

Confessions of a Radioist

By Clem Small KR6A

We've heard from owner and publisher Bob Grove who created MT in 1982. Then we interviewed Assistant Editor Larry Van Horn, who first started writing for MT in 1983. The writer next in longevity is Clem Small, who became a regular columnist in 1984, though he had written some historical articles for MT prior to that. Clem's start in radio is beginning to sound like a familiar story ...

Ever since I was old enough to wonder about what made things tick, I've been interested in radio technology. When I was a little kid I was fascinated by radio and wondered just how it could work. Later, when I got old enough to grab things and tear them apart with a screwdriver and pliers, I did what lots of us old-timers did: I got old, discarded radios and electrical gadgets that nobody wanted and took them apart. Then, with the parts so obtained, I made crystal sets, regenerative receivers, phono oscillators, and other electronic projects.

In junior high school I discovered Morgan's books on radio for boys in our school library. I read them and all the other radio books I could find. I remember finding an old automobile spark coil. Examining it, I realized that it had probably hundreds of feet of fine wire on its secondary winding. Excitedly, I thought it would make an excellent aerial and might bring in stations from as far away as China on my crystal sets! Hooking it to the antenna connection, it of course yielded no signal at all. It was just a small coil lying there by my crystal set. That's where I learned that a wire antenna works best if it is strung out high and long, not in a tiny coil lying beside the crystal set.

Listening and Learning

Later, a neighbor who had been a radio man in the navy in WW2 gave me an old copy of the *ARRL Handbook* and took me to a radio supply house (Burstine-Applebee in K. C. Mo.). There you could buy surplus parts and even complete surplus military transmitters and receivers for very little money. That was an eye-opener for me: I had access to the parts I needed to make what I wanted – when I could save enough money to buy them!

I started making simple receivers from the *ARRL Handbook*. When I first tuned in Australia, I ran and got my father, and had him listen to the headphones on my home-made regenerative receiver. I proudly mentioned that Australia was on the other side of the world, as far away as a signal could come from! That was even more of a thrill than getting a spacecraft signal from Mars would be for me today, if I had the equipment to do that.

At one point I made a one-tube regenerative receiver, which gave great results with only a simple whip antenna. I built it in a large cigar box, and it would work even as I walked around with it and its short antenna. What a thrill! Sure beat my crystal sets for performance.

I even remember the number of the tube it used: It was a 1G6GT-G which operated with 1.5 volts on its filament. I think I used 45 volts on the plate. Those batteries took up much of the space in that cigar box – a far cry from the small 9-volt batteries so commonly used in radios today. The tube had two triodes in one envelope, and so provided detection, regeneration, and audio amplification in one tube. I was extremely pleased and excited with the success of that receiver. But I wanted a ham rig so badly that I started building a tube-type, ham transmitter with parts I had scrounged, and kept it, in its partially completed state, under my bed. At night I sometimes dreamed I had it finished and on the air, and that I also had other equipment that I wanted up and running.

I never did finish that transmitter – never got the rest of the parts at that time. On the other hand, at the same time I was able to receive all the HF ham bands with the various regenerative receivers I had made. I used a set of plug-in coils to change bands. I also listened to shortwave stations with old, castoff AM BC-SW receivers that I scrounged from here and there. Lots of broadcast receivers built in those days had good shortwave coverage. Tuning in those signals coming from far-away places with strange-sounding names was quite a thrill.

Later, I was able to complete a simple ham transmitter, but I still didn't have a ham license, so I didn't get it on the air. However, I did get "on the air" with a spark-gap transmitter I'd made. I never put it on an antenna, but it still buzzed in loud and clear on my folk's radio! They soon put a stop to that!

I also made a phono-oscillator. Phono-oscillators were one-tube, extremely-low power transmitters used to play phonograph records wirelessly on the AM broadcast band. That transmitter was so popular with my friends that I finally sold it to a group of them. I think they wanted to use it to play disk jockey and radio announcer.

On the Air at Last

Going to the army was a big boost to my radio involvement. There I learned the Morse code and became an army radio operator. I attended the base radio operator's school in Anchorage, Alaska, and I got my code speed



A picture of me and my grandson, Paul, at my ham station a few years back. No, he's not a licensed ham (yet).

up to the novice level – so I got that license (WL7BDP). Then, when I was up to 12 wpm I got the general-class license (KL7BDP). Before I finished the school I copied the code at 18 words per minute.

Discharged and back home in Missouri, I became W0ZTY. Then, when I moved to California I became W6LZX. There I got the extra-class license, and was given my present call: KR6A.

After getting my ham ticket I built quite a number of ham transmitters and receivers. Mostly I built them from scrounged parts, but I also built a Heathkit AT-1. I believe that was the first model of a ham transmitter kit that Heath sold. I home-brewed a plate modulator and antenna tuner for it, and even worked a little DX with its low, almost QRP power level. Its final RF amplifier was a 6L6: a tube mainly used for audio amplification in radio receivers and audio amps.

I remember trying different antennas to see how they performed. One was a vertical cage antenna. It was a lot of work to build, and I was quite disappointed with it, as it didn't outperform my other simple antennas. At that point in my hamming I didn't realize that the cage's virtue was in its increased bandwidth as compared to a simple wire vertical antenna.

My interests have also led me to earn the FCC marine radio operators second-class license, the FCC radiotelephone first-class license (now re-issued as an industry certification by ISCET), the FCC general radio operator's license, a Civil Air Patrol radio

operator's license, the U. S. Infantry MOS number (1740 as I recall) for radio operator, and certification from the ISCET in industrial electronics, radio communications, and antenna technology. I also took a "minor" (technically a collateral-field) in electrical engineering in college.

A Life in Radio

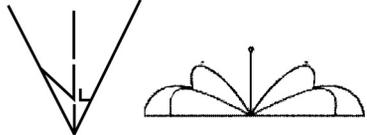
Although over the years I have worked mainly in areas other than radio and electronics, I have been a radio-TV service man, AM-broadcast station operating engineer, electronic technician, taught electronics, and worked as a technical writer in the electronics industry. I have written free-lance for various ham and electronic magazines, and I have been the antenna editor for *Monitoring Times* since November 1984 – nearly 23 years! I was also antenna editor for *US Scanning News* before it ceased publication. My *Antenna Handbook* is in its second edition.

In November 2007, I will be 75 years old. I'm really going to celebrate that birthday – I'll be a full three-quarters of a century old! And for most of those years I have been tinkering with radio in one way or another. I still enjoy making and repairing radio and electronic gear, learning more about radio and electronics, and occasionally getting on the air. Of all the operating modes I enjoy CW the most, using a keyer usually, but sometimes a bug for the nostalgia of it, and talking to old codgers like myself. Since 9/11 and Katrina, I am developing an emergency-response kit

for ham-radio communications.

So, for all the pleasure I have had from radio over the years, I offer a big thanks to Faraday, Maxwell, Hertz, Marconi, and all radio pioneers whose work has led to the development of today's fascinating technology of radio communications. That technology has brought me, and countless others, a very enjoyable hobby, as well as unbelievable advancement in our ability to communicate with one another. I believe that communication is a very powerful tool for world peace: it's difficult to want to bomb someone with whom you've just had a friendly conversation.

Peace, DX, and 73
Clem KR6A



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