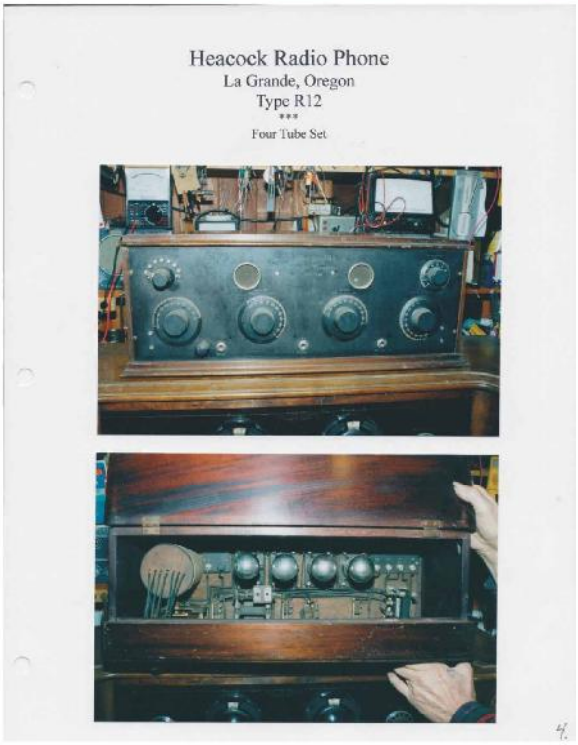
Restoration of Heacock Radio Phone R12

Summary of O.M. Heacock, who built and sold radios around 1920

He was early amateur radio operator
He had Early Relay Station in NW Oregon and was part of first trans-continent relay.
He advertised and sold consumer radios built by him in early 20's.

Figure 1. Picture of O.M. Heacock from QST

The Heacock radios are scarce because not many were made. They were written up in a two-part article by Dan Merz and Gerry Hale in the Jan and April 2012 issues of The AWA Journal, and are notable because the builder, like many early radio buffs, carried his hobby into attempts at commercialization. His sets are recognizable by the engraved panels.



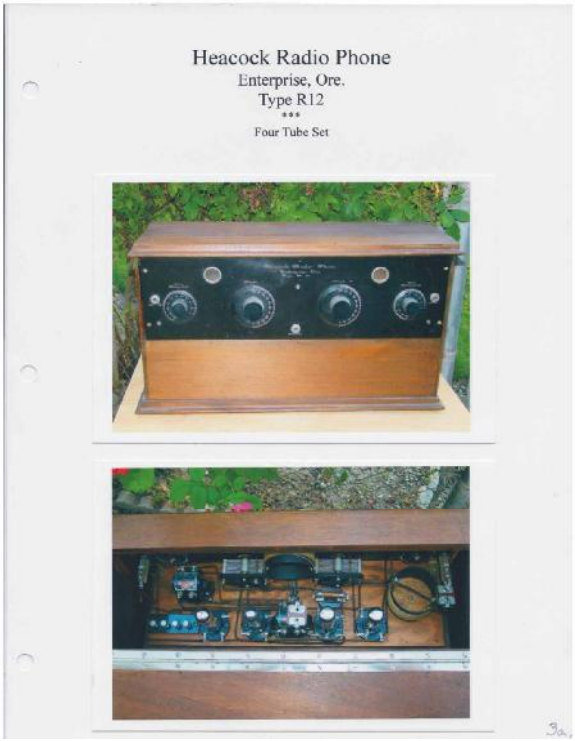


Figure 2 Pictures of some of his radios, 12 known examples.

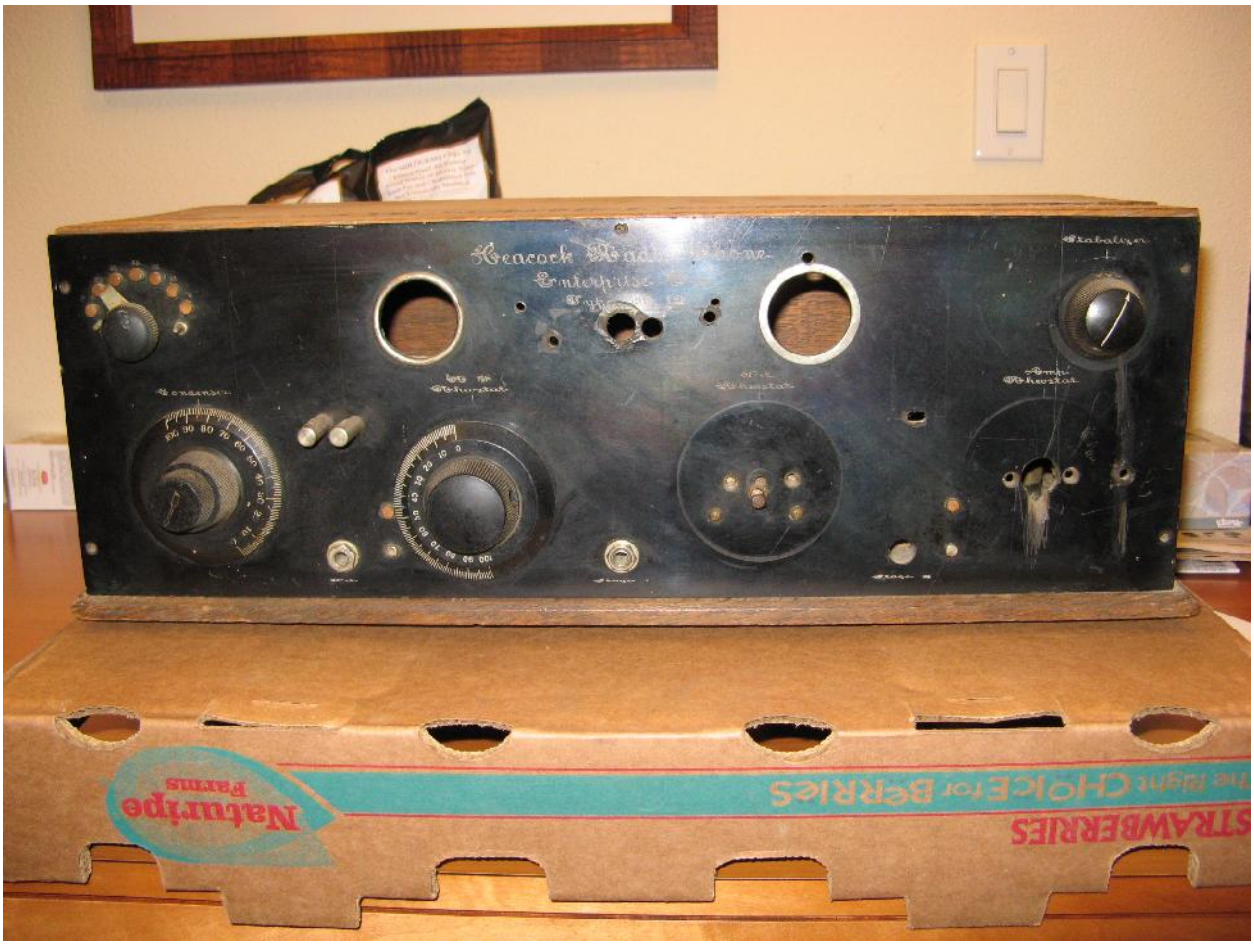


Figure 3. Picture of basket case example found in Portland, OR basement.

Figure 4. Picture showing damaged panel, extra holes, missing dials

Figure 5. Inside of case showing non-original parts. Probably an " improved" radio using much later parts but with original tuning capacitor & coil with added coils and capacitor.

The modifications were all stripped out and discarded (stored). The chassis board was removed, cleaned, sanded and laquered. This board was original plywood type used in all of Heacock's radios. The 2 chassis to panel " L " brackets were polished and reused (badly rusted). It was possible to see the original tube and transformer layout from holes. A set of matching tube sockets were selected, CH type. Audio transformers by Acme matched the chassis holes, and this was type used in most Heacock sets. An Acme rf tranformer fit the panel holes as in other Heacock sets.

The main tuning coil was badly damaged, though probably workable. I decided to replace it since I found some common black plastic pipe that was the right size and I had the right double cotton covered wire.

Figure 6. Picture of damaged original coil, approx. 100 turns #24 dcc wire with 8 taps.

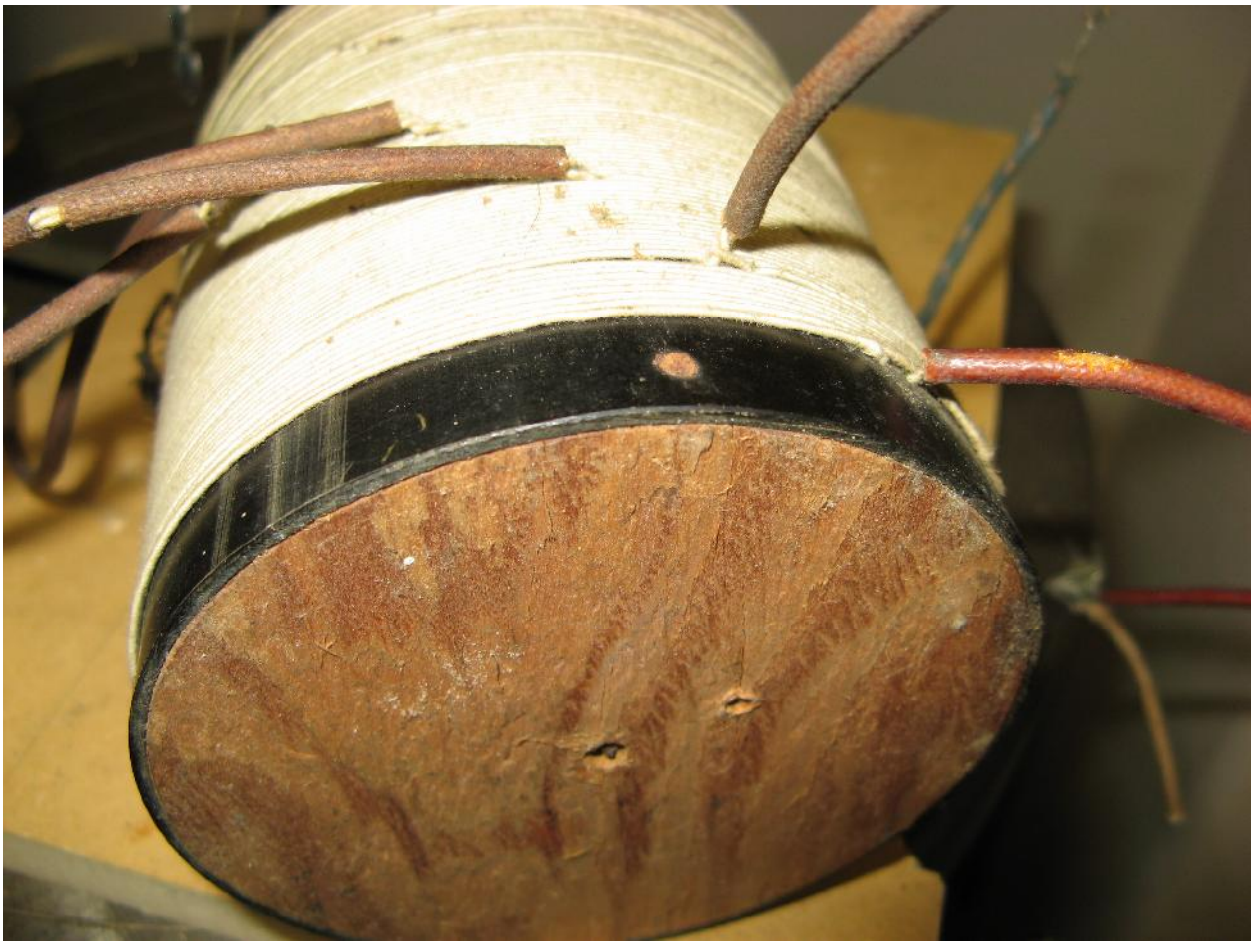


Figure 7. Bottom view of original coil.

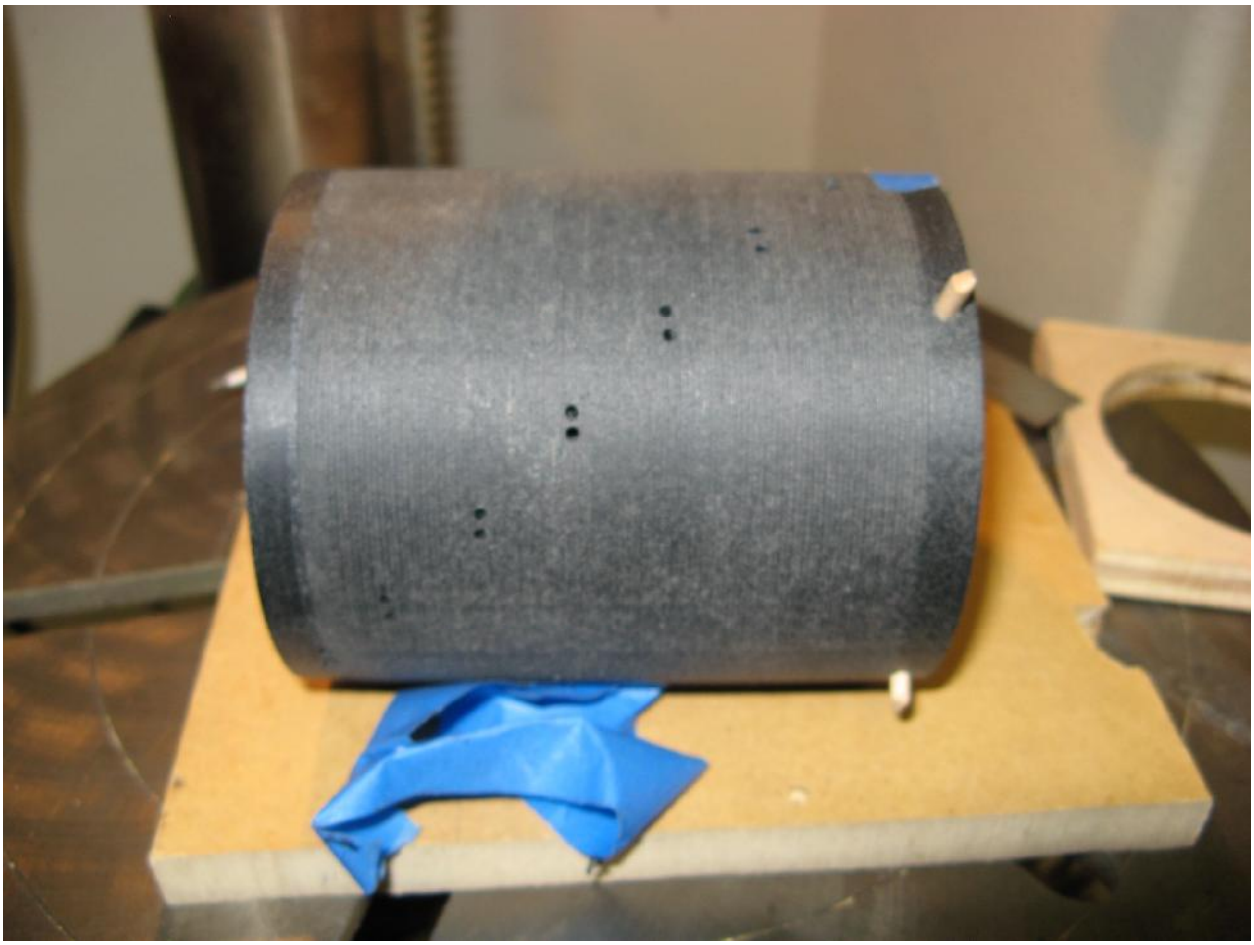


Figure 8. New coil form with 30 tpi grooves turned.

Grooves were not necessary but I wanted to try the technique . This coil could easily be wound without grooves but I knew the grooves would make the coil stay in place without glue and also make drilling the tap holes in at the right spot before winding started. I put two holes at each tap position and doubled the wire back from the end point of the lead to continue the winding to the next tap. This is same way Heacock made the coils, with a twisted pair of wires going to each tap contact on the panel and secured each tap using the two holes at each tap point.

Figure 9. Finished coil form with holes and wood bottom in place.

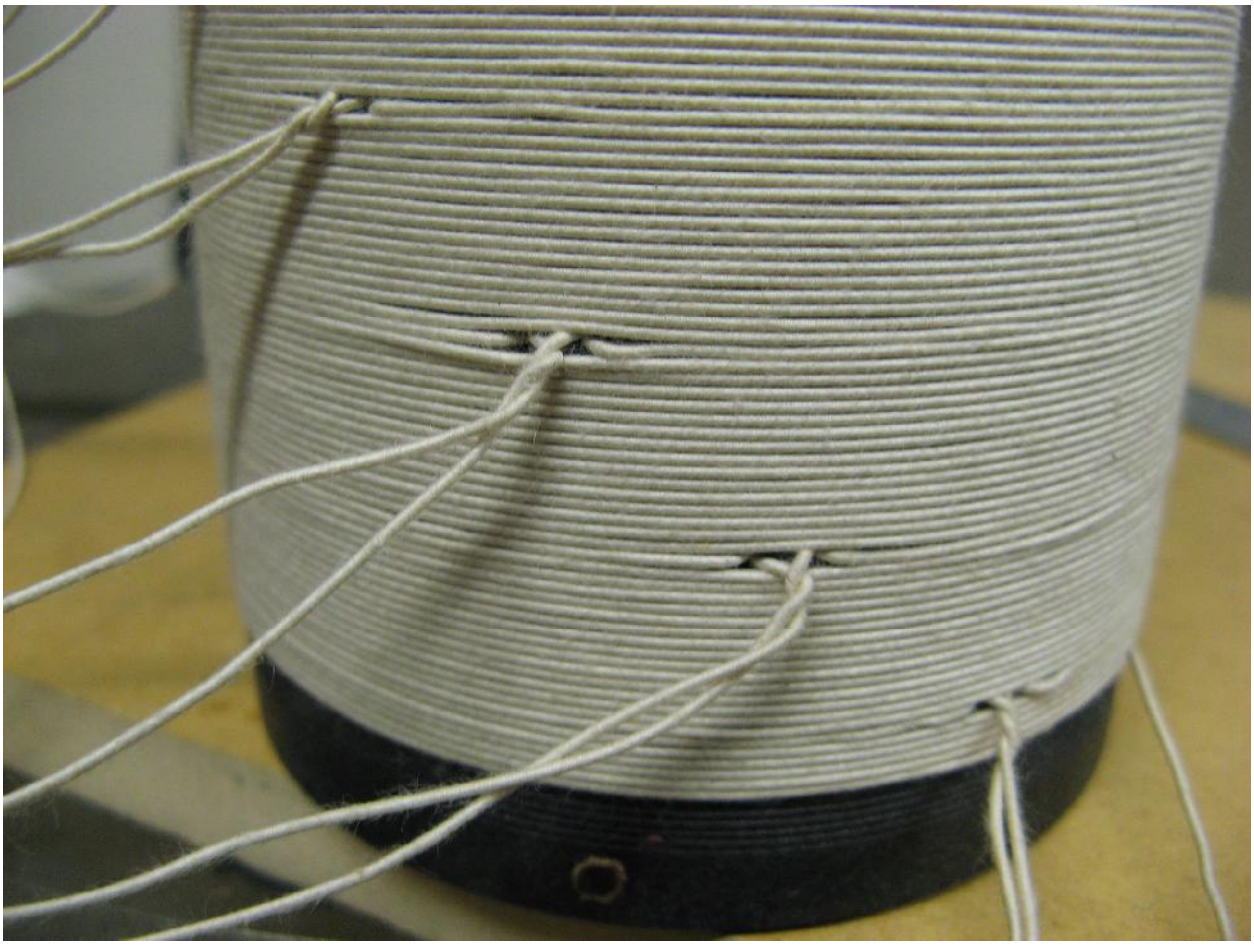


Figure 10. Closeup of finished coil taps.


Peacock Radio Phone
Enterprise Ore
Det. Rheostat
100 90 80 70 60 50 40 30 20 10 0
Det. Rheostat
0 10 20 30 40 50 60 70 80 90 100

Figure 11a.

Figure 11 b. Repair of Front Panel - Picture of Filled holes

I used epoxy mixed with black paint powder. Carbon black also works. Put just enough powder in to get deep black but not so much that sheen is lost when it hardens. The hardened epoxy will replicate the surface that it is cast against. I used silicone rubber sheet which has a shiny side. Epoxy will not adhere to it. I used a back up block of high density particle board to make it flat and clamped it in place during casting. You can use the silicone rubber on both sides of the filled hole but then you may have to remove extra that "squirts" out under the silicone.

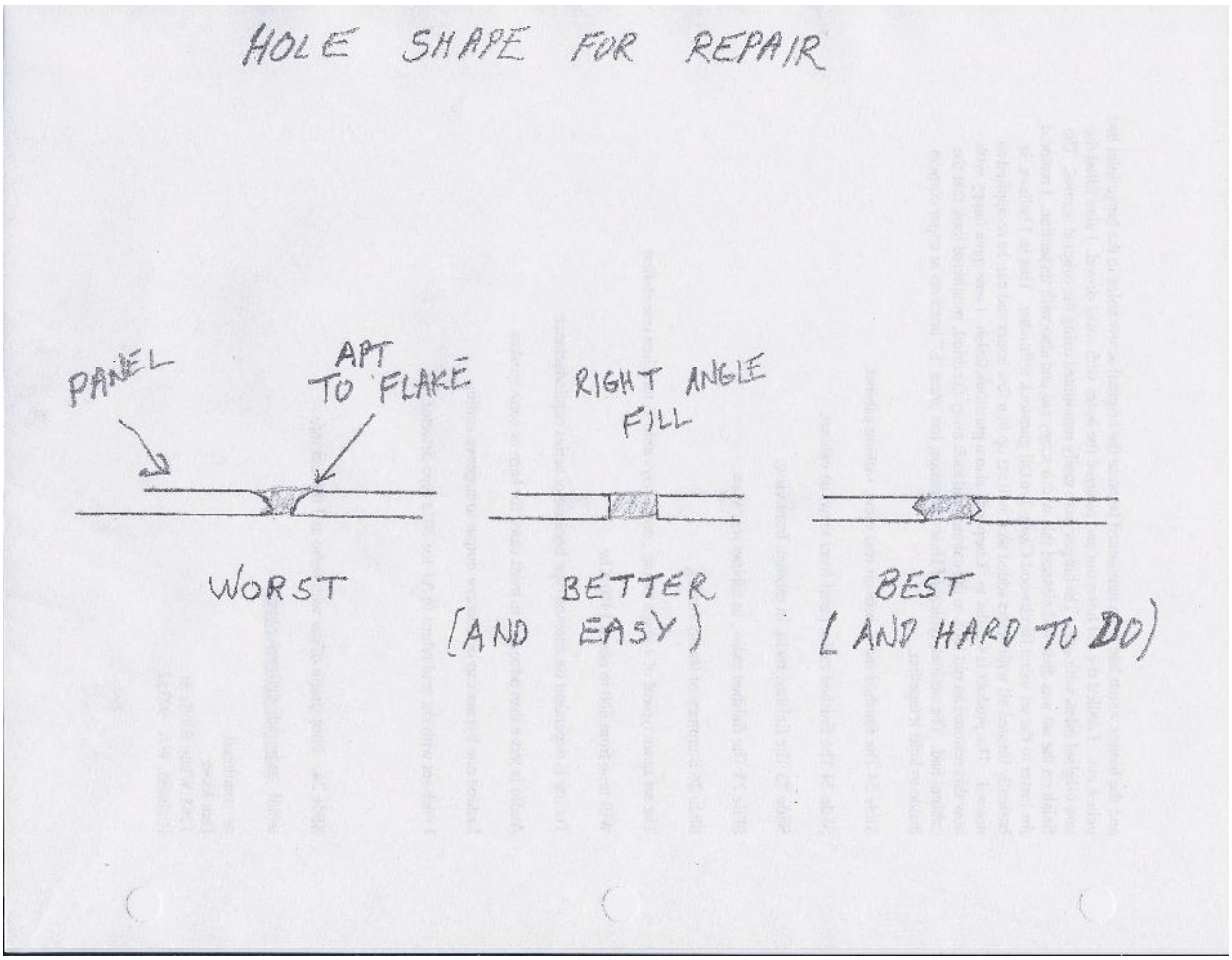


Figure 12. Schematic of desired hole shape for filling.

The hole should be altered, if necessary so that a feathered layer of epoxy DOES NOT occur on the finished surface because it will invariable flake away if thin and leave a broken edge. The worst to best kinds of holes are shown in the schematic drawing. I tried to make hole intersections with the panel surface at right angle rather than beveled or widening near the outer surface.

Figure 13. Picture of tap switch.

I replaced all the tap contacts and small screws as the originals were beat up. The original has metal tabs on each coil tap lead and I used the same scheme.

Figure 14. Partially completed parts installation.

The phone jacks were all replaced but only the final speaker jack was wired into the circuit. I left wiring of the jacks from the detector and the 1st audio as a future task for someone. I rarely if ever have used these jacks on radios that I've restored even when they were functional.

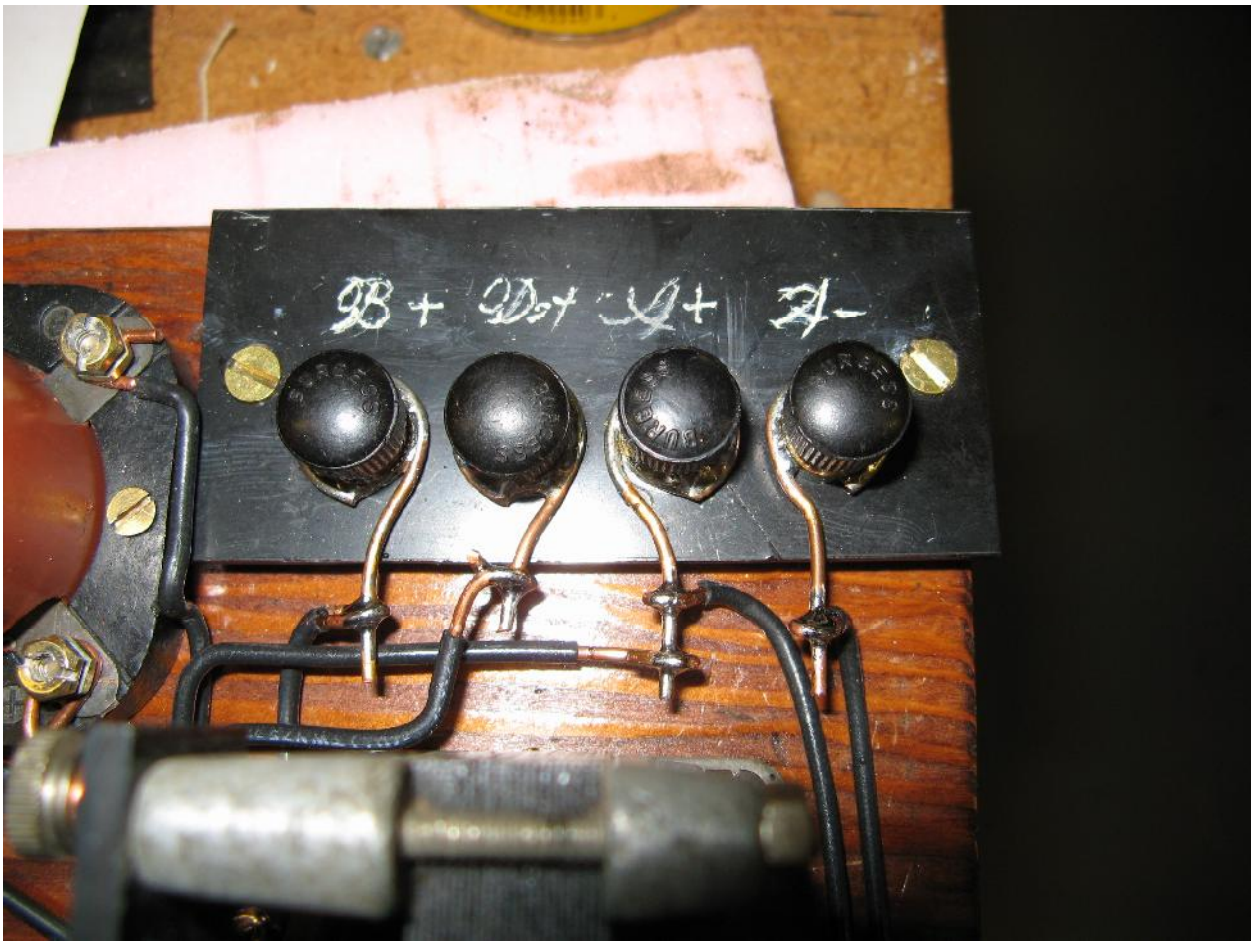


Figure 14. Hand engraved power terminal.

The power terminal strip in the original radio used fancy old English font like the front panel and I mimicked this by engraving by hand with a small pencil engraver from Harbor Freight, price about $8. I printed the desired lettering with the computer word processor and taped it to the bakelite strip as a guide for the tool and engraved through the paper.. This worked pretty well considering it was my second try after a practice attempt on a scrap piece. I may get up enough nerve to try tweaking the front panel at some date but left that chore undone for now.

Heacock had the unusual habit of soldering the leads from the set directly to the terminals ABOVE the bakelite, see in Picture, on the power terminal strip. I duplicated this detail and had to make one of the connectors to match the other three, as these were a little different style than most in my junk box.

Figure 15. Harbor Freight engraving tool. Uses two AA cells and has diamond cutter.

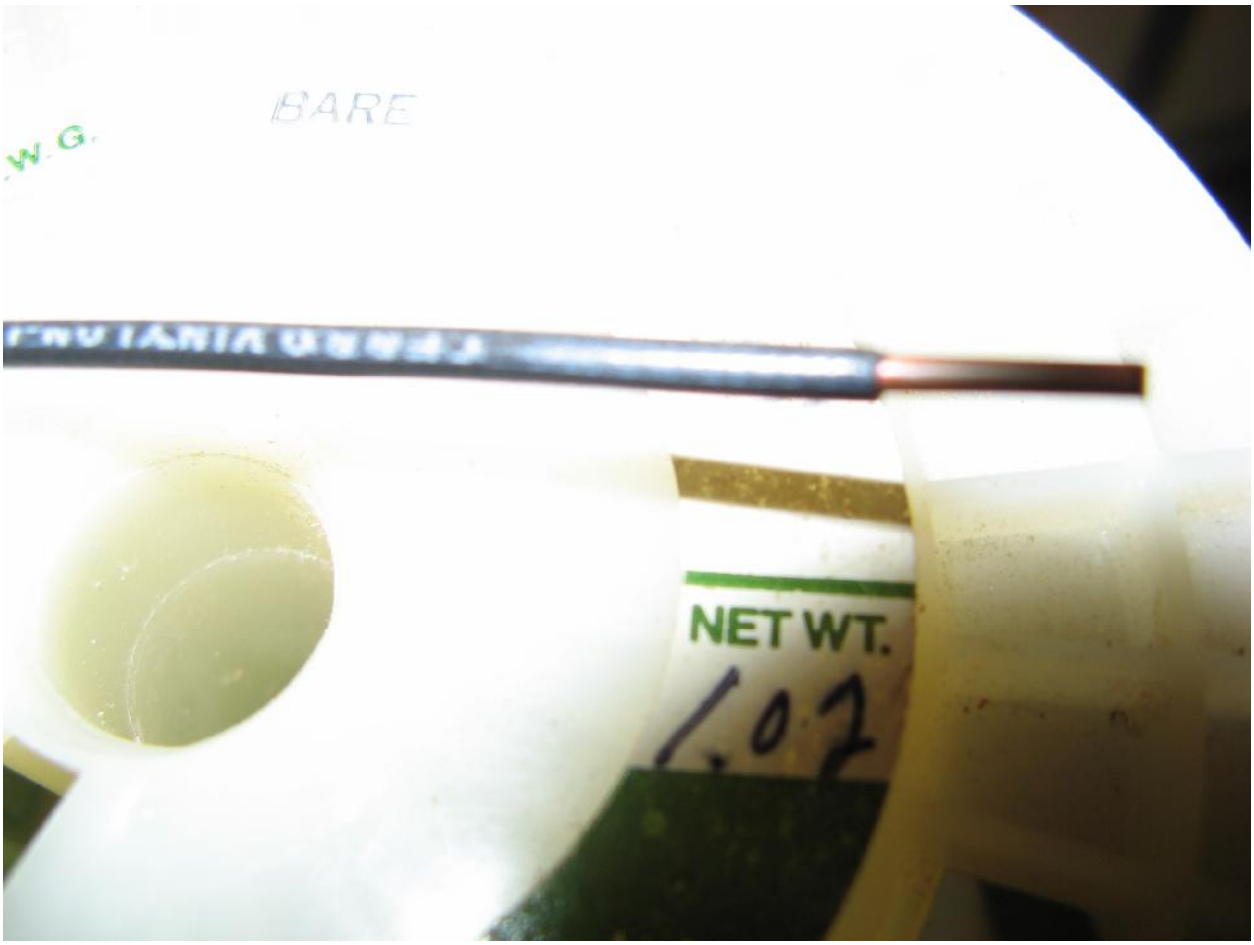


Figure 15. Wire for circuits.

Heacock used 14 ga wire with black covering, probably a rubber product. Common 14 ga wire from Home Depot is a good substitute, but it looks better to get rid of the outer thin transparent covering, by scraping with a pocket knife until thinned and then stripping that covering away. The lettering on the wire can easily be swabbed away with a little acetone and the wire looks nearly identical to Heacock's. His wire was not tinned.

Figure 16. Pictures of cabinet repair.

Near the front left at bottom, the side panel was damaged and a 1 x 2 inch piece of wood needed repair. I fooled around quite a bit trying to cut oak at various angles to get something to match the decorative grain of the quarter-sawn cabinet. The result was less than I hoped for probably because my oak didn't have a much of right kind of grain. This could be redone if I discover some better wood. I routered out the damaged wood with a small trim rounter and replaced it with a thin slice that fit the cavity.

Figure 17. Repair to hinge area of cabinet

The hinge area had some areas that were used for non-original hinges. This was repaired and the hinges were put in the original cut-outs.

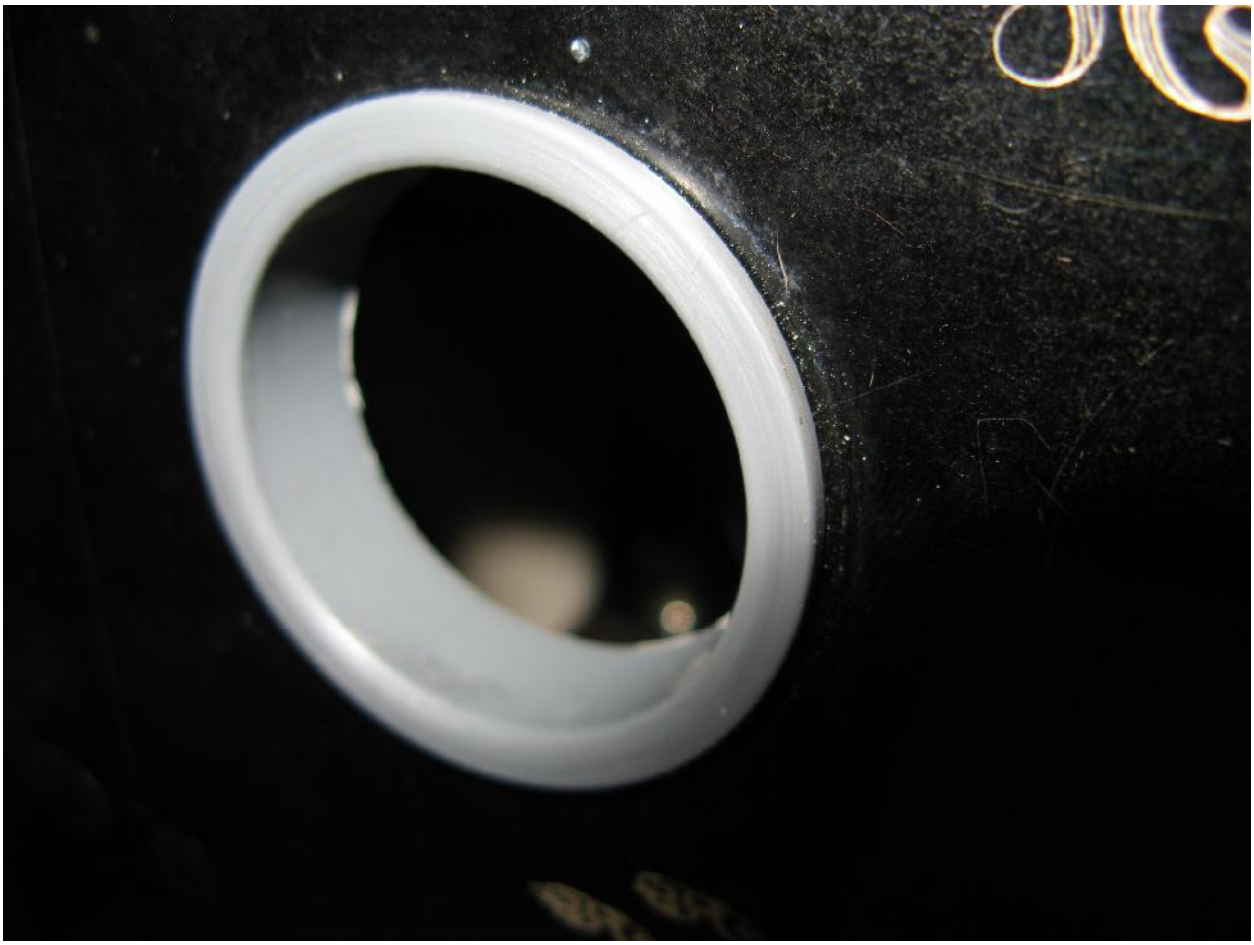


Figure 18. Substitute tube-view hole liner.

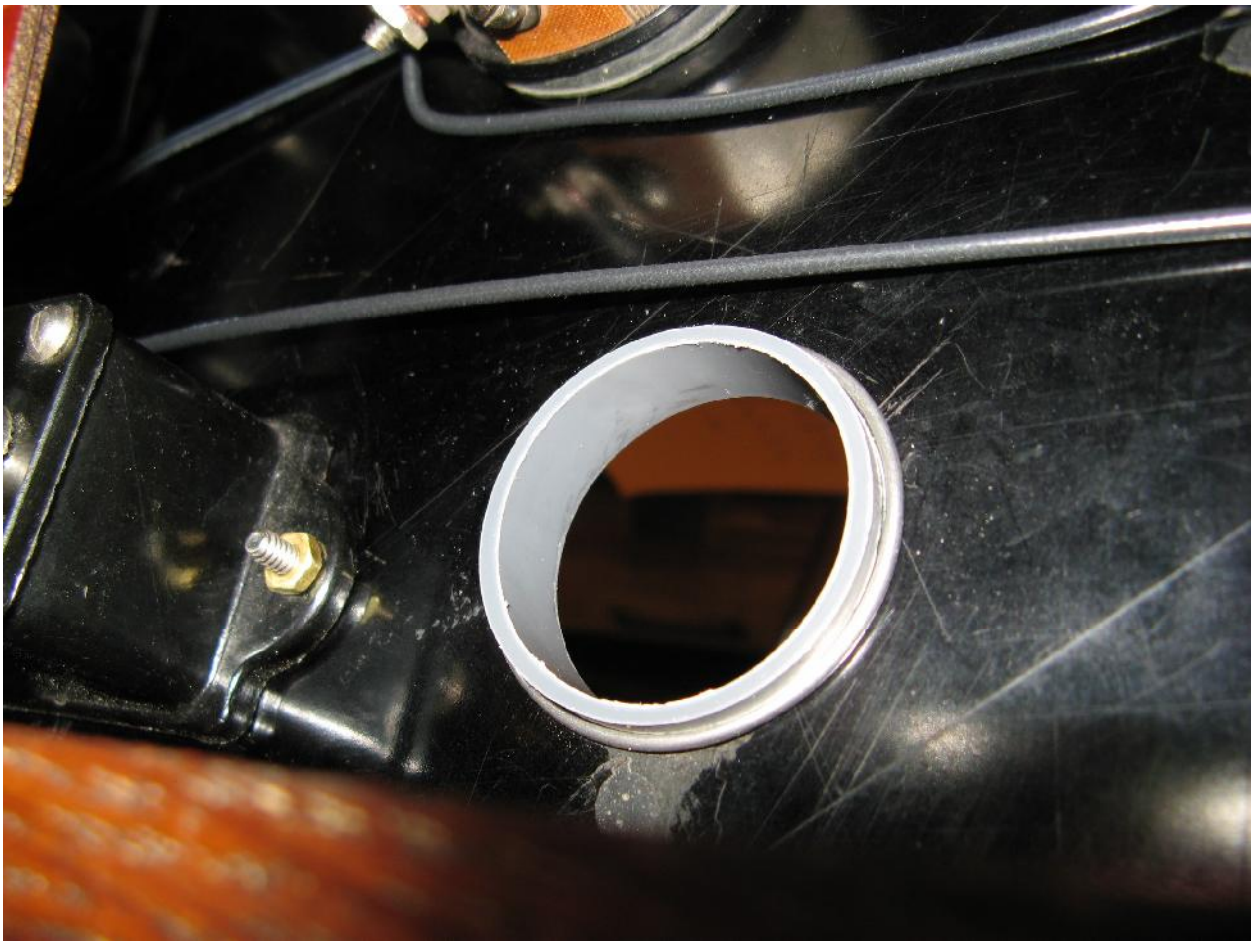


Figure 19. Back View of tube-view liner with stainless wire retainer.

The two large hole rings that line the tube-view holes on the panel were damaged. One was beyond repair so I made two matching liners out of plastic pipe. These were held in place by a ring of spring stainless steel wire. These appear ok and could be replaced easily with the original type rings with screens if found. I have smaller ones but none of this large size. Advertising with the Seattle club didn't turn up any.

Figure 20. Finished cabinet, front view.

Figure 21. Finished Cabinet, top view.

The as-found cabinet was fairly nice looking except for the damaged areas and the hinges which had been remounted because the original screw holes in the hinge inlet had pulled out. I drilled the old holes out and plugged the holes with small dowel. I also filled the non-original inlets with oak. The hinges were easily remounted using the original screws. The finish on the set was dirty so I cleaned this with a soapy rag and also with turpentine. I restored the luster to the set using Birchwood Casey Tru Oil gunstock refinisher. This is, I believe, is basically linseed oil with driers added so it will set up in a few hours and can be re-applied as needed. The product is similar to "Linspeed " also a gunstock finish. I was quite happy with how this restored an old look to the cabinet and took away the dried, weathered look that the cabinet had. The cabinet, typical of Heacock radios, has brass " L" brackets at upper corners inside to hold it together.

Figure 22. Restored Heacock Radio Phone, inside back view.

Figure 23. Restored Heacock Radio Phone, inside side view.

The finished radio, interior rear view, without cabinet. I replaced the copper ground shield in front of the tuning capacitor that was missing and was used by Heacock in his sets.

Figure 24. The finished radio, panel front view, no cabinet.

Figure 25. The finished radio, in cabinet, front view.

Figure 25. The finished radio , in cabinet rear view.

The set tunes typical of single stage variable tuning followed by broad rf transformer , not always able to tune just one station

It will tune from 600 to about 1400 Khz

Tuning is dependent on antenna type because of series connection of capacitance and inductance. I believe it works best with a long wire type antenna particularly for frequencies below 800 khz.

Audio is more than adequate in most cases for horn or cone speaker

I temporarily added one bypass cap on detector output to reduce distortion and improve audio.

I wired set with det grid return to A+ for 201a type detector rather than to A- which works for 200 type detector.

Figure 26. Photograph of restorer Dan Merz with radio.

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