

Alachua County ARES Hosts HF OCF Dipole Construction

by Gordon Gibby KX4Z

HF Emergency Communications was one of the goals chosen by Alachua County ARES participants for the 2018 calendar year (<http://qsl.net/nf4rc/2018/CoreCapabilities.pdf>). So for the May "LunchNLab" radio-gear-building session, we mentored hams building the center balun section for an off-center-fed, multi-band dipole, similar to a popular (and expensive) commercial OCF dipole that has well served the Gainesville Amateur Radio Society Field Day operations. Some of the features that were attractive for deployed emergency HF communications included: inverted V requiring only one high support; no significant wire tension allowing light-weight antenna wire; multiple bands without a tuner; all HF bands with a tuner. It didn't hurt that we're able to build a workable homebrew version for only about 10% of the (admittedly much more rugged) commercial design!

After some experimentation we developed a kit-like set of instructions:

<http://www.qsl.net/nf4rc/2018/OCFCenterBalunInstructions.pdf>

LunchNLab started with a fun catch-up chit-chat session at noon, at a nearby Wendy's. Handout-instructions were distributed and then eleven hams from ARES, GARS, and even some non-affiliated hams, met at a member's home, and started building in earnest, over flowing the kitchen and breakfast nook, even spilling out out of the house. 2" standard PVC plumbing caps and couplers sprouted SO-239 sockets and eye-bolt hanging hooks. Teflon-coated wires got bundled tightly, then turns on FT-140-43 (or -61) ferrite cores were carefully counted. This was the first time some of our members had ever dealt with ferrite cores, so a lot of education was going on all the while. Every build included a 1:1 current balun, but some builders chose 4:1 and others 6:1 voltage baluns for the matching system. Some used lower-powered Type 43, and others higher power handling Type 61 ferrite. As usual, participants went at different speeds, and everyone helped each other time and time again. *Lots of radio learning going on!*

Vann Chesney, AC4QS, arrived with a 4:1 design already quite far along in a rectangular electrical pvc box, and moved right into cutting and attaching his 90- and 45-foot antenna wires. 3" sections of plain electrical PVC conduit with drilled holes make our inexpensive end-insulators. Hoisted aloft by the test-rope over the front oak tree, measurements began through 50 feet of RG8x. A bit on the long side for 80 meters, it will need a tiny length adjustment, but already it handled the entire 40 meter and 20 meter bands, and with a tuner, would work acceptably for just about *all the HF bands* with relatively low losses on the coax feed. Another success!

Our next LunchNLab will be a very clever and inexpensive regulated bench power supply, that comes with its own clear plastic case. (<https://www.amazon.com/gp/product/B0130LKYYWE>) That will then make a very nice charger for a 12-volt gelcell, to power the following month's project--the inexpensive and innovative 3-30 MHz uBitx SSB/CW low power transceiver. We keep having fun while learning! (uBitx: <http://www.hfsignals.com/index.php/ubitx/>) The uBitx people have just released new and improved firmware for their multi-thousands-delivered-already low-power kit, and hardware experimental improvements are abounding on the bitx20 group on groups.io.



First group finished: (L->R) Stewart Reissener KK4DXF, Zeev Glozman KN4JQE, Vann Chesney AC4QS, Shannon Boal K4GLM, Jeff Capehart W4UFL and Mike Shaffer KD4INH. Vann completed his and made successful SWR measurements with his antenna pulled up the oak tree



Second Group Finished Susan Halbert KG4VWI, Duke Bailes KM4EVZ, Rosemary Jones KI4QBZ.



Breakfast Table Solder Session



Vann Chesney AC4QS making careful, methodical measurements from under the oak tree.



Took over the entire kitchen! Drills, soldering irons, wire, parts everywhere! John Troupe KM4JTE at the far left.