



The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

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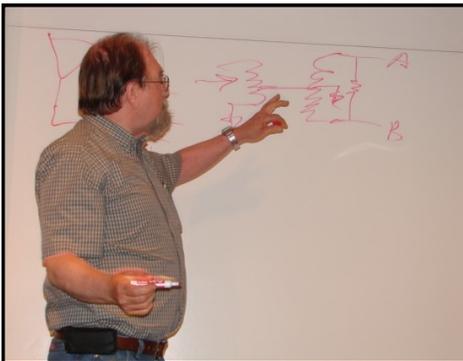
MEETING/ ACTIVITY NOTES

Reported by
Marv Beferman

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 mbeferman@verizon.net. Be sure to include your full name.

July was quite a month for the NJARC, filled with swapmeets, contests, presentations and quite a bit of museum work. With limited space, we've covered as much as possible in this month's *Broadcaster*.



Al Klase goes over antenna basics in describing an upgraded system for our Princeton meeting location. (See page 8 of this month's *Broadcaster*.)

Under the direction of Ray Chase and with the help of Steve Rosenfeld, Jules Bellisio, Phil Vourtsis and Harry Klancer, the remainder of the Hugo Picciani collection (see the July 2014 *Broadcaster*) was transferred from storage in Neptune to the secure portion of building 9036 H at InfoAge. This ends the storage module cost with no cost for storage at InfoAge. Ray notes that the key to deciding what to do next with the collection is to understand



MEETING NOTICE

The next NJARC meeting will take place on Friday, August 8th, at 7:30 PM at Princeton's Bowen Hall (70 Prospect Ave.) This month, Dave Sica will take us on a virtual tour of Bob Paquette's Microphone Museum in Milwaukee. Dave will also screen the "world premier" of the video footage he took of Princess Elettra Marconi's visit to InfoAge and the NJARC Radio Technology Museum. We'll also have an auction of assorted radio books, radios and a TV.

what we have and, to this end, he is conducting a detailed inventory. As soon as the inventory is completed, it will be presented to the NJARC board.

Ray also notes that although we have obtained a lot of "great stuff," most of it is very dirty after sitting on Hugo's shelves for dozens of years. Therefore, help in getting it organized and professionally cleaned is always appreciated.

Ray also noted that former NJARC president Jim Whartenby came up from Arkansas to drop off a pickup truck full of WWII electronics for InfoAge. Jim is a great long distance supporter of InfoAge. Another great supporter, John Dilks, delivered some significant radar units, a box of newsletters from other clubs and a recent purchase by your editor, a unique Appleby battery set. Look for future *Broadcaster* articles describing these items.

The weekend of August 9-10 will be a special time at InfoAge when the centennial of the start of what was known as "The Great War" will be commemorated. Included is a lecture on "The Rise of Military Communications" and the pivotal role of local installations when the United States entered the conflict. Other topics include 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.

You'll also be able to view 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. Admission is free with a \$5 per person donation suggested.

As you can see from the Upcoming Events section, the date and location of our December Holiday Party has been

finalized. Thanks to Sal Brisindi, we may be able to rent the Elks Club dining hall for close to half of the cost of the Marconi Hotel. If it pans out, the cost of attendance may be able to be reduced. Another advantage is that the caterer is located close by.

Get well soon goes out to member Edith Chase who has been under the weather. Edith has shared the chair with Marsha Simkin in helping with membership administration and auction registration and collection of payments. She can also be seen alongside husband Ray at most swapmeets and helping with the recording of auction prices. We are happy to hear from Ray that she is on the mend.

Although he has moved to Main, member Joe Devonshire remains in touch. Although there's no R. F. interference and the stars are bright, his "aluminum and steel" rental house has limited him to "computer DX." He was also surprised to find radio miniature creator Walt Buffington (a Kutztown regular) at a local flea market. Small world - it turns out that Walt lives just a short distance from Joe and they plan to get together as soon as Joe settles in his new home.

Upcoming Events

- Aug. 12-16 - AWA World Convention, Rochester, NY
- Sept. 12 - Monthly meeting at InfoAge
- Sept. 13 - Repair Clinic
- Sept. 19-20: Kutztown radio swapmeet
- Oct. 10 - Monthly meeting at Princeton's Bowen Hall; Marv Beferman talk on "Capacitors and More"
- Nov. 14 - Monthly meeting at InfoAge; Al Klase talks about the history of SW
- Nov. 22 - Fall Swapmeet in Parsippany
- Dec. 13 - Holiday Party at the Freehold Elks

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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ANOTHER HAMFEST GEM... BESIDES DAYTON

By
Robert Forte



While the crown jewel for amateur radio in the United States is the Dayton Hamfest held in mid-May, there is another gem for those radio enthusiasts “on the other side of the pond.” Held in Friedrichshafen Germany at the end of June, the “Hamvention” is the biggest hamfest in Europe and, having attended both the Dayton and this year’s Friedrichshafen event, I can say that they are comparable in size.

Friedrichshafen is located on the southern border of Germany on Lake Constance (or the Bodensee). The lake is quite large and is bordered by Germany, Switzerland and Austria; on a clear day, the Alps can be seen in the distance. With its beautiful surroundings and a large, waterfront part, the town is a resort area with boating, fishing, and sailing.

Friedrichshafen is also the home of the dirigibles Graf Spee and Hidenburg and a dirigible museum holds a full size mock-up of the Hidenburg. This museum is the source for the history and development of these two famous airships from their roots in hot air balloons. (We’re all familiar with the explosion of the hydrogen-filled Hidenburg in 1937 at Lakehurst, N.J. and the end of the airship era.)

Friedrichshafen was also involved in the testing of the V2 rocket motor (the rocket itself was manufactured in Peenemunde). It also hosted the ZF factory which made gear boxes for German tanks. As such, the town was summarily flattened during the war by allied bombers. While the history of dirigibles is emphasized, there is scarce mentioning of the V2 rocket connection. Today, the ZF factory still produces gearboxes for many automo-

bile companies like Volvo, Audi, and Mercedes, employing nearly 70,000 people.

The venue (“Messe” or “Trade fair”) for the 39th International Amateur Radio Exhibition was huge, new, spacious and easily accessible from town on free, dedicated buses. Picture twelve large halls, each hall big enough to hold two Good-year blimps side-by-side. Hall A1 was used for the vendors as well as a booth for other countries with an amateur radio society including the ARRL, Israel Radio Club, Croatia Radio Society and many others. The usual “biggies” - ICOM, YEASU, Cushcraft - as well as newer, smaller startups were located here. There were also classes in basic electronics for the youngsters, advanced classes for amateurs, lectures and custom vans for sale that were fitted specifically for amateur use. Halls A3 and A4 were set up for the sale of ham gear and flea market items. A4 contained more antiques while A3 was dedicated to more modern military and computer gear. Tony Perera, W1TP, with his cheerful wife Gretchen at his side, displayed his usual inventory of enigma machines, keys, and spy radios.

For me, hall A4 with its antique radios and parts was what I came for. I had already purchased six extra tubes for my DKE 38 GW and VE 301 GW Dyn German radios some time ago. I found these tubes so interesting to look at that I ultimately mounted them on an oak display board. Since I didn’t want to break up this display if I needed a replacement, I bought another six for backups. I also purchased some 10-volt pilot lamps, some special European fuses and more accurate plugs for my B2 spy set. The tubes were available from about four vendors. The remaining items came from only one vendor and were located after rummaging through a Tupperware box full of old stuff hidden under the table. Such is the joy of the hunt!

The show ran for three days, Friday through Sunday. There was plenty of R.F. in the air as most attendees had handhelds. As for food, a huge courtyard offered great “wursts” and 1 liter beers.

Of course there is no comparison between German beer and that found in the states - German beer is simply tastier. Their small size is 1/2 - liter (17 ounces) and their “normal” size is one liter (35 ounces). I am writing this article at the Munich airport. It’s 7 AM and people are drinking 1/2 liter and one liter beers while I sip a cup of Joe!

Even though “Messe Friedrichshafen” is an amateur radio convention, there is

plenty to see and buy for the the vintage radio collector. Of course, most items are of European origin but you can still find some attractive memorabilia to add some dimension to your collection. It might be nice to incorporate your attendance into a European vacation since Switzerland is across the lake, Austria is nearby and all of Europe is railroad accessible. And you can't beat European railroads for cleanliness, speed, punctuality and a smooth ride.



Discussing a purchase.



One of the large display halls.



Liquid refreshment.



Meters anyone?



An enigma.



Homebrew



A nice assortment.



Showing the flag.



Even a kindergarten for the kiddies.

THE “GRAPES OF WRATH” RADIO

By
John Ruccolo

As part of our homebrew/basket case restoration contest last month, member John Ruccolo submitted a unique entry. John was nice enough to provide a full write-up for this month's Broadcaster...Ed

Introduction

Some years ago at Kutztown, I purchased a Depression-era looking homebrew wooden box that enclosed, what I thought, was a one-tube receiver. The tube was missing, but for \$5, it had a certain “charm” (I use the word loosely) and I thought I could make something out of it.

This unit sat neglected in my basement for several years (so what else is new?) until I saw an article in a Lindsay reprint for a 1-tube AC receiver (“Smallest All-Electric Radio Has Only One Tube”) from *Modern Mechanix*. I was immediately reminded of that funny-looking wooden box sitting in the basement. The cabinet appeared to have been built from a vintage fruit or vegetable box; some of the labeling was still visible. That was the inspiration for the name I chose, based on John Steinbeck’s classic novel about Okies moving to California to get away from the Dust Bowl during the Great Depression. They tried to make a living as migrant fruit and vegetable pickers.

What *was* this thing?

A careful inspection told me that the unit was *not* a receiver at all – it was a self-rectifying signal generator. It used one tube in series with a 25-watt lamp; no rectifier, no filter capacitors - running right off the AC line. Through a process of elimination, I figured out that the tube must be a 201A or 71A. Since I found a 71A in the “big pin” junk box first, that’s what I plugged in. Sure enough, it worked! It threw some ugly “hum modulation” across the AM broadcast band.

Making it into the “Grapes of Wrath” radio

The article called for a 12A7 tube, which I had never heard of. It is *not* a

6A7 with a 12.6 volt filament! It’s a half-wave rectifier and power-pentode in one envelope - like a prehistoric 117L7/M7. The 12A7 uses a standard 7-pin “big pin” socket with 0.75-inch spacing. There is also a slightly larger socket with 0.855-inch spacing. It’s hard to tell them apart unless you try to plug a tube into the wrong socket.

I managed to purchase 12A7’s on two different occasions from Bob Bennett at Kutztown. One of Ray Chase’s Kutztown junk boxes yielded a nice 7-pin, base-mount tube socket. However, the tube pins were numbered *incorrectly* on this ICA (Insuline) tube socket. The filaments are pins 1 and 7, but they are labeled 3 and 4 on the socket.

The enclosure already had a nice National dial, a nice brass-plate Hammarlund tuning condenser, and a ceramic lamp socket. I needed to use a 40-watt bulb to drop the filament voltage for the 12A7, as opposed to the 25-watt bulb used by the 201A or 71A.

I got the receiver working by first using a Heath bench supply. Imagine my excitement when I heard WLS from Chicago using a piece of wire strung on the basement floor! Unfortunately, the set does not work as well under its own power. It’s a bit “hummy,” which is no real surprise, as AC regen receivers usually are. The regeneration is controlled by a 50K pot across the plate “tickler” winding. I have never been fond of this type of regen control, but I wanted to stay faithful to the schematic. The regen control is very “squirrely” and hard to adjust.

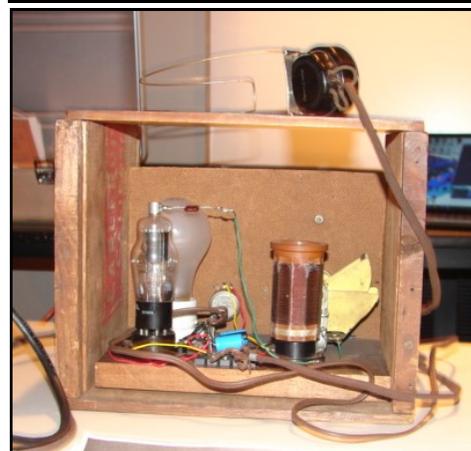
How was this set supposed to be used?

The builder was supposed to use a table lamp with a 40-watt bulb as the series dropping resistor. Instead, I used the internal lamp socket. But I forgot just how hot a 40W bulb gets! When I make some improvements to this radio, I will use an external table lamp to run it. I demonstrated the radio at the club meeting using a variac to cut the line voltage down to around 110V, and an isolation transformer for safety. I also discovered too late that the external dial was not rotating. The dial drives the tuning cap just fine, but the numbered disc does not move. Oh well...another fix.

I always wanted to build a “minimalist” 1-tube AC-operated regen, and I finally did, under a “crash program” a week prior to the Homebrew Contest. It needs some tweaking, but I had a lot of fun getting it going.



John demonstrates his “grapes of wrath” radio at the July meeting. Note the variac at the lower left.



Not pretty, but functional.

HOMEBREWS AND BASKET CASES

By
Marv Beeferman

Our homebrew and basket case contest might best be placed in the category of “quality, not quantity” since the limited number of entries displayed at our July meeting fully held the full attention of the membership. We’ve already described John Ruccolo’s “grapes of wrath” radio in the previous article. Additional entries included those from Professor Michael Littman and Echo Qiao Tan, and Walt Heskes. Jon Butz Fiscina also showed and talked about a homebrew radio from the early 1920s which he had restored some years ago.

Professor Littman obtained his string oscillograph from ebay. The device was first offered by General Radio in 1928 to enable one to observe the waveform of an

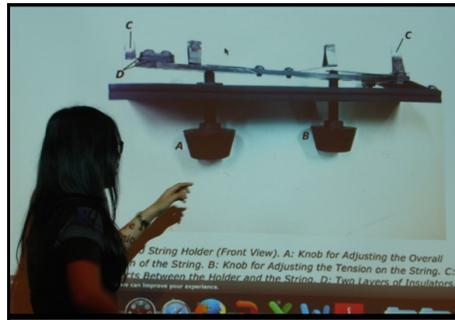
electrical current in real time. Although the exterior condition was good, it was missing a few parts and Professor Littman assigned its restoration to one of his students, Echo Qiao Tan, as a Joseph Henry Project.

Miss Qiao Tan explained the operation of the unit as follows:

“A very fine tungsten wire is positioned in a magnetic field supplied by a permanent magnet. When an electrical current flows through the wire, the wire will get deflected where the displacement of deflection is proportional to the amplitude of the applied current. The wire string, being suspended in the beam of a powerful lamp, will then cast a shadow of itself upon an arc screen. Before the shadow strikes the screen, it gets reflected from an octagonal, non-synchronous mirror, which rotates about an axis parallel to the line of the wire string’s vibration giving it an additional displacement that is proportional to time. As a result, the string oscillograph converts an electrical current waveform into mechanical vibration. This is represented by spots of shadows spread over a viewing box screen, eventually reproducing the current waveform which may be observed and studied.”

Miss Qiao Tan described how she reproduced missing pieces like the lamp holder and viewing box screen holder on a 3D printer and the difficulties in working with and adjusting the tension of the very fine tungsten wire (i.e., string). Of special interest was the non-synchronous, shaded pole motor which drives the octagonal, rotating mirror. Its speed is adjusted by a variac in order to synchronize it with the frequency of the current being measured and to produce a stationary image of the waveform.

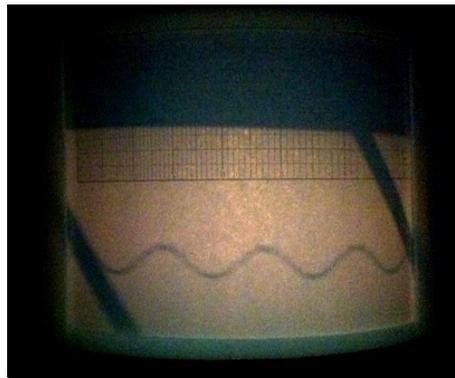
For more information on this project go to <http://www.princeton.edu/ssp/joseph-henry-project/string-oscillograph/>.



Echo Qiao Tan talks about the “string” holder and the difficulties of working with very fine tungsten wire.



Professor Littman makes some final adjustments.



Sine wave - frequency response is limited to about 200 Hz.

Walt Heskes (W2MQ) described the design and construction of a very versatile piece of test equipment. The beauty of his Eye Tube Tester is that its portability allows checking the viability of eye tubes such as the 6E5 found at swap-meets where power for tube testers may not be available.

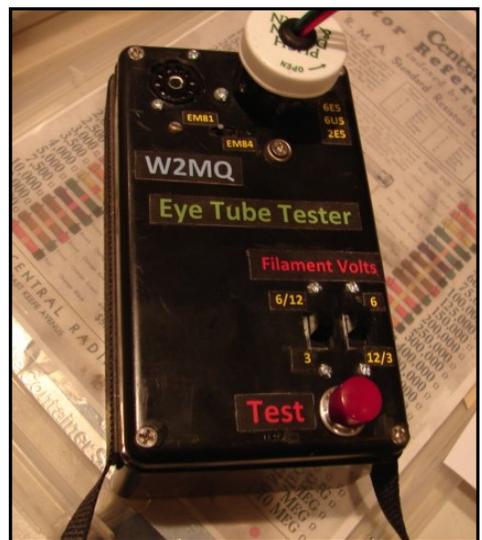
In Walt’s design, a 3-volt mechanical buzzer is used as a vibrator to chop a source of smooth DC voltage (3-volt battery) into a series of pulsating square waves which appear across the buzzer’s

coil. This is applied to the primary winding of a transformer producing an AC voltage in the secondary. A transistor is used as a current amplifier, limiting the buzzer contact current to 20 mA which is within its current abilities. The buzzer contacts are adjusted to obtain a maximum output of 400 VDC from a standard audio output transformer. Filament voltages are derived by using a pair of slide switches to connect twelve AA cells to provide 3, 6 and 12 volts respectively.

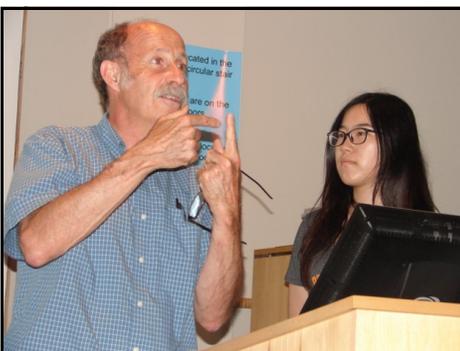
Walt demonstrated his creation using various eye tubes such as a 6E5, 6U5, 2E5, EM82 and 6AL7. Each tube was enclosed in a cardboard tube so that the tuning eye was more visible. Walt noted that his tester, although not being capable of testing the results of an imposed signal on the tube, provides the two most important parameters of interest - is the filament intact and does the eye tube exhibit a bright display?



Walt Heskes describes his creation.



An up-close look.



Professor Littman makes a point as Echo Qiao Tan looks on.



Jon Butz Fascina's 1920s restoration of a homebrew.

**W2MQ's
RADIO
PUZZLER**

**By
Walt Heskes**

Perhaps as a tip of the hat to the "Car Talk" duo Click & Clack, member Walt Heskes has suggested a monthly puzzler with which to challenge your radio knowledge. Please send your answers to Walt at wheskes@verizon.net and we'll acknowledge all correct answers in the September Broadcaster, including Walt's solution...Ed

This particular puzzler was taken from an actual case history. All capacitors are brand new.

Given: GM model 120 TRF receiver. 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 test good.

Plate voltages: 300 VDC. Audio output is good.

Symptoms: No radio frequency signals detected. What is wrong with the receiver shown below?



**NJARC AT THE
PONDS**

**By
Marv Beeferman**

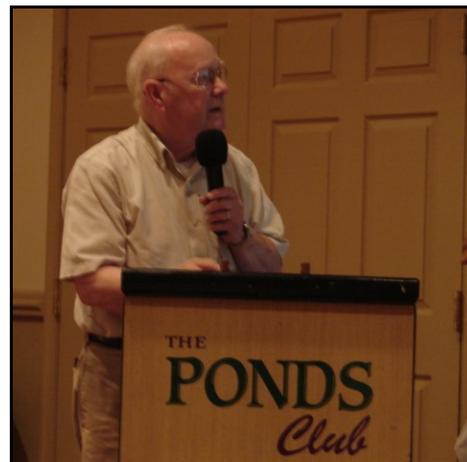
On Monday evening, July 14th, the NJARC travelling road show conducted another "History of Radio Broadcasting" presentation at the Ponds, a gated retirement community in Monroe, NJ. On hand was Ray Chase, Harry Klancer and your editor. Harry was instrumental in clearing up some of the glitches that appeared in what, at first, to be a very sophisticated audio/visual system. The audience consisted of members of the Jewish Culture Club and the program was supplemented by excerpts from the "Golden Age of Yiddish Radio" which could be once heard over stations like WHN, WEVD and the low-power Brooklyn stations WBBC and WCNW. I remember these stations filling my grandparent's Brooklyn apartment on Sutter Ave. with those strange but lively strains of Eastern European music and words I just barely understood.

In the 1930s, New York City, in particular, teemed with musicians playing in Yiddish theaters, restaurants, and the synagogues and halls hosting weddings and bar mitzvahs. Yiddish-American music, recorded and live, was at its apex, and radio was the perfect medium to amplify it. Small stations, which couldn't afford professional orchestra leaders or arrangers, hired fine players of klezmer, the traditional music of Eastern European Jews. The tunes were familiar to older listeners, who had danced to them all their lives.

But klezmer was less and less what the developing Jewish radio audience wanted to hear. By the late 1930s, what they chose to tune into instead was "Yiddish swing," described as "downtown Jewish music in an uptown-style." This type of music was typified by the song "Bei Mir Bist Du Schoen" which became a blockbuster for the Andrews Sisters in 1937. And you haven't heard anything until you've heard "Surrey with a Fringe on Top" in Yiddish.

Unfortunately, a major storm came through the Monroe area during the presentation which severely limited attendance, but the 15 or 20 attendees who braved the weather were most appreciative of our efforts. In addition to their educational and entertainment value, these programs are also used to promul-

gate the InfoAge and NJARC mission. In the same vein, on July 7th, Ray Chase gave a presentation at the Ocean Township Library titled "The Wizard War and the Origins of Radar." This is a new "Senior Science" series being initiated by the library but the weather again limited attendance to a small but appreciative audience.



Ray Chase at the podium.



Ray adjusts one of the many radios that surrounded the audience.



Harry Klancer handled the audio/visual details.



A small but appreciative audience.



A SWAPMEET UNDER THE TREES

By Marv Beferman

Although interrupted by a passing shower, a beautiful, cool day made for a pleasant tailgate swapmeet at InfoAge on July 26th. Thanks to Harry Klancer for doing most of the setup work, your editor supplying morning coffee and bagels and president Richard Lee and Ray Ayling for directing traffic, etc. The number of vendors was not overwhelming but they exceeded last year's turnout. As usual, member Bob Bennett has provided a short video of the activities at his "Radiowild" website on YouTube.





MINIMUM SERVICE CHARGE - \$3.00?

IN 1946 THAT IS

I recently came across a "Radio Service Standard Rate Book" for 1946 and was quite surprised to find that, before repairs are started on an item (auto radio, portable, console, table radio, etc.), a "general service" is performed for which the owner is charged \$3.00 (excluding materials). Based on what is done to a console (if it is really accomplished), it seems like a pretty good deal at first and still holds up as a general guideline for initial troubleshooting and maintenance.

1. CHECK tubes for dead, noise, shorts, loose grid caps, etc.
2. Check A.C. cord and plug for frayed, bare, brittle or broken wire.
3. Check tuning condenser for bent plates, dirt, corrosion, etc.
4. CHECK dial belt or dial cable for wear, binding, slipping.
5. CHECK dial indicator for accurate setting.
6. CHECK dial drive shaft for binding, slipping, wear.
7. CHECK internal wiring in radio for loose or poor connections.
8. CHECK dial bulbs for dirt, grease, burnouts, loose, incorrect size.
9. CHECK speaker cone for brittleness, proper centering, loose rim.
10. CHECK volume control for noise,

intermittent, open.

11. CHECK waveband, push button, phono-radio, tone switches, for noise.
12. CHECK antenna, R. F. and oscillator coils for loose turns of wire.
13. REPLACE defective tubes.
14. REPLACE defective dial lights.
15. REPLACE or repair A.C. cord and plug if defective.
16. CLEAN and lubricate tuning gang, straighten bent plates.
17. CLEAN dirty or greasy dial lights.
18. CLEAN and lubricate sliding contact type switches.
19. REMOVE dirt and grease from chassis.
20. REMOVE dirt and grease from tubes.
21. REMOVE dust from speaker cone and frame.
22. REMOVE dirt and grease from dial scale.
23. RESET dial indicator accurately.
24. LUBRICATE volume control.
25. LUBRICATE dial drive shaft.
26. CEMENT speaker cone rim if loose from frame.
27. CEMENT any loose turns on antenna, R. F. and oscillator coils.
28. SOLDER any loose or poor connections in radio wiring.

Quite a list, and it's hard to conceive that it was all performed for \$3.00 - even at 1946 prices. But if you look at the list more closely and add up the potential cost of replacement parts and materials (I wonder if you're charged for solder and cement), it doesn't take long for the owner to get hit with a much larger bill!

A NEW ANTENNA SYSTEM FOR PRINCETON

At the July meeting, Technical coordinator Al Klase demonstrated the successful results of several years of experimentation in trying to obtain good reception in areas plagued by high noise and the "Faraday cage" conditions of our meeting location at Princeton. Al supplemented his demonstration with a short explanation of his design and antenna basics.

The club will now have the option to hold DX-peditions and homebrew contests at both InfoAge and Princeton. Even John Ruccolo's "Grapes of Wrath" radio (see page 4) showed some life with the aid of Al's antenna system.



Al explained how a loop is less sensitive to noise than a whip.