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QRV? Which Kit to Buy? Yes!

At a recent meeting of the North Georgia QRP Club (<http://www.nogaqrp.org>), the question, “Which kit should I buy?” came up. This question also pops up on the QRP-L reflector every so often. With so many great kits on the market, it really a difficult choice, sometimes, deciding what your first homebrew project from a kit should be.

Well, my answer is: **Yes!** I firmly believe that with sufficient time, energy, elmering, etc., you can have fun with just about any kit available today. Heck, the folks that put the kit together had fun, why shouldn't you?

However—and it's a **BIG** however—there are some kits that are better suited for the ham just getting started in construction than others. You might not want to bite off more than you can chew right at first. A very telling example of that is the partially completed White Mountain 75M transceiver from Small Wonders Labs (<http://www.smallwonderlabs.com/>) that's still sitting in a project box in my shack. I bought it a several years and many projects ago, and while the kit was extremely well documented, and fairly straightforward construction, I quickly found myself over my head trying to figure out what I had done wrong to cause no audio to come out.

On the other hand, there are some extremely small and/or simple projects, such as the Pixie 2 transceiver, that are very easy to construct, but very challenging to use. Build one of these as your first project, and you might get frustrated wondering why you can't get anyone to answer your CQ.

Please, please, please! Do not take these comments as being in any way negative about the kits themselves—it's all got to do with where you are in terms of your skill in construction and in operating. The key here is to have fun! And in time, you should plan to build both (in fact, I've built several Pixies, some that have worked and some that haven't, but each has been a blast to build!).

“So,” you say, “what do you really recommend for the average ham, just getting started in construction?” Well, two of my favorites are the MFJ Cub (MFJ-93xxK) and the Small Wonders Labs SW-series. And to be more specific, I'd recommend either the MFJ-9340 or the Small Wonders Labs SW-40+.

Why? Well, first of all, in terms of complexity, both are well within the construction capabilities of most hams. Secondly, I recommended the 40 meter versions, because once constructed, you can almost always find somebody to chat with on 40 meters, just about any time of day, and you can often find someone to chat with who is going to be comfortable going at just your CW speed (hint, if you're like me, and can't blister the bands with 35WPM, you don't really need to configure the lower 25 KHz of the band!!!).

Both projects also have excellent documentation. In the case of the SW-40+, in addition to the documentation that comes with the kit, there is a complete “Elmer 101” series available on the Internet (<http://www.qsl.net/kf4trd/faq.html>). This “course” is truly incredible! Not only does it walk you through construction, step-by-step, it also explains the theory behind the radio. The web page grew out of the “Elmer Project” whose objective was to provide a group learning experience, and to help those just getting started in construction to better understand how a common QRP transceiver works.

The MFJ Cub is a great first project, because although it is a reasonably complex circuit (at its core it is a superheterodyne transceiver) that takes advantage of surface-mount (SMT) circuitry, MFJ has taken care of the hard parts of construction by pre-installing many of the kit's SMT parts using robotic equipment!

When you are finished, you've got a pretty good radio that's not too difficult to operate for the average ham.

For the next couple of columns, we will be talking about building the MFJ Cub (MFJ-9340). Although this series of articles is not nearly as comprehensive as the Elmer 101, it should help you get started and to get your rig on the air. You can order the Cub from MFJ directly (<http://www.mfjenterprises.com/index.htm>), or buy it from an MFJ dealer. For more information about the Cub, check out the QRP ARCI Cub Project page at <http://www.qrparci.org/cub.html>.

Let's Get Started!

The first thing that you do when your kit arrives is to do the "happy dance." Every ham knows how to do the "happy dance" (you know, what you do after you worked your first station on CW, or your first DX—you get the picture). And then, tell all your buddies that your Cub arrived (understand, this is not considered boasting—in fact, it is sort of a courtesy, giving them a "heads up" that questions are soon to follow!!!).

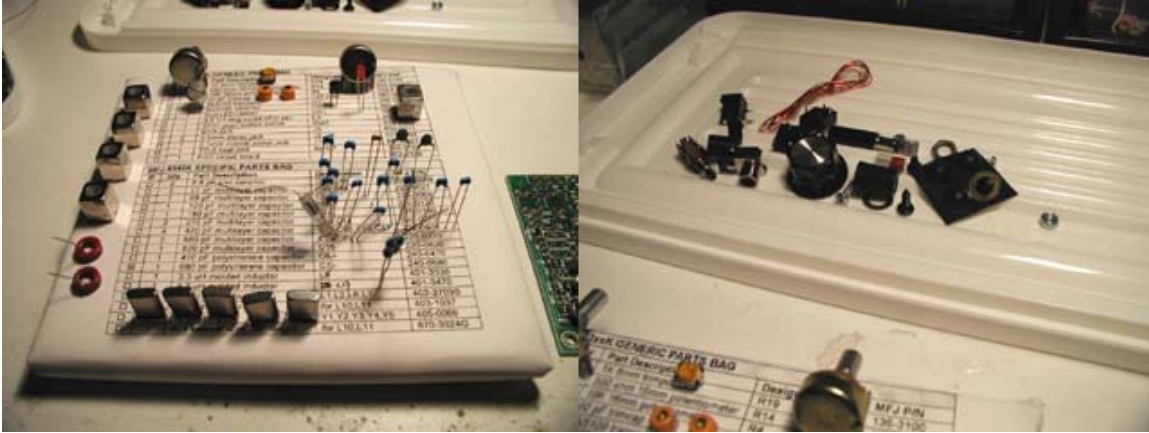
The most important thing that you can do to prepare for constructing your Cub is to RTFM (Read The Fine Manual). Actually, the Cub comes with two manuals: a construction manual and an operating manual. Read both. It is *very* important to become familiar with how the kit is assembled—before hand—and to begin to have some expectations about how it will operate once completed.

It is important, also, to have a clean, well-lit work area. It is a good idea, if possible, to not work over a carpeted floor. You would be surprised how impossible it is to find a small part that has been dropped onto carpet! Gather all of your tools and supplies, as described in the manual, then spread out the circuit board, parts bags, manuals, etc. from the MFJ Cub box.

Notice in the photograph that a piece of styrofoam has been added. While not required, I've found that if you photocopy the parts list from the manual and then tape it onto a piece of styrofoam, it makes the parts inventory much easier, and also aids in finding the right part during construction. Components can be easily pushed into the styrofoam on or near their description in the parts list photocopy.

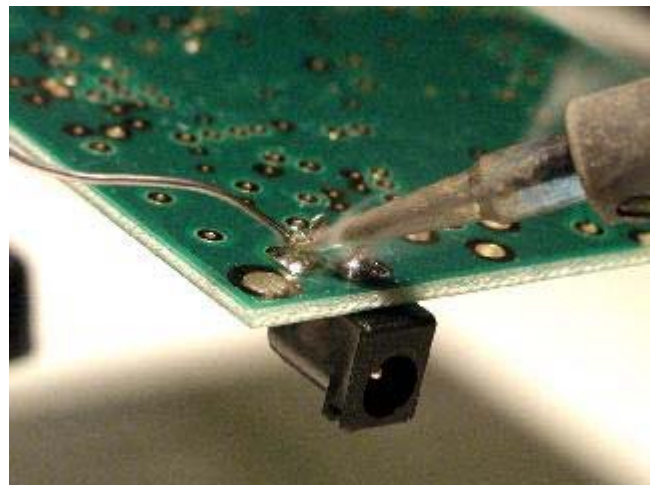


Following the instructions in the construction manual, inventory all parts—although MFJ has very high quality standards, sometimes mistakes do happen. What a way to put a real damper on your project if in the middle of construction you discover that you have stop and wait for a replacement part to arrive!



MFJ organizes the parts into three bags, a bag containing generic parts (same parts for every flavor of MFJ-93xxK), a bag containing the 40 meter specific parts, and a bag containing miscellaneous hardware. By the way, a plastic shoe box, available at most discount stores and drug stores, makes a very handy storage container to keep your project together during construction (assuming you don't build it all in one session, that is). The top can be inverted to make a good place to keep loose hardware and parts together.

A word about soldering—this seems to be one of the most difficult aspects of construction when you are first starting out. The point behind soldering is to make a good mechanical as well as a good electrical connection. You also want to take care that you do not create any *solder bridges*. A solder bridge can occur when one of the leads touches another pad other than the one it is supposed to touch, and causes a short between the two pads. Too much solder, or touching more than one pad with the iron or the solder while soldering can also cause a solder bridge. More projects have not worked due to solder bridges than perhaps any other single cause! Go slowly, be careful, and inspect the board each time you solder a component and you will do just fine.



Next time, we will discuss the actual construction of your Cub, including tips on that great mystery, how to wind a toroid. Until then, lets get QRV!

72 de Mike, KO4WX