

Ham 142 – HF No Infrastructure
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1. Mission: Establish reliable, lowest technical common denominator, communications locally.
2. What: Since the first days, amateur radio has been associated with disaster communications. In conducting ham classes for over 20 years, the reason most people want their license is for emergency. Unfortunately, once the license is earned, little directed support has stymied them.
3. Who: We are simply a group of individuals with a common interest. We are not a club or organization. We do not have officers or dues. We give that *community support*.
 - a. In amateur radio fashion, each pays their own way and contributes to occasional joint projects. Evergreen generously allows use of their facilities.
 - b. With limited resources, we primarily focus on the *tools* to assist local communications through nets, training, and equipment. Myriad other venues support hobby aspects in forms of contesting, chasing long distance (DX), and building another variation of a long wire antenna.
4. What is an emergency? Hopefully it is something you plan and work to resolve, that never comes.
 - a. In our neck of the woods, weather and power outages are common, but the skills are the same for other uses.
5. How: Training consists of license classes and a monthly Show-n-Tell to learn and share equipment experiences. Multiple on-the-air nets permit practice, testing of equipment, and research into what works here. Nets arise based on needs and interests. Now, there are two General Interest, a Ladies, and Intrepid Scouts for pushing the edge of science.
6. The mission statement gives a clear perspective.
 - a. Establish – a mechanism does not exist at this time, so we continue to develop the tools.
 - b. Reliable – experiences will show the good and bad, so changes are inevitable.
 - c. Lowest technical common denominator – make it duplicatable, simple, and effective.
 - d. Communication – use predominantly voice with perhaps limited data.
 - e. Locally – requires tools for a very precise configuration. Distance (DX) is very different.
7. Common denominator implies each one can use the tools available and help others with theirs.
 - a. In Disaster Recovery, much like a phone company or military, when you look in an equipment trailer, it is the same every time.
 - b. We recommend a common denominator set of quality equipment selected for the purpose.
 - c. If you use different equipment, by necessity, you are experimenting on your own.
8. Numerous other articles address routine communication using VHF/UHF. You have your license.
 - a. Then, you must have the correct radio, have it on, and know how to use it. Else...
9. A working model is communicating when there is nothing else, no satellites, no ethernet, no tv, no radio, no electricity, no infrastructure support.
 - a. High Frequency (HF) is the only communication tool which works in a hammer-down situation.
 - b. This requires a little more moxie, a General or Extra class license, and an Icom 7300 family HF radio.
 - c. Reliable implies it works in the niches of hills, forest, or areas without infrastructure.
 - d. It took a while to give the background, so you have a rationale for the very limited tools available.
 - e. No commercial equipment is on the market to meet the needs, so you get to build it.
 - f. The *environmental* design must be suitable for every ham, regardless of where they live.
 - g. The design is adjustable based on available space, available equipment, and available bands.
10. Usable bands are 6-m and 10-m for closer direct comms while 40m and 80/75m depend on atmospheric reflection.
 - a. Each antenna has two or three separate tunable loaded inductors. The ones we use are Shark Mini-Hamsticks.
 - b. The sticks can be purchased individually. A complete suite includes 3: 75m, 3: 40m, 3: 10m and 2: 6m.
 - c. Model# S-F5MS, a 5-pack may be more cost effective. Its 15 & 20m are unused, but are good hobby projects.
11. In addition, each antenna needs the following. It is not inexpensive. You can make one at a time.
 - a. 1: 3/8"-24 to So239 antenna adapter
 - b. 1: 4" electrical octagon box with double knockouts on end and screw-down Romex connector
 - c. 2: 3/8" star lock washers
 - d. 2: 3/8"-24 nuts
 - e. 25' RG8 coax or better with PL259 ends
 - f. 5 to 7 ferrite beads, Mix 31, to fit the coax. This are crucial for tuning.
 - g. Optional washer, M10 or 7/16" is needed for some adapters, to assure contact with the box.
12. Construction details are in other articles.
13. Life is good. Enjoy!

