

# Discovering the delights of the Regenerative Receiver

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I decided it was time to burn solder again and rediscover one of the aspects of our hobby that sadly seems to be fading.

I wanted to homebrew a simple regenerator receiver from odds and ends in my tool box. So I hopped onto the internet as one so often tends to do these days and soon came across Peter Parker's fabulous site at <http://home.alphalink.com.au/~parkerp/projects/>

I selected 'AM Broadcast Band Regenerative Receiver just two transistors', downloaded the instructions and I was in business.

The first job was to make sure I had all the relevant components on hand. What I didn't have, I made a short list and made my way to my local DSE store. Initially I had to make do with two plastic variable capacitors until I bucked up enough courage to strip an old antenna tuner I had that was surplus to requirements in the shack. The trouble was, the air variable cap I pulled out looked like it would be up to the task but had no markings on it to indicate what its rating was. I decided to use it anyway and experiment when it came to winding the coil.

Next job was to etch the PCB board. This was a straight forward, if messy, operation, but the result was pleasing enough. My intention, you see, was to construct the radio on a nice piece of timber so that I could admire the 'working parts' while listening.

Then came the fun part; mounting all the components into their places on the board. This took an hour or two and was most enjoyable. A quick check on completion revealed everything to be in the right places.

Next came the job of thinking about how the board and other hardware would be mounted. I had a nice piece of timber, which I cut to size and oiled. Then I selected a piece of aluminium, planned where I wanted to mount the various components that needed holes drilled, and got to work with the drill and reamer. I made mounting brackets for the ferrite rod from L shaped aluminium and drilled

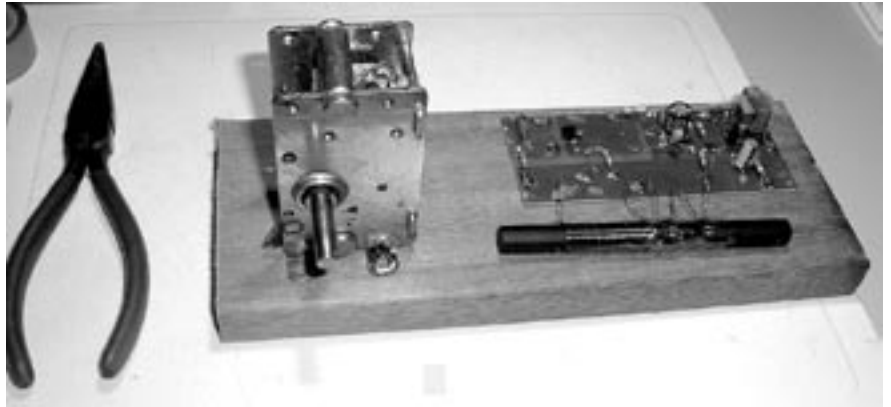


Photo 1: The regenerative receiver under construction.

the holes. The most challenging part here was measuring the distances for the mounting holes for the vernier dial on the tuning capacitor to be drilled.

The winding of the ferrite rod was easier than expected, but baring the ends of the 0.4 mm winding wire proved fiddly. Then it was time to mount the rest of the components. At the last minute I decided to include a switch and LED, with resistor, so that I could see when the 9 V battery was on. The reason I did this

was just for fun, really, and because I had one lying around in my junk box.

Then came the smoke test. I connected up the battery, flipped the switch and held my breath. No smoke but no signals either!

A quick check of the circuit board revealed that one leg of the transformer hadn't been soldered down. I fired up the iron once more and rectified that oversight.

Another flick of the switch produced

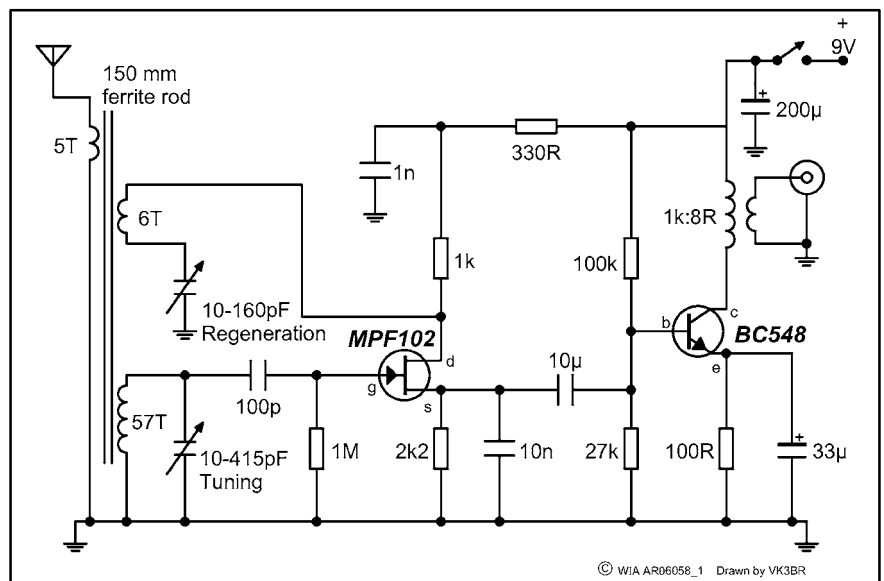


Figure 1: Schematic of the regenerative receiver.

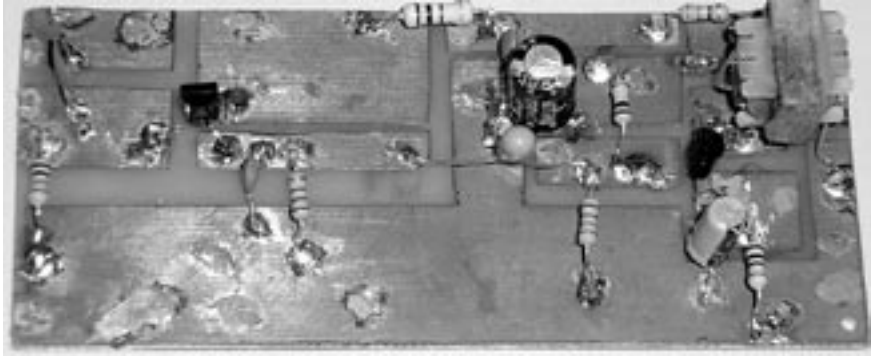


Photo 2: The regenerative receiver under construction



Photo 3: The completed regenerative receiver.

hissing noise. Life! Ah, what a sound.

I swung through the tuning range and the only signal with enough load to drive the  $8\ \Omega$  speaker was a local ethnic station, but even though I couldn't understand a word, it was still music to my ears.

This was the only station I could hear, and it was sitting at the bottom end of the band. I figured that I needed to reduce the number of windings on the ferrite rod to bring in more stations. Out came the iron again and I unwound fifteen or

twenty turns. Now things were looking, or should I say sounding, better. More stations. I was well pleased. This little receiver was certainly very sensitive.

Since completing the radio, I have already had hours of fun listening to local BC stations.

But now I want more. Some of the interesting stations are so soft I can only really listen to them on headphones. So it's time to think about my next project – a simple audio amplifier.