Zero Beat

January 2023

General Meeting
Wednesday January 11th
At 7:30 pm at the
Hazel Park Library
and on Zoom
With Socializing
At 7:00 pm

Club Officers

President Mike K8WU
qrz@k8wu.me
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2nd. VP Jim W8DPM
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President's QRM

Welcome to 2023! In the President's QRM from the previous newsletter, I mentioned that the Geminids meteor shower was coming, and it would provide some opportunities for interstate DX via meteor scatter. I am happy to announce that I found enough time to get a couple of contacts on the 2 meter band, and they were both to new states, as well as new grid squares (FN42 in New Hampshire, and EM13 in Texas). It never ceases to amaze me what you can use to bounce your signal to distant places to make contacts.

We had a great holiday party in December. Everyone appeared to be having a good time, and lots of food was brought and consumed. For those who noticed, our past president Joe WB8ADX cut a short looping video with footage relating to the ARISS contact between Davis Aerospace Technical High School in Detroit and an astronaut aboard the International Space Station.

We have our next swap meet – the first one in three years – coming up on January 22, 2023 at the Royal Oak Farmer's Market. We'd love to see you out for this one, of course. Also, the ARRL VHF contest and Winter Field Day are coming in January 2023.

In closing, I hope that this new year brings you all prosperity, health, happiness, and good signal propagation.

Thanks and 73,

Mike Phipps, K8WU
President, Hazel Park Amateur Radio Club

Cheap & Easy Portable Antenna Hacks!

Chris Warren Off Grid Ham December 28, 2022

Revisiting an old topic.

I don't do a lot of antenna articles because there is already so much information in circulation I can't see much ground left to cover, at least that's what I thought until new *Off Grid Ham* reader Rick sent a nice email that inspired this article. What are some cheap and easy ideas to make a portable antenna better, from an off grid perspective?

The off grid niche.

To rehash the obvious, running off grid radio does not require a "special" antenna. Whatever works for conventionally-powered stations will also work off grid. However, off gridders tend to have different needs and operating goals. Some antennas fit these needs and goals better than others.

I know from my own operating experience, running this blog for over seven years, and talking with other hams, that off grid amateurs disproportionally use QRP, lean towards portable operations (outdoors), and are less focused on having a big signal for the purpose of DX, contests, & awards. They also, by a very large margin, are involved with the survivalist/ prepper movement and/or EMCOMM on some level.

If you are into amateur radio in whole or in part because you want communications when SHTF, then your equipment choices are going to be different from the guy who is a contester, DXer, or thinks it's just a fun hobby. An analysis of those two demographics might itself be worthy of an entire *Off Grid Ham* article.

From the abstract to the real.

Now that we've lightly touched on the sociology and psychology of why operators may choose different equipment, the next question is "what are my options?" Your options as an off gridder are are for the most part the same as they are for everyone else. You'll just have to make a few adaptations. As we have discussed many, many times on this blog, there will be tradeoffs and compromises. Here are a few ideas with a "cheap & easy" goal in mind:

The wire antenna.

Perhaps the most fundamental of all antennas, the dipole has been around almost as long as radio itself. There are a few things an operator can do to make it more off-grid friendly. These ideas can apply to all other wire antennas too:

Lose some weight!

If you are running QRP power levels, there is no compelling reason to have a dipole with heavy gauge (16 or less) wire. Wire sizes between 18-22 gauge are perfectly acceptable for QRP. It's less expensive, easy to work with, and coils nicely for easy transport.

Speaker wire is a popular material for light weight antennas. It's easy to find and not particularly expensive. It would be a great choice. But there is something better. Much better.

The "holy grail" of off grid antenna wire.

The top of the QRP antenna wire pyramid is 22 gauge central office frame wire (sometimes referred to as cross connect wire). CO frame wire is incredibly strong for its size and does not easily stretch. It comes in a twisted pair. There is no need to separate the pair. Simply strip the insulation and terminate the bare wires together at each end. This turns the twisted pair into what is effectively one single conductor. The twist will have no meaningful effect on your send or receive signal.

Unfortunately, CO frame wire is used only by the telecommunications industry and is very hard to find for sale to the public. It can occasionally be found at swap meets. I was able to source this wire through my professional affiliations and can confirm that it makes a fantastic light weight antenna material.

The photo below is a 20 meter central office frame wire dipole with balun, rolled up for transport. It weighs 9.6 ounces (0.272 kg) including the balun and fits in a plastic sandwich bag.

Many hams work for the phone company, or have connections. Ask around. If all else fails, you've got nothing to lose by knocking on the door of your local central office and simply asking the tech if you can have some frame wire. He/she will know what you are talking about. Every year they pay contractors to haul away thousands of feet of the stuff to the scrap yard, so it's not a big deal to give some away. Many telephone central offices are not manned full time so you may have to make a few attempts to catch someone while they are there. Since techs set aside unwanted wire for recycling, "dumpster diving" will not likely produce any results. In any case, it will be well worth your effort if you can find some.

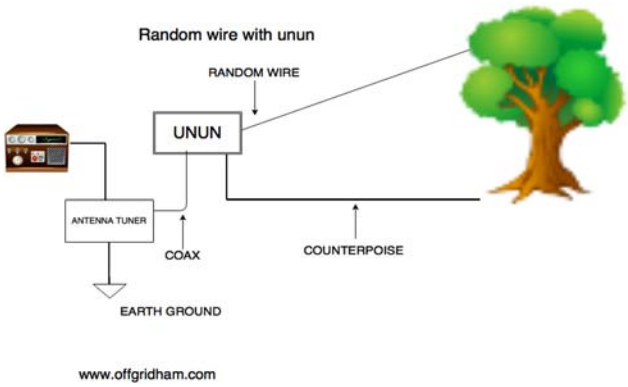
If you cannot source central office frame wire, light gauge speaker or doorbell wire will work just fine but will not be as strong and stretch resistant.

Baluns and ununs.

Almost any antenna fed by coax can be improved by adding a balun or a unun. These devices are essentially transformers that manage the impedance difference between your feedline and the antenna and prevent *common mode current.* Common mode current is undesirable RF energy that flows along the outer braid or shield of the coax; it contributes to inefficiency and poor antenna performance.

A balun is used on antennas where all elements are the same length, such as a dipole. A unun is used on antennas where the elements are not the same length, such as a random long wire1

Commercially made baluns and ununs are relatively inexpensive. It is also fairly easy to make your own; YouTube has many great DIY videos



Random wire antenna, version 3. OFF GRID HAM ORIGINAL GRAPHIC ©2016

Ham sticks.

Another popular cheap & easy option is the ham stick dipole. Two mobile antenna whips (intended for use on a car) are screwed into a mounting. A coax connector on the mounting directs the signal to the appropriate element. The fitting usually has a clamp for mounting on a mast or other support.

Ham stick dipoles are very effective & inexpensive antennas and can usually handle power higher than QRP. The disadvantages: 1) they have a tight bandwidth and can be difficult to tune. An antenna tuner may be needed; 2) they cannot be coiled up small like a wire, 3) they also require a support mast. Depending on your resources, needs, and logistical situation, transporting them for portable operation may be a problem. Lastly, they are only good for one band. You'll need a totally separate set of ham sticks for every band you want to operate.

HAM STICK MOUNTING BRACKET. OFF GRID HAM ORIGINAL PHOTO ©2022

Telescoping antennas.

There are some great commercially made telescoping antennas that are about as close to plug-and-play as you can get.

The Chameleon CHA SS17 extends to 17 feet and is 27 inches when collapsed. The manufacture claims it will work on 20-6 meters with no need for a loading coil. MFJ offers the MFJ-1979, which is almost exactly the same as the CHA SS17. I have not personally used either of these antennas but *OGH* readers have reported excellent results with them. They cost between $70.00-$80.00 and you'll probably have to also buy some adapters and mounting hardware to make them work. If light weight, small size, and portability are your top priority then a telescoping antenna is your best pick.

In conclusion.

Any antenna will technically work in an off grid application. However, there are many simple ideas one can employ to make a good antenna better and more adapted to specific off grid needs. These hacks are not necessarily difficult or expensive. With a little creativity, you can come up with a very effective —and very cheap & easy— antenna for your off grid radio station.

A visit to Ham Radio Club W6AB

By Rick Laird, KB5OO

My trip to California last June was primarily to visit with my Daughter who lives in Santa Maria. While there I visited my old radio Club at Vandenberg Space Force Base.. I was a member for 22 years until the move to Michigan. The Air Force and now the Space force have always supported Ham radio since the club was the MARS station for many years, It was formed to support the TRW ARC in preparing for the launch of Oscar I on Dec 12, 1961. I became a member in 1978 being stationed there after a year in Greece.

The club building I remember was a two room structure with asbestos shingles. There were critters around including mice, rattlesnakes and racoons. It was not the best but it was free and no utilities. Several years later, the Air Force wanted us to move due to the health problems with exposure to asbestos. We were assigned to the current building but had to clean it up since no one Had occupied it for several years. It was about this time my family moved to Michigan. I heard later that the base sent a team in to rehab the building with heat and AC, installed new wiring and paved the road.

The current building.

Posted by Base Security

Portable antenna tower. This was an old flight line lighting unit sold at surplus. I talked to the purchaser, he only wanted the generator. He sold the trailer to the club for $100.00. Great for Field Day.

Meeting Room

Flex Radio, current main station

Work and Testing Room

Power Supplies and a tuner

Equipment Panel. They still have and use a Kenwood TS -450 for about 40 years now.

Anyone recognize this?

Members of this club worked with a number of local contractors such as Lockheed, Martin Marietta, NASA, TRW, and Boeing. Many were on active duty or retired from the USAF. There was a good knowledge base to call on to help with problems and were a fun source of various stories.

Chairmen

Repeater	Joe WB8ADX
W8JXU Trustee	Bill N8QVS
Swap	John KD8NYF
Field Day	John AA8UU
Education	Jerry W9NPI
Sunday Net	Bob N8REL
Zero Beat Editor	Rick KB5OO
Public Information Officer (PIO)	Rick KB5OO
Webmaster	Reuven KB3EHW
Banquet	John W8TOY
Club Picnic	Jim W8DPM

Volunteers

LoTW Manager	Murray KE8UM
Club Cook	Bill N8QVS
Lark in the Park	John AA8UU
Net Control Operators	Len AD8FK John W8TOY Mike K8WU Bob N8REL
HPARC Media Dream Team	Hugh KE8BED Rick KB5OO John AA8UU Mike K8WU John W8TOY

HPARC Nets

HPARC Official Sunday Night 2-meter Phone Net

Every Sunday a 9:00 Pm local time on the DART repeater, 146.64 (PL 1 00), catch up on club news and information, and just to keep in touch. All amateurs are welcome to check in.

ARPSC Thursday Night 2-meter phone net

Every Thursday at 8:00 PM on the W8OAK repeater, 146.90 (PL 100). The Hospital radio check net takes place on the last Thursday each month at 7:30 PM on the W8OAK repeater. http:///www.arpsc.com

Around Town

HPARC Buddy Breakfast every Saturday at 9:00 AM (or so)

Cozy Cabin Diner, 2129 E. 12 Mile Rd, Warren, MI Come in early for the socializing. Park in the restaurant parking lot.

Oakland County ARPSC Siren Testing, 1st Saturday at 1:00 PM.

March through November. Contact Marsha, N8FE, at n8fe@arrl.net, to volunteer and be assigned a siren to test.

Amateur Radio Licensing Testing

Jerry has announced that license testing will be on the first Tuesday of every even month at 7:00 PM at the Oak Park Community Center.

Next Session February 7th