

Natural Radio

News, Comments and Letters About Natural Radio

September 2010

Copyright © 2010 by Mark S. Karney

It's been an interesting summer. In May I underwent Coronary Bypass Surgery as I was experiencing some minor symptoms that turned out to be major blockages. I didn't have a lot of the typical risk factors, but apparently had made a poor choice of ancestors. I was lucky since the problem was discovered before I had any damage to the heart muscle.

The breakthroughs and incremental improvements in this procedure are a tribute to the medical profession. Just four days after having my chest sawed open and my heart stopped for repairs, I left the hospital, walked into the house and was good enough condition to stand at the kitchen counter, chop vegetables and help my wife with dinner with only over-the-counter Tylenol for pain medicine.

Cardiac surgeons, in my opinion, are the ultimate hackers, and I mean this in the most complementary way. They steal a vein from your leg and use pieces of it to route blood around the blocked coronary arteries. Then they divert the mammary artery in the chest which is already hooked to the aorta to bypass another blockage. Your body readily compensates for the loss. For a person who has modified, re-purposed, disassembled and repaired many pieces of equipment over the years, this kind of fix seemed appropriate. One final ironic twist was that after surgery, there were two sets of wires coming out of my stomach each terminating in a set of standard binding posts, just in case there were any heart rhythm problems that needed correction. Seeing the binding posts attached made me laugh. As with most projects, I am working better after the modifications and mostly back to normal.

In mid June, a nasty line of thunderstorms swept across the Chicago area and a mighty lightning bolt brought down a tree a few doors away on top of the power lines. The lines didn't break, but went to the ground and shorted out and then pulled the poles down to a 45 degree angle. I hope the bolt generated a nice whistler for somebody as we lost power for three days since the crews were overwhelmed with outages and handling the bigger ones first. No lights, no Internet, no phone, no air-conditioning and no water since we have a well. It is amazing how dependent we are on the power grid.

It was only my block that was knocked out, so I didn't even get a little break from the hum and buzz to do some decent listening. By the time I got a back-up generator through the generosity of some neighbors, I had 3 inches of water in my finished basement. Fortunately, with the generator going, we had it pumped out in about an hour and again fortunately, the remediation and repairs were a covered item under our homeowners insurance.

Reconstruction was finally completed this week and I have a new vinyl floor in my workshop along with having some previous water damage corrected. Equipment, shelves and benches needed to be moved around in the process, so I have a good

opportunity to get rid of junk, reorganize and rethink how I want things laid out as I put the workshop back together.

At this point, I'm just starting to think about what types of projects I'd like to work on in the future and how to set up the workshop to accommodate them. This will probably be a fall and winter project.

One thing is definite; with a spare computer re-purposed from work, I will be installing DL4YHF's Amateur Radio Software, "Spectrum Lab". This is downloadable at <http://www.qsl.net/dl4yhf/spectral1.html>. Support is available in a user group at <http://groups.yahoo.com/group/SpectrumLab/>. I've played with this software in the past, but a dedicated computer should make it more useful.

This is an excellent piece of software and with an appropriate soundcard it can function as a Natural Radio receiver with built-in power line noise filtering. It also can be used as a VLF receiver for SID monitoring and other propagation studies.

An external USB sound card keeps the sensitive audio circuitry away from the noisy environment the inside of the computer. It seems that one of the better choices is an Emu 0202. This has a street price of around \$100, samples at 192 kHz, has 24 bit audio and quiet preamplifiers. Theoretically, this sampling rate should allow the reception of stations up to about 95 kHz.

I still have my Weller soldering gun and the typical Radio Shack soldering iron. But over the past month I've spent some time with my middle son, Jeff, who is starting a company to provide boards, kits and components for the Arduino and other microprocessors. (www.jkdevices.com)

In the process of setting up his workshop he bought a temperature controlled rework station with a hot air gun and soldering iron. He said he'd never use a cheap iron again, and as I watched him easily solder microprocessors and microscopic resistors and capacitors to a surface-mount board I understand why. I'm thinking that this would be a good investment even if I don't do a lot of surface mount building as I've damaged way too many boards and components with my cheap irons.

My eyesight has always been bad, but with the aging process and especially with SMC devices, an illuminated magnifier is a necessity. I have an ancient klutzy one which doesn't stay put very well, so I'll probably be investing in a new one.

My plans are usually bigger than what I can accomplish in a given time, but I am looking forward to some time at the bench this winter. There seems to be resurgence in kits and electronic projects with lots of smaller niche companies springing up. I'll be posting some links to some of the more interesting projects on my website at www.naturalradiolab.com

Sun Finally Waking Up – Solar activity has finally picked up with some C and M-Class flares and associated CMEs. I'm sure we all look forward to the increased activity and possibility of better Natural Radio listening and visible auroras after this long period or a sun devoid of spots.