One Saturday Morning…

On a recent Saturday morning, the new test and repair bench at the Clubhouse got some use by a relative novice at cable assembly. It all started the night before, when **Alex Rodriguez KE2AAK**, a relatively new club member and student in the Amateur Extra class, happened to mention that he needed to make up a couple of coaxial cables from the supplies that he had purchased. I suggested that he come in the next morning, a Saturday, and assemble his cables at the clubhouse.

Alex had ordered about a hundred feet of RG-213U coaxial cable and a set of twenty-four crimp/solder PL-259 connectors from DX Engineering (DXE). He had little or no experience in assembling these cables, but using the tools and equipment available on the Clubhouse test and repair bench, he was able to successfully assemble his coaxial cables under my direction. Also participating for the learning experience was **Earl Moore KC2NCH**.

Among the tools on the bench are a DXE coaxial cable gripper and a DXE coaxial cable stripper, both appropriately sized for the RG-213U cable, as well as cable cutting pliers and cable trimmer pliers. Of course, the tool complement also includes a DXE coaxial cable crimper with the die set for the RG-8U and RG-213U cables. The final piece of equipment necessary was the solder station, useful for soldering the PL-259 center pins.

With all of the needed tools and equipment on hand, we set out to teach Alex and Earl how to install the PL-259 connectors to the cable. The DXE cable gripper and stripper make short work of preparing the cable, stripping exactly the correct length of outer jacket, shield braid, and dielectric in two easy steps. Step one is to insert the cable into the “slicing” end of the stripper, and then squeezing the stripper closed while rotating it around the cable a couple of turns… until the sound of cutting cable ceases. Step two is to open the stripper tool and reverse it end-for-end on the cable, placing the cable into the “slitting” end of the tool. Then, while squeezing the stripper tool tightly closed and holding the cable securely with your other hand, simply pull the stripper tool straight off the end of the cable, taking the proper lengths of insulation, braid, and dielectric off cleanly.

With the cable end prepared, it is a simple matter to install the connector. Start by slipping the connector nut onto the cable, closed end first. Next, slip a connector ferrule onto the cable, and then peel off the remaining strip of outer jacket left behind by the stripper tool. This strip of jacket will already be slit and will come off very easily. Continue by slipping the connector body onto the end of the cable, inserting the center conductor into the connector pin and working the connector body tube under the exposed shield braid, pushing it gently as far as it will go to bring it up against the cable body. Note… DO NOT twist the connector into place, as doing so can cut the shield

braid wires. Push the ferrule up along the cable to the connector body, slipping it up and over the shield braid. Then, using the appropriate crimping tool with the proper die set installed, crimp the ferrule tightly to the cable and connector body. Finish the installation by soldering the center pin to the center conductor of the coax, working *inside* the center pin tube only, being careful to avoid getting any solder onto the outside of the center pin. Clean off any rosin on the outside of the center pin for best connectivity and a professional finish. Repeat the process on the opposite end of the cable, and then check the cable for continuity and shorts with an ohmmeter. A properly assembled cable will show a direct connection from center pin to center pin, and no connection from the center pin to the connector body or shell.

Alex and Earl each installed a couple of connectors, including soldering the center pins using the Yihua 948-II solder station on the test and repair bench. The cables tested out correctly when measured using the Greenlee DM-510A handheld DVOM, also on the test and repair bench. Are we sensing a theme here yet? Let me spell it out… with the cable and connectors supplied by Alex, everything else needed to assemble the coaxial cables is available right there in the Clubhouse for *all* members to use! All that we ask is that you get "Elmered" on the tools and equipment if you are not already well experienced with them, both for your own safety and to prolong the service life of the tools and equipment.

The story is not over yet. Alex also had brought with him a power cable for his home radio, consisting of separate red and black wires about twelve feet long each with a four-pin Molex® plug at one end, and a pair of fuse holders near the opposite end, which had about an inch of insulation removed from each wire to accommodate being wrapped around the power output studs on his power supply. His power supply, however, also has Anderson Powerpole® connections available, which is what Alex really wanted to use. To that end, he had purchased a small quantity of 30 ampere rated Powerpole® terminals and some connector bodies.

We improved his power cable by taking out about six feet or so of length and installing the Powerpole® termination that he wanted. Of course, Alex had provided the connector supplies, not knowing that the necessary parts are stocked on the test and repair bench. Equally important, however, is the fact that the test and repair bench is also equipped with a proper Powerpole® crimper tool, which was needed to install his connectors.

We used some large-diameter heat shrink tube pieces to tie the red and black wires together at several points along their length. We also spliced the wires where we had cut out the excess length, properly soldering the splices and covering them with heat shrink tube as well. Shrinking the heat shrink tube sections was a breeze, literally, using the hot air supplied by the hot air reflow wand on the solder station. The heat shrink tube lengths are stocked on the test and repair bench.

The point of all of this is that this bench is really and truly well-equipped and supplied with the most common consumables used in our hobby. Come on out to the clubhouse and check it out – and plan on using it for your next upgrade, repair, or modification task. After all… it belongs to all of us!

