The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

August 2025 Volume 31 Issue 8

The *Jersey Broadcaster* is distributed to members of the New Jersey Antique Radio Club via email as a PDF file. Back issues of many of our newsletters are available on the club's website: www.njarc.org/broadcaster/

Meeting Notice

Our August meeting will be held on Friday, 8/8 at Princeton University in Bowen Hall. Meeting topic will be "Tricks of the Vintage Electronics Trade" by Dr. Jonathan Allen.

Directions can be found on Google Maps at https://bit.ly/4jZe8XI.We plan to live stream the meeting on YouTube at youtube.com/user/NJARC.

Meeting Review

At our July meeting, the club hosted another installment of our long-running "Shown & Tell / Hints & Kinks" member presentations. As always the narratives behind the items in various collections showcased were interesting, informative, and occasionally humorous.

If you missed the meeting, you can watch a recording of the live webcast on the club's YouTube channel: https://bit.ly/3yZ5yoR.

Our Summer Swapmeet took place last month at InfoAge. As usual, there's a great Radio Wild video recap of the event. You can catch it and all the other great Radio Wild videos on his YouTube channel: www.youtube.com/@Radiowild. The Swapmeet video is: youtu.be/1Lf-PHBhfPg?si=xBYLJLMUcZkjRueU

Calendar of Events

August 8: NJARC monthly meeting, Princeton

August 23: NJARC Summer Repair Clinic, InfoAge

September 12: NJARC monthly meeting, InfoAge

September 19-20: Kutztown Radio Show

October 7-11: AWA Conference, Henrietta NY

October 10: NJARC monthly meeting, Princeton

October 25: NJARC Autumn Repair Clinic, InfoAge

November 14: NJARC monthly meeting, Princeton

November 22, NJARC Fall Show, Parsippany

December 13: NJARC Holiday Party, Jackson

From the President's Workbench

Greetings Fellow Enthusiasts!

The President's Workbench.

This is a review of our Annual Summer Hamfest Swapmeet on July 26th. First off, Senor Marconi smiled down on us **again**, and supplied us with another beautiful weather day! Not to jinx our good fortune, but it has been almost 20 years of an unbroken string of nice weather for our summer show!

The stats are: 26 vendors. That's less than last year, but three of our regular sellers were not able to make it. We did have a couple of new (young!) vendors who may have seen our **NEW** social media presence on Instagram! The complimentary Radio Bagels for vendors disappeared very quickly.

Buyers were 93 at the gate. Again, a little less than last year, but vendors were happy with their sales, especially those who diversified and brought audio items.

I received a call a week previous to our show from a high school Sophomore named Raghav Desani KE2GEO. He attends Manasquan High School and was working on a ham radio project for class. He asked if he could be a "helper" at our show in exchange for documented hours. I agreed and he was a

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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 on the second Friday of each month either at InfoAge or at Princeton University. Neither the editor nor NJARC is liable for any other use of the contents of this publication other than for information.

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President's Workbench
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great help.

I was interested to test-out our new Altec Lansing SoundRover Pro amplified speaker on our InfoAge site. I was pleasantly surprised how well it worked as a PA and music speaker at only 650 watts.

I want to thank our "Usual Suspects" for making our show run smoothly. They were: Lady Judith, Fred, Jerry, Bill, Harry and young Raghav!

– Richard Lee Pres. NJARC

The Gate Crew: Jerry, Lady Judith, Raghav and Fred

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President's Workbench
(Continued)

Radio Row

Ashley and Alex Blanding

Bill and Len

Pat and Ed

(Continued on next page.)

President's Workbench
(Continued)

Paul, James & Radio Wild

Lary

Young man with his box of WE300Bs

Raghav moving the Plane back in position after the Show

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President's Workbench
(Continued)

That Intrepid Radio Rat!

Surface the Capacitors!
By Joseph Divito

Recently, I have been doing some experiments with using surface mount capacitors in repairing tube radios. To my surprise, surface mount capacitors, especially ceramic capacitors, are showing up with voltage ratings as high as 1Kv, though for my purposes in AA5 radios I've opted for 630V capacitors, the same generic voltage rating I've kept in stock for conventional (leaded) film capacitors. I have had them in service for over a year now, and so far, they have held up and the radios have been performing normally. The radios seem to be quite happy using these tiny little things!

I'm sure that is the first question that comes to mind. There are as you can imagine many challenges to using a surface mount capacitor in a tube radio circuit with point-to-point wiring. Not the least of which is — no wire leads! Also, those things are tiny (did I mention *tiny*) — I've had to handle them with tweezers. Since traditional leaded capacitors are still available, the easy way to a radio restoration is of course to continue using them. Having said that, ever since I saw surface mount capacitors offered for sale with such high voltage ratings, I have been curious to answer the "what if" question — *what if* the capacitor industry goes all in for surface mount devices, *what if* we had no choice but adapt current technology to keep our old radios singing?

From what I've learned, surface mount technology in general (soldering active/passive components directly to a circuit board without the traditional wire leads soldered through circuit board holes, or point-to-point wiring) is a growth industry, expected to grow over 8% over the next ten years. The main drivers are as always in the electronics industry, more features in a smaller, lower cost footprint. Surface mount capacitors can be adapted more easily to automated assembly than through hole construction, and the industry has responded with growing demand for surface mount devices generally (capacitors, resistors, and other active components.)

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Surface the Capacitors!
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A casual look at capacitor prices shows this trend. When I want a one-off, I often shop at Mouser.com. I do sometimes shop from dedicated hobbyist sources such as Just Radios (https://www.justradios.com/) but they often have minimum orders, Just Radios being up to $30 now. I am not doing more than a couple of radios a year now and prefer not to make that large of an investment in parts. However, for comparison, I took a look at Just Radios too.

I chose to compare cost of a 0.047uf capacitor, which is a common value I encounter, and use at least a couple in most radios I've repaired. For traditional leaded film capacitors, I've seen prices ranging from $0.48 on Mouser, to $0.44 on Just Radios (keep in mind with Just Radios, you'd have to buy enough parts to meet a $30 minimum order.) By contrast, I can buy a 630V 0.047uf capacitor in surface mount form for $0.10. Yes, that is ten cents apiece! Most of us are not going to "bean count" restoring a radio we want to restore, but I am sharing this so we can get an idea where demand is driving things — OEM is going to specify parts all the time which have a 4:1 price advantage. Sadly, that does make traditional leaded parts an increasingly niche industry.

Making it Fit

Having the urge to try my hand at using these little devils, I bought a couple as a guinea pig to experiment with. I chose 0.02uf multi-layer ceramic capacitors, which have an X7R type dielectric. This offered a good price per piece and had a temperature drift of +/- 15% with temperature between -55C to +125C (see https://resources.altium.com/p/which-type-capacitor-should-you-use for more about different types of capacitors and their strengths/weaknesses). That's a little more than the +/- 2% for film capacitors, but still well within the range of usefulness in many uses in tube circuits. It was good enough even back in the day for OEM manufacturers of tube radios, I have many 1950s radios that make heavy use of similar ceramic capacitors (though of course, back in the day they have conventional leads.)

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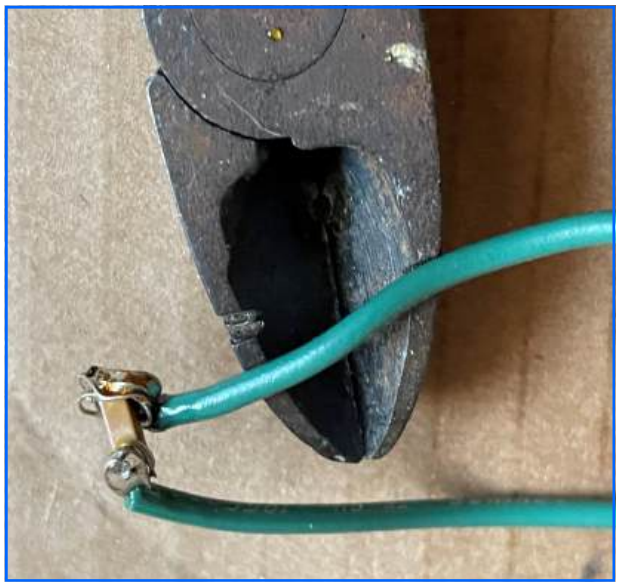
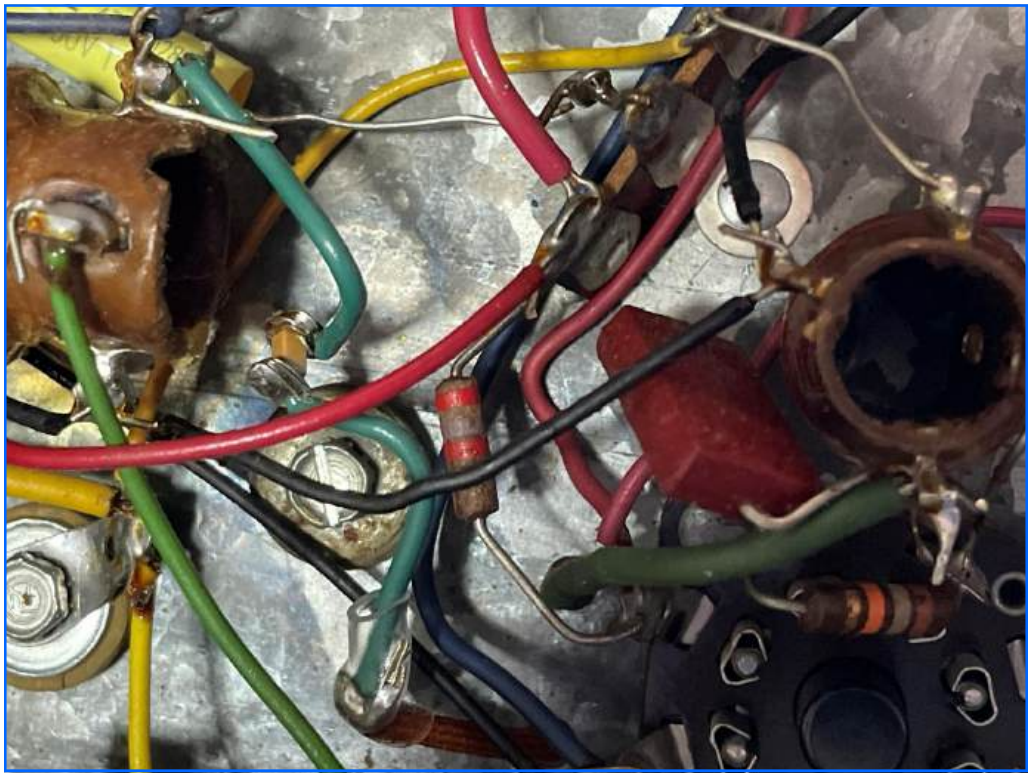
Surface the Capacitors!
(Continued)

My first approach was straightforward — solder wires directly to the capacitors. Version one is below, I soldered this by crimping the wire around the capacitor ends and pooling some solder to hold everything together. This guy went into a 1951 GE model 422. It replaced C4 on the schematic, described as the RF coupling capacitor. I found the radio played well. An encouraging first start (even if it did test my patience a little getting wires on that itty bitty thing.)





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Surface the Capacitors!
(Continued)

As you can see above, it took up much less space installed than a regular capacitor. My second attempt was on a 1951 Crosley 11-114U. This time I covered the capacitor in heat shrink to protect the solder joints and better insulate it when installed (so I could safely put it closer to the chassis). This time, I used it in place of C5, described in the schematic as "output plate" (going from the plate of the 50C5 to ground.) This set also worked fine after a year's use and sounds great. It's one of my "go-to" radios that I listen to a lot.

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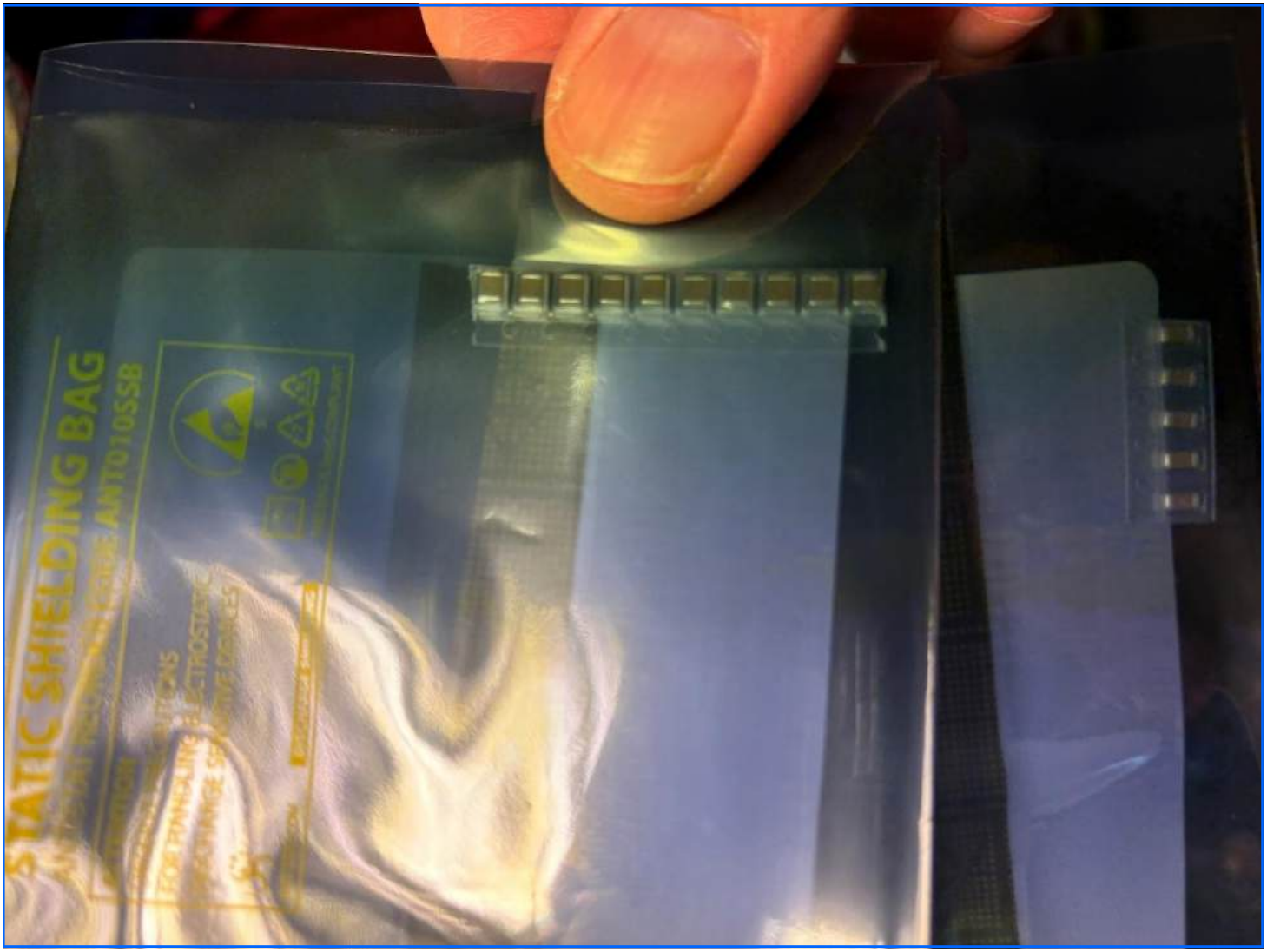
Surface the Capacitors!
(Continued)

I liked how well it performed and I was getting better at the challenge. So, I bought a batch of 0.047uf SMD capacitors. This time, I also bought the C0G dielectric, which provides near zero capacitance drift with temperature. These weren't much bigger as you can see below.



These went into several more radios, including a Zenith B509 (AVC filter), a Stewart Warner 9160 (AVC filter and rectifier, plate). The Stewart Warner is an interesting case study as I have three examples of this model, two recapped using traditional film capacitors, and the third using two of the above surface mount capacitors. Comparing performance of all three, the one using the surface mount capacitors performs normally, working as well as its counterparts using traditional capacitors.

Part 2 of *Surface the Capacitors!* will run in next month's issue of the *Jersey Broadcaster*.

(Continued in next issue.)

Refinishing a Radio Cabinet (Part 2)

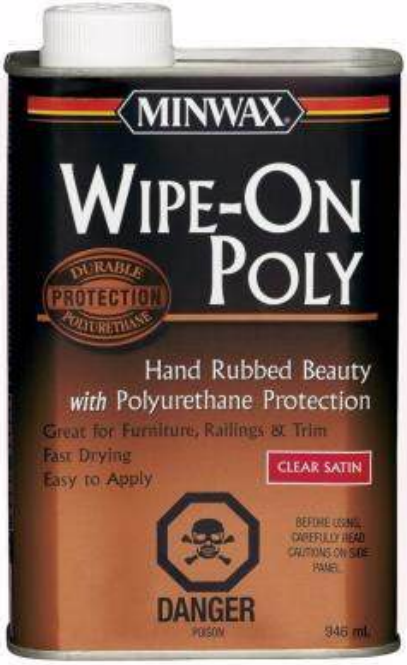
By Dan Gervais (Continued from last month)

Applying a finish without spraying

If you don't have access to spray equipment or you simply don't want to go that route, there are still some decent options. Depending on the condition of the radio and what you intend to do with it, you can do some basic refinishing like applying a coat of carnauba wax, some boiled linseed oil, or tung oil. This will be quick fix and hide a fair amount of scratches from the original finish.

While polyurethane has been given a bad rap from radio restorers for many correct reasons, one cannot forget that this finish is easy to apply, dries hard, protects the surface and has hardly any smell. One drawback is that unlike laquers or shellac you cannot use a solvent to remove it once it hardens, sanding is the only option. Also polyurethanes tends to yellow a bit over time.

Wipe-on poly finish is part of the polyurethane resin family. This type of finish dries very slowly so paint brush marks don't show up. So what is Poly wipe-on? It's simply a regular polyurethane varnish that has been diluted 50/50 with mineral spirits. You apply it using a lint free rag or foam brush. You can make it simple and buy it directly as a wipe-on, or save some money and make your own. Mineral spirit will slow down the curing rate. Purchase the regular mineral spirit that smells and mix it 50/50 with regular polyurethane.



Polyurethane is a varnish that cures by crosslinking the polymer chains and this occurs by adsorbing oxygen. Once hardened you cannot dissolve it back into solution like lacquers or shellacs (so these latter have an advantage when making spot repairs.) While this makes it resistant to solvents, if you want to do a second coat, you must sand the surface a bit to increase adhesion. Also skinning will occur over unused portions in the jar, so consider purchasing smaller quantities, or store in two smaller jars. Some people inject inert gas (such as nitrogen) to retard skinning (see Bloxygen as the commercial product.) I've seen others store varnish in specially made pouches that provide a small opening and minimize greatly exposure to oxygen (see product from Lee Valley — https://www.leevalley.com/en-ca/shop/tools/supplies/finishing/72867-finish-storage-bag?item=62K0410

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Refinishing a Radio Cabinet (Part 2)
(Continued)

Often I will use wipe-on polyurethane as my first coat to bare veneer to seal deep into the pores of the veneer. Another use is for very old radios where the veneer is heavily weathered with numerous small cracks, in this case I will try and stabilize the veneer by applying a very liberal coat of thinned out wipe-on to let the varnish soak in and under the veneer. Once soaked, I will wipe off as much as possible, and continue on with a more traditional lacquer finish.

Assuming your radio is all sanded, wood repaired and veneer fixed, a finishing system using polyurethane without an air gun could be like this:

1. For the trim areas, use a mixture of laquer with many drops of transtint dye. Apply with a brush.
2. Or if more opacity is required you could use paint and apply as a stain or soft brush.
3. Apply a first coat of wipe-on polyurethane let dry for a day, lightly sand with 220 and 320.
4. Apply a second coat of wipe-on.
5. Note: use fresh wipe-on poly that is still liquid and runny. If in doubt you can always dilute it a bit using some mineral spirit. Apply thin coats either with a rag or foam brush.

A system like this will do a decent finish without using spray equipment and will protect the radio greatly.

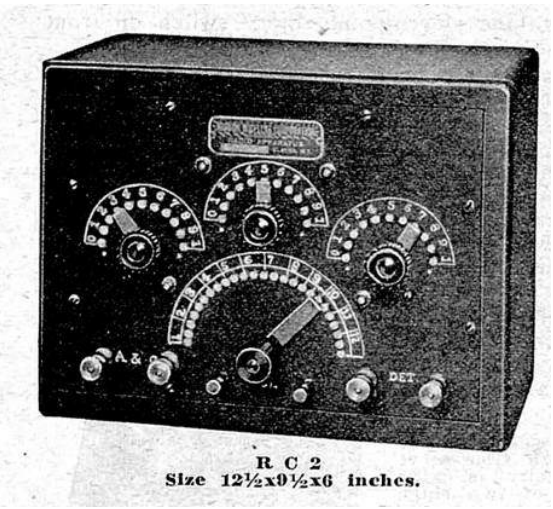
Using a spray gun for the trim areas

While it is possible to paint the trim areas with a tint dye, a more uniform color is obtained using a small spraygun. You can purchase an inexpensive small artist one at harbor freight (https://www.harborfreight.com/air-tools-compressors/air-spray-guns/03mm-gravity-feed-dual-action-airbrush-59292.html)

Using a air spray gun takes some practice, however the skill acquired will be extremely useful. YouTube has many tutorials on the subject and I suggest to practice on scrap pieces. The number one rule in the usage of an airbrush is to clean it properly after use.

Part 3 of *Refinishing a Radio Cabinet* will appear in next month's issue of the *Jersey Broadcaster*

A "Real" Cat Whisker Detector
From the NJARC *Communicator*



R C 2
Size 12½x9½x6 inches.

CONCERNING "REAL" CAT-WHISKER DETECTORS.

One of the E. I. Co. customers recently purchased one of their new "Mignon" Receiving Sets at their retail store, New York City, and a few days afterward brought it back to the clerk, with the complaint that it would not work. The set was carefully tested and nothing found the matter with it. The clerk then started to investigate and his first query to the customer brought forth the following extremely startling reply:

"He stated that he could not get the 'Mignon' set to work in any fashion whatever, when used with a pair of 2,000 ohm phones and a *Cat-Whisker Detector of the genuine type,* which he had went to great trouble in making up from a piece of Galena and a *real Cat-Whisker!*"