

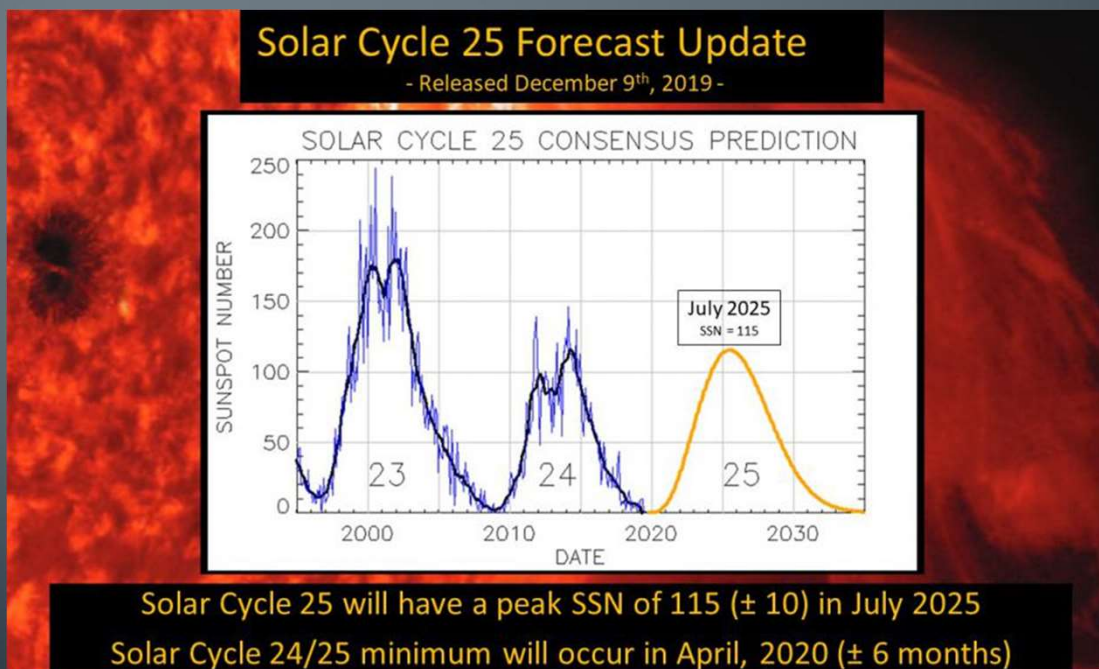
QRP Presentation

John Meade W2XS

- Contact Info:
 - jm416@optonline.net

QRP Philosophy

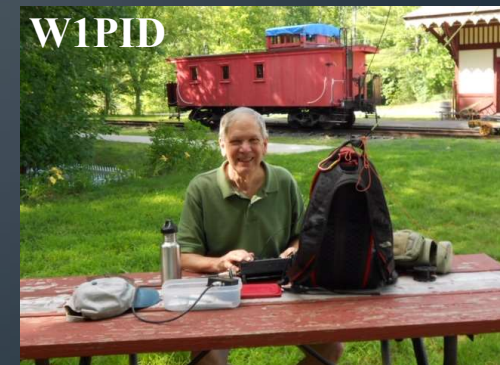
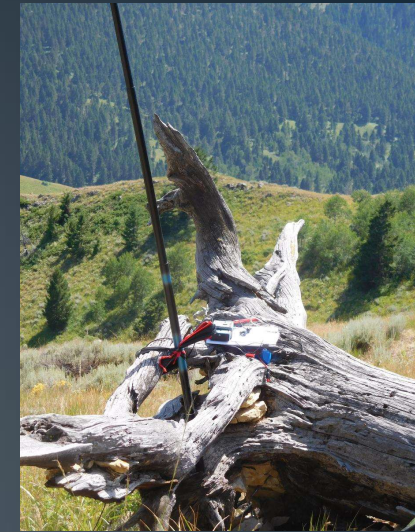
- Operating at 1 to 5 watts can be fun and addictive.
- The results are surprising when the band is open.
- QRP does not necessarily have to “replace” QRO. Do both!
- Operate from the back yard or a park bench.



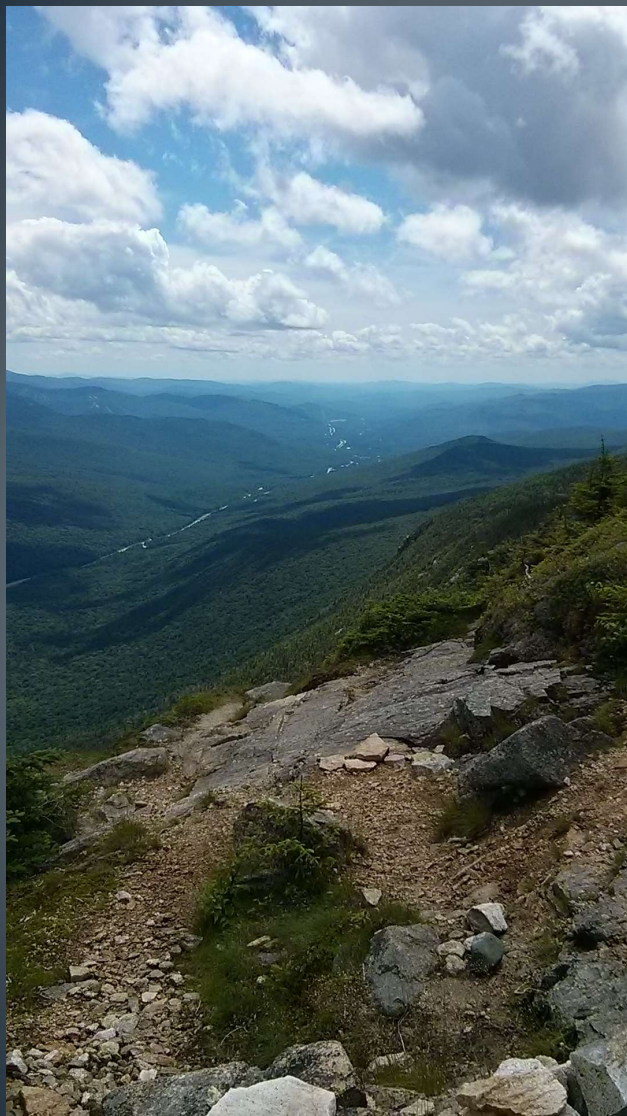
Where can I operate?



Where can I operate?



W1PID.COM



W6PNG

<https://nomadic.blog/2020/12/11/are-your-laurels-in-the-bloody-mountains/>

KX2, EFHW



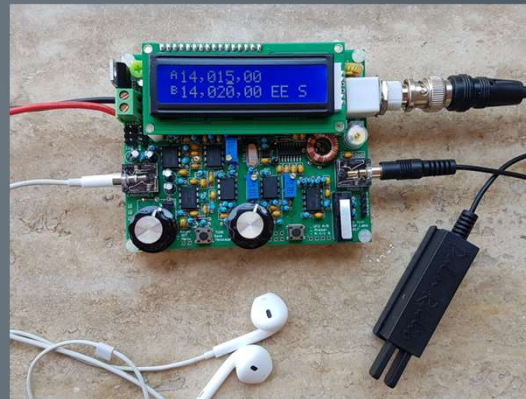
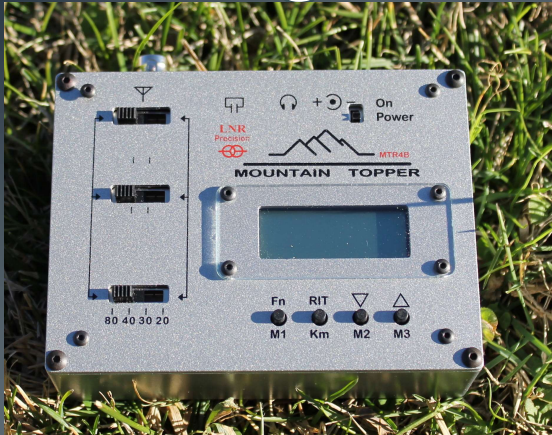
QRP Philosophy

- Even simple QRP rigs will provide fun and satisfaction.
- The lower the current drain, the longer the batteries will last.
- Many QRP rigs are simple but high performance.
- Put up the best antenna possible.

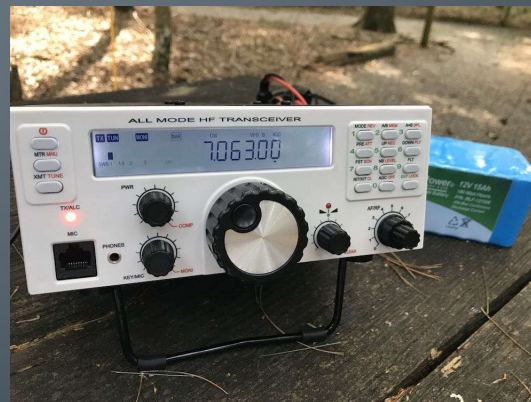
What rig should I buy?



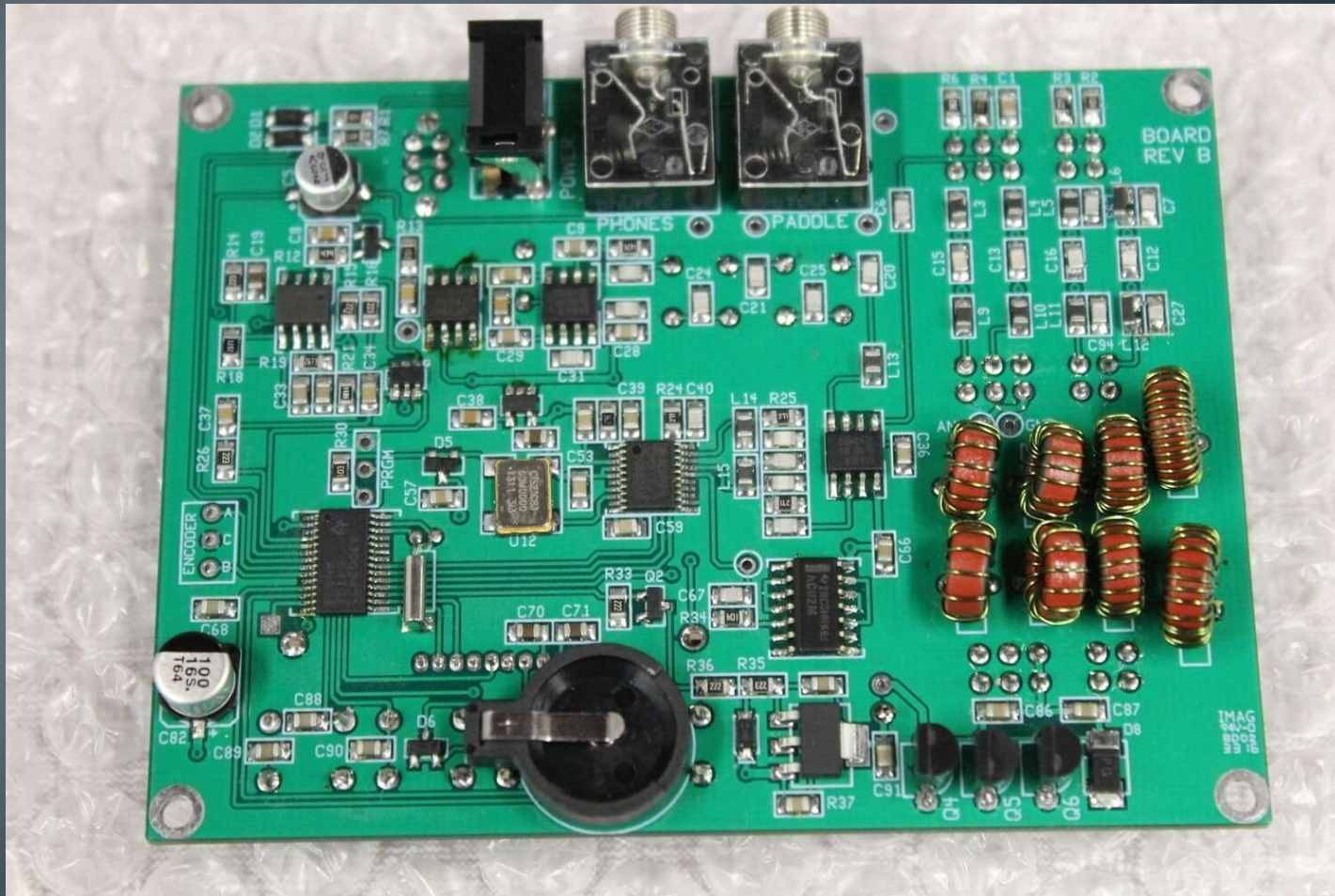
What rig should I buy?



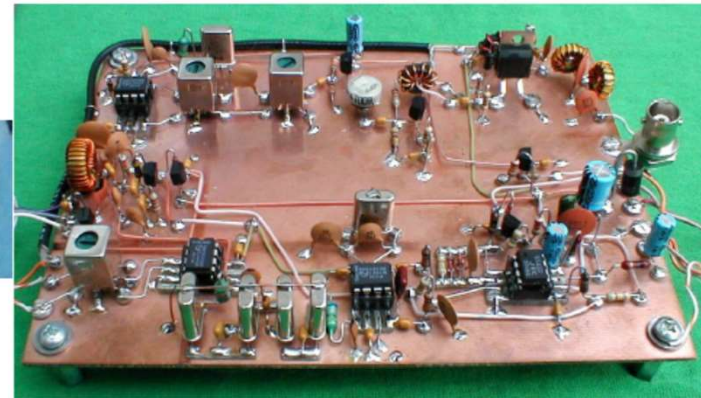
What rig should I buy?



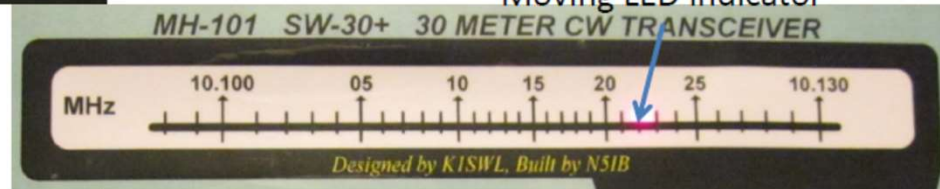
Why these new rigs are not kits!



A Nice Homebrew Example N5IB



Moving LED indicator



SW-30+ built Manhattan style and Enclosed in a retro-look poplar box.

What paddle should I buy?



American Morse



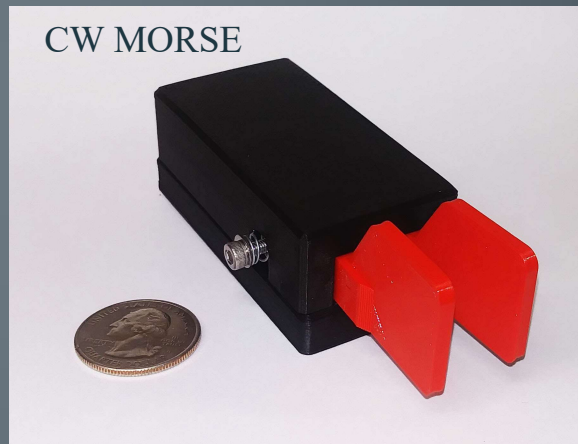
American Morse



GM0EUL



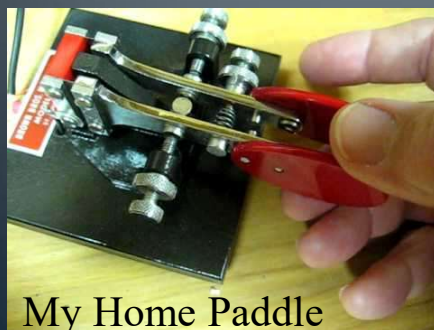
Vibroplex Code Warrior



CW MORSE



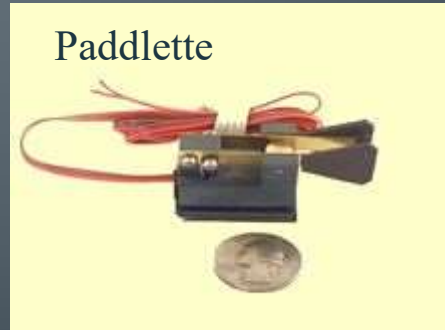
K9LU Bull Dog



My Home Paddle



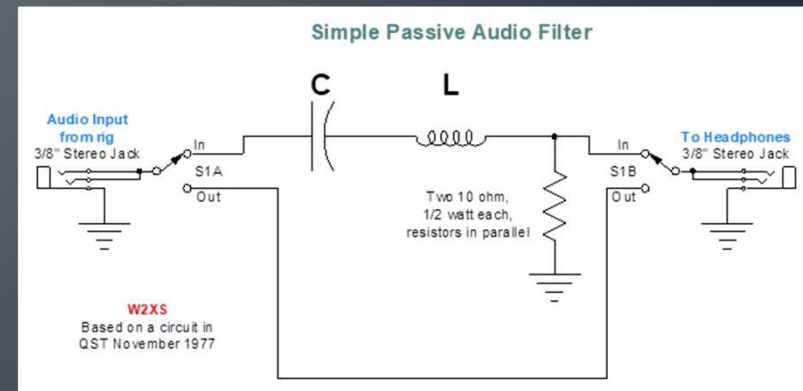
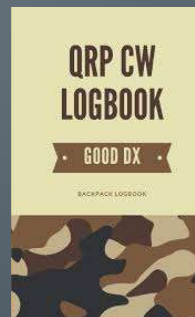
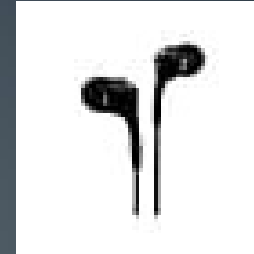
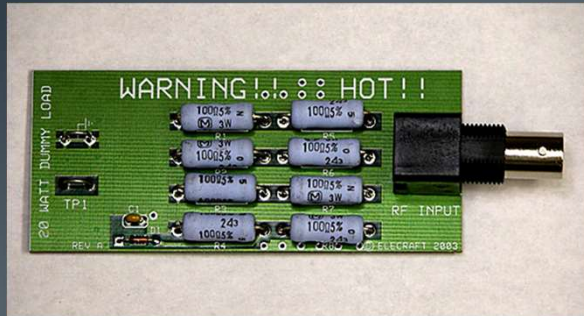
TE-NE-KE



Paddlette



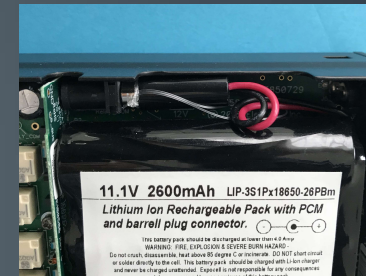
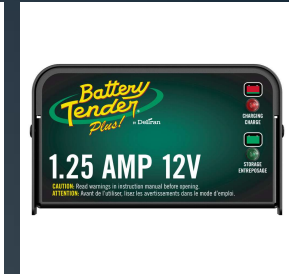
What accessories might I need?



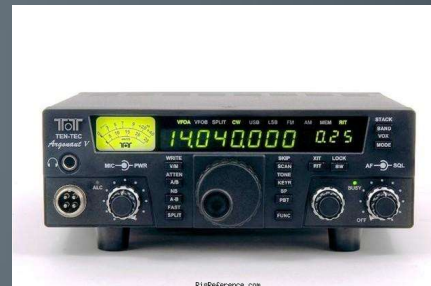
What Battery Should I Use?

- SLA Batteries – 2 V per cell = 12 V typ
 - Heavy but dependable
 - Use the right charger: Battery Tender Plus
 - www.batterytender.com
- Lithium Ion – 11.1 V (KX2)
 - Use the right charger Must remove to charge
 - 6 AH = (1 lb 10 oz) 5 hrs at 15 W, 12 hrs at 5 W
 - 3 AH = (12 oz) 5 hrs
 - <https://www.bioennopower.com/>
- NiMH (used in KX3) – 1.2 V per cell
 - AA sized cells. Charge while in the radio
- Alkaline Batteries – 1.5 V per cell
 - Not Rechargeable

AAA Battery = 1 AH
AA Battery = 2 AH
C Battery = 6 AH
D Battery = 11 AH



Ten Tec QRP History



Heathkit QRP History



QRP Calling Frequencies

Table 11-5 North American QRP Calling Frequencies		
<i>Band (Meters)</i>	<i>Morse Code (MHz)</i>	<i>Voice (MHz)</i>
160	1.810	1.910
80	3.560	3.985
	3.710	
40	7.040	7.285
	7.110	
30	10.106	
20	14.060	14.285
17	18.096	
15	21.060	21.385
	21.110	
12	24.906	
10	28.060	28.885
	28.110	28.385
6	50.060	50.885
2	144.060	144.285 (SSB)
		144.585 (FM)

A Few QRP Links

- Neil Goldstein W2NDG
 - <http://fofio.blogspot.com/2015/07/radio-kit-guide.html>
- ARCI
 - <http://www.qrparci.org/links/qrp-kits-bits-and-supplies>
- LIQRP
 - <https://www.qsl.net/liqrp/>

W2LCW

<https://longislandcwclub.org/>

QRP Resources

Table 11-6 QRP Operating Resources

<i>Resource</i>	<i>Address or Source</i>	<i>Description</i>
QRP Amateur Radio Club, International	www.qrparci.org	<i>QRP Quarterly</i> magazine and numerous awards
American QRP Club	www.a-qrp.org	Extensive kit-building and construction resources, <i>Homebrewer</i> magazine
G-QRP Club	gqrp.com	Lots of building and operating information, <i>SPRAT</i> magazine
Adventure Radio Society	www.arsqrp.com	Emphasis is on portable operation
QRP-L e-mail reflector	listserv.1ehigh.edu/lists/qrp-1	Best-known QRP e-mail reflector, includes archives for e-mail, files, and articles
QRP forum	www.eham.net/forums/QRP	Wide variety of topics
Magazine columns about QRP	<i>QST</i> "QRP Power," <i>Worldradio</i> "QRP" <i>CQ Magazine</i> "QRP"	A different technical or operating topic with every issue

What Antenna Should I Use?

- End Fed Half Wave Wire
 - 66' on 40 meters with a 49:1 matching transformer. No tuner needed
- End Fed “Random” Length Wire
 - 41' or 58' with a 9:1 transformer and a tuner and counterpoise
- Center Fed 40m Dipole With Twin Lead
 - Multiband – Need tuner and a balun
- Magnetic Loop
- Short, Loaded Whip

End-Fed Halfwave Antenna

See Handout for more info

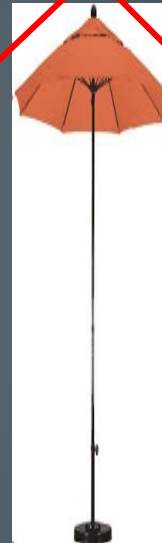


**Rig
(No Tuner)**

**BNC
Cable
10' - 25'**



**Matching Unit
49:1 Transformer**



**Support Pole
and
Base Mount**

**Antenna Wire
40m = 66'**

Insulator

**Rope
or
Twine**

**Ground
Stake**

End-Fed Wire with 9 to 1 Transformer

Need a tuner and a counterpoise

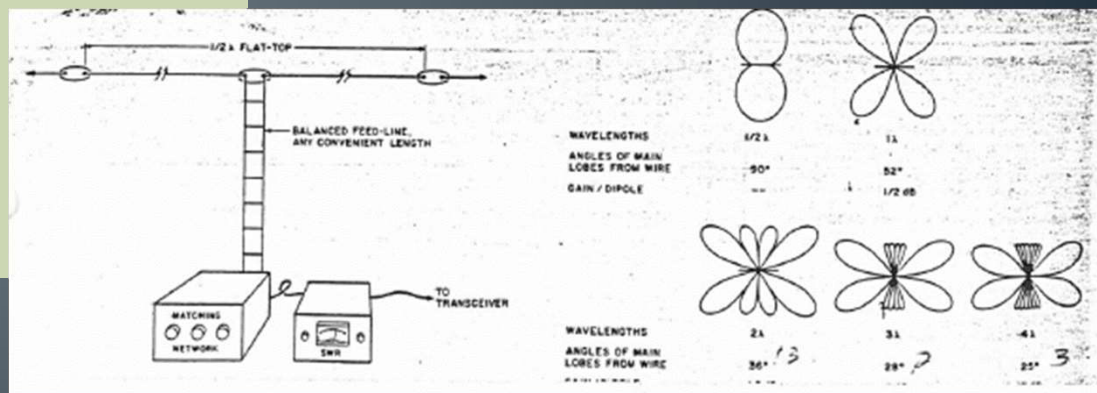
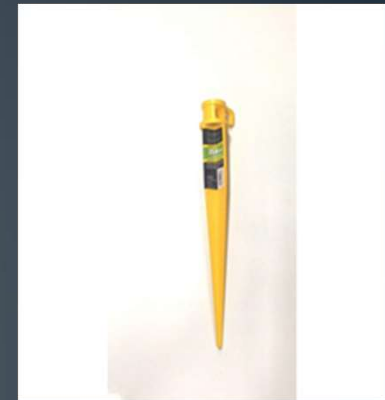
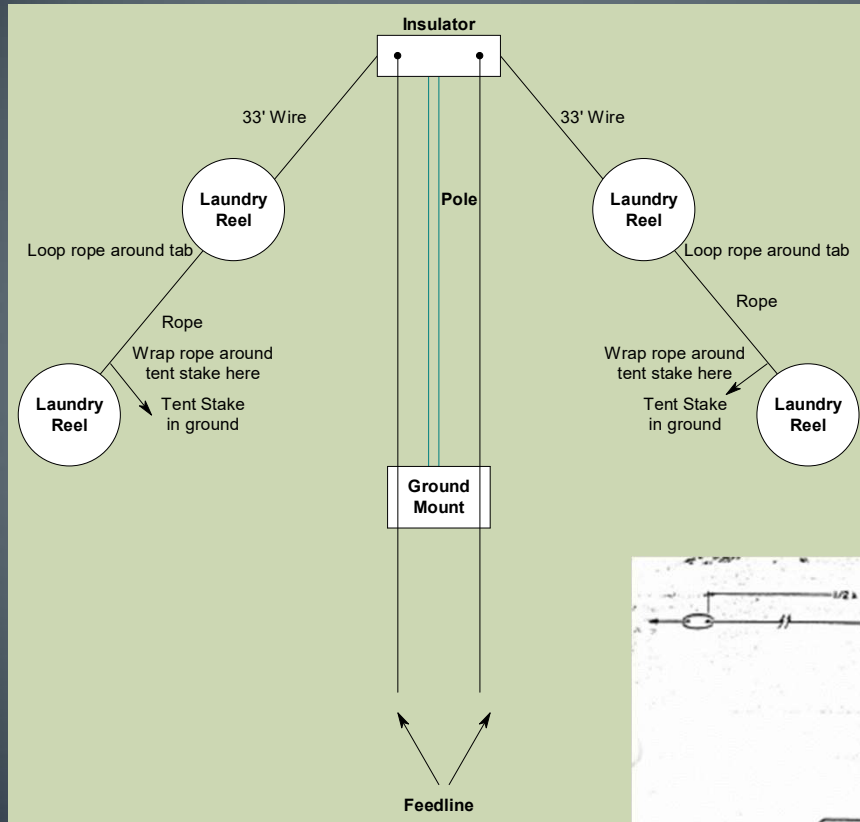


<http://www.hamuniverse.com/randomwireantennalengths.html>

Feet: 29 35.5 41 58 71 84 107 119 148

Portable 40m to 10m Inverted V

See Handout for more info

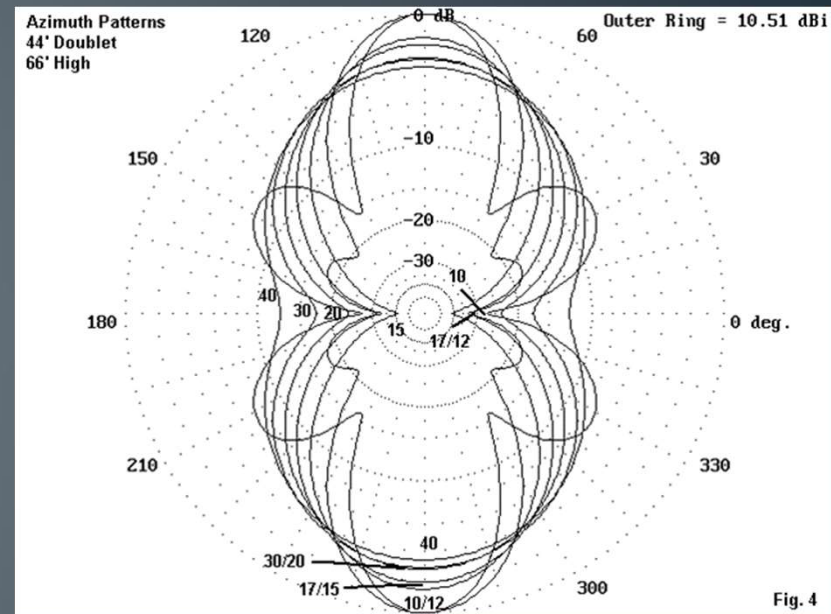
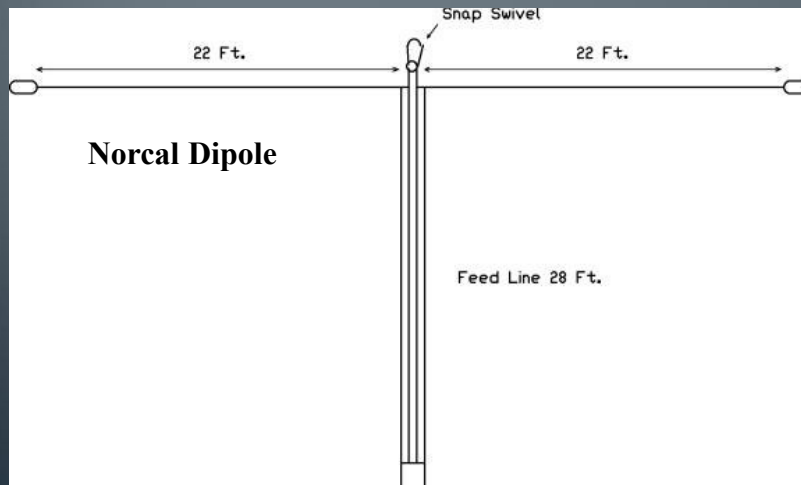
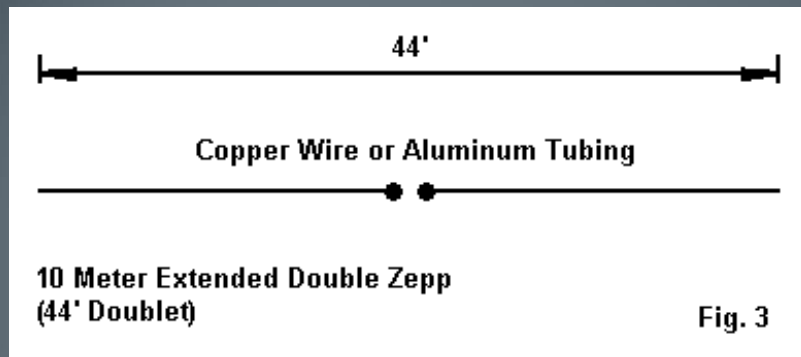


Portable 40m to 10m Inverted V

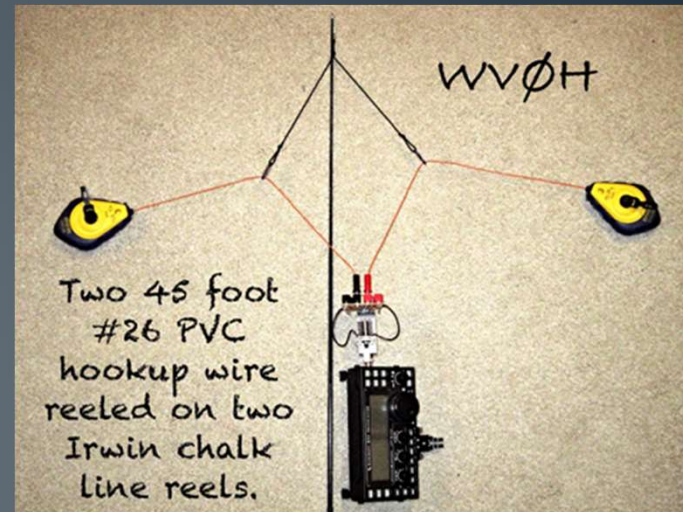
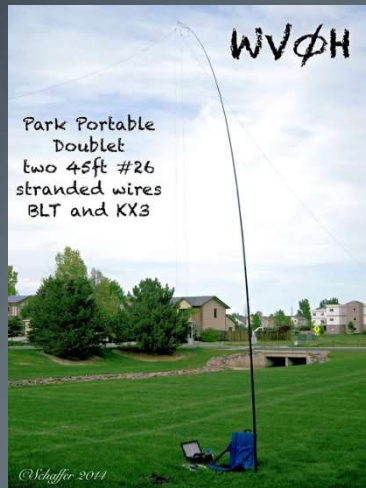


W4RNL – 44' Antenna

People use with a balanced tuner from 40m to 10m

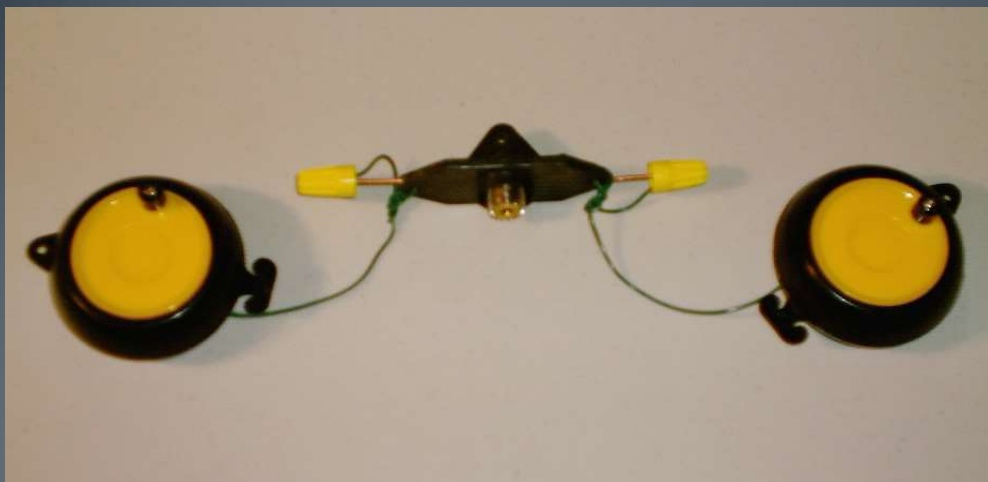


WVØH – Park Portable Doublet



<https://wv0h.blogspot.com/2014/05/the-wvh-park-portable-doublet.html>

Yo Yo



Spiderbeam 40, 20, 15

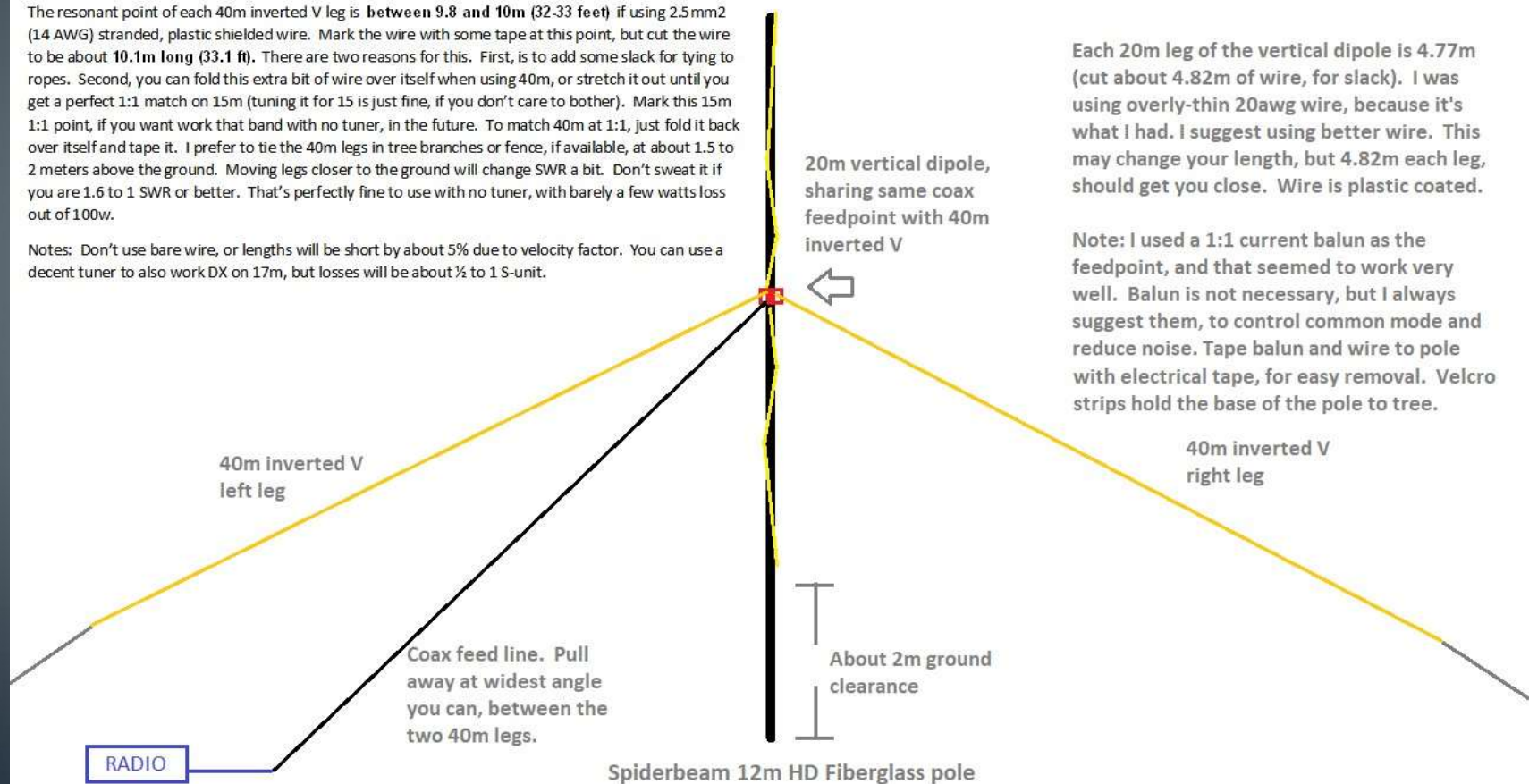
Multiband matched antenna for 15, 20, and 40m. Also 17m with tuner.

The resonant point of each 40m inverted V leg is **between 9.8 and 10m (32-33 feet)** if using 2.5mm² (14 AWG) stranded, plastic shielded wire. Mark the wire with some tape at this point, but cut the wire to be about **10.1m long (33.1 ft)**. There are two reasons for this. First, is to add some slack for tying to ropes. Second, you can fold this extra bit of wire over itself when using 40m, or stretch it out until you get a perfect 1:1 match on 15m (tuning it for 15 is just fine, if you don't care to bother). Mark this 15m 1:1 point, if you want work that band with no tuner, in the future. To match 40m at 1:1, just fold it back over itself and tape it. I prefer to tie the 40m legs in tree branches or fence, if available, at about 1.5 to 2 meters above the ground. Moving legs closer to the ground will change SWR a bit. Don't sweat it if you are 1.6 to 1 SWR or better. That's perfectly fine to use with no tuner, with barely a few watts loss out of 100w.

Notes: Don't use bare wire, or lengths will be short by about 5% due to velocity factor. You can use a decent tuner to also work DX on 17m, but losses will be about ½ to 1 S-unit.

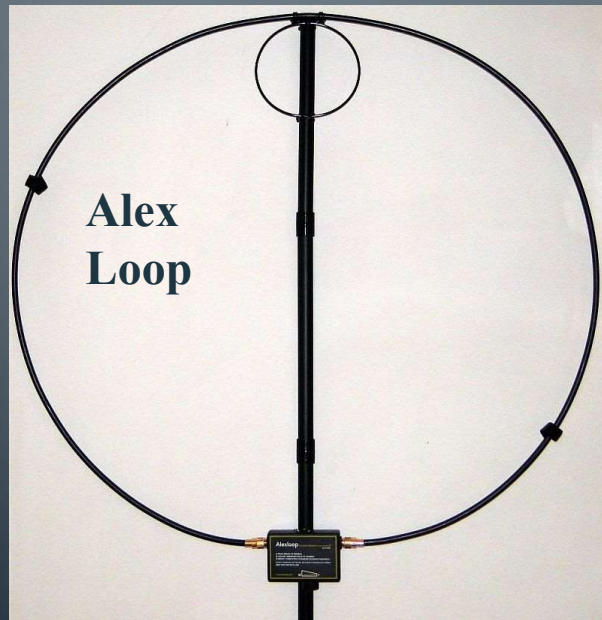
Each 20m leg of the vertical dipole is 4.77m (cut about 4.82m of wire, for slack). I was using overly-thin 20awg wire, because it's what I had. I suggest using better wire. This may change your length, but 4.82m each leg, should get you close. Wire is plastic coated.

Note: I used a 1:1 current balun as the feedpoint, and that seemed to work very well. Balun is not necessary, but I always suggest them, to control common mode and reduce noise. Tape balun and wire to pole with electrical tape, for easy removal. Velcro strips hold the base of the pole to tree.



Magnetic Loop

W4OP



CQ Mag – June 1, 2018 \$35



Photo B. Materials for the loop — not a lot to gather!

MFJ



Loaded Whip

Highly Portable but the poorest radiator. Absolutely need a counterpoise.



Loaded Whip



This guy can't be married!

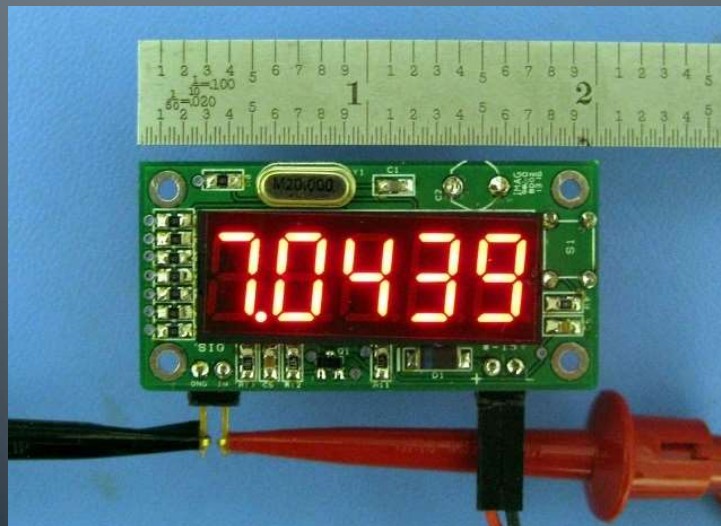
A mobile station for QRP



This guy can't be married!



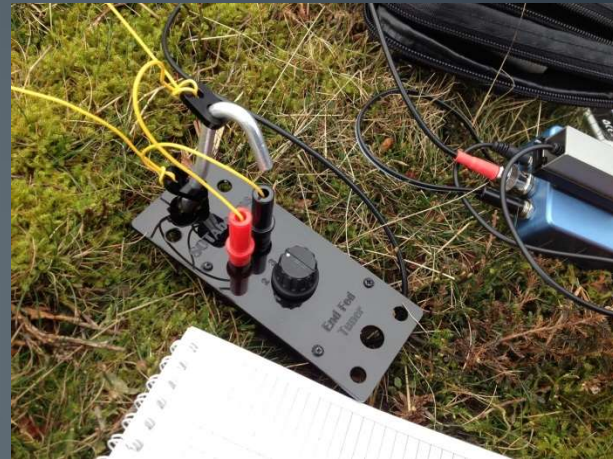
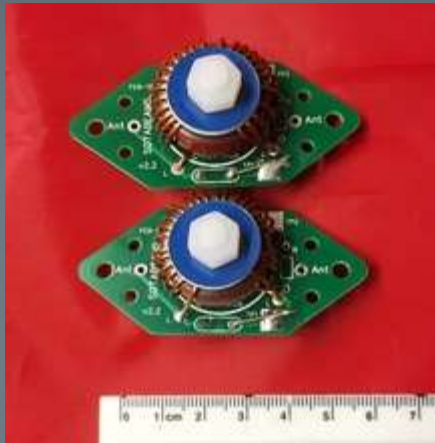
Qrpguys.com sells nice stuff



Qrpkits.com does too



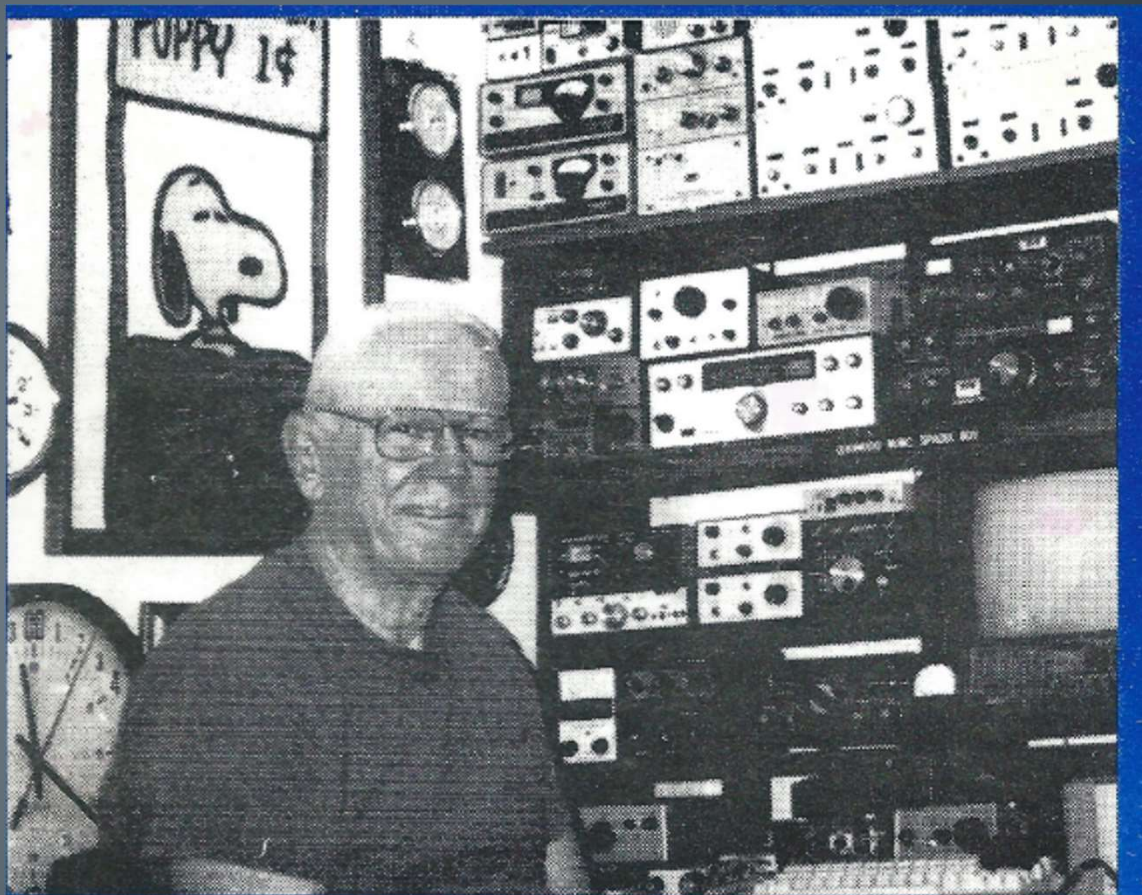
Sotabeams.co.uk does too



Summary

- Don't skimp on the antenna. Let the entire wave get radiated.
- Choose a CW or an SSB rig.
- Have fun. That's what this hobby is all about.

Keep it simple? Even QRP Guys Collect Stuff



Jim Cates, WA6GER

My First QRP Rig was the Heathkit HW8.
Direct Conversion means you hear signals on both sides
of zero beat.



Any Questions?

Thank you! CUL
73,

John W2XS