NEW FOR 2023

Successful POTA

The WV1W Illustrated Guide to Parks On The Air℠

by

Don Dickey

Special Hamstick Guide

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v2.32h

This is just a small sample
of what's in ***Successful POTA***!

This book will pay for itself
in time and $$$ saved
several times over!

Avoid failed activations!

Check out ***Successful POTA*** at
WV1W.US

also available on Amazon

Introduction

This is a special FREE section of ***Successful POTA***, my illustrated guide to Parks On The Air. This treatise on hamsticks is based on material in my book's Antenna section, to give operators an idea of what they might expect from the rest of the book. If you enjoy this info and my writing style you should check out the full book on my website: WV1W.US

Background

I have been a licensed amateur radio aka "ham" operator since 1975. While studying mechanical engineering in college, I carpooled with classmate Ron Benatti, WA1JMP, to save gas. Ron gave me a tour of his station, and the stack of QSL cards he had amassed from all over the world enticed me to make the jump from avid CBer to ham radio.

I started my journey with building a receiver: Heathkit's venerable HR-10B. This kit was followed by their matching DX-60B transmitter and finally an HG-10B external VFO.

I used the receiver to practice copying Morse code. My traditional straight key was connected to an oscillator to practice sending. When I was ready, WA1JMP gave me the 5 word per minute Novice test which I passed on the first try.

Between my engineering courses and the knowledge gained from building the kits I knew enough theory to pass the FCC's written test without studying. I was off and running with my first "ticket" and went on the air on June 11, 1975 at 2230 UTC. My first QSO was, naturally, with WA1JMP.

After a 14-year hiatus from hamming I got back on the air in 2019 with a new Yaesu FT-891. Soon after, I ran into a guy doing what he called "POTA" and the rest, as they say, is history. As of this writing, I've enjoyed over 30,000 QSOs, mostly while activated in state parks doing POTA.

Hamstick Basics

Perhaps the simplest of all commercial vertical antennas are the monoband hamsticks. While you should have a pair, one for 20m and another for 40m, they are usually under $20 each and work surprisingly well. They also fit standard mobile mounts if you are looking for an inexpensive car-mounted setup. I completed a “Kilo” award at K-2001 with a pair of hamsticks!

Hamsticks are usually tuned to resonance by adjusting the length of the stainless steel whip sometimes called a “stinger.” I often use my RigExpert Stick 230 antenna analyzer to adjust the antenna. Without an analyzer, you can use an external SWR bridge or the SWR metering function in your radio for checking and tuning the antenna.

One downside of hamsticks is their relatively limited bandwidth. This is a function of all shortened antenna designs which present a high “Q factor.” I prefer resonant antennas because I can usually leave the tuner in the car. Nevertheless, the tuner can come in handy for widening the usable bandwidth of a high-Q antenna like a hamstick.

Radials

No discussion of vertical antennas including hamsticks would be complete without talking about a counterpoise or radial system. The typical vertical antenna will not function very well without one, J-poles excepted.

If the antenna is ground-mounted or has a base less than 18 inches up, radials can lay directly on the ground and do NOT usually need to be tuned to resonance as they couple to the earth. Note that with low ground conductivity, like on sand at a beach, radials don’t couple to the earth as well and can act as if they’re elevated.

There is considerable discussion as to how long radials should be and how many need to be deployed. Here, views from knowledgeable sources vary widely.

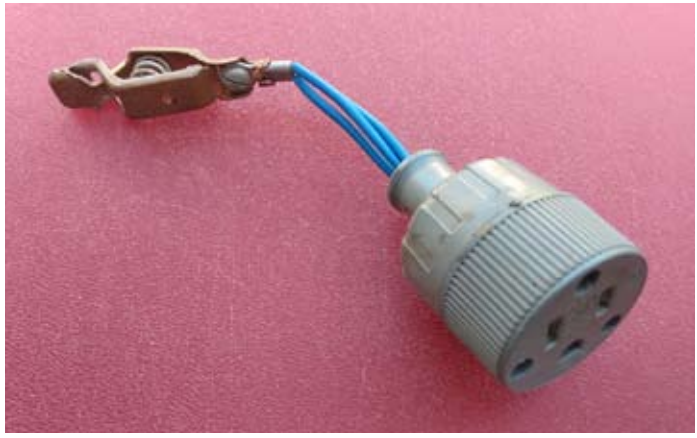
HyGain recommends a minimum of four 33-foot radials for their simple AV-18VS vertical antenna. Wolf River Coils includes three 33-foot radials with their antenna kits.

Many operators think that several times that number is required for good communications. My experience tells a somewhat different story. Most of the time, I've deployed just three 18-foot long wires laying directly on the ground for a counterpoise.

When needed to lower my SWR at some parks, I actually prefer six 18-foot radials to three 33-footers. Over a dozen "Kilo" awards prove my system works well enough indeed.

To be sure, we have a high water table in my area, and stations in drought conditions may need a better counterpoise system.

Also, more radials might be desired at home, but for POTA (or EmComm) expediency is often more important than efficiency. I've even found a way to get radials literally for free!



Radial Adapter
ready for your extension cords

With this adapter attached to your antenna mount, you can plug in as many off-the-shelf extension cords as desired. Need more? Use a cube tap! Need a longer counterpoise? Plug a couple extension cords together. Since it's a female socket, it is both safe and an economical partner for your hamsticks.

Radial Kit
adapter, triple tap, and extension cords

Radial Kit Deployed
with hamstick antenna and tripod mount

Mounts

I am not a fan of using a magnet mount on the roof of my car and generally prefer mounting as close to the ground as I can.

A simple mirror mount attached to a piece of pipe or angle iron driven into the ground connected to standard coax can get you on the air fast and within budget. I have such a setup for days when I feel like activating with as little effort as possible.

Spike Mount
with SO-239 connection and right angle adapter

If using a piece of pipe, put a large bolt in the top of it to take the brunt of being hammered into the ground. Note that this arrangement is not ideal in cold weather when the ground is frozen hard.

My favorite ground mount is more expensive but easier to deploy because the spike is only 6 inches long. It uses a pedestal base often sold for supporting corner flags on a soccer field. The cost is about $15. It works very well, even with a full-size 20m vertical, because the disk helps prevent it from tipping over. I added a CB mirror mount with longer bolts.

Pedestal Mount
with SO-239 connection and right angle adapter

Pedestal in Ground
ready to attach antenna and radials

The SuperAntenna UM2 is a clever gadget. It has tapped holes for both 1/4-20 and 3/8-16 tripod screws, a U-bolt for fastening to a pipe or railing, and it also comes with a large C-clamp which can fasten it to a picnic table or other fixed object.

SuperAntenna UM2
universal mount for 3/8-24 antennas

Since the UM2 is often out of stock, the jaw clamp below is another excellent option which can often be found on Amazon. This can even clamp onto the ball if you have a trailer hitch. Like the UM2 above, the 3/8-24 stud mount can be rotated 90 degrees for horizontal or vertical configurations.

Workman QRCS3 with Firestik K-4A
jaw clamp with 3/8-24 mounting stud

For really fast activations I often deploy a camera tripod with 3/8-24 mount for the hamstick. A tripod is my go-to solution in winter when a spike or pedestal mount is unusable because the ground is frozen. This works really well even when the ground is covered with snow. But, it can be blown over when it's really breezy, so you should have other options.

Hamstick on Tripod and Clamp Mounts
with push-on counterpoise wire connections

Wolf River Coils offers a simple camera tripod adapter plate with a threaded stud and wing nut for attaching radials. You can also attach the jaw clamp mount to a tripod.

I also have a mirror mount attached to an angle bracket as shown above on the right. With the bracket in a horizontal configuration it can be clamped to a bench or picnic table. With the bracket mounted vertically or removed completely, the mount can be clamped to a guard rail, sign post or fence slat.

Hamstick Tips & Tricks

My first trick is to make hamsticks easier to adjust in the field. The tiny hex socket set screws securing the stinger are really hard to find if dropped and they require a special tool. Start by replacing them, ideally with knurled head thumb screws, or at least with screws which have Phillips or regular slotted heads.

Next, adjust the tightness of the screws so the stinger can be just barely adjusted by hand. Screws should be tight enough to prevent slipping but loose enough so you can move the stinger up and down as required for tuning without tools.

My second trick is to keep one stinger long for CW and digital band segments. My CW stinger is 48" long overall. Trim the other for SSB band segments, usually requiring removal of about 6 inches off the end. My SSB stinger is 42" long overall.

My third trick is to make single-band hamsticks work on two bands! I got a 15m hamstick to resonate on 17m by using a piece of coat hanger wire to lengthen the stinger. Similarly, I got a 20m hamstick onto 17m by making a much shorter 17" stub (from another coat hanger) instead of the regular stinger.

I expect you could get a 15m hamstick to work on 12m and a 12m stick to work on 15m with the same tricks. Ditto for getting a 12m stick on 10m and 10m stick on 12m.

My last trick is to combine hamsticks. I found that by putting a 40m hamstick with it's stinger on top of a 20m hamstick bottom section that it was usable on both 6m and 2m. Surprise!

You could also combine a hamstick with a WRC coil to get even more band coverage. Hamsticks definitely represent some of the best antenna values for portable operation and POTA.

This one page of tricks just saved you enough $$$ to buy my POTA book! My book will save you even more $$$!

Sample POTA Checklist

Transceiver
Transceiver Power Cord with Powerpoles®
Transceiver Hand Mic
Antenna Tuner with data and RF cables
Morse Key
Headphones
Laptop or Tablet with updated log
Clipboard with:
    FCC License
    Blank Log Sheets
    ARRL Band Chart
Pencils & Pen
POTA Sign with holder
12v Battery, charged, with Powerpoles® Pigtail
Battery Clips to Powerpoles® Pigtail
20m Hamstick
40m Hamstick
Long and Short Stingers
Counterpoise Wire Sets x2
Tripod with Mount
Jaw Clamp Mount
Pedestal or Spike Ground Mount
25-foot Coax Cable x2 with Barrel Connector
Antenna Analyzer, charged
Mallet
Leatherman Multi-Tool
Spares: wire, crimp connectors, paracord
Electrical Tape
Folding Chair & Folding Table
Thermos (with hot coffee) & Cup
Water Bottle (with fresh water)
Cap & Sunscreen
Bug Repellent

Meet the Author

Hello! I'm Don, WV1W, author of *Successful POTA*. I've been a ham since 1975, first as WN1VDD and then as WA1VDD.

In my first career, I was a mechanical design engineer and worked on "macro" projects including large printing presses for Harris Corp and later "micro" projects including a pager watch for Timex when I was awarded a patent for the antenna.

Later, I followed my passion for baking and cooking and became the culinary professor for a state community college. I taught exclusively low-income inner city kids professional kitchen skills so they could get jobs in the culinary field.

I currently live in CT and am married to N1GDW. We have one daughter who is a successful fashion designer in NYC.

WV1W Hamstick POTA Station at K-0882

Parks On The Air can breathe new life into your amateur radio hobby! This book will give you the information you need to get started with this exciting new adventure. The great outdoors is ready. So, what are you waiting for?