QRP Presentation – HRU 2023
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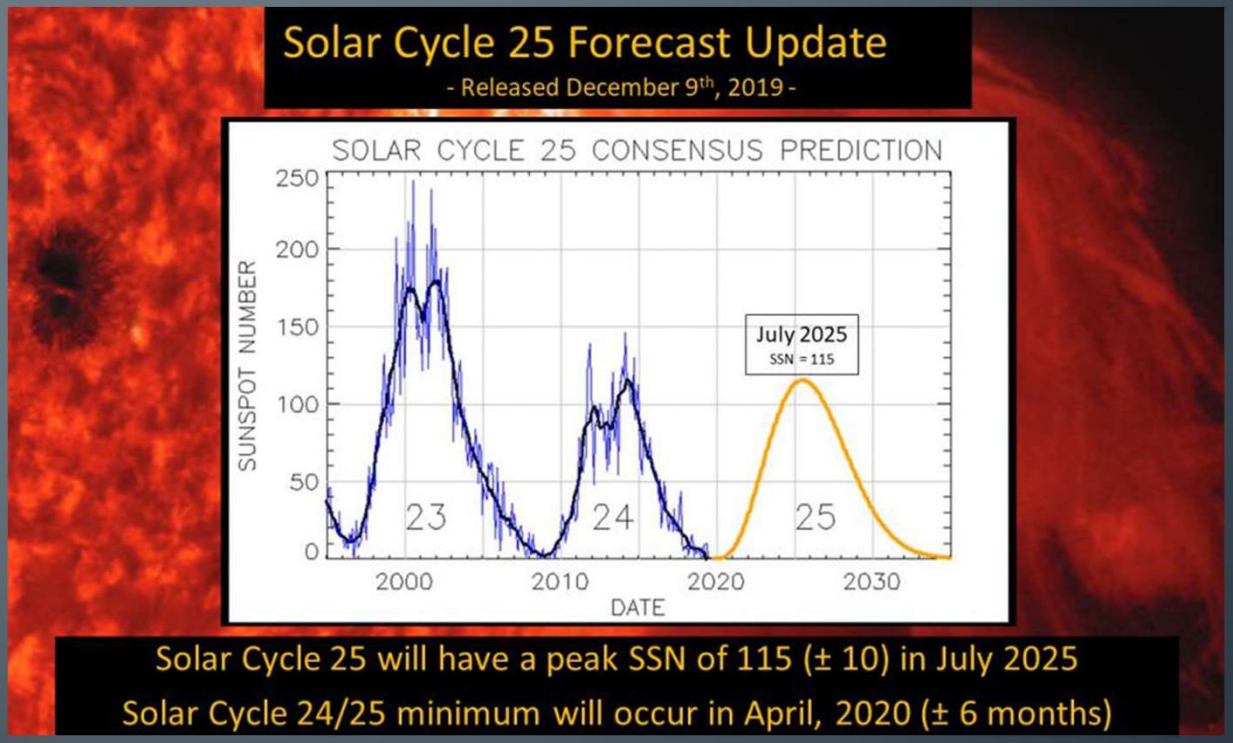
QRP Philosophy

- Operating at 1 to 5 watts can be fun and addictive.
- Operate from the back yard or a park bench.
- The lower the current drain, the longer the batteries will last.
- Put up the best antenna possible.



Is QRP a new thing?

- I did a search on "QRP" in the ARRL Article Archives.
- The oldest article that came up was from 1927!
  - Designed for portable use
  - Simple circuit - One tube RX, One tube TX
  - Batteries weighed 15 pounds
  - Set weighed 8 pounds
  - Batteries lasted a month at 2 hrs/day
  - No mention of output power, but range was 10 to 15 miles.

QRP Antennas

- End Fed Half Wave Wire
  - 66’ on 40 meters with a 49:1 matching transformer. No tuner needed on 40, 20 and 10 meters (and maybe 15).
  - Can feed a dipole in center, off-center, or at the end.
  - Dipoles can be >95% efficient
- End Fed “Random” Length Wire
  - Uses a 9:1 transformer, tuner and counterpoise. Can work on multiple bands with a tuner.
- Center Fed 40m Dipole With Twin Lead (or Ladder Line)
  - Multiband – Need a tuner and a balun. Works on all bands from 40 to 6 with a tuner.
- Magnetic Loop
- Short, Loaded Whip
  - Very portable but not very efficient

End-Fed Halfwave Antenna

See Handout for more info

Works really well! Voted most popular in a QRP poll

The pole supports only the wire, not feedline/insulator

Impedance is very high at the end. The coax is also the counterpoise.

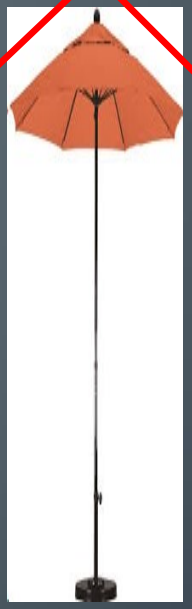
A 49:1 transformer provides matching to 50 ohms

The coax is matched and has very little loss

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

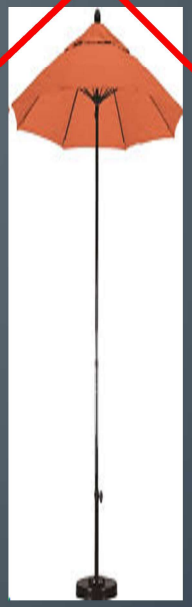
End-Fed Antenna – Not Halfwave

The pole supports only the wire, not feedline/insulator.
A 9:1 transformer provides help in matching but need tuner for match.
The coax is not matched on any band.
Also need a counterpoise wire.

Rig
(With Tuner)

BNC
Cable
As short as
possible.
Under
Mis-Match!

9:1 Transformer



Support Pole
and
Base Mount

Antenna Wire
See lengths

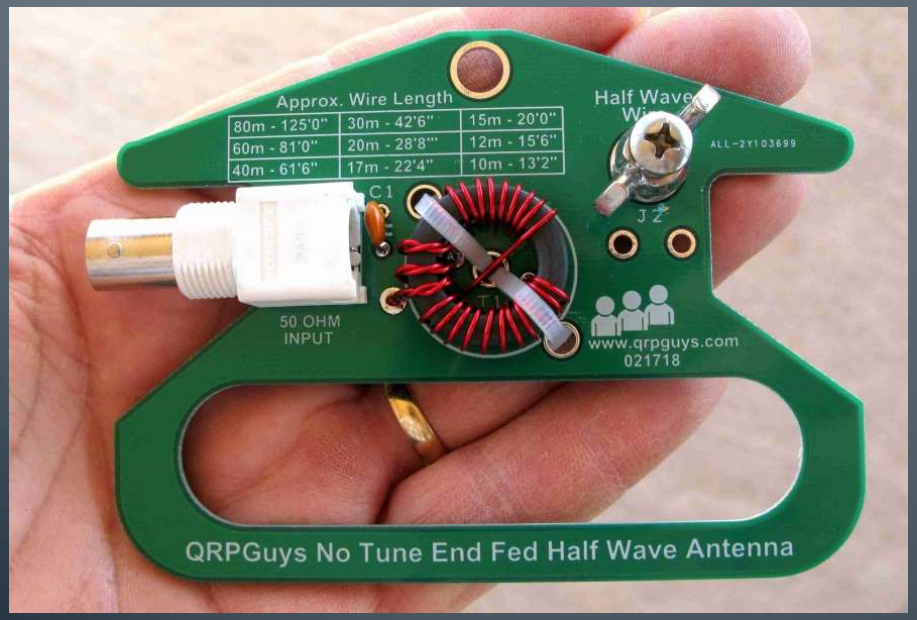
Insulator

Rope
or
Twine

Ground
Stake

49:1 vs. 9:1

The EFHW has no reactance to deal with unlike the EF (not HW)



End-Fed Wire with 9 to 1 Transformer

Similar to the EFHW except wire not ½ wave

Feed impedance changes from band to band

May not radiate as well as ½ wave

Needs a tuner, transformer, and a counterpoise

Some wire lengths are easier to find a match

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

Feet: 29 35.5 41 58 71 84 107 119 148

Portable 40m to 10m Inverted V

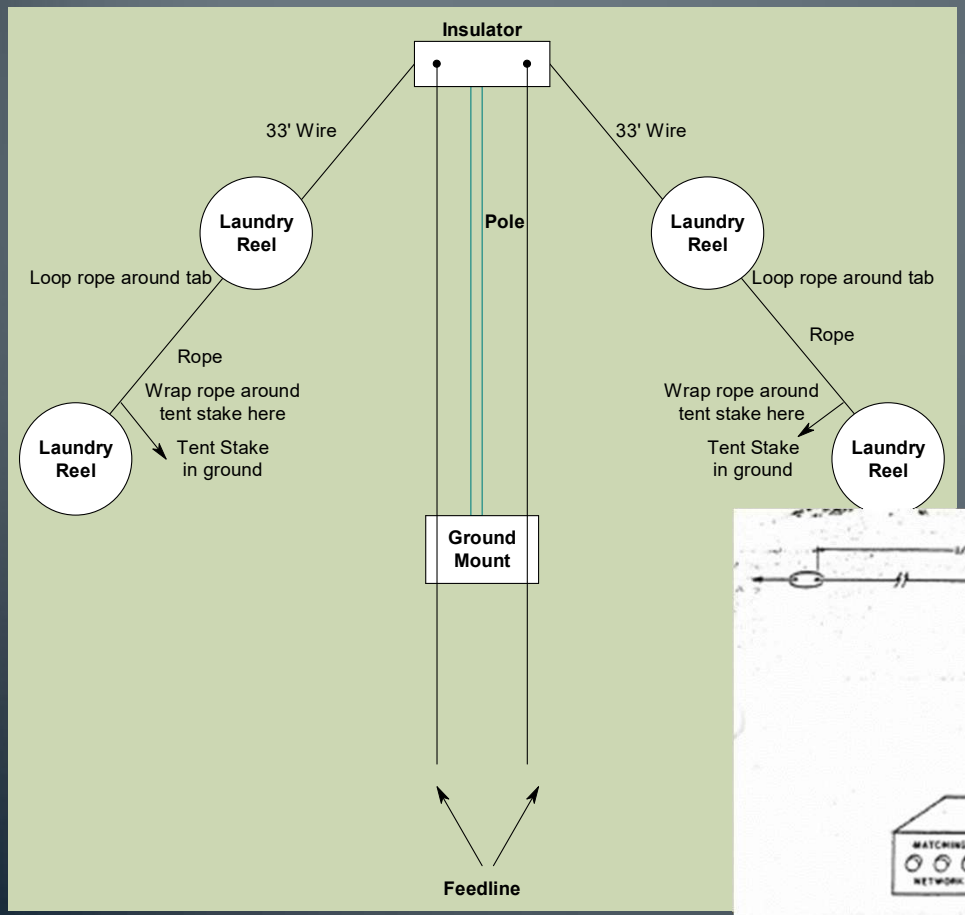
See Handout for more info

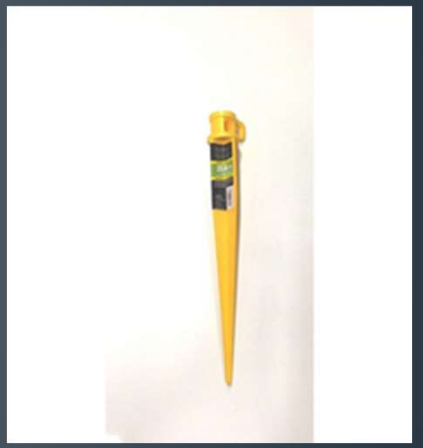
A 40m doublet with twin-lead or ladder line feeders

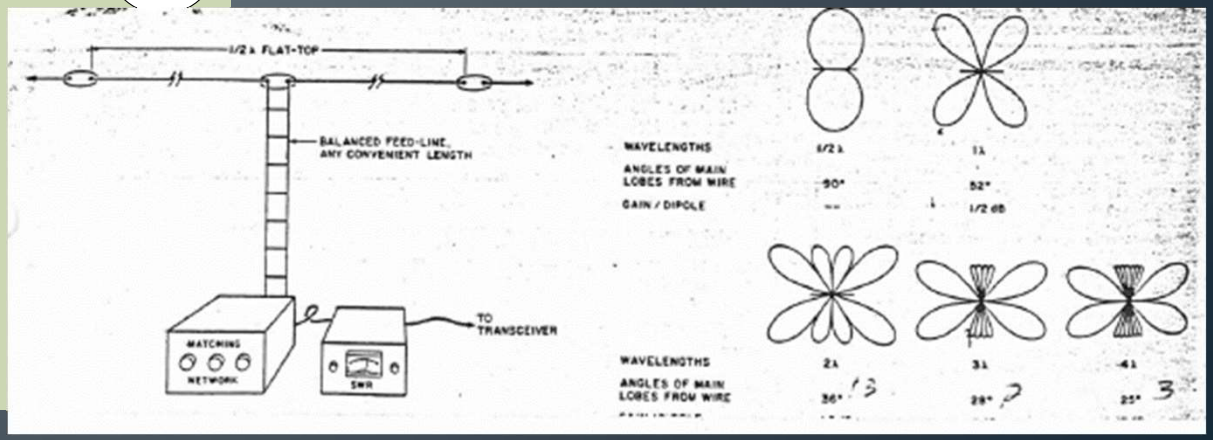
My favorite antenna!

Covers all bands from 40m to 6m

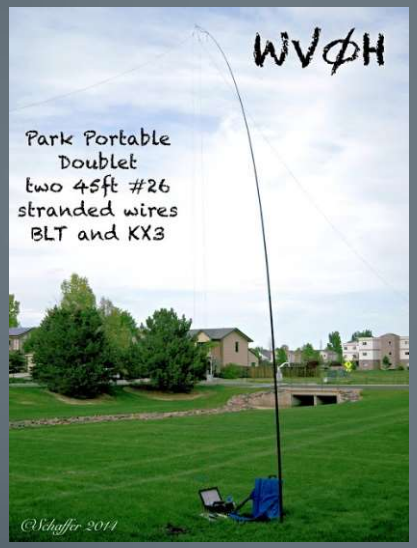
I used twisted-pair telephone wire recently

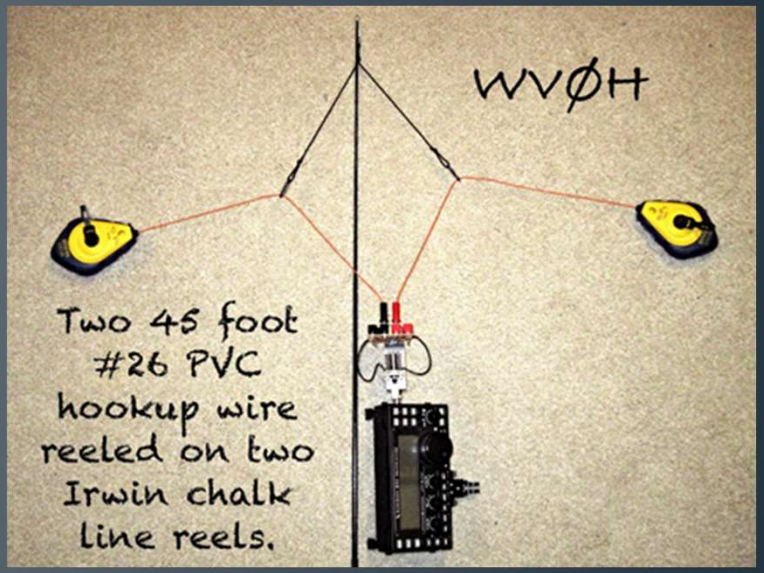






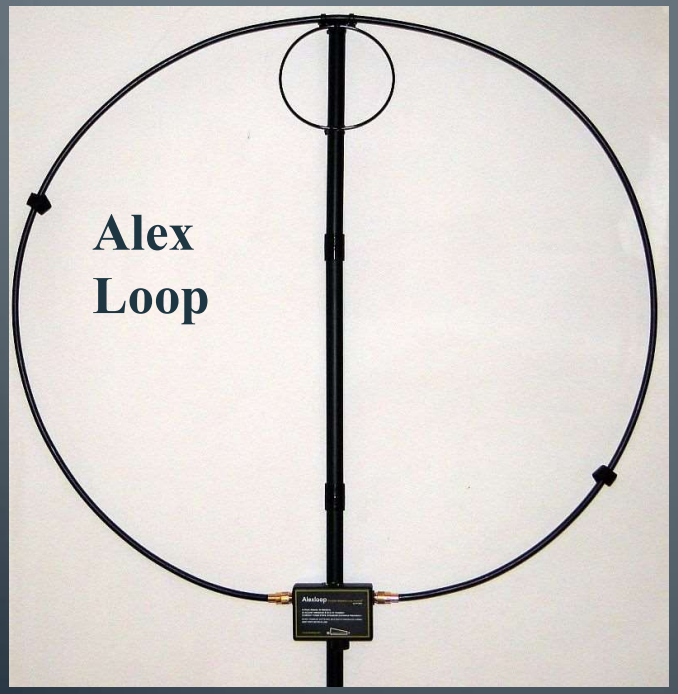
WV0H – Park Portable Doublet
A nice portable antenna
No separate feedline or center insulator





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

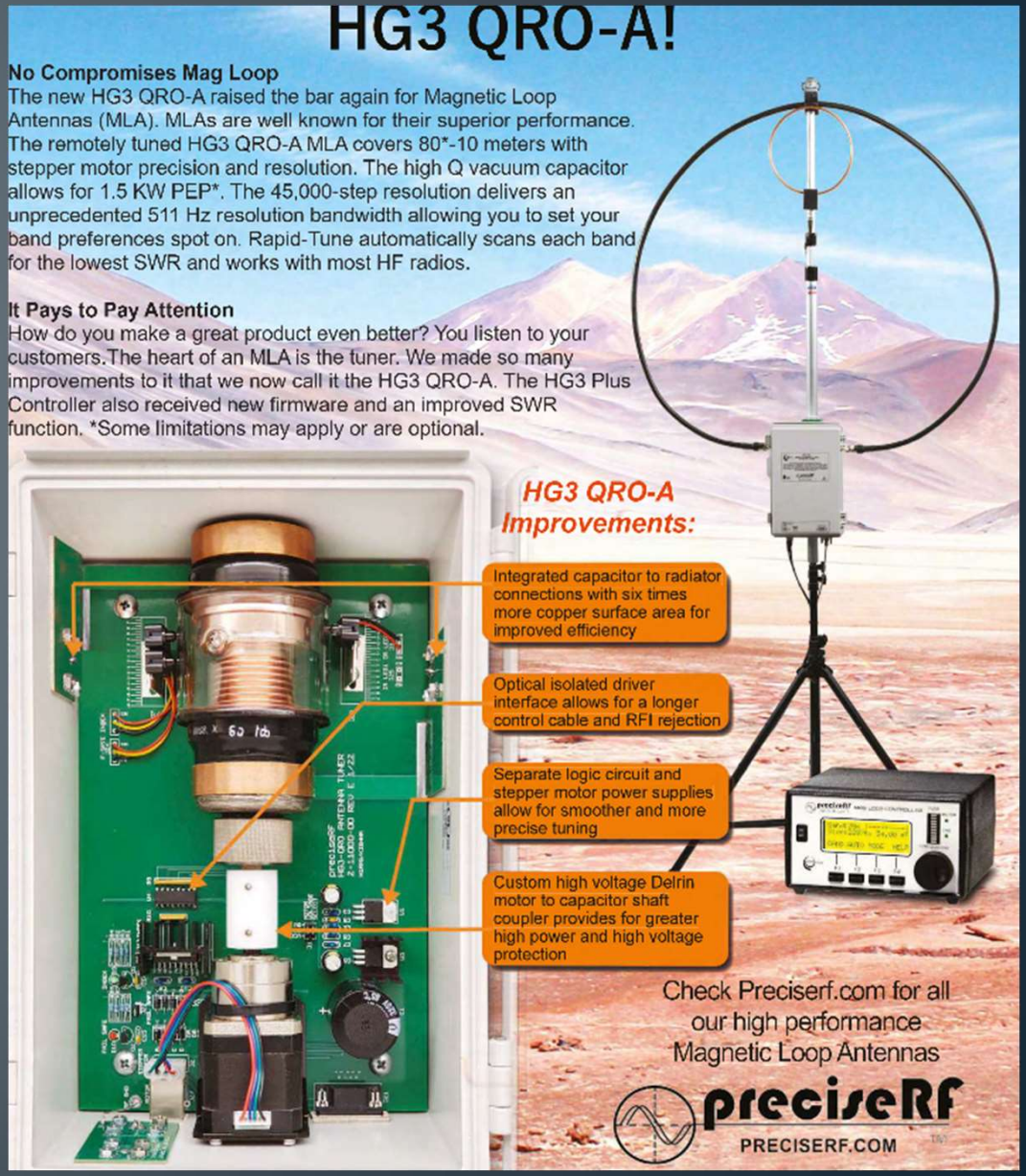
Magnetic Loop



Magnetic Loops

HG3 QRO 1.5 KW Stepper Mag Loop Antenna

$3,025.00



Loaded Whip

Highly Portable but the poorest radiator.

Absolutely need a counterpoise.

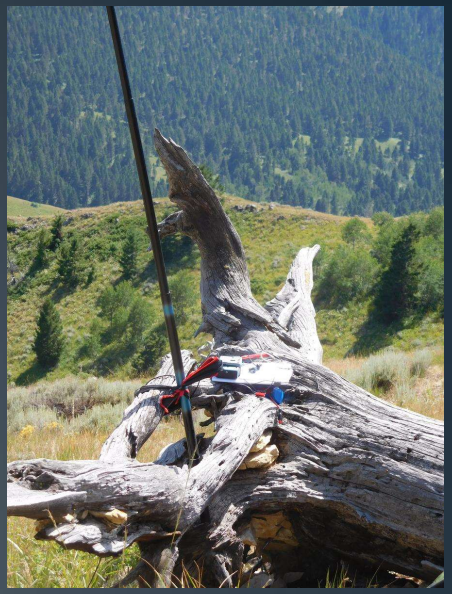
AX1

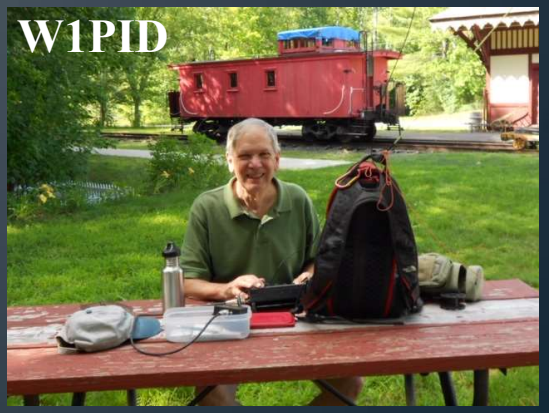
AX2

Loaded Whip on a tripod

POTA or Just Out For The Day

See QRZ.com for their info





W1PID.COM

W6PNG

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

KX2, EFHW

KD8ZM

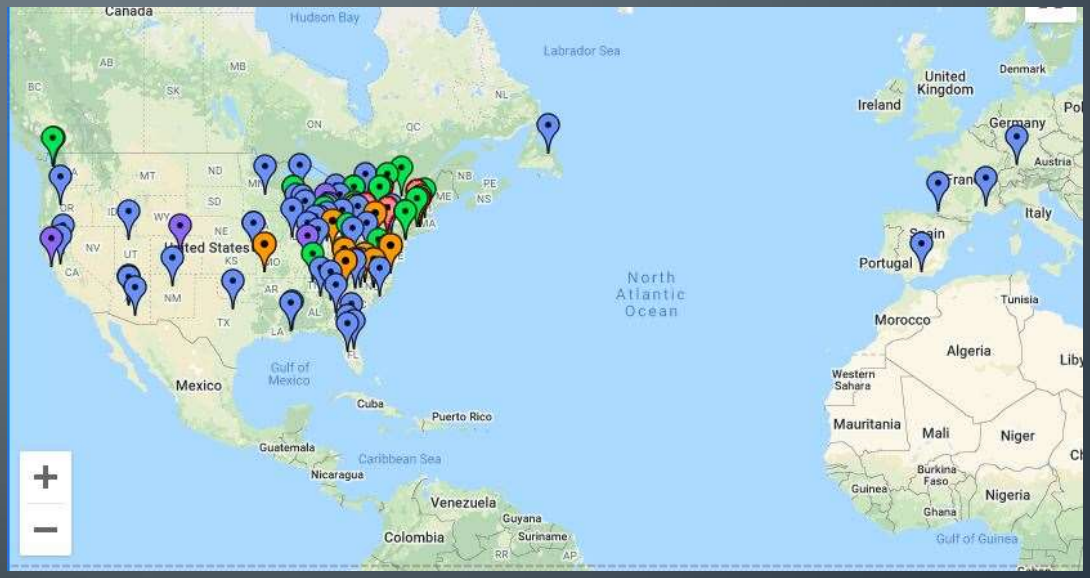
Velcro tape holding items on clipboard

W4TJE

W0BNC

WB2FUV

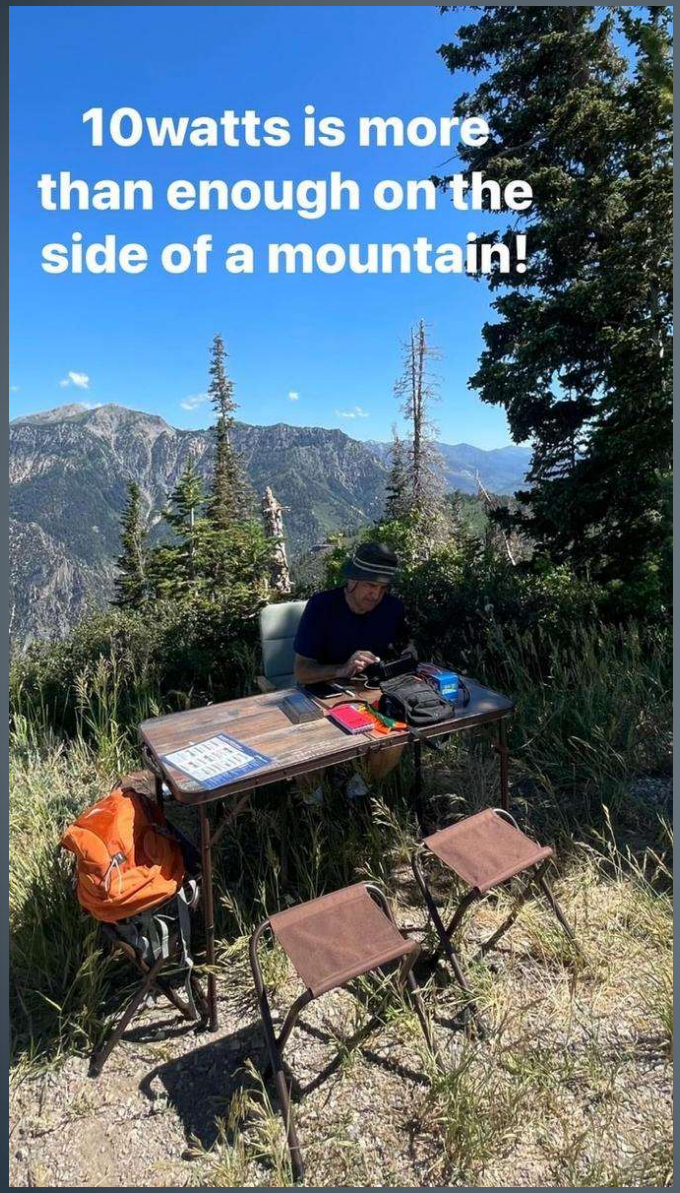

AMATEUR
"HAM"
RADIO
WB2FUV


Canada
Hudson Bay
Labrador Sea
United States
Mexico
Gulf of Mexico
Cuba
Puerto Rico
Guatemala
Nicaragua
Caribbean Sea
Venezuela
Colombia
Guyana
Suriname
North Atlantic Ocean
Ireland
United Kingdom
Denmark
Germany
Austria
Italy
Portugal
Morocco
Algeria
Tunisia
Western Sahara
Mauritania
Mali
Niger
Burkina Faso
Guinea
Nigeria
Ghana
Gulf of Guinea

WB2SMK


ANTENNA
INDUCTANCE
TRANSMITTER
VERSA TUNER
MFJ-901B
HB-1B 4 Band QRP Transceiver
YouKits

K8MST



KA5HZV

N4UM

K2EAG


He is STRONG with the MORSE but TALENT without TRAINING is NOTHING
K2EAG
N3ARB
ALINER
SENSIBLY DIFFERENT.
BAD WOLF

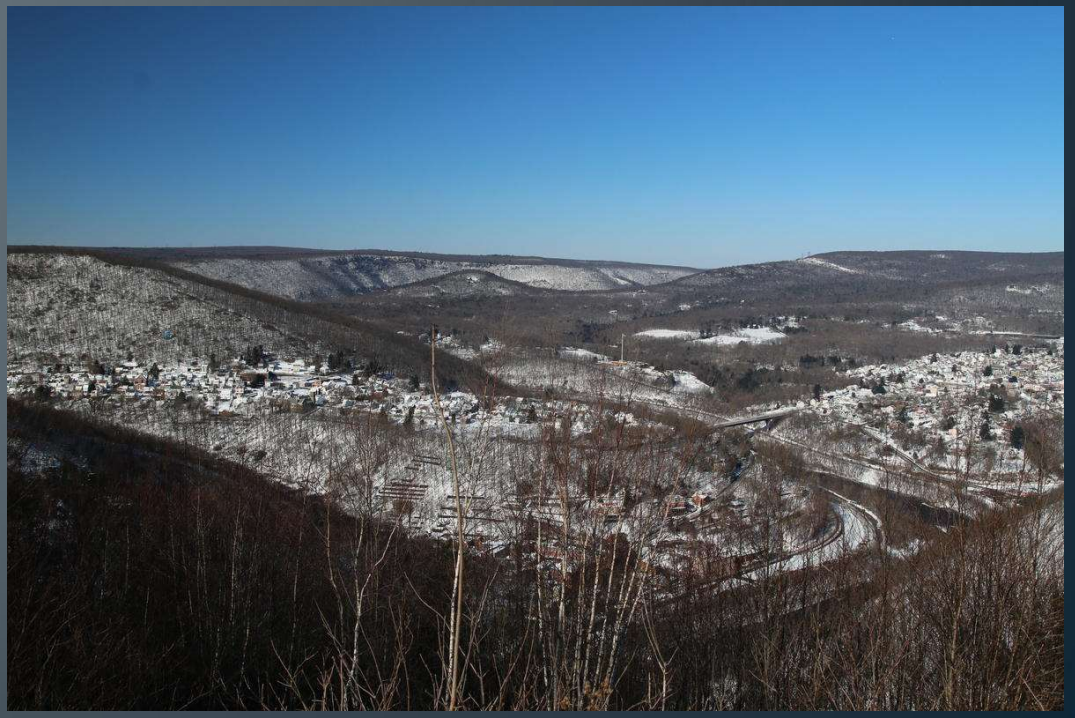
K2WGM

KE2SD

VE3WH

VA3PCJ

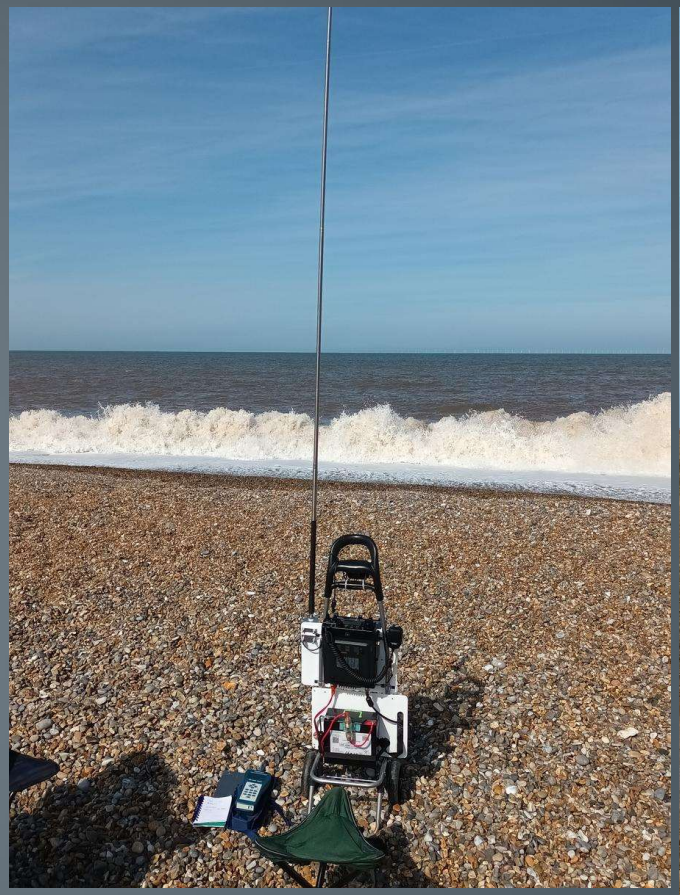
KC3MIO



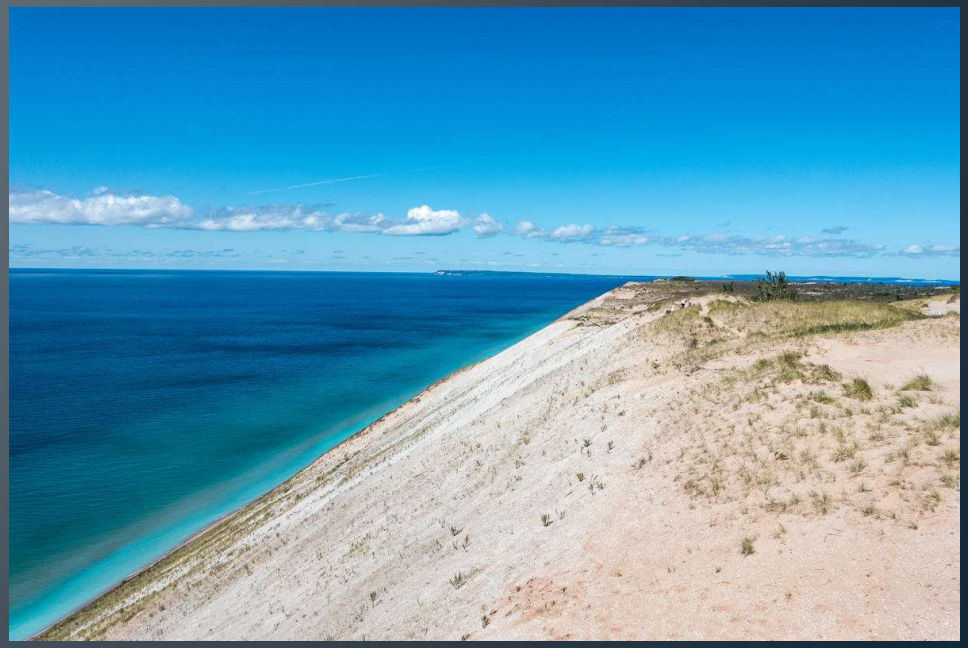
WB2HLM

K1EY

GOLLY

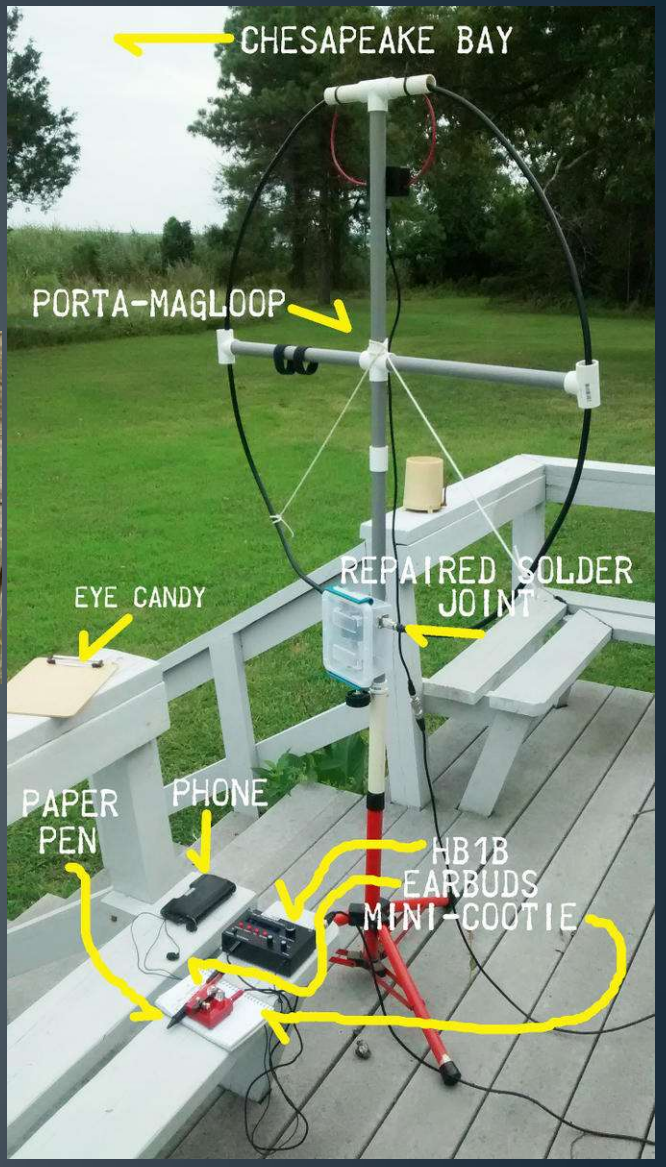


K8EK



W7EE

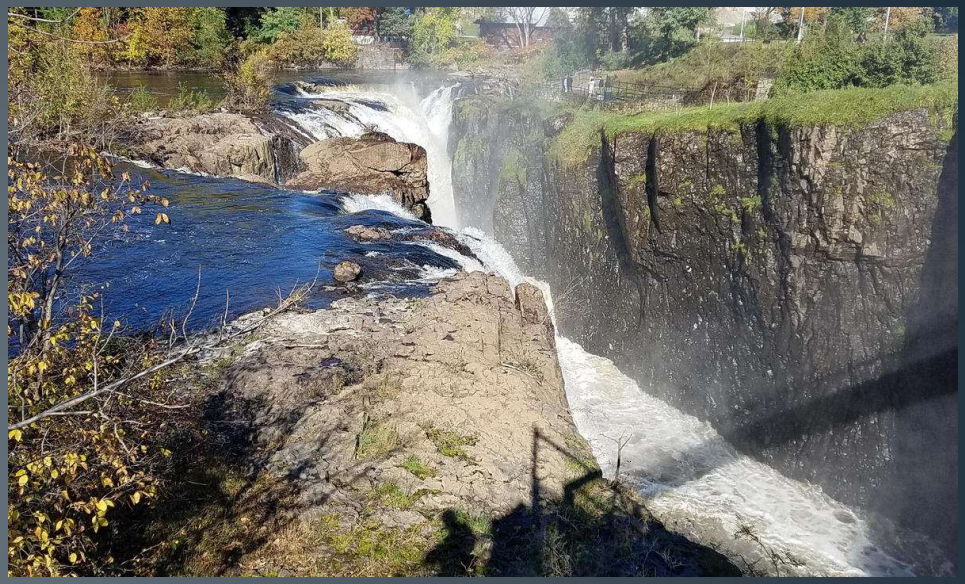
WA4CHQ

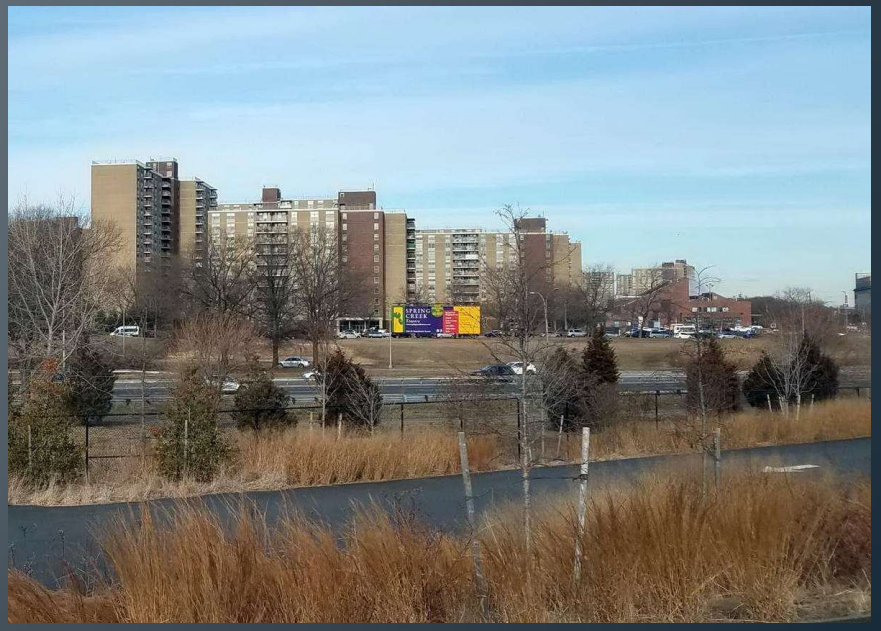

CHESAPEAKE BAY
PORTA-MAGLOOP
REPAIRED SOLDER JOINT
EYE CANDY
PAPER PEN
PHONE
HB1B EARBUDS MINI-COOTIE

AE5X

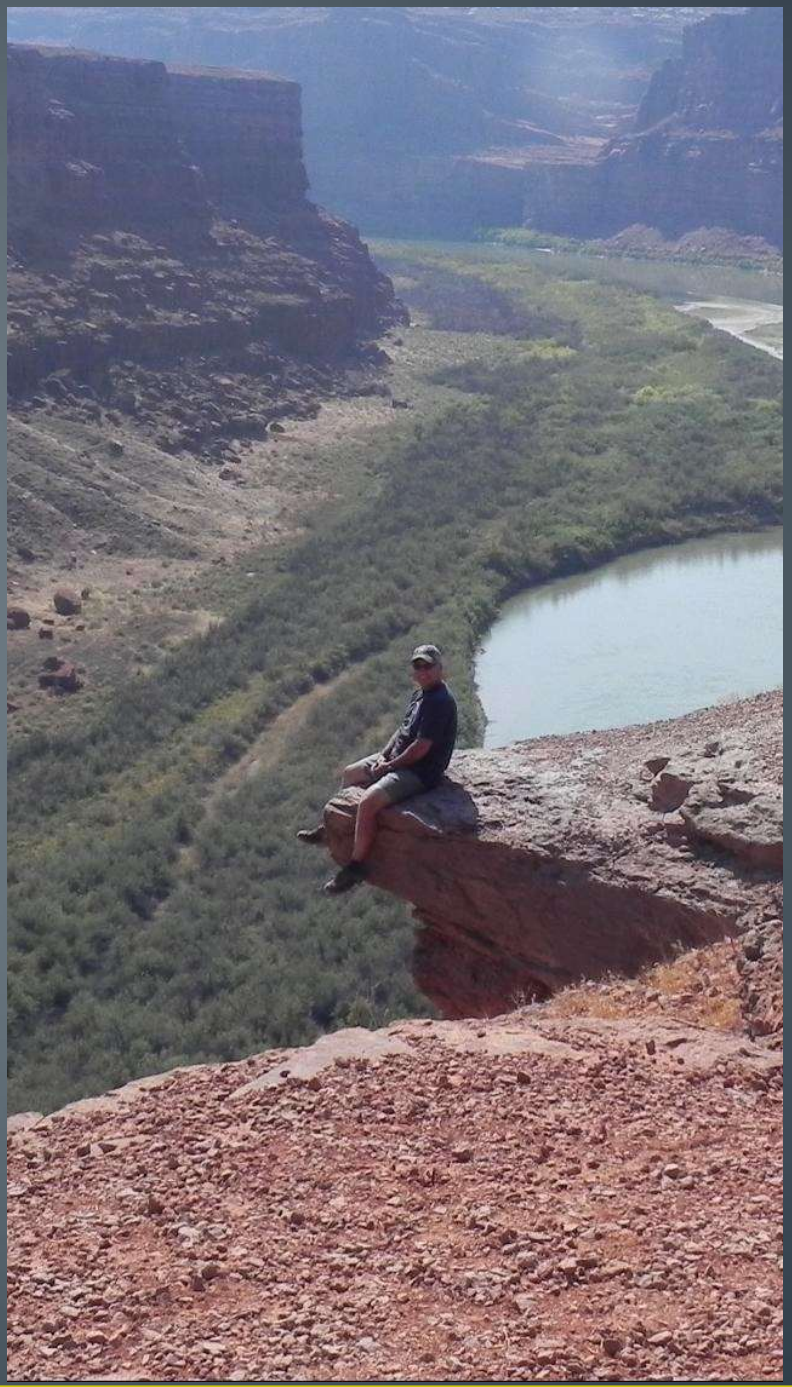
WI2X

Look at the QRZ dot com page for much more



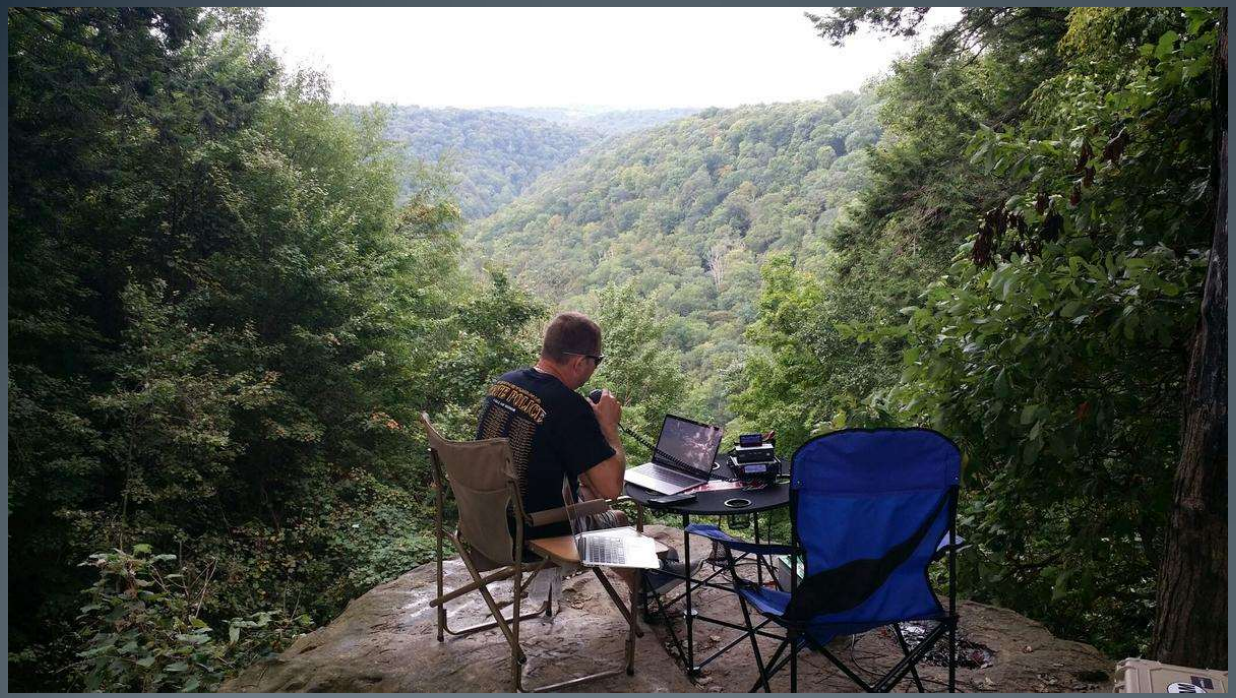


KB4CO – OMG!



W6NIB (?)

N3DL



KN2X

K4SWL - https://qrper.com

Go read everything on his website – categories are on the left side

K3WWP - http://k3wwp.com/

- Has a streak of more than 10k days of QRP QSOs, at least one/day using CW, QRP, and simple wire antennas.
- That's >29 years!
- I was # 9,994 on 14 Dec, 2021
- I was #10,365 on 19 Dec, 2022!!

QRP Is Fun At Home Too!

See Handout for more info on switching

Summary

- This is a great time for QRP.
  - Fun and efficient rigs are out there
  - Batteries are small and light
  - The solar peak is coming!
- 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.

Any Questions?

Check out the Handout!

Thank you! CUL

73,

John W2XS