall panels.

The chronological range of the collection extends from an experimental tube made by Lee DeForest shortly before he patented his audion in 1907 to the last miniature "nuvistor" tube made at RCA's Harrison plant before it closed in 1976, as well as more recent examples.

Upcoming Events

Sept. 13 - Repair Clinic
Sept. 19-20 - Kutztown radio swapmeet
Oct. 10 - Monthly meeting at Princeton's Bowen Hall; Marv Beeferman talks about "Capacitors and More"
Nov. 14 - Monthly meeting at InfoAge; Al Klase talks about the history of short wave
Nov. 22 - Fall swapmeet in Parsippany
Dec. 13 - Holiday Party at the Freehold Elks

ANOTHER RADAR SAGA

By
Ray Chase

This and the following article will also appear in the InfoAge "Marconigraph." ...Ed

To preserve our heritage as the home of "Army Radar", we are always on the lookout for historic artifacts that will enhance our museum displays. And so it began on March 10th this year when I spied a message on the Milsurplus internet reflector, a site populated by military electronics aficionados. An amateur radio operator in North Carolina, Todd, KA1KAQ, was hoping to clear some space in his garage of accumulated WWII equipment that he no longer had a need for. Included was a BC-406A unit.

Todd had researched this piece and found that it is one of the two receivers for the SCR-268, the U.S. Army's first radar. We already have one BC-406A in our radar room, and adding a second would move us on towards the goal of acquiring as many bits and pieces of a complete SCR-268 radar system. I immediately contacted Todd and told him how we would be delighted to acquire the unit. However, its location was 450 miles away and, although the unit was only a little bit over a cubic foot, it weighs in at just about 100 pounds...so shipping would be a problem.

Todd thought it would be great for his BC-406A to go to a museum and agreed to donate it. He then verified our credentials to insure that I was not an opportunist individual trying to get a freebie. (As an aside, Todd's wife, who is a school principal and has a masters degree in U.S. History, was pleased that Todd saved it for over 20 years so that it would find a good home in a historical museum.)

With the initial negotiations completed, we still had to solve the transportation problem. However, I knew that there was an upcoming annual radio convention in Charlotte, NC on March 20 to 22 and that our friend and NJARC member John Dilks of Egg Harbor, NJ would be attending. So a deal was struck that Todd would meet with John at a convenient location in NC and transfer the unit. John could not lift the unit himself but he had space in his vehicle so Todd was kind enough to load it in. The plan was to bring it to InfoAge as soon as John got back from NC where

we would offload it. Well things did not work out as planned.

As soon as John got back to his home in Egg Harbor, his wagon was needed for urgent family service so his son unloaded the receiver at John's place. April came and then May and there just did not seem to be an opportunity with the right combination of people to get the receiver back into John's vehicle and complete the final leg of the 450 mile trek. But on the 16th of July, seemingly all the planets were in correct alignment so John got the receiver reloaded and brought it to InfoAge.

Finally, five months from the initial donation, the BC-604A is in our hands and it gives InfoAge a full complement of receivers for our SCR-268 display. This BC-406A is in remarkably good condition for its age and has not been modified along the way as happens to many items of surplus WWII electronics items. (In 1946, Harrison Radio offered a BC-406A for 29.75 with instructions for its conversion to a "hot" 2, 6 or 10 meter superhet receiver...Ed) Many thanks to Todd in NC, John Dilks in NJ and all those who helped along the way to recover this important artifact and bring it home to InfoAge at Camp Evans.



John Dilks and Al Klase admire the innards of the BC-406A.



Not pretty on the outside but a significant find.

BUILDING 9115 MOVED TO THE INFOAGE CAMPUS

By
Ray Chase

Through the cooperation of Brookdale Community College, demolition contractor Frank Lurch and InfoAge, building 9115 (formerly was located at the far south side of the Camp Evans site) was relocated on Tuesday July, 15th to a vacant former Quonset hut pad across the road from the end of building 9036A. This building was located on the Brookdale College portion of Camp Evans and was not part of the original InfoAge allotment.

What is the significance of this event? Bldg. 9115 was designated "House HO-5" by the Army as the shelter and antenna base for the SCR-271 long range air search radar. The SCR-271 is one of the fixed location versions of the mobile SCR-270, the second radar developed by the Army. It was the type of radar sited at Pearl Harbor on December 7th 1941 that detected the approaching Japanese invading flight at least 20 minutes before the attack started. Unfortunately the warning went unheeded due to lack of a functioning command and control system.

Bldg. 9115 at Camp Evans dates back to the WWII period and probably was used for continued development of the SCR-270 family of radars. I have a 1943 Army Tech Manual that describes and pictures a series of antenna control modifications to this radar and it is very conceivable that the pictures in this TM were taken inside this very building. This 20 x 20 foot shelter is deceiving in its appearance; it serves as the base for a 40 foot antenna tower yet the interior has a clear 400 square foot area to accommodate the units of the radar equipment. The roof peak area has massive support beams that serve to transition from the beams around the internal periphery of the structure to the three foot square mast that was protruding from its roof. The demolition company did not appreciate the weight of this building and had to bring in a special crane that could handle its heft. Fortunately, the move was handled well and 9115 is now emplaced at its new location as part of the InfoAge Campus.

Some months ago, Frank Lurch helped us remove some of the antenna control equipment that was still in the hut and that is now stored away pending its reinstallation.

tion. Unfortunately, that was all the equipment that remained in the building; the basic radar units were removed many years ago.

As can be seen in the pictures, the Army cut off and removed the antenna tower at its exit point at the top of the roof. Last year, several work days were spent removing other debris from the hut and earlier this year an energetic group of youth volunteers helped us greatly by clearing the old Quonset hut pad of overgrown vegetation so that its new foundation was ready. We have good reason to believe that this building is the last surviving SCR-271 shelter in existence.

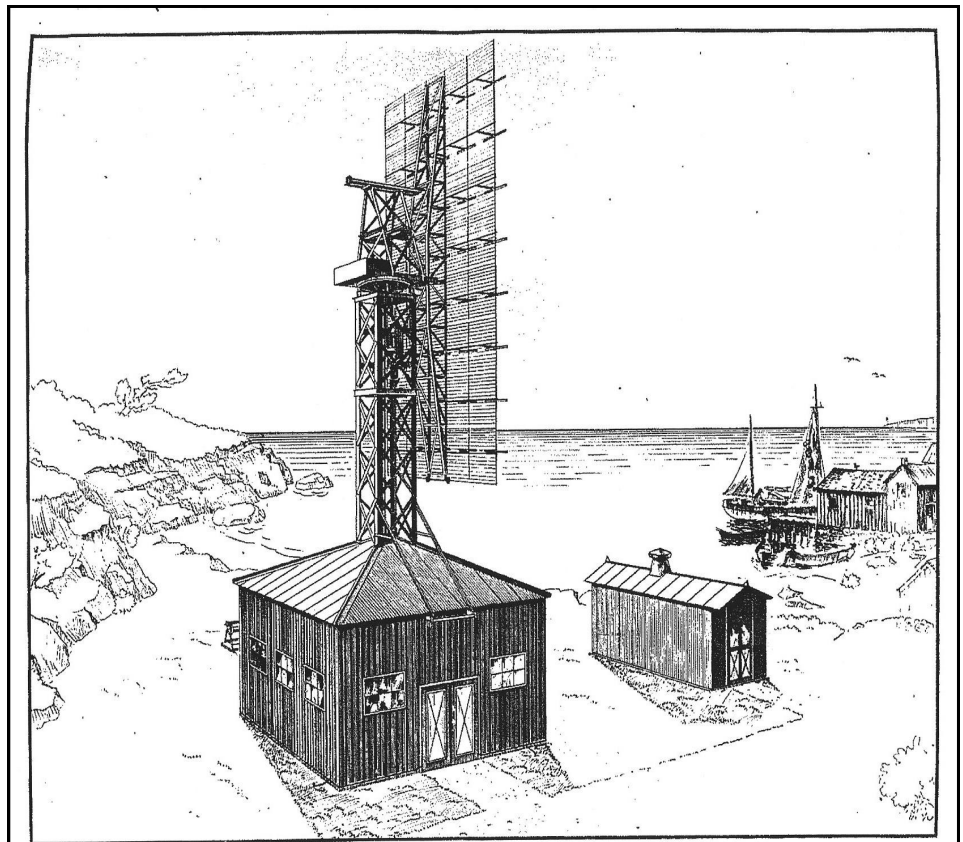
Now our task is to preserve it for the future. We do have detail interior plans of how the rest of the SCR-271 radar modules were configured and it will not be too difficult to create mock-ups of them. This is clearly an important asset to our campus and its historic radar displays.



The initial lift had to be abandoned; the demolition company did not appreciate the weight of the building and a special crane had to be brought in.



Some of the antenna control equipment that was still in the hut is now stored away pending its reinstallation. Unfortunately, that was all the equipment that remained in the building; the basic radar units were removed many years ago.



OVERALL VIEW OF MODIFIED RADIO SET SCR-271



Building 915 at its new location.

TRUCK BED DIVING

By
Dave Sica

Last month's meeting "book auction" was quite a treat. Dave Sica was nice enough to provide the back story as both a "word to the wise" (most of you will understand what this means) and an example of the great effort made by some of our members to "distribute the wealth," help out the club treasury and preserve the future...Ed

Late one evening, I received a phone call from a fellow who had previously donated some items to the club. He had just heard that a relative, a ham and a "kindred spirit," had passed away and the family was taking his lifetime collection of books to the dump the next morning. As he said to me, "That isn't right!" I agreed and made arrangements to meet the owner's son the next morning and salvage what I could.

There were thousands of books already piled in the driveway when I got there. Books about metalworking. Books and magazines about vintage remote control aircraft. Books about firearms. Books about astronomy and lens making. Books about railroads and steam engines and model steam engines. Books about mathematics and science. And many books about radio. Our departed comrade apparently wore many, many hats besides those of a ham and radio collector.

I spent a few hours picking and sifting through the piles, selecting anything that appeared radio-related. The son was anxious to get going as I hastily looked through each stack of books. I was unable to take it all, and anything that I did not select was immediately, and unceremoniously, tossed into the bed of his pickup truck. Because of time and space limitations, there were many interesting books

that I was unable to save, but I did manage to get most of all the radio-related material.

Coordinating with club president Richard Lee, I arranged to bring the material to the August meeting. Steve Rosenfeld, who serves as the librarian for the InfoAge technical library, offered to arrive a few hours early to put the books and magazines in some sense of order. Steve, assisted by Marv Beeferman, identified a dozen or more “significant” books that were accessioned into the library. The rest, numbering some 300, were organized into lots and auctioned off after the meeting. I am happy to say that they all found an appreciative new home while netting over \$300 for the club.

The house itself was packed with what seemed like several lifetime’s accumulation of artifacts of various technical interests. Most of the stuff was inaccessible when I was there, hidden in stacks behind other “treasures” and in rooms packed so full that entrance was impossible. I was told that there are even more books lurking in there and these will be the subject of another club auction after they can be removed from the house.

The son of the owner wants to sell off the radio artifacts and other collectible items his dad has accumulated. He has already assembled a small portion of the collection in some newly-freed space in the garage. He expects that the process to empty the house will take over a year.

We were not even able to enter the basement, often the location where the “good stuff” is located. It was packed solid, right up to the top of the stairs.

The house is in Morris Plains, NJ. Anyone interested in going there to see what’s available, please contact me and I’ll send you the phone number so you can make an appointment. There appears to be relatively few antique radio items but there is a large quantity of ham gear and electronic test equipment and an unfathomable amount of parts and items of interest to hams, radio collectors, machinists and automotive hobbyists.

One word of caution, however. The owner rejected a full cleanout and buyout by the club, so the items that will be on sale are those that he has slowly dug out and moved to the garage. Also, you won’t be welcomed as an “American Picker” with access to the piles of inaccessible items and probably will have to make multiple trips to get the things that might be of interest.

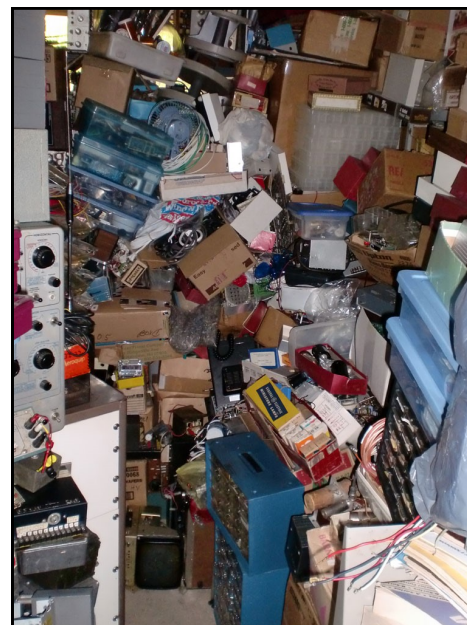
Thanks again Dave for being at the right place at the right time!



A truckload of good reading destined for dumpster fodder.



“I did manage to get most all of the radio-related material.”



Look familiar?

“Most of the stuff was inaccessible when I was there, hidden in stacks behind other ‘treasures’ and in rooms packed so full that entrance to the room was not possible.”

THE GE TUBESAVER

By
Marv Beeferman



Some time ago, I purchased the above piece from Bruce Mager of Waves. Although we both couldn’t figure out exactly what its use was, I thought it would be a nice advertising piece. Recently, while thumbing through some back issues of *Service* magazine, the March 1952 issue provided the answer.

GE called this device a “TubeSaver” and advertised it to do a little more than its name might suggest:

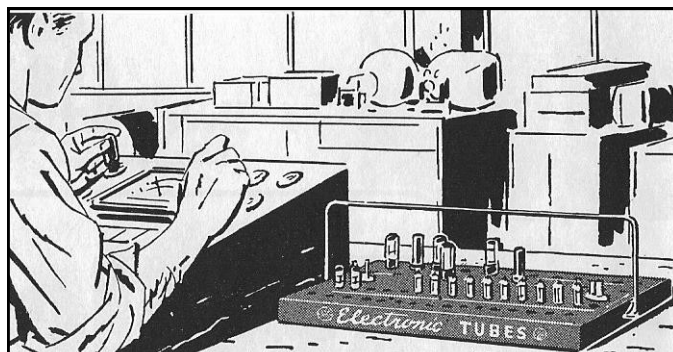
“NO MORE WORRY ABOUT PUTTING TUBES BACK IN THE WRONG SOCKETS!...The systematic

layout of the G-E Tubesaver keeps tubes in their exact order. Moreover, they stay that way because rubber inserts keep them from dropping out - *even if you tip the Tubesaver sharply!* With its convenient handle design, the Tubesaver can be laid flat on the bench, angled, or hung on the wall nearby.”

The Tubesaver was advertised to give one the ability to test tubes “fast and accurately.” The idea was to place tubes in the inner holes (surrounded by a yellow border) of the device. Then you would test them one-by-one, putting the good tubes

in the outer set of holes and returning rejects to the inner set. If you were interrupted in your testing, tubes were kept correctly arranged until you resumed your work. "In their proper order, you now show the full tube complement of the receiver - which tubes are usable, and which not!"

My Tubesaver is missing its rubber inserts (which probably deteriorated over the years) and its built-in pin straighteners. In any case, it still makes a nice advertising collectible. I only noticed the ad in the March, 1942 issue of *Service* so their couldn't have been too much demand.



W2MQ's RADIO PUZZLER

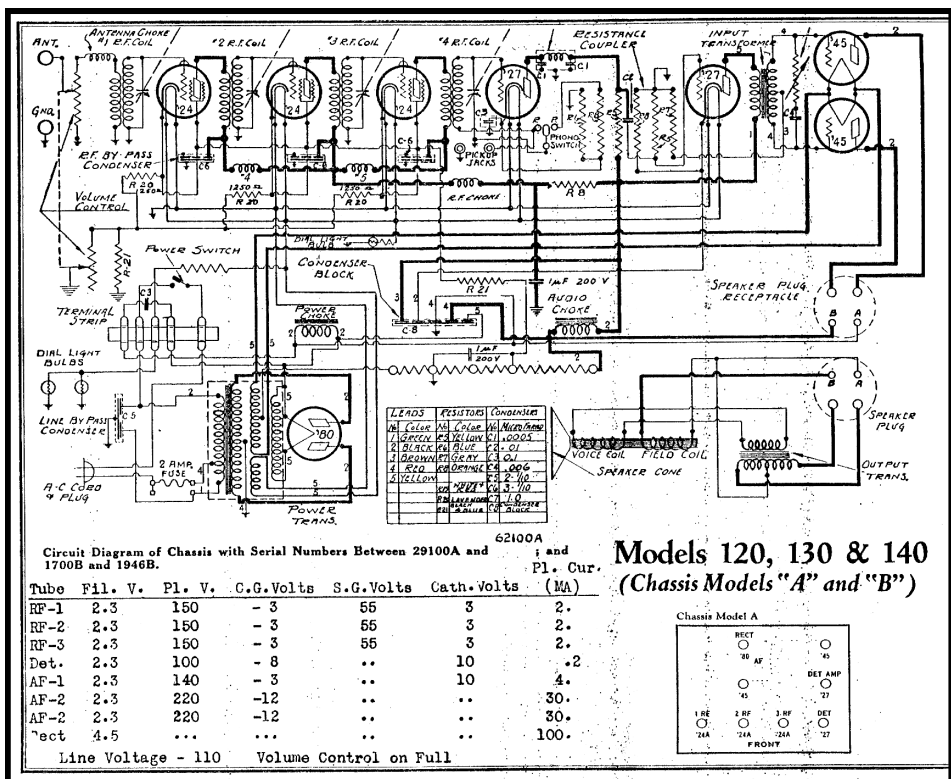
Last month, member Walt Heskes challenged us with a radio problem taken from an actual case history. I don't know if Walt received any solutions, but we're providing his answer this month. For new members or those of you who did not see the original problem in the August *Broadcaster*, we'll repeat it here:

Given: All capacitors are brand new. GM model 120 TRF receiver with the following tube complement: Three 24A RF amplifiers, one 27 detector, one 27 1st audio, two 45 power tubes in a push-pull configuration, and one 80 rectifier. All tubes are good. Plate voltage measures 300 VDC. The audio output is good. Symptom: No radio frequency signals detected.

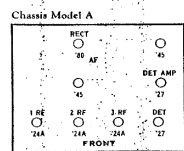
ANSWER: If you look at the "typical" schematic for a GM 120, you will notice that the power supply circuit contains a voltage divider resistor, which is a wirewound component. One of its functions is to provide a source of B+ voltage for the plates of the tubes. Another of its functions is to provide a shunt to safely discharge the electrolytic capacitors.

The 55 volt, factory specified screen voltage for the 24A RF amplifier tubes is taken off a section of the voltage divider. Upon checking for screen voltages, 0.0 volts was found. The lack of voltage was traced to an open portion of the voltage divider.

This is a common failure in wirewound resistors. A series of three, 18 Kohm resistors (54 Kohms) was connected from the first takeoff at 300 volts to the screen



Models 120, 130 & 140 (Chassis Models "A" and "B")



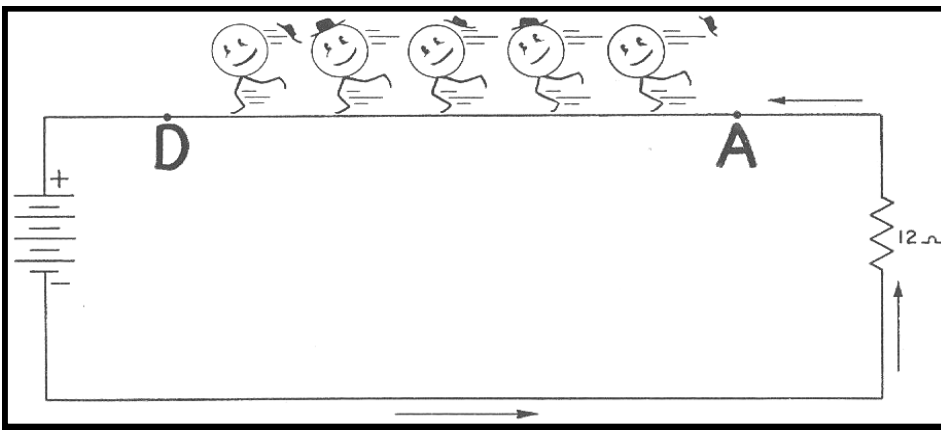
voltage takeoff at 55 volts. This activated the screen grid of each 24A and the radio came to life. However, there were some objectionable squeals and feedback oscillations. An additional 36 Kohm resistor was connected from the screen voltage takeoff to chassis ground which stabilized the receiver and damped the unwanted oscillations.

With both my phone and internet down, I wasn't able to contact Walt for a second puzzler, so I decided to present two which I recently came across in browsing through *Service* magazine for 1958. They were offered in "a series of questions for progressive technicians" as part of advertisements for the Cleveland

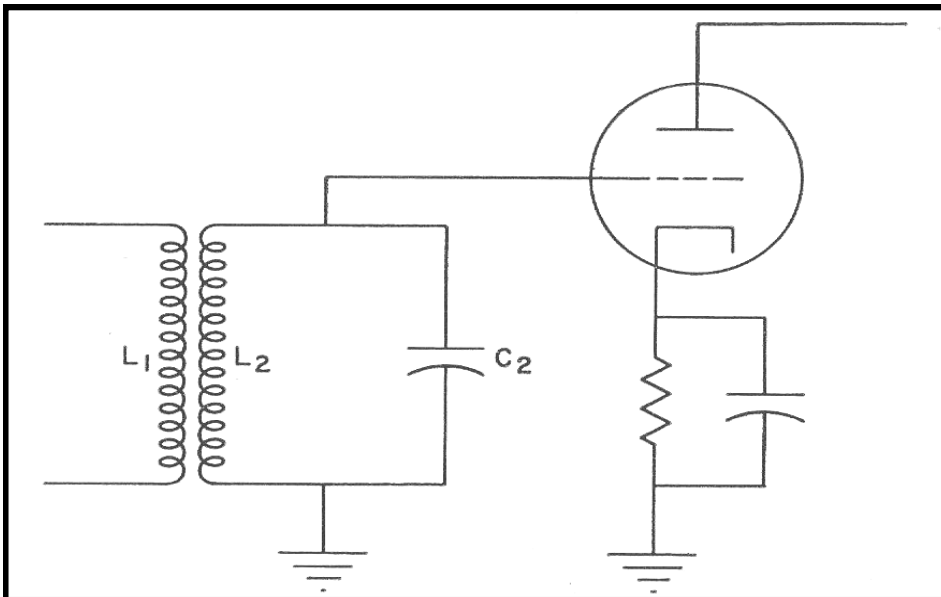
Institute of Radio Electronics. I hope you don't find them too easy.

The first asks the question "At what speed do the electrons travel from A to D in the circuit presented on page 7?"

1. Very slowly, not more than a few inches per minute.
2. At the speed of light (186,000 miles per second).
3. At the speed authorized by the FCC.
4. At a speed slightly slower than that of the speed of light.
5. At varying speeds between 10,000 and 80,000 miles per second.
6. The question made sense in 1958, but not in light of today's scientific advances.



Quiz 2: No vintage circuit was in more common use than the simple tuned grid, the components of which are designated by L_2 and C_2 . But is this a parallel or series circuit?



WWI and WWII WEEKENDS AT INFOAGE

By
Marv Beeferman

The weekend of August 9-10 was a special time at InfoAge when the centennial of the start of what was known as the “Great War” was commemorated. Included was a lecture on the “Rise of Military Communications” and the pivotal role of local installations when the United States entered the conflict. Other topics included the effects on the American Marconi Belmar, NJ station, the anguish of the “Lost Battalion” and the heroics of a very special carrier pigeon from Fort Monmouth, NJ.

Also on view were such dioramas as “Trench Warfare on the Western Front” and artifacts such as WWI “Aeroplane” radio equipment, a Belmar Station Navy receiver, rifles, helmets and other WWI memorabilia. NJARC members Al Klase and Ray Chase were instrumental in supplying artifacts and supporting the lectures.

Although I was unable to attend, InfoAge also celebrated its fifth annual World War II weekend during August 23 -24. (InfoAge has been designated as New Jersey’s Living World War Two Memorial.) This event featured military vehicles (including jeeps, trucks and weapons carriers), exhibits, memorabilia, dioramas and videos.

At 2 p.m. each day, Emmy-award winning video engineer Maurice Schecter presented a lecture and demonstration, including rare WW II video footage, tracing the development of television technology from the mid-1930s through the

end of WW II when TV-guided bombs, aircraft and missiles were used in combat. NJARC members Al Klase, Ray Chase and Jules Bellisio aided Maurice in the setup of his working displays. (Al Klase also provided military radios for the InfoAge booth at Monmouth airport while the WWII Warbirds were on display.)

In addition, Brookdale Community College Associate Professor of History Paul E. Zigo presented the story of communications between naval ships and the landing beaches during D-Day. These communications turned potential disaster into success for allied forces as they began the invasion of Europe. InfoAge also honored WW II veteran Lt. Russell L. Wadbrook, Sr. who participated in the D-Day invasion as part of Navy Amphibious Forces assigned to LCT (Landing Craft Tank) 003, in Assault Force “U”, Flotilla 4, Utah Beach.





A GREAT RADIO DX STORY

I've been waiting for some room to run the following story and, with not many submittals this month, I finally got the chance. I thought it would be fun for those who missed it. It was posted on the NJARC Reflector in January by Pete Malvais in response to a story from member Dr. Alex Magoun titled "Man Wins Cold War Radio Competition, 44 Years Later."

Reminds me of when, in the mid-60s, as a young SWLer, I was sending letters and QSL requests to Radio Moscow, Radio Budapest, Radio Havana, Radio Prague and others. I recovered several replies which were stamped "inspected by FBI." Then, an FBI agent visited the house one day to question my father (who had the same name as me) why he had so much interest in Communist countries.

I was summoned up to talk to the agent who was not very friendly looking, to explain what I was doing and ask me if I listened only to the "commies." I told him no but that they had much better signals than others and had the best QSL cards (some of which I still have).

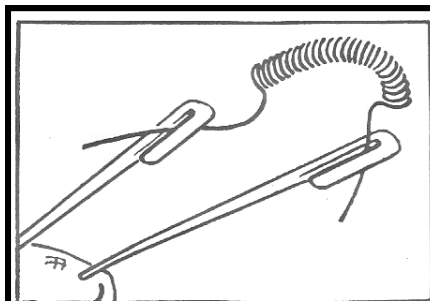
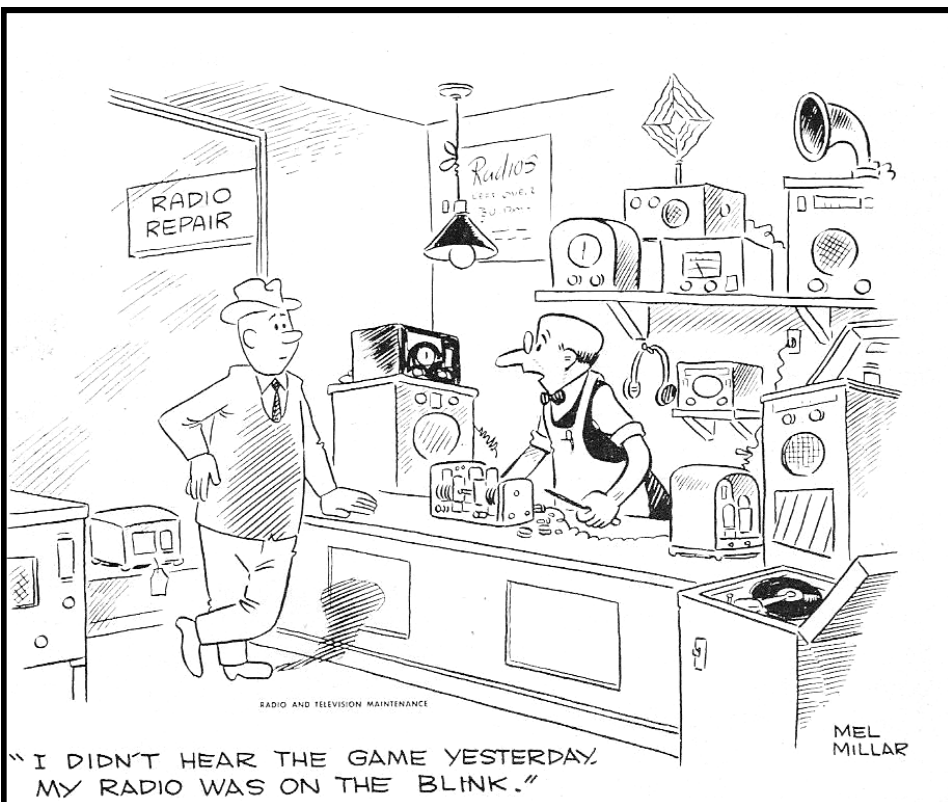
I'm sure I'm still in the database somewhere as a subversive, but I did have security clearances in later years so I guess I've been forgotten.

Besides the FBI, a year or so later, my poor dad heard another knock on the door at midnight on a Saturday. It was Dave Popkin, the local FCC inspector who traced my non-licensed CB operation to my house. He had a white Valiant sedan with an under dash HRO 500 and steerable DF loop on the roof.

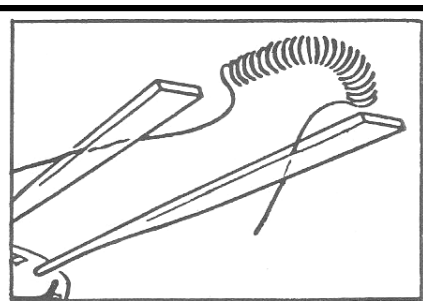
He began the conversation with "can you show me your radio shack." Once there, he asked to see my license. When

I admitted I didn't have one, he enlightened us that the penalty for violating the Communications Act of 1934 was a \$10,000 fine, 10 years in prison, or both. Dad was not pleased with this "radio thing." But Dave (who is now W2CC) gave me three months to pass my Novice ham license and, if I did, the bootlegging case would be dropped.

That was my start in ham radio...



OLD-TYPE JOINT. Some types of dial lamps actually cause "static". Old-type clamp joints in the bulb (above) often permit changes in resistance or tiny arcs that cause the lamp to radiate bothersome interference.



IMPROVED JOINT. To prevent dial lamps from being "noisy", General Electric developed a better joint—one with tungsten filament legs pressed firmly into the softer metal of the lead-in wire. It's another reason why G-E dial lamps insure customer satisfaction!

