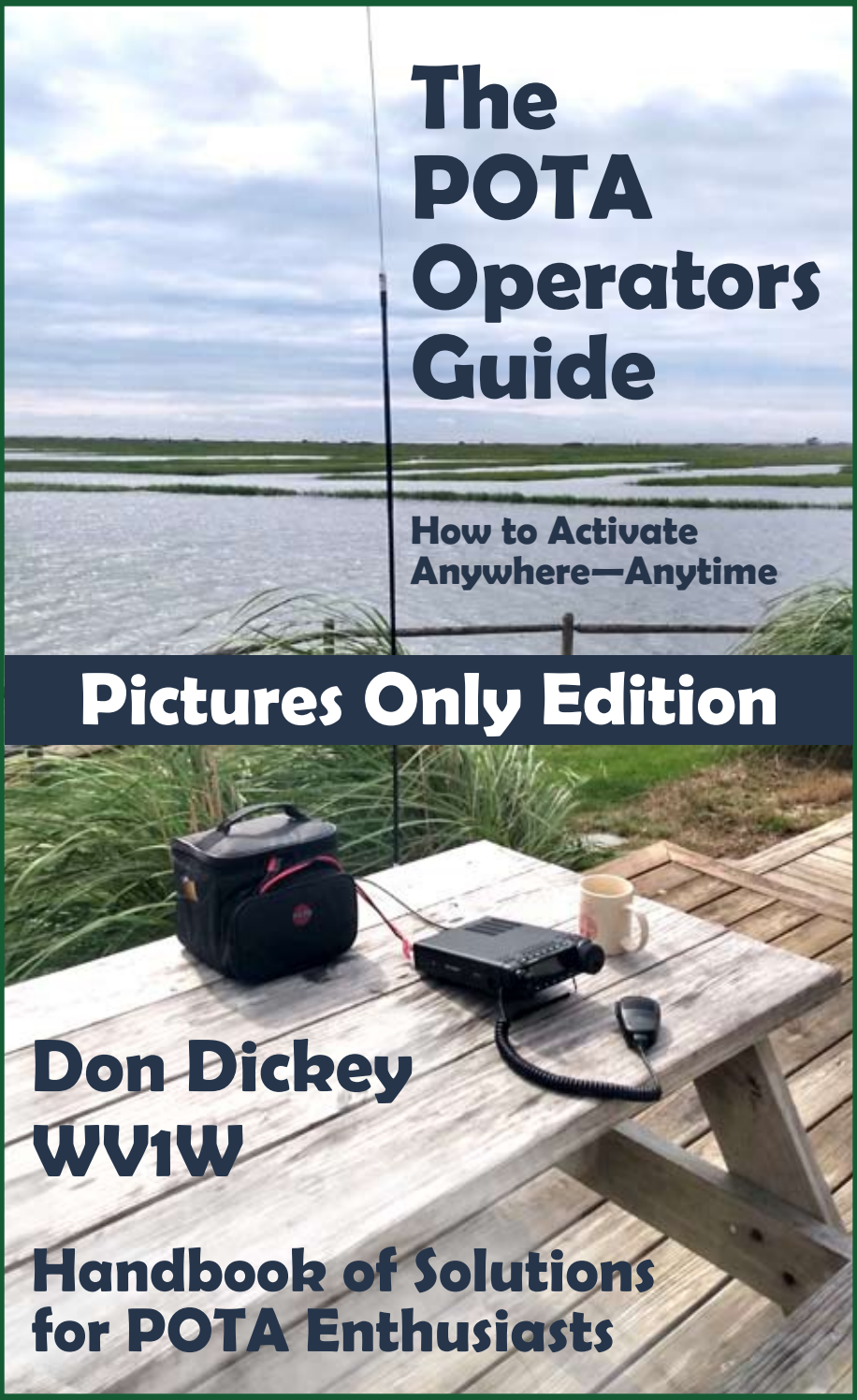

The POTA Operators Guide

How to Activate Anywhere—Anytime

Pictures Only Edition

Don Dickey
WV1W

Handbook of Solutions for POTA Enthusiasts

v1.11
Published by Instafax
www.instafax.com

This book is dedicated to
Sara “Bean” Lefebvre
KC1MEB, silent key

The author would also like to thank
the trusted friends who helped with
tips and suggestions to improve the
book during its creation and evolution.

Visit
wv1w.us/links
for info on stuff in the book!

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Introduction

I have been a licensed amateur radio aka "ham" operator since 1975. Likely with many others, hobbies ebb and flow. During the summer of 2019, I had just gotten back into operating after a 14-year hiatus when I purchased a Yaesu FT-891 on a whim.

My original intent was to operate from the picnic table on our deck whenever the weather was nice enough to get out of the shack. A 12-volt battery borrowed from my weed whacker ran the FT-891 at 20 watts, just enough to have some outdoor fun.

A month later, I ran into Patrick Gearty (W0YES) on 20m SSB. He said he was doing something called POTA, and I asked, "What's that?" I had never heard of POTA, and Pat gave me a brief description and suggested I check it out on the web. The rest, as they say, is history.

TIP: If you are brand new to POTA, begin with my first book *Successful POTA* which explains what POTA is about, guides you through many rig and antenna options, and shows you how to get started. It also covers spotting and logging. This book pays for itself by saving you LOTS of time and $$$.

The POTA Operators Guide is my third book in the WVTW series and helps you get the most out of POTA by showing how to solve the problems unique to each section. I demonstrate by example how to convert issues into opportunities for both fun and furthering your knowledge of amateur radio.

I share my experiences from over 800 activations and 79,500 QSOs to help you operate in a variety of settings from simple pastures to waterfront properties with spectacular views.

It is more conversational (less geeky) than my other books with some personal stories many readers will find interesting. Come along, we're going on an adventure. It's time to POTA, anywhere—anytime!

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Close to Home

Connecticut is the 3rd smallest state in the U.S., behind Rhode Island (smallest) and Delaware. Interestingly enough, this is the exact same rank for POTA parks per square mile with RI coming in at #1 and CT at #3. It comes as no surprise to me with 10 parks I can drive to in less than 20 minutes from home.

After a batch of recent park additions, one of the newest is just under 2 miles away. With such a valuable resource for POTA so close to home, it is very important to be on the best of terms with park managers and rangers. This is especially true because I was hoping to become a "regular" there.

In fact, I met manager and beekeeper Kevin on my very first activation at Auerfarm State Park Scenic Reserve (US-9896). It was forecast to rain off-and-on that day, so this was going to be an in-car activation. On arrival, I gave the area a quick survey and saw an unpaved road leading up a hill that looked to be as far away as possible from power lines and other sources of noise. I parked in a wide level spot in front of a closed fence gate that looked like a turnaround for tractors and other farm vehicles.

There weren't any suitable trees nearby, so I decided on a ground-mounted antenna. A hamstick might have worked, but the rain stopped long enough for me to set up my tent pole vertical using a pedestal (spike) mount into the ground.

Shortened "compromised" antennas like hamsticks and Super Antenna kits can have a limited bandwidth. This is due to the "Q" or quality factor.

My tent pole vertical is a full-size quarter wave ground plane design on 10-20m and has plenty of bandwidth whether that be for SSB or CW/digital frequencies.

Tent Pole Antenna Parts
with 40m coil and guy system for windy days

The top tent pole section has a through cut that can be squeezed together with a small stainless steel automotive hose clamp. This allows it to grip a tunable tip that can be extended up to 3 feet thereby allowing the antenna to cover the lower CW and digital frequencies (FT8, etc.)

Tunable Tip
can be adjusted in/out for the lowest SWR

I also made a coil for this antenna so it can tune the 40m band as well. To switch from 40m to 20m a simple jumper bypasses the coil, and band switching takes only a few seconds.

40m Loading Coil
with easily removable jumper for 20m

Tent Pole Vertical on Spike Mount

Radials Clipped to Coax Connector

normally 4 are used but just 2 can work just fine

Typical SWR

after tuning via adjustable tip

As I often do, I began the SSB portion of the activation on 40m initially looking for park-to-park (P2P) contacts with operators who were spotted via POTA APP on the web. That's always a good way to get a bunch of QSOs into the log right off the bat. You can meet up with other activators and help them out as well. This day was no exception, but 40m wasn't particularly strong, and spots only netted 6 P2Ps.

I stayed on 40m for the better part of an hour until the contacts pretty much dried up. That's my style; to wring out as many QSOs with as many hunters as possible before changing bands.

Some activators get their 10 required QSOs (plus maybe a couple "spares") and then move on to another park or even call it a day. That's fine, but it isn't the way I operate. In over 800 activations, I don't like to leave a band or a park with hunters actively trying to contact me, and I have only done so a handful of times due to sunsets or attacking mosquitoes.

I was enjoying a quick coffee break before switching to 20m when I saw a pickup truck approaching in my rear view mirror. Had I gone down a private road? Was I out of bounds? There was a moment of tension as the truck pulled up and parked next to me and the driver rolled down his window.

I was greatly relieved to see a smile on the fellow's face. He introduced himself as Kevin, a manager and beekeeper, and he was just curious what I was doing. It so happened that Kevin was an electronics enthusiast and was very interested in the technology I was using. I explained what POTA was and that I was even the guy who literally wrote the book on it. He was duly impressed, so I continued to show him the gear I had with me including several other antennas in the back of my SUV.

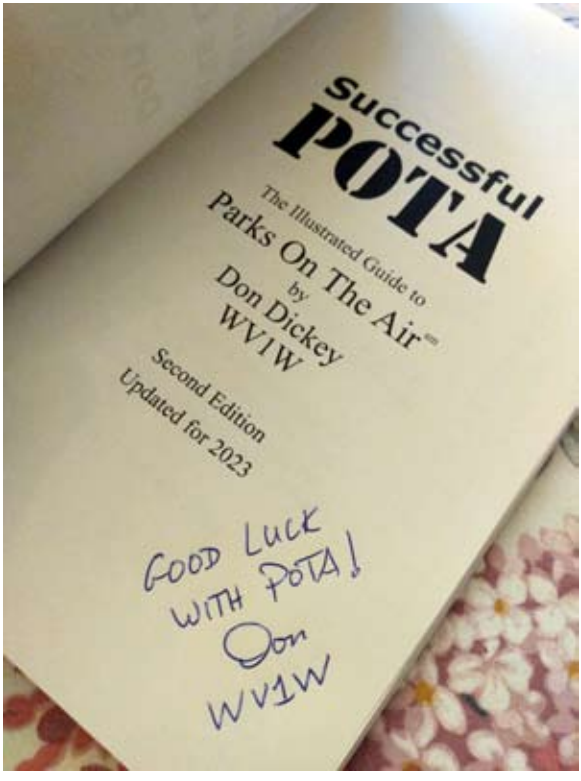
We ended with a warm handshake, so this activation wasn't so much involved with solving technical problems as it was about avoiding a personal one!

Tent Pole Vertical Antenna Deployed
Auerfarm State Park Scenic Reserve (US-9896)

After Kevin drove off I switched to 20m for a while. I was just about to call it a day with another 100 QSOs added to my log when I heard another vehicle coming up the hill.

This time it was a POTA operator, Tom (KC1NUC). It was actually quite a surprise, since the weather had deteriorated and certainly far from ideal for doing POTA activations.

After greetings and salutations, Tom said he wanted to ask a favor. He had purchased my book *Successful POTA* on Amazon before finding out he could have gotten an autographed paperback on my website directly from me. He had driven over a half hour in rain to ask if I would be willing to autograph his book, which of course I was happy to do.



Successful POTA
autographed on request

A few weeks later, I was back at Auerfarm and parked in the exact same spot. This time, while I was operating, I heard a vehicle approaching. When I turned around to look, there was a young woman driving a classic red farm tractor pulling a wagon full of children on a hayride!

I didn't know it when I arrived, but I had parked in the spot where "Jonni" normally turned her rig around. It was a wide area, but she needed every bit of it due to the wagon in tow. I quickly disconnected my antenna and was about to move the car, but she said she would turn around somewhere else.

Jonni opened the gate and continued down the other side of the hill. All was well with the kids enjoying an extended ride until after she turned around and was trying to come back up the incline. The weight of the wagon full of kids was just too much and the tractor's rear wheels started to spin on slippery grass.

About 10 minutes passed, and then I saw Kevin coming up the hill driving a big John Deere to the rescue. He towed the red tractor with wagon attached to the turnaround spot next to me. Fortunately, thanks to our previous hospitable meeting, he was still smiling and our relationship wasn't tarnished.

I have since been back to Auerfarm several times and completed a "Kilo" award logging 1,000+ QSOs with only 6 activations. My average at this park is 171, but I "cheated" by using a special event call sign during 2 activations. That helped my count, as I was an operator for WSS celebrating President Eisenhower's birthday. Thanks, Ike!

In conclusion, there are two POTA lessons here. The first is to take great care to foster relationships with park authorities whenever possible. It might help keep you out of the weeds down the road. The second is to accept or search out opportunities to operate special events. They can act as force multipliers while attracting huge pileups on the air.

Hit the Trail

Most of the registered POTA entities are enclosed spaces with clear perimeters and defined boundaries. The largest is St. Elias National Park & Preserve in Alaska (US-0069) which spans over 13 million acres. It is so remote it has only 24 activations!

The largest park in the "lower 48" is actually New York's Adirondack State Park (US-2001). This one park includes a fifth of the state covering over 6 million acres. As of this writing, I am a park leader at US-2001 with over 2,500 QSOs.

Yet, some of the most attractive POTA entities might not be enclosed parks at all but registered trails. A few of the most well-known are the Appalachian Trail (US-4556), Lewis and Clark National Historic Trail (US-4572), and Ice Age Trail (US-4238). There are many more POTA gems like these.

These are linear parks, and you can activate anywhere within 100 feet according to current rules. This includes the National Wild and Scenic Rivers as well. You can also get a "2-fer" by activating where trails and rivers intersect or go through a POTA park. 3-fers and 4-fers are also possible.

The biggest problem some activators have is knowing what trails are available to them. When you look at the POTA map, locally available trails probably won't show up. Their "dot" on the interactive map may be in a different state altogether. So, how do you find out about these hidden opportunities? The best way is to talk with other POTA activators in your area.

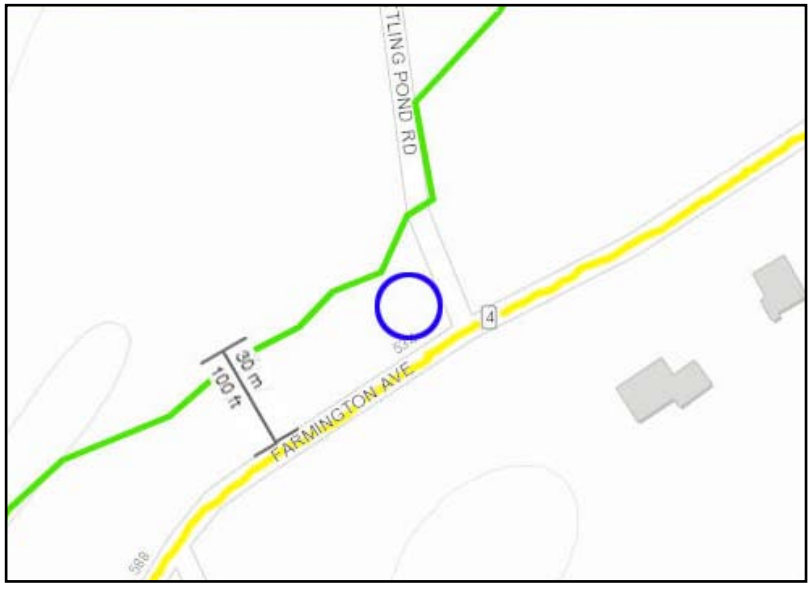
I activated Penwood State Park (US-1706) over a dozen times before I found out the New England Trail (US-4561), known locally as the Metacomet Trail, runs right through Penwood's parking lot (tiny "P" on map). By submitting the US-1706 logs again, with MY_SIG_INFO changed to US-4561 in the ADIF file, I was able to get credit for those activations over a year after I sent in the original logs for Penwood.

New England Trail in Penwood State Park (US-1706 Metacomet Trail Section

It was interesting to see an article on CNN.COM recently about three POTA trails: "The Ice Age, New England and North Country national scenic trails were previously administered by the National Park Service as part of the National Trails System. They're now part of the National Park System. The trails join the Appalachian, Natchez Trace, and Potomac Heritage trails."

This NPS distinction might help these new parks get additional resources such as better signage, oversight, and maintenance. In any event, they will remain great places to activate.

It can take some research to find trail intersections. I was able to use the overlapping interactive maps of the New England National Scenic Trail (US-4561) and the Washington-Rochambeau Revolutionary Route (US-4582) to find such an intersection. Some research may be required to find similar opportunities near you, but it can be rewarding.



US-4561 on top (green) & US-4582 below (yellow)
park in circle (blue) for a 2-fer

There are also many state trails in addition to those administered by the NPS. Most are listed in POTA's database and available for activations. Examples near me in CT include the Air Line Trail (US-7528), Hop River Trail (US-7532), Larkin Trail (US-7533), and Windsor Locks Canal Trail (US-7544). These are administered as state parks. To find similar options near you, search your state park website for trails.

Trails can offer unique opportunities for POTA not available in parks. In CT, *all* state parks officially close at sunset (unless you are a registered camper in-season). State Park trails have the same hours, but there are places where you can park near trails that don't close in order to activate the "Late Shift."

Also, when you're activated and spotted using POTA APP at a trail, nobody really knows exactly where you are. In the *Expect the Unexpected* section you will read how someone used this feature to hide from a stalker.

As mentioned, POTA rules state that activators must be within 100 feet of a trail. This requires that you know precisely where the trail is. Usually this is clear-cut. Many state trails here in CT used to be rail beds and now, with the train tracks removed, they have been either paved or cindered for durability, erosion control, or the safety of walkers and bicyclists.

Trails over rough terrain may be less obvious. There are several common ways of marking trails. Signs are used though typically limited to road crossings and trailheads.

Often trees are marked with a stripe of paint or even stenciled with little feet which can indicate a direction. Another method uses material at hand: rocks. If you see a small pyramid of rocks, that's probably a trail marker. Please do not disturb it.

Metacomet Section of New England Trail (US-4561)
marks for trail turning right

Most trails are maintained by volunteers. I know several ham operators who do this as their "other hobby" for both recreation and exercise. If trail work interests you there are probably opportunities nearby where you can offer to help.

Parks often include amenities such as picnic areas with tables and rest rooms. Some also have a visitor center. Trails, however, typically offer very limited facilities if any at all.

When I head out to activate at a trail, I usually put a folding table and camp chair in the car. Plan ahead to be comfortable. If I don't have room for a table, I use an open car trunk instead.

WV1W Trail Activation
BYO table & chair

POTA trails and rivers are linear parks and some cross state lines. Before you submit a log, you can use an editor like ADIF Master to add a column for the "MY_STATE" field. Otherwise, you will need to select a state during the uploading process. The database tracks activations by state for certain awards.

POTA in the Woods

This chapter is about hiking some distance away from my car into the woods on Talcott Mountain (US-1724) to activate on the New England Trail (US-4561) for a 2-fer.

My favorite mode of POTA operation is sitting at a picnic table with a nice view and hot cup of coffee. I only operate inside my car on cold or rainy days. That works, it just isn't my preference. This is why you will see a picnic table in the activation photos on my website and in my books more often than not. I especially appreciate a table when operating digital modes as there's plenty of room for the computer and cables.

That said, occasionally I leave the close proximity of my car to POTA in the woods or by the water, which is the focus of this section: what's different and how to execute it.

Normally, the "trunk" of my SUV is full of gear. My tent pole vertical is packed into a dedicated antenna bag. Most people would recognize it as a golf bag, but they're not ham operators.

Many people in my neighborhood put things out by the curb on the evening before trash pickup the following morning. Occasionally, an after-dinner walk provides an opportunity to turn a neighbor's junk into my treasure. Such was the case for this lightweight golf bag with an attached prop-up stand. Ditto for the power cord on a discarded vacuum cleaner which later provided the wire for my favorite linked vertical antenna.

Along with my antenna bag, I also pack a heavy-duty tripod, Wolf River Silver Bullet 1000 coil, military-style sectional whip, spike and clamp mounts, 40m and 20m hamsticks, and a small tote with wire antennas and RG-58 coax cable.

The challenge is deciding what of this stuff to use for each activation, along with my Yaesu FT-891 and a battery. Hiking into the woods eliminates just about everything mentioned!

If I'm not going far, like under 100 yards, the hamsticks with a spike mount and 25 feet of coax are certainly possible. Any further and a lightweight, more compact kit is in order.

40/20m Linked Vertical with Throw Line and Weight

Fortunately, woods have trees, and hopefully some will have suitable limbs for hanging a wire antenna. The solution for this day's POTA outing is rapidly becoming crystal clear: my favorite linked vertical.

The compact 40/20m version of my linked vertical antenna kit complete with two sets of radials fits in a plastic sandwich bag and weighs 13 oz (370 g). The 18-gauge wire in this antenna easily handles 100 watts QRO power from my rig.

I can further simplify my kit by leaving the coax behind. The banana plug on the end of this antenna conveniently fits into the SO-239 jack on the back of my rig, and the coax can clip over the threaded portion of the same jack.

Since 21 MHz is the third harmonic of 7 MHz, with the link closed for 40m I can also get on 15m if it is open. As a three-quarter wave (3/4) antenna it often provides some great DX

40/20m Linked Vertical with Radials

A small but rugged backpack will contain everything needed for this hike-in activation. It would be readily apparent to any serious QRP enthusiast that my FT-891 and 20 amp hour battery are far from ideal for Summits On The Air (SOTA) activations, but I'm not doing that. I'm only hiking a few hundred yards over mostly level terrain, and I can easily handle a 5-pound radio (with mic) and a 6-pound battery (with power cord) along with a water bottle and couple snack bars.

FT-891 ~ 4.7 #

Lunch Bag Packed
rig on bottom - battery in upper pouch

The upper compartment of this insulated lunch bag normally contains a Yaesu FC-30 antenna tuner with its control and RF cables plus a RigExperts Stick 230 antenna analyzer. I'll be leaving those accessories home for this outing since the antenna is resonant and the SWR bridge in the FT-891 will let me know if anything has gone awry for some reason.

I normally prefer to log on a small portable Windows 10 laptop with 11-inch screen running Microlog (aka µLog). To save weight, this time I'll pack my backup computer: a 10-inch Android tablet running VLS Logger.

The app can import and export ADIF files which make it compatible with almost any other logging programs you use in your shack. It looks up previous contacts when you enter a call sign letting you automatically add the name and a QTH. It also has fields for "Your reference" (MY_SIG_INFO) and "recv reference" (SIG_INFO) making it very POTA-friendly. It works on a phone, but I don't like switching back and forth between the POTA spotting page and logging.

VLS Logger Log and QSO Entry Screens

screenshots from a phone but it also runs on tablets

One last bit of planning was to identify where to activate. I'm hiking into the woods to be able to claim a 2-fer. That's where two POTA entities intersect.

I will be inside Talcott Mountain State Park (US-1724). The Metacomet Trail, a section of the New England Trail (US-4561) runs through this park, and I can be anywhere within 100 feet of it when I activate but preferably not right on the trail at a narrow spot that could interfere with hikers passing through. Google Maps and the GPS in my phone can help, so I've sent some coordinates to it ahead of time.

Metacomet Section of the New England Trail

Parking on the side of the access road near the upper circle on the map is only a few hundred yards to the closest point on the Metacomet Trail circled below to the left.

This spot is in a valley between the summit of Talcott Mountain on the left (west) and a substantial ridge in Penwood State Park in the shaded area on the right (east). Many POTA activators think that altitude is a huge benefit to making lots of contacts. This is certainly true for UHF and even VHF frequencies. On HF, the target is actually the ionosphere. A clear sight line to the horizon might help make DX contacts, but it isn't absolutely necessary for a decent activation.

In fact, I've found that close proximity to a large body of water to help HF communications more than altitude. It doesn't have to be salt water, either. Having spent many vacations on the edge of Lake George in New York I've learned to take advantage of the water's ability to act as a giant reflector and magnify my signal for multiple "Kilo" awards.

POTA at the Beach

New England is fortunate to have some absolutely gorgeous beaches. While a few dozen miles of very expensive oceanfront property referred to as the "Gold Coast" is under the private ownership of some of the richest people in our country, many of the best beaches are open to public access. Connecticut has a dedicated fee added to motor vehicle registrations that pays for our state parks. Non-residents are charged but residents have already paid for access, so they only pay for extra services like camping and special activities.

One such park worth visiting is Silver Sands in Milford, CT. It has a wonderful view of Long Island Sound and even some nice hexagonal shaded picnic tables near the pavilion where visitors can enjoy their lunch and do some POTA. The tables have a built-in hole for an umbrella, but that's also perfect for an antenna mast. In the picture below, I used my Pole Pruner Vertical to activate on a picture-perfect day at the beach.

Silver Sands State Park (US-1716)

Beaches can present real challenges to operators. The sandy soil isn't great for anchoring antennas, there's often a stiff breeze at the shore when non exists a few miles inland, but the biggest problems can be electrical. Beach-front pavilions can produce ridiculous HF interference, probably from noisy compressors in refrigeration equipment. The biggest problems have to do with ground conductivity or a lack thereof.

Antennas that worked perfectly at other parks amazingly show elevated SWR at the beach. One quick fix is to pull out the tuner. That's what I did here, and you can see an FC-50 auto-tuner under my FT-891 in the close-up above. It saved the day.

Marconi Beach - National Seashore (US-0672)

Guglielmo Marconi used kerosene-burning engines with alternators producing 2,200 volts to power his 30,000 watt station. Even with that enormous "juice," he had lots of trouble getting signals from Cape Cod in Massachusetts to receiving stations in Europe on the other side of the Atlantic Ocean.

Once again, this time in MA instead of CT, I had a high SWR at the beach and, like before, my tuner saved the day. With a modern HF rig running only 100 watts into an 8-foot hamstick and powered by a battery, I had no trouble replicating what Marconi did, but this time using voice instead of Morse code.

Marconi Station circa 2023

There are other possibly more efficient solutions like a different antenna. With the exception of some half-wave designs and familiar J-pole antennas, most verticals rely on a counterpoise system external to the radiating element to function properly. This is usually in the form of radials, a set of wires deployed below the base of the main element.

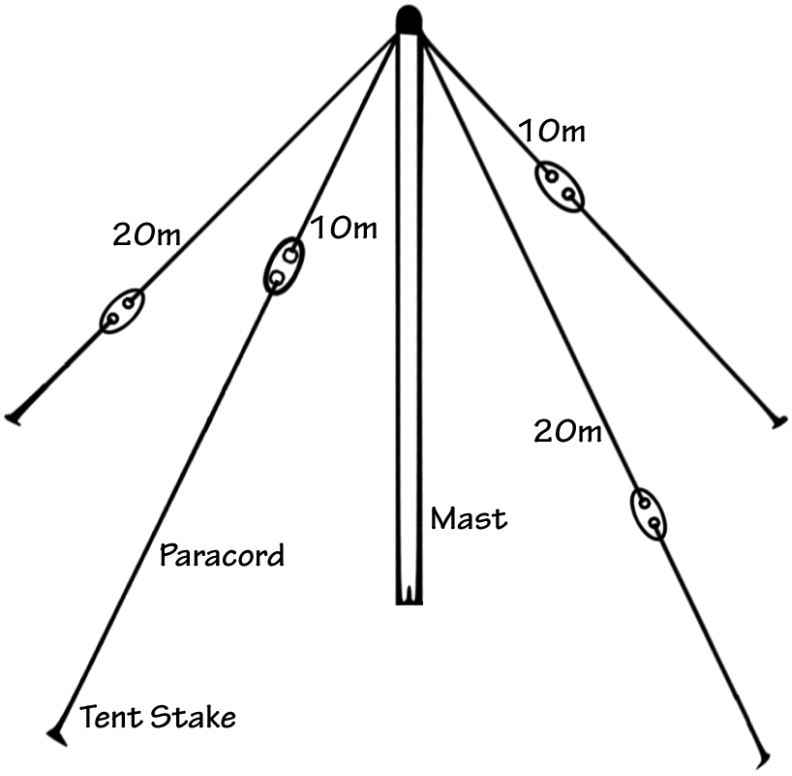
Normally, radials laying directly on the ground can couple with the earth. They don't need to be carefully tuned for this to work. That's why my kit of four 16 to 18-foot radials can successfully make contacts on 40m. They are relying on electrical conductivity in the soil for this to happen. Unfortunately, sandy soil found at or near the beach lacks enough of this conductivity.

One solution is to raise the antenna base up a few feet and use elevated radials. This requires them to be tuned, and usually be about the same or slightly longer length as the radiating element. Tuned radials can be just as fussy as the antenna. That's why I usually prefer to lay them on the ground, but this doesn't work so well at the beach.

There is another solution: use an antenna design that doesn't rely on a separate counterpoise but, instead, has one of its own. The simple dipole and its close relative the inverted V are self-contained antennas and do not need any separate radial system. While possibly more challenging to set up, these designs can offer the best solutions for beach-front POTA.

The trouble with most beaches is an absence of trees from which to hang antennas. Dipoles usually need two for the ends, and inverted V configurations need one in the center, but sometimes even that's a bridge too far when all you have is tall grass. Even that's off-limits, barely hanging on for its own survival, and probably infested with ticks! TIP: Stay out of beach grass.

One solution for a beach activation might be my crossed fan antenna. This design doesn't need a counterpoise, it's self-supporting, and its construction is particularly likely to survive the stiff breeze you're likely to find at the beach.



20/10m Crossed Fan Inverted V

The mast can be a sturdy commercial model or one you make yourself using off-the-shelf PVC pipe from your local Home Depot or plumbing supply. It should be 17–18 feet high.

All four elements should terminate with insulators and a length of paracord. Stakes should be the type with a broad flat side to hold in sand. With a 17-foot mast, you need 50 feet of paracord with 9 feet for each 20m leg and 16 feet for each 10m leg. A taller mast will require more cord to maintain a minimum 45 degree angle between the elements and mast.

Inverted V Wire Antenna Lengths

USA BAND	CW BOTTOM	CW TOP	CW MID	INV-V LEG-FT
160	1800	2000	1900	117.0
80	3525	3600	3563	62.4
60	5332	5405	5369	41.4
40	7025	7125	7075	31.4
30	10100	10150	10125	22.0
20	**14025**	**14150**	**14088**	**15.8**
17	18068	18110	18089	12.3
15	21025	21200	21113	10.5
12	24890	24930	24910	8.9
10	**28000**	**28300**	**28150**	**7.9**

USA BAND	SSB BOTTOM	SSB TOP	SSB MID	INV-V LEG-FT
160	1800	2000	1900	117.0
80	3800	4000	3900	57.0
40	7175	7300	7238	30.7
20	**14225**	**14350**	**14288**	**15.6**
17	18110	18168	18139	12.3
15	21275	21450	21363	10.4
12	24930	24990	24960	8.9
10	28300	29700	29000	7.7
10T	**28300**	**28500**	**28400**	**7.8**

General Class Frequencies in KHz
10T = Technician Class Frequencies
Bold = Lengths for 20/10m Design Shown
Inverted V Angle = 45 Degrees
Leg Lengths in Feet
Overall Length = Leg x 2
Always Cut Long - Trim to Resonance

The "hot" sides on both bands are connected to the coax center conductor, and the opposite sides are connected to the braid.

You don't need a balun, but you could use a 1:1 voltage balun if you have one and are so inclined. None of my antennas include a balun, and they work just fine with thousands of QSOs proving one isn't required for success and fun on the air.

You need 47 feet of wire to make the 20/10m crossed fan. You could buy 25 feet of speaker wire or zip cord and split it down the middle and have more than enough to make all 4 elements.

Element lengths for SSB or CW/digital frequencies should be about the same as for an inverted-V listed in the table on the previous page. For SSB frequencies, 20m elements should be 15 ft 7 in long and 10m elements should be 7 ft 10 in long. CW/digital operators should add a couple inches to each wire.

Expect some interaction between the two bands, and experimentation with trimming may be required.

Some readers may wonder just how a fan dipole works. The answer is simple. Those elements who's resonant frequency matches that being either received or transmitted absorb or transfer most of the energy. The non-resonant wires are basically ignored. This is a good example of the magic of resonance and why it is so important to antenna design.

TIP: You could make a 40/20m crossed fan instead. This design is included in ***The POTA Antenna Book***. It would take up much more room and result in very different propagation with close-in NVIS contacts on 40m but also omnidirectional long distance contacts on 20m.

This is because the 40m elements are only a small fraction of a wavelength above the ground. The 40/20m hybrid design can work for both POTA and EmComm.

Camping POTA

POTA, short for Parks On The Air, was founded on September 15, 2010 "to encourage amateur-radio operators who enjoy the outdoors -- but who may not be interested in or able to take long hikes or make steep climbs -- to blend their interests by operating from municipal, county, state, provincial, and national parks around the world."

Some of the original POTA operators included Fred Lesniek aka VE3FAL, Kyle Jeske aka N4NSS, and Pete Spotts (SK) aka N1ABS and W1PNS.

My story dates back to almost two decades before POTA officially began. Great friend and our "Best Man" Gary is an avid camper. He makes an annual trip to Lake George, NY every year. This isn't an RV experience, far from it. This is rugged tent camping on remote sites accessed only by boat. Bears are common, so food must be stored very carefully.

In September of 1991, Gary invited my wife and I to join him, his YL friend, and another couple for a long weekend on the edge of the lake in Adirondack State Park (US-2001). We would leave our cars in Bolton Landing and travel to our sites in "the Narrows" several miles away on his Four Winns inboard/outboard runabout with our Sunfish sailboat in tow.

I had all the camping gear needed for the trip, and it didn't take long to have that sorted and ready. Then, it struck me that we would be completely cut off from civilization for the weekend. Having experienced any number of camping mishaps, I was concerned. The solution was at hand: bring my radio!

At that time, my HF rig was a Yaesu FT-301. This was a very unique design. It was basically a 10-watt QRP rig with a 100-watt linear amplifier literally bolted to the rear panel. In fact, Yaesu offered a QRP version (without the amp) as an FT-301S.

Yaesu FT-301S
10-watt QRP HF Transceiver

The amp was powered and controlled through a built-in Molex connector. RF was handled via a pair of short BNC cables. I could loosen four captured screws and the amp came free. Bypassing the RF in and out with a short BNC jumper basically converted my full-power rig into the QRP version. So, that's what I did, reducing both weight and current draw.

My Craftsman weed whacker was powered by a 12-volt gel-type battery that slung over a shoulder. The package had a standard cigarette lighter type socket, perfect to run my radio.

It didn't take long to put together a set of simple dipoles. From my log, I know they covered 75, 15, and 10m. In fact, I distinctly remember checking into the 3.917 MHz ECARS net one evening. With my 75m dipole so low to the ground and the lake acting as a huge reflector, I was the strongest signal reported by the net's control operator that evening.

TIP: If you want a powerful Near Vertical Incident Skywave (NVIS) signal, set your antenna up near a large body of water and keep it down low to the ground, something less than a quarter wavelength above the earth.

Of course, if I were to repeat this camping trip today, I'd do a few things differently. First off, I'd be taking a more compact and modern radio, my Yaesu FT-891. If I owned a QRP rig that might be an option, but I don't have one right now.

Second, I'd expect to make a lot more contacts than the couple dozen back in 1991. My average activation now is over 70 QSOs. This will require a lot more power than a 4 amp-hour weed whacker battery. My main POTA battery is a 20Ah LiFePO4, which might be plenty for a weekend outing.

If I was planning for a week-long camping trip, a solar panel and charge controller would likely be the best solution since the motor on our current boat doesn't have an alternator. If it did, that could supply enough power to recharge the battery.

Finally, I know there are plenty of trees at most campsites, so a wire antenna would offer a good contact-to-weight ratio. Rather than pack separate ones for each band, they would be combined in a single stacked design. This antenna is like my linked vertical but covers more bands using sections simply bolted together instead of using more complicated links.

Start with a basic 10m ground plane. The radiating element has a banana plug on the bottom end and a ring terminal on the top end. The banana plug can go into a standard double-female "barrel" connector for a coax run to your rig. A piece of thin nylon line or paracord ties onto the ring terminal for hoisting. Clip a few radials onto the barrel connector, plug in coax, and you're on the air. Simple!

Now, we can add optional bands, one at a time. Next up is 15m. This is a piece of wire just under 3 feet long with ring terminals on both ends. Bolt the 15m element's bottom to the top of the 10m element and tie the nylon line to the top ring.

Next up, bolt on 17m. This piece is only about 2 feet long. After that, add 20m with another piece of wire and another bolt and nut. You can top it off with a piece 16 feet long to add the 40m band if desired, but you can choose to leave that section home for a more compact 4-band antenna. The nylon hoisting line gets moved to the top each time.

10m	15m	17m	20m	40m
99	33	23	42	191

SSB Stacked Vertical Wire Segments
dimensions in inches

To build the 40/20/17/15/10m antenna, you will need a piece of wire 388 inches (32 feet 4 inches) long. I used 18 gauge wire, and separated zip cord or speaker wire would be fine.

5-Band SSB Stacked Vertical
showing all sections bolted together

Cut segments one at a time. Crimp or solder ring terminals to the ends. Label sections with a fine point marker and a narrow piece of white first aid tape wrapped around the terminals.

You can improve on the basic design by alternating wire colors as shown in the picture. This might help sort things out later if a label comes off and you can remember the color sequence.

With all five segments bolted together you have a quarter-wave 40m vertical. By unbolting segments and using what's left below you can change bands in the park as desired. It doesn't take very long to lower the antenna and remove a section.

It is easy to modify the design for CW/digital frequencies. Start with a wire 397 inches (33 feet) long.

10m	12m	15m	17m	20m	30m	40m
100	13	20	22	44	78	120

CW/Digital Stacked Vertical Wire Segments
dimensions in inches

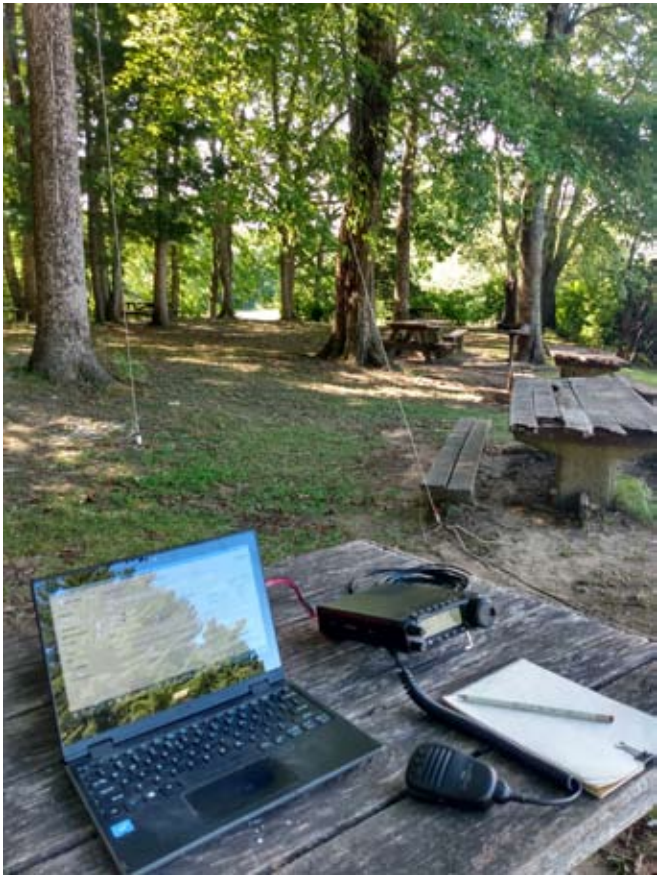
You might wonder why I included a 15m segment when this antenna will resonate on that band "for free" as the 3rd harmonic of 40m. Good question! The 15m segment allows this antenna can work without that long 40m wire, just in case you don't have a tall enough tree or long enough mast for it.

Radials are discussed in more detail elsewhere in this book.

Clip-on Radials Are Part of this Antenna Kit

POTA while camping offers several benefits. Since you will be there for more than just a couple hours, you can set up a more elaborate antenna system if desired. While you might normally use a hamstick for lunchtime activations, given a full weekend you can opt to try a more efficient inverted V or off-center fed dipole.

Second, you can take advantage of the "late shift" for even more contacts and perhaps snag some DX. Late shift activations can generate large pileups because there are more hunters targeting fewer activators.



Campsite POTA
stacked vertical deployed

Mountaintop POTA

To be sure, this section is not about Summits on the Air (aka SOTA) which usually involves hiking up a mountain with ultra-light gear. This is about car-accessible POTA, something anyone who does other types of activations will have no extra trouble enjoying. This chapter is more about taking advantage of unique opportunities altitude can provide.

Height doesn't buy you all that much on HF. Your target is the ionosphere, and the top of the highest mountain on the planet is an insignificant distance closer to this RF mirror that's as much as 600 miles (1,000 km) above the earth's surface.

The situation is completely different for POTA using VHF or UHF. This is where "height is might" as many hams often say. That's why you might see a microwave or cell tower up there as well. The original AT&T tower on Mohawk Mountain in CT was used to send ABC's live color TV signals all the way from the 1980 Winter Olympics in Lake Placid to their master control in New York City for nationwide distribution.

Mohawk Mountain Tower

With a little planning and preparation, we can put the altitude of a mountaintop to good use during POTA activations. Here in New England, Mt. Mansfield in VT, Mt. Washington in NH, Mt. Greylock in MA, and Mohawk Mountain in CT come to mind as good places to try VHF POTA. There are several ways to accomplish this.

You could obviously call CQ POTA on national simplex frequencies like 146.52 and 446.00 MHz. That might result in a few QSOs if you're lucky. There are things you can do to increase your potential audience. Obviously, you should spot yourself. If you can't do this, maybe have a buddy spot you.

We have a fairly active club repeater that happens to be on top of the same hill as Talcott Mountain State Park (US-1724). There's a ham repeater on Mt. Mansfield in VT as well. You can't use a repeater to make legitimate POTA contacts, but you can use it to scare people out of the woodwork to meet you on a simplex channel or even on an HF frequency. This works especially well when the folks on the repeater know you and want to help. It works even better if they're also into POTA and are equally vested in making POTA contacts.

My next suggestion takes the last one to a new level. Let's say you don't want to drag folks off the repeater to make POTA contacts. You don't need to! I have my HT and mobile rigs programmed with a simplex channel on the repeater's output. I also have them programmed with an "upside-down" channel transmitting on the same frequency as the repeater's output but listening on the repeater's input. I'll make a call on the repeater like, "Hey, I'm going to see who can hear me on direct." Then I'll switch to the upside-down channel and call "CQ POTA, anyone hear me?" If someone comes back, I will hear them on the input. Since this QSO did not go through the repeater, it's a legitimate POTA contact. You shouldn't try this when the repeater is busy.

Mountaintop POTA can be as simple as adding your HT to your kit. From 5,000 feet up you might be amazed how far 5 watts will go when there aren't any obstructions in the way.

That said, you will probably have better results with a 50-watt mobile rig connected to a decent roof-top antenna.

If you are purchasing a new rig specifically for POTA that you intend to use for both mountaintop and regular activations, there are two models worthy of consideration. Both include full HF coverage plus all-mode VHF and UHF as well.

First up is Yaesu's FT-991A. I own this rig and mostly use it in my shack. I have tried it for POTA, and it even comes with a factory-equipped carry handle, but it has one weakness that needs to be mentioned. The FT-991 seems to be both power-hungry and unhappy with the lower voltages provided by a lead-acid battery as it is depleted during operation.

Yaesu FT-991A HF/VHF/UHF Transceiver

I have both the FT-891 and the FT-991A and can say without doubt that the FT-891 was fully operational at a significantly lower voltage than the FT-991A as provided by my U1 garden tractor battery during lengthy or busy POTA activations.

If you do choose to use an FT-991A you will need to invest in a LiFePO4 battery. This chemistry provides power in the 13+ volt range for most of its output cycle.

Another "shack in a box" is the Icom IC-7100. This is rather unique in that it comes in 2 sections: a sturdy metal box containing the actual transceiver and a separate sloping plastic touchscreen control unit. This makes it easier to install in a mobile shack. You can choose which section to plug in your microphone, key, or external speaker/headphone.

Icom IC-7100
2-part HF/VHF/UHF transceiver

If choosing a used rig, an Icom IC-706MKIIG or IC-7000 might be a good choice. These are similar in size to the Yaesu FT-891 and might be found for around $450 used.

Icom IC-706MKIIG
compact HF/VHF/UHF transceiver

Yaesu made a similar mobile rig called the FT-857D which may be found on the used market. Yaesu claimed it to be "the world's smallest HF/VHF/UHF mobile transceiver." In the latest "D" iteration it included the 60-meter (5 MHz) band, plus the previously-optional DSP circuitry. A friend of mine is very happily using a FT-857D for POTA which replaced an IC-706.

All of the radios mentioned have separate antenna jacks for HF and VHF/UHF. This lets you have the best of both worlds; your portable HF antenna for regular contacts, and a high-gain mobile antenna for mountaintop opportunities.

If you have a sturdy tripod stand like those used for DJ speakers, you could even set up a base station VHF/UHF antenna for portable operation. My choices would include a collinear vertical like Comet's GP1 (about $75) or GP3 (about $95). Diamond offers equivalent models in their X30 and X50.

Generally, I would avoid those models (from either company) which have multiple sections as the threaded joint between them can be prone to problems and failures down the road.

For serious long-distance VHF or UHF work, a beam-type "yagi" would be recommended. You forfeit omnidirectional coverage for significantly more gain. Unless you have experience constructing things from aluminum tubing, I recommend serious VHF and UHF operators invest in a commercial yagi from one of the reputable antenna companies.

Lastly, mountaintops can provide horizon-to-horizon visibility which also makes them great places to try satellite POTA. Many of the newer "birds" can even be accessed with HTs. Satellites communications take some practice to become proficient with, but this can be very rewarding and add a new dimension to your enjoyment of the hobby.

Mountaintops typically offer very few amenities. You can pack a folding table and camp chair for comfort while operating. Or, you can use available resources instead like the boulder I used for a desk.

Rock Desk

Really high mountains are completely devoid of trees, so be prepared with a self-supporting vertical or portable mast.

POTA on the Water

Operating a radio on water is often referred to as "maritime mobile" in ham circles. Elsewhere it's called marine radio which includes both channelized VHF and sometimes SSB for off-shore boating.

U.S. Coast Guard rules actually state that if you have a VHF radio on-board, you are required to maintain a watch on channel 16 (156.80 MHz). In USCG District 1 (northern New Jersey to Canada), urgent marine information broadcasts, such as storm warnings, are also announced on Channel 16.

When sailing our Precision-18, I usually listen to channel 16 on one of my ham HTs, saving the battery on our Standard Horizon HX270S marine radio for an emergency if needed.

Precision-18

I only operate HF onboard while docked, moored, or at anchor. There is simply too much going on while sailing to play radio.

HF Station in the Cabin
Dentron tuner with Yaesu FT-891 transceiver

So, when we're back from a sail, it can be lots of fun to get on the air from the boat. I haven't tried using our mast as a radiator, but I have tried using it to hoist up wire antennas.

The results were much less than desirable. With an inverted V, our 18-foot boat simply isn't long enough for this design to work because the angle inside the V is too narrow. Ideally, legs of the inverted V should be at a 45-degree angle from vertical.

The other problem was that the boat rocked every time it was hit by the wake from a passing craft. This changed the distance from the antenna to water, and tuning varied all over the place.

The solution was to switch to stern-mounted hamsticks. I used a stainless steel CB-type mirror mount. Fortunately, the welded stern rail was big enough to present a usable counterpoise.

Stern-mounted Hamstick

Power was supplied by the boat's own U1 battery. This normally runs a marine GPS and lighting and provides about 30 amp hours capacity.

U1-size Battery
in padded bag with zippered compartment

It should be mentioned that if you intend to operate a radio transmitter, and you are not the boat's owner and or captain, that you must have the captain's permission. This rule also applies to aeronautical mobile operation.

Between 1947 and 2007, Windjammer Barefoot Cruises owned a fleet of tall sailing ships which toured Caribbean and Central American waters. My wife and I were fortunate to enjoy one such adventure on their flagship *Fantome*. It was a majestic 4-masted staysail schooner, 282 feet long displacing 679 tons.

S/V Fantome off of Dominica
before lost at sea in 1998 during Hurricane Mitch

When I identified myself as an amateur radio operator, the captain was glad to show me the ship's gear which included an Icom SSB transceiver (a marine version of the IC-78) and an AH-2 antenna coupler (predecessor of the current AH-4).

The captain gave me permission to use his radio, but I wasn't completely sure it was legal. Not all countries have reciprocal license agreements with the U.S. This was before the CEPT agreement of 1995 which established international permits. Research CEPT and IARP for current info if interested.

Urban POTA

While most POTA activations take place in rural parks, some activators have perfected urban operation to a level I didn't think was possible.

One such operator is Archibald Delfish (N2NWK) who goes by the on-air handle "Del." Del lives in Baltimore, and he can often be heard calling CQ POTA from Washington D.C. thereby taking advantage of numerous 2-fer, 3-fer, and 4-fer opportunities where parks, trails, and monuments overlap like almost nowhere else.

Counting total QSOs, Del is the #2 activator in the world with over 451,000 and growing almost daily. Del is in my log over 140 times. On the Washington-Rochambeau Revolutionary Route (US-4582) I'm the #2 activator with just over 6,300 QSOs, insignificant compared to Del's 15,800+ contacts.

US-4582 is a long route stretching from Boston Harbor, Massachusetts to Yorktown Battlefield in Virginia. The route passes through nine states and provides uncountable spots to activate anywhere within 100 feet that's on public property.

You can research it online at www.nps.gov/waro/

I have activated it in my own hometown of West Hartford, CT. I normally prefer a spot on water company property owned and operated by the Metropolitan District Commission. Since this is a public corporation, their property is legit for POTA and the New England Trail is also available for activations. The reservoirs act as huge RF reflectors, particularly on 40m.

I have, however, activated US-4582 in West Hartford's town center. Our town green is actually right on the route and has nice grassy areas where operation is possible even including several trees for wire antenna deployment. So, what's this chapter all about? The unique challenges of urban POTA.

Right off the bat, there's parking. West Hartford's center has plenty of it, but most is in garages and surface lots that aren't convenient to US-4582. There is metered parking on the street, but you have to be extremely lucky to find a handy spot or willing to drive around the block a few times hoping one will become available the next time you get near the W-R route.

TIP: Parking is free on Sunday in some cities.

Unless you don't mind operating from a sitting position on the grass or standing, you should also bring along a small table for your rig and a folding chair. This might be a good time to read the Buddy POTA section, because having a friend along means you will have enough manpower to carry extra stuff.

Urban POTA Station on US-4582
author taking advantage of a marble bench

Portable Station: FT-891 & Small Laptop Computer
12-volt battery is out of sight on the ground

The antenna will likely have to be ground-mounted. Here a spike, pedestal, or tripod will come in handy. Almost any vertical antenna will do like a hamstick, WRC with a whip, Super Antenna, or Buddistick. Radials should be white or other bright color to help prevent someone from tripping over them.

Expect curious visitors, and perhaps a police officer as well, to wonder what you are doing. Be prepared to take a break from operating to represent our hobby in a positive and courteous way. You can also explain how POTA helps keep us ready to communicate for the Red Cross and local governments during emergencies like floods and storms.

FT-891 with Stake-Mounted WRC Antenna

I carry a small 5 x 7 inch sign in a plastic holder with my call and POTA logo that I can put on the table next to my rig. I also carry an 8½ x 11 inch sign in a plastic sleeve.

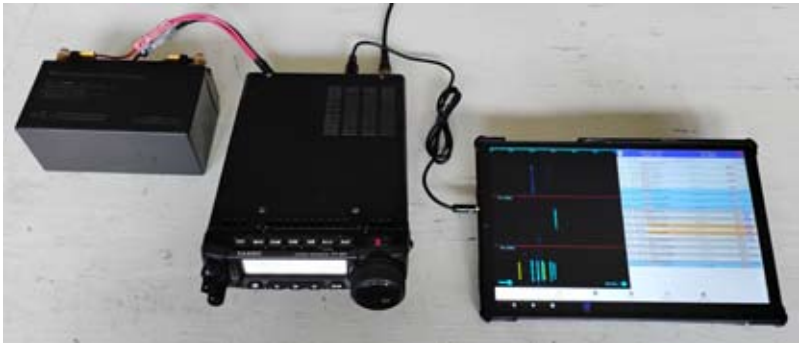
Sample POTA Sign

The single biggest problem you will likely encounter with urban POTA is noise, both electrical (masking received signals) and audible. During an activation in West Hartford Center, my FT-891 showed background noise levels of S9 on 40m and S7 on 20m. This was in addition to the sounds of fire engine sirens and other vehicles going by the operating position on the busy street only a few feet away.

Do everything you can to minimize noise. Choose higher bands when possible as they will usually be quieter. My favorite is 17m, especially if there's also a contest going on. Try turning your rig's noise blanker on/off and see if it helps. Some stations may benefit from an external band-pass filter.

The single most useful tactic will be to operate with a mode which is less sensitive to noise than SSB. My personal favorite is FT8. With a simple data cable, I am able to use digital modes via either my Android phone or an inexpensive 10-inch tablet.

6-pin mini-DIN to 3.5mm TRRS
data cable for some Yaesu rigs



Portable FT8 Setup

12 Ah battery, Yaesu FT-891, Lenovo 10-inch tablet

In the photo above I am running FT8CN. It is an Android application and while it is still in the beta testing phase, I have used it successfully on several activations. If you are not familiar with FT8, expect a rather steep learning curve. You should practice using FT8CN before attempting to activate with it. Beware: it does not work like WSJT-X.

As for other tactics, if you are in a larger metropolitan city like Boston, Chicago, New York, or San Francisco, there might be useful opportunities to make POTA contacts on VHF or even UHF. Be sure to bring your HT along, and get spotted on the national simplex frequency for best results.

You can also announce your presence on local repeaters. If there's activity on a repeater, try listening on its input frequency. If you can hear someone there, you can probably work that station via simplex or even "upside-down" on the repeater's frequency pair. Be very careful not to cause interference or create a lot of confusion.

Be mindful of opportunities to operate during events that might attract interest in the hobby such as town fairs and celebrations. Parades are probably NOT a good time for POTA. There is simply too much going on, and you would be a distraction from what people are there to enjoy.

WMA POTA

POTA in a Wildlife Management/Conservation Area or State Game Land (universally called WMA in this section) is basically the opposite of Urban POTA. While this opportunity shares many similarities to POTA in the Woods, unique circumstances need to be considered during WMA activations.

WMAs can vary widely by state. I am located in New England, so I share my experiences in Massachusetts for examples. During 2024, adding over 200 WMAs to the POTA system doubled the number of potential activation sites in this state. Many operators now have POTA parks literally in their backyards if not close by. That is the biggest upside of WMAs.

WMAs are protected public areas to provide habitat for wildlife and give people a place to explore the wild. These lands are open to the public for walking, hiking, hunting, fishing, trapping, and wildlife viewing. Unlike typical state parks, access to WMAs is free-of-charge, another big upside.

The first challenge of activating a WMA can be finding it. There is often little or no signage designating the site. Besides the POTA map, perhaps the best way to find a WMA is via a state website. Search your state to find such a page. Some states break down WMAs by region to make this easier.

The next challenge is that when you do find a particular WMA, there may be nowhere to park your car. Again, a state WMA website (or hunting/fishing blog) might provide valuable information. Some WMAs are walk-in access only. I resorted to being dropped off by my wife to activate one such WMA. This might force you to pack lighter than usual with most of your POTA kit in a backpack or satchel for easy transport.

You should not expect to find the amenities typical of a state park at WMAs. There won't likely be any picnic tables, covered pavilions, wheelchair ramps, or toilet facilities.

Plan your visit appropriately as the WMA might not be suitable for a day-long activation and will even be out-of-the-question for some operators, particularly those with a handicap.

Be mindful of the time of year you visit WMAs. I totally avoid WMAs during hunting seasons. The absence of a parked car doesn't mean there aren't others in the area. They might be wearing camouflage clothing to blend in with foliage for bird watching or hunting. Unless you activate from inside your car, it would be a good idea to wear clothing in vibrant colors that don't exist in nature, like a bright orange cap and/or vest.

Be aware that WMAs exist to protect wildlife that can be hazardous to your health like bears and poisonous snakes, to name a couple. They can also be perfect habitats to encounter ticks and mosquitoes. While topical insect repellents work well, also consider using Permethrin applied to your clothing.

Expect that you may encounter poisonous vegetation such as poison ivy, oak, sumac and other nasty plants. The real name-of-the-game when out in the wild is "situational awareness."

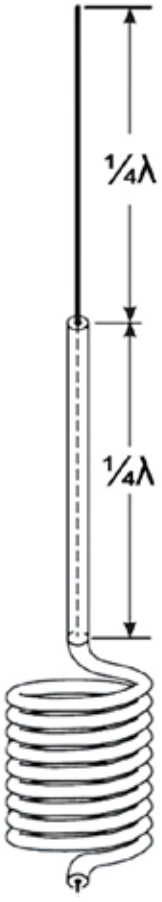
As for activating challenges, one area I visited did not have enough clear space on the ground to lay out the half dozen radials I normally deploy with my vertical antenna system.

I solved this problem by using an antenna called a T2LT or Tuned Transmission Line Trap vertical dipole that does not require a counterpoise. Like a typical dipole, the design includes two quarter wavelength (¼λ) sections except they are arranged one above the other and are end-fed instead of side-by-side and fed in the middle like a horizontal or "V" antenna.

One disadvantage of a T2LT is the requirement for a support. While a suitable tree limb could easily work in many sites, some operators will need a mast to deploy this antenna. It is also mono-band, so you might want to carry more than one. The T2LT design is not practical for 30m or lower bands.

There are many advantages of the T2LT design:
- excellent on-air performance
- low radiation angle good for DX
- no transformer required = efficient
- no radials = tiny footprint
- RF energy well out-of-reach = safe
- easy to build with commonly available materials

My T2LT antennas are made using inexpensive RG-58 coax.



The top half of my T2LT dipole is simply a ¼λ piece of insulated wire connected to the center pin of a standard PL-259 male plug. This is attached to a double-female "barrel" connector.

The bottom half of the T2LT dipole is a ¼λ section of coax (connected to the other side of the barrel) followed by a choke to isolate the antenna from the rest of the coax which serves as a feedline.

Both ¼λ sections in feet are calculated by dividing 234 by the frequency in MHz. Example: 234 / 28.400 = 8.24 feet for the center of the 10m Technician band.

The choke can be formed with 8 to 12 turns of coax on a suitable form between 3 and 5 inches in diameter. Some experimentation should be expected, adding or removing turns or moving the coil up or down to find the lowest SWR. TIP: an empty plastic peanut butter jar makes a strong and lightweight coil form.

Of course, an analyzer will make tuning easy and precise, but you can use the SWR meter in your rig if you don't have one.

Bicycle POTA

I am not seriously active with bicycle POTA, but I will share what I know, with caveats where necessary. Back in the fall of 1983 I met my wife-to-be in the ferry line on a Connecticut Sports Club bike trip to Nantucket, a idyllic island about 30 miles off the coast of Cape Cod in southeastern Massachusetts.

What made the biggest impression on this YL? It was my knowledge of wine, and that I had packed several bottles of favorites in the bags attached to my Univega bicycle! I had been taking college classes in wine appreciation at a community college which were finally paying dividends.

She wondered the reason why I bothered to bring wine, because alcohol was readily available on Nantucket. A couple years prior I had visited its sister island Martha's Vineyard only to find that half of towns there were dry. This time I wanted to be prepared, just in case that happened again.

Wine on a Nantucket Beach
circa 1983 - XYL on right

A year later, I planned our return to Nantucket. She was excited to go back, but there was a catch. We weren't bringing a car, and everything had to be packed and carried on our bikes for the trip from the ferry dock to our bed and breakfast.

This necessitated the purchase of special suitcases called panniers that attached to the "Blackburn" racks we installed on our bikes. Everything worked as planned. We didn't need to ride bikes in pouring rain to our lodging (which was certainly possible), and she came home with an engagement ring that she still wears. Now, 39 years later, she is NIGDW and hopefully will enjoy finally being included in one of my books.

Packing to travel via bicycle for POTA will be very different. It will include carrying delicate electronics instead of jeans and T-shirts. It will involve many technical decisions instead of being prepared for a chilly day or the possibility of rain. You should consider rescheduling a bicycle POTA outing if rain is forecast. There are too many things that could go off the rails.

So, what do you bring and how should you pack it? That is the substance of this chapter. Regarding your radio, physical (not electrical) shocks from bumps in the road meeting high-pressure tires should be your biggest concern.

Good padding is essential. Operators with large budgets can invest in special padded and water-proof containers sometimes referred to as Pelican cases. Discounted versions of similar boxes can be found at places like Harbor Freight.

I use an insulated lunch bag purchased at a local supermarket. It isn't as elegant or protective as a Pelican-type box, but it works when carried in a handlebar-suspended bag that also provides shock-absorbing capabilities.

The battery might be similarly sensitive, as modern LiFePO4 packs contain battery management circuitry. All come from China, and they aren't known for military-grade durability.

Next, the antenna comes up for discussion. A lot will depend on where you will be. If it is Nantucket, you will likely encounter problems similar to those already covered in POTA at the Beach. If it is inland terrain, then you should consider a vertical antenna working against a counterpoise system using a few radials laying on the ground.

Hamsticks are simply too long for bicycle POTA. Instead, consider wire antennas or small verticals like those from Super Antenna. A simple spike or pedestal mount would support a WRC Silver Bullet Mini coil with modest telescoping whip. If you know there will be suitable trees, go with my stacked or linked vertical, either of which offer POTA on multiple bands.

In any case, I would focus entirely on resonant antennas so the tuner can be left at home. That's one piece of gear you don't really need with a good resonant antenna, which will both save weight and protect its electronics from harm during a bike ride.

There are plenty of great places to try bicycle POTA. My most recent experiences have been on Cape Cod, MA which is fortunate to have an exceptional Rail Trail.

CCRT in Brewster, Massachusetts

Old South Dennis Cemetery
WRC with mil-style whip attached to fence

The Cape Cod Rail Trail aka CCRT (US-8395) is a paved bikeway that runs 25 miles from South Dennis to Wellfleet. If planning a vacation around biking on it, you can choose to stay in a typical suburban town like Dennis or a more rustic part of the Cape close to the National Seashore (US-0672).

It is even possible to get a 2-fer as the CCRT runs through US-0672 near the National Park's Visitor Center. Marconi Beach, covered elsewhere in this book, is also nearby.

If you are a camper, it is possible to stay close to the trail at Nickerson State Park in Brewster, MA. Beware that campsites can be rather expensive for residents from other states, and there is a parking fee in the lot for the CCRT. You can find other free places to park within walking distance to the CCRT.

One such place is at Old South Dennis Cemetery adjacent to the CCRT near the former town hall. I have activated from this nicely shaded spot several times and even used it as a convenient location to meet hams from local communities.

RV POTA

To be clear, this section isn't about small campers, pop-ups, or teardrops. This is for operators with larger RV's including 5th wheels and Winnebago-type motor homes that are basically small vacation cottages on wheels.

The intent is to have a mobile-type antenna that permits quick and easy activations without having to go up on the roof or climb a ladder just to change bands. Because of the height of many RV's, you might not want the antenna to be permanently attached, so top-side excursions will be allowed to attach and later detach for transport so it won't be damaged hitting trees.

What I might recommend depends somewhat on which radio you have or intend to purchase. Yaesu fans including folks with the hugely popular FT-891 should consider their ATAS-120A. This is a remote-tunable antenna with some unique features. It's pricey at about $400, and you will also need a mounting bracket with UHF connectors for the antenna and coax.

Yaesu ATAS-120A

The ATAS-120A covers HF (40m and higher), VHF, and even UHF bands. At just over 5 feet tall (extended) it won't be the most efficient antenna on 40 meters, but it does work well enough to make contacts with the simplicity of pushing a button on your radio.

That's the beauty of the ATAS system: the controls are integrated into several popular Yaesu transceivers including the FT-891 and FT-991. Another big plus is that control signals are carried over the same coax feedline as RF so a separate cable is not required. This makes installation simpler and easier.

To mount the ATAS antenna you could use a sturdy stainless steel CB-type mirror mount with double-female UHF connector. Many RVs have a ladder you could clamp to. Or, attach the "L" bracket to the side of the RV with stainless steel screws using caulk/sealant behind the plate to prevent leaks.

UHF-Type Mirror Mount & Bulkhead Connector

You could use a UHF bulkhead connector to go through the sidewall into the RV. Secure with the supplied nuts, stainless washers, and sealant. Then, run a short coax jumper between the UHF mount and the bulkhead connector and a longer jumper between the bulkhead connector and your radio.

For Icom fans, especially if you have their popular IC-7300, I recommend that you consider their AH-4 remote antenna tuner. This could be used with a standard 108-inch CB-type stainless steel whip to cover 7-30 MHz. Or, use an AT-271/PRC military-type sectional brass whip for easier storage. The AH-4 will tune down to 3.5 MHz with a 23-foot element/wire. Cost is about $500.

Icom AH-4 Remote Antenna Tuner

The AH-4 requires a separate control line, and a 5m (16.4 ft) cable is included. A longer 10m (32.8 ft) cable is available as an accessory. Control circuitry with a special 4-pin tuner port is built into many popular Icom transceivers.

With the AH-4 and whip antenna setup, use a similar stainless steel mirror bracket on the side of the RV but with a 3/8-24 (UNF) stud mount instead of the double-UHF type. The tuner mounts to the side of the RV near the base of the antenna.

The chassis of the RV may provide a usable counterpoise, but for best results a ground wire can be attached when operating. This can have alligator clips on both ends for quick and easy connections.

River POTA

I recognize that boating to a POTA spot will not be for everyone. In fact, I expect this could be the most useless section of the book for most operators. That said, there are POTA parks only accessible by water, and larger crafts will be outside the budget or not permitted at all due to park rules.

As an example who this chapter is for, Haddam Island State Park (US-1673) is in the middle of the Connecticut River. The only way to activate it requires a boat (unless the river freezes and you can walk to it). There's no good place to dock or anchor a large boat, and there is a rather swift current in the river between the slacks at high and low tide.

You can choose between a rowboat, canoe, or kayak for this and similar activations. Rowboats are certainly the most stable and offer a degree of safety due to their size and ability to carry more than one person plus lots of gear.

Many canoes have built-in flotation and are virtually unsinkable. Unfortunately, they're also more likely to dump careless boaters into the water due to their higher center of gravity and generally tipsy nature.

Kayaks at Haddam Island State Park (US-1673)

Modern kayaks can offer good solutions, especially if they have waterproof compartments for your gear.

My experience is with the excellent kayaks from Eddyline, particularly their Equinox. This model weighs 45 pounds and has both forward and aft waterproof storage which doubles as flotation. Its only real downside is the price: $2,149 if purchased new. Our pre-owned Equinox was about half-price.

Eddyline Equinox Kayak

There are also inflatable kayaks available from other companies which make both transportation and off-season storage less of a problem. Finally, if you regularly kayak with a spouse or buddy, there are tandem kayaks with two seats.

For packing gear, hard-sided waterproof cases might work if using a rowboat or canoe, but it could be difficult to fit such cases through the small hatch in a kayak.

Hard Sided Waterproof Box

Another option is a set of dry bags. You can wrap your rig in a towel for shock protection before stowing in one of these.

Dry Bags

For a very inexpensive waterproof box, you could use an ammo can or plastic ammo-style box. Walmart carries some of these and they are very affordable, about $15 for the larger metal one and $6 for the smaller plastic model. Use your own foam to add protection from bumps and short drops.

Inexpensive Plastic Ammo-type Box

Lastly, wear a life jacket. If you think you can put one on after you go into the drink, just try that sometime while swimming.

As for POTA gear, a compact transceiver like the FT-891 could work, but an even smaller QRP rig like the Icom IC-705 or Yaesu FTX-1 might be better since they have a self-contained battery pack. If so, be sure to charge it fully before packing up.

Just remember that it might take longer to make the required contacts to activate when using 5 or 10 watts instead of 100. I don't have a dedicated QRP rig, but when I've lowered my power to those levels I've noticed a lot more effort and patience is required. That's what can make QRP so rewarding.

Icom IC-705
QRP HF/VHF/UHF transceiver

What antennas you bring along should be determined by the intersection of the terrain where you will be going and the type of boat you will be using. A pair of hamsticks should easily fit in most rowboats, canoes, and even kayaks.

Check satellite imagery in Google Maps to see if there will be trees, sand, or just a pile of boulders where you are headed.

A mount that attaches to your boat will eliminate worrying about variables you might find on land. The hull of an aluminum rowboat or canoe might even provide a suitable counterpoise. You won't know unless you try it, preferably before your POTA outing. You should definitely become proficient with portable operation on land before trying anything in this section.

River activations can offer unique opportunities for POTA operators. One is access to waterfront campsites exclusively for paddlers and not available to anyone else.

Waterfront Campsite

Enjoy a picture-perfect view with your morning coffee!

Connecticut River POTA Station

Desert POTA

If you're used to POTA in northern states and heading to the southwest on vacation, you might be surprised by more than a change in temperature. I will use my experiences in Arizona to illustrate some challenges to expect when operating in a desert.

First off, don't necessarily expect to find a plethora of tall trees with good branches for supporting wire antennas. In some areas, the scene looked more like the surface of the Moon than the lush parks I am familiar with. It is a good idea to be prepared with ground or vehicle-mounted antenna options.

Secondly, I found the ground to be significantly harder than what I'm used to, so hard that my spike mount was useless. The solution was to deploy a tripod which worked fine as long as the wind was calm. You could use guy lines with rocks to steady the setup if your antenna gets blown over in a breeze. Don't expect to be able to push tent pegs into the earth for guying a tall fiberglass mast or DX Commander vertical.

The soil in Connecticut is generally moist and often sits above a high water table, so radials laying directly on the ground usually couple well to the earth and create a good counterpoise for vertical antennas. In desert areas, radials on the ground may behave more like they're elevated. This situation usually requires that radials be tuned to work well on HF bands. Be prepared with radial sets which are cut for the bands you plan to operate on. Use your antenna analyzer to check and adjust their lengths as needed to achieve a low enough SWR.

Another issue requiring adjustment is your choice of bands for POTA. In New England, I am usually able to make plenty of contacts on 40m and sometimes even on 75/80m. When counting ham operators, desert areas are sparse rendering these lower bands much less useful during the day. Plan to rely on 20m and higher frequencies for most of your POTA contacts.

Roving POTA

Once you master activating parks, another thing you might want to try is activating a bunch of them the same day. Some operators refer to this as a *rove*. A rove forces you to pack carefully and repack equally carefully for subsequent activations. Antenna selections becomes increasingly important as you probably won't have time to set up elaborate multi-band wire dipoles. Vehicle-based HF antennas offer a simple solution, but a telescoping mast with an auto-tuned vertical or helical wire would provide more efficiency and faster contacts.

Dimitris (NE1D) did a rove with me and we activated 10 parks that day. It was a lot of fun, and we plan to do it again.

PARK	QSOs	P2Ps
US-1729 Windsor Meadows	13	4
US-1706 Penwood	13	0
US-4561 New England Trail	13	0
US-1724 Talcott Mountain	12	0
US-0882 Farmington River	14	1
US-1721 Stratton Brook	16	5
US-6861 Great Pond	14	4
US-6862 Horse Guard	15	3
US-4582 Wash-Roch Trail	10	7
US-7527 Sunset Rock	18	6
TOTALS	138	30

NE1D & WV1W October 2023 Rove

We used a total of five different antenna configurations:
- Wolf River Coil with mil-style whip on pedestal mount
- Linked Vertical Wire from ground to tree limb
- Linked Vertical Wire from water pipe to tree limb
- Inverted V hung from tree limb
- Tent Pole Vertical on pedestal mount

Contacts were split between 40m with 80 QSOs (58%) and 20m with 58 QSOs (42%). Only two parks required us to use both bands in the interest of managing our limited time.

We set up the station in the back of my SUV using the trunk floor as an improvised desk. With two operators, antenna setup and tear-down went must faster than it would have with only one operator. After only a couple activations, we were a well-oiled POTA machine.

My only complaint was our need to keep a schedule sometimes forced us to cut activations short with hunters in cue shut off prematurely. Some activators do this all the time, but it isn't my style. We apologize to anyone who was disappointed.

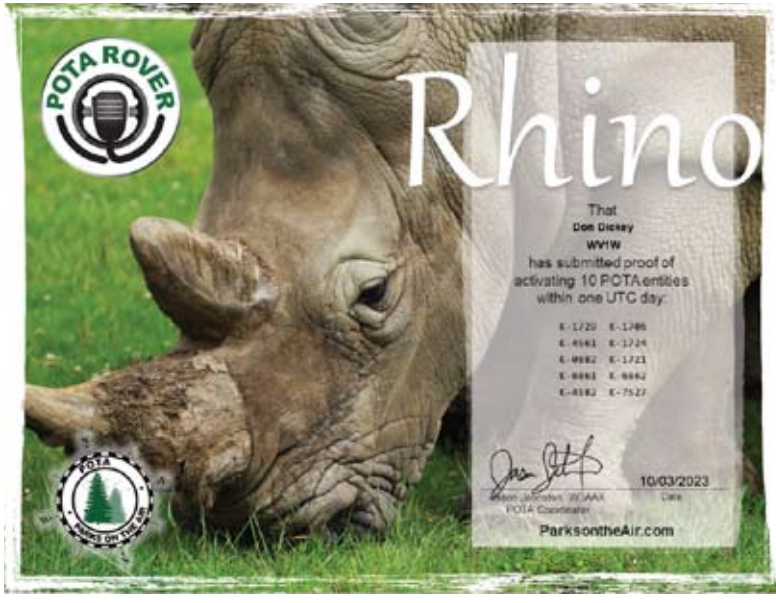
Trunk Based Station for Rove Activations

Note that a rove is NOT necessarily Rapid Deployment Amateur Radio (RaDAR) which entails activating multiple parks on the same outing *with a certain minimum distance between them*. The RaDAR concept originated in South Africa. Search the web for up-to-date info on RaDAR.

The POTA system offers award certificates for roves to those so inclined. I have never been a "paper chaser" but enjoy earning POTA awards none the less. I've probably earned a Worked All States (WAS) certificate several times over since becoming licensed in 1975 but never applied for that award. We have different motives for playing radio, and while certificates aren't one of mine, go for it if they float your boat.

The POTA system generates rover awards automatically at six different levels as follows:

Rover Warthog – 5 references activated in a single UTC day
Rover Rhino – 10 references activated in a single UTC day
Rover Cheetah – 15 references activated in a single UTC day
Rover Ostrich – 20 references activated in a single UTC day
Rover Leopard – 25 references activated in a single UTC day
Rover Lion – 30 references activated in a single UTC day



Rover Rhino Award

If awards makes you feel good, go for it. If not, you can still rove just for fun and what you will learn from doing it.

Buddy POTA

There are good reasons to do POTA with a friend, and the one motivating you may determine the best way to proceed. If you're new to POTA, tagging along with an experienced operator would be a good way to learn. Some people learn easily by reading, and maybe that's why you bought this book.

Others learn better by watching and doing. If you're one of these, try to invite yourself to a POTA outing with a buddy, maybe a member of your local ham club or someone you met on a VHF repeater. You can plan to just watch, but offering to help set up might get you a spot at the mic or key.

If you're the "elmering" type, you can invite a "newbie" to stop by when you are in the park. If they seem interested enough, you can take it further and invite them to participate with you. If not, don't take it the wrong way! POTA isn't for everyone.

There are several ways to POTA with a buddy. One is to pass the microphone back and forth. The first person establishes the contact and maybe the second person gets the QSO into the log. Then, the first person says, "Stand by for second operator" and passes the mic over to the buddy. Hunters really like this because they get credit for both contacts.

Later, both operators can submit their own logs, essentially the same data with the OPERATOR field changed but also noted in the ADIF filename as well. This can be a good way to teach proper logging to a newbie including the submission process.

If your logging software supports multiple operators, you can submit one log if you carefully follow these instructions: The on-the-air call sign is recorded in the ADIF field "STATION_CALLSIGN." This is the call sign given over the air. Use the ADIF field "OPERATOR" for your personal call sign. You need a separate entry for each operator's QSO.

If you are logging on paper, you can use carbon paper if you're "old school" or send a scan of the log to your buddy via email when you get home. If it's a short log, a smartphone photo might be good enough and you can text it to your buddy.

The other way to share POTA with a buddy is with each operating their own station. The best way to do this is on separate bands. For example, you can start on 40 meters and your buddy starts on 20 meters.

You agree to meet up for coffee in an hour, and after that you switch bands. Having separate setups works best when there is some physical distance between antennas and rigs, on the order of yards not feet. That way you minimize interference both electronically and aurally.

Running low power or QRP can also help reduce interference. You don't need a dedicated QRP rig. Just dial down the power.

Buddy POTA with KB1ZKK
two-station setup at Windsor Meadows (US-1729)

Meeting a buddy at a mutually convenient park for can be lots of fun. This is a good way for two experienced operators to share tips and learn from each other. They can also help each other set up antennas or make repairs in the field.

POTA Meetup with KD1JT & K1DFS
near the Farmington River (US-0882)

K1DFS operating POTA Station WV1W

Field Day POTA

When someone unfamiliar with Parks On The Air asks what it's about, I often say "just like Field Day, any day you want." So, this section is about combining POTA with Field Day (or the other way around, depending on how you look at it).

Who, what, where, and when all depend on what YOU want Field Day to be. If you are active in a club, you may have little steerage in any of those. The club might have strong traditions that its members follow every year, a Field Day rut, if you will.

My club hosts Field Day from the summit of Talcott Mountain inside the state park with the same name (US-1724). Well in advance, we get permission from the state to set up in a pavilion there, so we're covered if it rains. Here, I can essentially do POTA and FD at the same time. Judy (KC3IAS) has done the same thing, and I have worked her P2P on Field Day after seeing her spot. She was using a club call sign on the air, but had spotted for POTA hunters using her personal call.

Field Day Pavilion on Talcott Mtn (US-1724)

Jim (KC1FNM) & Tina (KC1MTH) on Field Day
BARC club president and secretary

If you are not planning to do Field Day with a club, you probably have a lot more options to consider; alone or with a friend or two, daytime-only or camp overnight, near to home or some remote park with access to more features (picnic tables, toilets, height above average terrain for VHF, etc.)

Of course, you could always activate and participate in Field Day as a "lone wolf" anywhere you might normally do POTA. That's what I have done several times, in the same park as my club, but a half-mile away, with much less on-air interference.

If you will be activating Field Day with a club, there's a way to "double-dip" and get credit for both your and the club's call sign. To do so, the club needs to register with the POTA system, so a trustee or officer can upload logs with the club's call. Then, POTA operators can also upload their own logs with the club call in the "STATION_CALLSIGN" field of the ADIF file and their personal call in the OPERATOR field.

Winter POTA

Spring, summer, and fall offer great times to operate outdoors here in New England but winter can be challenging. With temperatures usually below freezing, there can also be snow and ice in the parks.

Many state parks here go into off-season status with access roads closed. They're open to the public with walk-in permitted, so still legit for POTA activations, but many of the ideal locations like picnic areas and mountain summits aren't reachable by car. Some parks even put the tables into storage.

Yet, the diehards among us get cabin fever, and many have a desire to activate every week, some every day. To be sure, in colder climates most winter activations will be from inside a vehicle. You probably can't run the engine for heat because of the RF interference it will generate, but just being in a car or truck is a lot warmer and certainly less windy than outside.

Winter Activation at Windsor Meadows (US-1729)
Tent Pole Vertical on Tripod Mount

It is common to establish over-the-air friendships through POTA. This is particularly true among activators. Judy (KC3JAS) is an XYL I go out of my way to enjoy QSOs with. Her solution to winter activation: an Eskimo ice fishing shelter.

Eskimo Shelter POTA Shack

KC3JAS “Snug as a Bug in a Rug”

I can offer some tips and suggestions for vehicular activations. You can begin by simplifying your antenna selections to those which set up quickly and easily. This might be a good time to bring out your hamsticks.

Second, you likely won't be able to pound a stake or pedestal mount into frozen earth. A tripod offers a useful alternative for a ground-mounted antenna. It can be set up on top of snow.

One downside of a tripod is that it can be toppled by a breeze. While a few guy lines on the antenna can steady it, I use a different mount when it's very windy. If buying a tripod for an antenna, choose a heavy duty model with a hook that you can hang a weight from, like a plastic jug filled with water or sand, to help keep it from tipping over.

Tent Pole Vertical on Tripod Mount

Wolf River Coils offers a camera tripod adapter plate with a 3/8-24 threaded stud mounts. It has a 1/4-20 tapped hole that accepts the screw on most amateur camera tripods. It includes a bolt with wing nut for attaching radials.

WRC and Super Antenna Tripod Mounts

Another tripod-compatible 3/8-24 threaded mount is the Super Antenna UM3 that comes with their spike kit. It has a 3/8-16 tapped hole that fits the larger screw on heavy-duty professional camera tripods. The UM3 has a pair of quarter-inch tabs for radials with push-on F-type disconnect terminals.

A more universal option is to use a jaw clamp mount. This can attach to a tripod's shaft or another object like a sign post you might be able to park close enough to and use as a support.

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

The mounts on this page accept 3/8-24 threaded antennas which include hamsticks, WRC coils and telescopic whips, Super Antennas, and Buddisticks.

How you set up your station will largely depend on the layout and space in your vehicle. I normally drive a Ford Escape. The rig fits nicely on the dashboard. When this picture was taken, the rig was powered by a UL garden tractor battery on the floor.

FT-891 Dashboard Station
during in-car winter activation

Now, I put my LiFePO4 battery directly behind the radio. The FT-891 has a fold-down bail that fits over the steering wheel.

If I need to use the tuner, my FC-30 fits on the small ledge just above the A/C vents on the right. One thing to be careful of: if the coax is captured by a closed window, be careful when you open that door so the rig or tuner doesn't get pulled from its spot and fall, potentially causing damage.

I log on a very compact Windows 10 laptop with an 11-inch screen. It sits on the center console's arm rest. All in all, this setup works quite well, but I still prefer being outside whenever the weather is nice enough to do so.

P2P POTA

As I am writing this book, it is late fall here in New England. The temperature outside can vary substantially from mid 50s during the day to down well below freezing at night. When a nice day comes along, POTA activators jump on it with both feet since winter is breathing down our necks, or so it seems.

We had such a perfect day for POTA in early November, and I headed out to Auerfarm State Park Scenic Preserve (US-9896). During previous activations here I have set up in a hillside pasture using a ground-mounted vertical antenna.

This time I wanted to try something different. I headed down a different path and was able to park near a stand of tall trees, perfect for hanging a wire antenna. With a swinging toss, my throw bag arced over a limb about 35 feet up and came back down without getting fouled. Every once in a while I get lucky.

I tied my 40/20m linked vertical to the throw line and hoisted it up until the bottom end with a banana plug was just off the ground. It didn't take long to connect the feedline and clip on a set of 4 radials spread out in an "X" pattern under the antenna.

I always start activations by hunting other parks, and often I have enough park-to-park (P2P) QSOs to be fully activated before spotting myself. This is a great way to build on-air relationships with other activators. Sometimes I spot myself on the band edge with the comment "Hunting before spotting" just to let other operators know I'm in a park and activating.

Today was no exception, except that I noticed a lot of what I call *bad behavior* on the air. Hunters were stepping all over each other acting like parks were rare DX opportunities. Frankly, it was disgusting. What really infuriated me was them stepping all over activators trying to make P2P contacts. The best operators understand the significance of P2Ps and give them a measure of priority over other QSOs.

This is when I decided I was NOT going to spot myself that day. I didn't want to generate a huge pileup and have to deal with what seemed like a preponderance of "lids" on the air. Instead, I chose to spend the day just hunting other parks.

I started on 40m with the link closed, and right off the bat had a nice QSO with my dear on-air friend Judy (KC3IAS). In 38 minutes I had 22 QSOs logged and 14 were P2Ps.

As I was about to switch to 20m I got a text from Jim (KC1FNM) that he was heading over to join me at the park. I moved my rig, battery, and logging computer from inside my car to the hood so we could operate outside in the fresh air. I enjoyed a quick coffee break and then Jim arrived.

Jim (KC1FNM) Operating Station WV1W

I explained the circumstances and that we would be hunting. In under 2 hours we logged 60 QSOs on 20m, and every one was P2P. In all, I ended the day with 88 total QSOs and 79 were P2Ps. The lesson here is that you can just hunt parks when you don't have the energy to deal with pileups and bad behavior.

POTA DX

Most of my POTA activations involve domestic QSOs with stateside operators. Some of these folks have become on-air friends as a result of many sequential conversations. I won't list hunters' call signs for fear of leaving someone out.

That said, every once in a while I get a barrage of calls from Europe and elsewhere far away. I'm guessing someone spotted me on a DX cluster somewhere, and an international pileup was only a matter of course while propagation held up.

This can be a lot of fun, and there are things operators can do to make it more possible or even likely. Obviously, running QRO at 100 watts will give more predictable results than QRP. This isn't to say that international QRP is impossible, just that it doesn't work well all the time. In fact, making DX contacts with 5 or 10 watts can be rewarding because of the challenge.

Your choice of band and mode can make a huge difference in your success at scoring DX. Generally, the higher bands from 20m to 10m are best. I've reached Greece and Ukraine on 40m, but that is rare and band conditions have to be perfect.

If you are determined to make DX contacts during POTA, I think FT8 might offer the best chances for success. I've had particularly good luck on 15m FT8. One thing is for sure: when you use a digital mode like FT8 you will know right away a band is open if you see lots of QSOs march down your screen. And, unlike SSB signal reports which can be "generous", those shown for digital signals are very reliable.

Another important factor is your antenna choice. In general I have had better results with vertical designs which tend to have a lower angle of radiation than horizontal wire antennas.

Finally, you may have better results answering people calling CQ than by calling it yourself. Spotting can also help a lot.

Unless you know in advance that conditions will be favorable for DX, for me it usually happens by accident. Just like operating a home station, you might notice that bands have "opened up" and you are receiving signals from far away. Sometimes this is an all-of-a-sudden thing, and beware that conditions can fade just as fast. To take advantage of this opportunity, you have to "strike while the iron is hot."

Such was the case while I was activated at Gillette Castle State Park (US-1672). I packed a minimum of POTA gear that day since I was accompanying my wife on a kayak outing. Besides my rig, tuner, and analyzer (in the same bag) I had my LiFePO4 battery and 40/20m linked vertical antenna kit which includes a throw line and weight plus 2 sets of clip-on radials.

Just like someone flipped a switch, bands came alive. I switched over to 10m and heard strong signals coming in from Europe. The problem was, I didn't have a 10m antenna!

I did some quick math using the calculator on my phone. 234/28.3 MHz = 8.27. So, I needed a wire 8 feet 3 inches long. I could have cut the lower section of my linked vertical, but I had a better option: sacrifice one of the radials. It didn't take long to approximate the length, cut the wire, and attach a banana plug borrowed from the end of my linked vertical.

SWR was usable but higher at the top of the band than at the low end, so I knew the wire was too long. Trimming a couple inches at a time, I got the SWR down to 1.2:1 at 28.4 MHz.

I tried spotting myself in the Technician segment of 10m and called CQ several times. This only produced a couple QSOs. The problem is, on 10m your skipped signal can hit very small targets. The solution was to stop calling CQ and hunt others. Almost every time I found someone calling CQ I was able to make contact. It seemed that if I could hear them, they could hear me just as well, and it turned into a great activation.

Secret POTA

Every once in a while even the blind squirrel finds a nut, and when he does, he's not going to tell all his buddies where he hid it, even long after he eats the nut.

This is a bit like the way I feel about a sweet spot I discovered. It is actually in a town park that also happens to be next to a legitimate POTA resource, the Wild and Scenic Farmington River (US-0882). It is on a relatively unknown section of the river that was added to the system in March of 2019. So, what makes this spot so nice? Everything an operator might want:

- picnic tables
- shade trees
- nice view of the river
- coffee shop & pizza restaurant

My Favorite POTA Spot

OK, I've shared it, but only with my best of POTA friends. Do something rude, like step all over other folks hunting me, use your 1,500 Kw amp to bust a POTA pileup, or act unprofessional on the air, and you're off my very short list.

What's my point? It is really simple; treat people the way you would like to be treated. Being a ***nice*** operator can be contagious. Let's hope so. The POTA community is growing.

Etiquette should extend from the park to your on-the-air presence. It is my belief that POTA operators can and should set the standard for good behavior and operating practices. Fortunately, my experiences have demonstrated this to be the case ***most of the time***.

It can be particularly challenging during contest weekends. Not only are the bands extra busy, but it is often impossible to know when you are causing interference, particularly to a nearby station you can't hear because it is too close. In the interest of being good ham citizens, if alerted, it would certainly be better to simply move off frequency and re-spot yourself than to cause interference to another operator.

This is especially true of established nets. There are lots of them, so don't expect to know where they all are. Just QSY when politely requested. One you should always avoid is the Maritime Service Net (14.300 MHz). This is where boaters might call for help, and where land stations listen on HF for marine emergencies in addition to VHF marine channel 16.

Out of courtesy, avoid SSTV calling frequencies on 7.170 and 14.230 MHz. SSTV is basically QRM to POTA anyway.

Please take the high road, especially since re-spotting is very easy and effective in bringing traffic to your frequency. The spotting site updates every 60 seconds, and hunters will find you soon enough. It is amazing how well the system works. Nuff said.

Packing POTA to Fly

Taking POTA gear with you on a cross-country trip by air will be challenged by weight and size restrictions but also by TSA agents. I'll talk more about power later in this section.

What you pack for a trip by air will somewhat depend on what you have and where you are going. Start by looking at the POTA map to see what parks might be within range from where you will be staying and visiting. Then, check websites detailing those parks to see what kinds of landscapes to expect.

A barren desert won't likely have the kinds of trees you may be accustomed to using for antennas in your local state forest. Or, the trees might be tall redwoods or giant sequoias. That would suggest a ground-mounted antenna needs to be packed, and maybe ordered well ahead of your trip, so you will have time to learn how to deploy and tune it.

A couple of very tidy kits come to mind which are better for taking on a jet than others. The first is the Super Antenna MP1DXG kit. This is a complete ground spike mounted antenna kit for about $250.

If you want to have more mounting options, then it makes sense to bump up to their deluxe MP1DXTR80 package which adds a small tripod and universal clamp mount. While expensive at about $350, this will cost less than adding those or similar components to the base kit later.

You'll also get a coil for 80m, but you can take that out and leave it home to save some weight. Unless you have a specific desire or need to operate on 75/80, you would probably find it next to useless for POTA anyway.

Another kit worth considering is one from Buddipole with their basic Buddistick antenna (not the dipole type). If that's not available, check out their Buddistick Pro models.

Deluxe Super Antenna Kit

These kits include everything you need except the feedline. I have 20 feet of RG-316 coax that fits in the palm of a hand.

RG-316 Coax

These compact kits can be very finicky to tune. I encourage you to practice at home and then at your local POTA park with an activation or two before going on vacation with either of these antenna systems. You may discover that you want to add your own radials or maybe a jaw clamp mount to the kit.

Certain types of lithium batteries can explode, and this has led the TSA to put limits on their capacity. The present limit is 100 watt hours (Wh) for a battery contained inside a piece of equipment. With airline approval, up to 2 extra "loose" batteries up to 160Wh are permitted. Be sure to check with your airline for their specific rules.

To convert Ah to Wh multiply by volts, typically 12.8 volts for LiFePO4. If you divide 160Wh by 12.8V you will find the limit is 12.5Ah. That's enough to run a 100 watt rig. My personal favorite is the 12Ah battery from TalentCell. Most batteries in this size range have F2 tabs, but this one has threaded posts and screws, a nice feature to look for.

TalentCell 12Ah LiFePO4 Battery
153.6Wh specified on the label

Of course, you could cut the power in half to extend the length of time you could POTA with it, or you might be able to pack 2 batteries. To get through TSA you should tape over the terminals to prevent contact with metal in your kit, and I recommend you also pack batteries in heavy duty plastic bags.

There may be another solution that makes your kit even lighter and easier to get through a TSA checkpoint: leave the battery home! If you will be renting a car, maybe you could power your rig from that. A power cord with either a cigarette lighter plug or alligator clips is a lot lighter and smaller than a battery.

Battery Clips to Powerpoles® Adapter
for running a rig directly from the car's battery

I have one of these adapters in my POTA kit all the time. It might come in handy if a connector or terminal breaks on the pigtail attached to my battery.

I also carry an adapter with a cigarette lighter plug. You should not expect this connection to supply the 20 amps needed for full power output at 100 watts, but it should be sufficient for running at reduced power of 25-40 watts depending on your rig. Be sure to carry a spare fuse, usually hidden in the plug.

Cigarette Lighter Plug to Powerpoles® Adapter

SOTA, WWFF, and Lighthouses

People have asked why I didn't cover SOTA and other ham radio programs in my book *Successful POTA*. My answer is simple: because that is a book about how to do POTA! I am mentioning some of these alternative activities here since POTA can take you to recognized sites that overlap, so you can participate in two programs at the same time if interested.

Summits on the Air (SOTA) is similar to POTA but, as the name implies, is focused on mountaintop (and hilltop) activations. From their website we learn the basic premise: "SOTA is an award scheme for radio amateurs that encourages portable operation in mountainous areas."

Like POTA, SOTA is international and has activities in about 100 countries. Each DXCC entity has its own association, and that organization designates which summits are recognized and assigns scores based on the height of each summit. Operators accumulate points to earn certificates similar to POTA awards.

To claim credit, one needs to be within 25 meters of the summit, so you don't have to be on the exact peak. Unlike POTA, operation from, connected to, or even near a vehicle is not permitted. And, generators are forbidden. But, you only need a single QSO to qualify for an activation! You need 4 QSOs to accumulate points, however.

Like POTA, SOTA also has a spotting page plus a "reflector" where members can communicate with each other on assorted topics of interest.

This is just an overview of SOTA to give readers a very basic understanding of what that program is about. Interested operators should visit their website for complete information and to download their rules document:

www.sota.org.uk

World Wide Flora & Fauna in Amateur Radio (WWFF) is an organization that involves sites having considerable overlap with POTA. Many times I have worked operators activating parks recognized by both programs.

Like POTA and SOTA, WWFF is also international. What makes WWFF unique is its purpose: "draw attention to the importance of protecting nature, flora and fauna, and to encourage the development of radio skills, especially in portable operations."

The Flora and Fauna movement actually began with the Russian Robinson Club which later grew into the WWFF program we know today. Like POTA, WWFF includes activators and hunters but also short wave listeners as well.

Similar to POTA, operation from vehicles and generators are both permitted. Interested operators should visit their website for complete info and to download their rules document:

wwff.co

If you are interested in activating lighthouses, there are a few organizations which encourage participation in that activity.

World Lighthouses On The Air (WLOTA) is a program that began in France. Their website is at:

www.wlota.com

The International Lighthouse Lightship Weekend is an annual event. Learn more at their website:

illw.net

The Amateur Radio Lighthouse Society hosts QSO parties and other events. They also maintain a worldwide list of sites:

arlhs.com and **wlol.arlhs.com**

Expect the Unexpected

This section shares POTA related ham radio stories. They are for general interest only, and some include content appropriate for mature operators. You've been warned.

The first story begins in 1971, before I was an amateur radio operator. I was a freshman engineering student at Rensselaer Polytechnic Institute (RPI) in Troy, N.Y. With very limited housing for upper classmen, many students choose to join a fraternity. For the uninitiated, they're never called a "frat" by brothers. Rather, they're referred to as "the house."

While I am not going to share specific details, I can assure you that scenes depicted in the movie *Animal House* were NOT a stretch. The drinking age in N.Y. at the time was only 18, so virtually everyone was able to legally consume alcohol, often to excess. Toga parties happened. You can imagine the rest.

One thing that came from this environment was a genuine sense of brotherhood with members of your house. Lifetime bonds were created and many of us are close friends to this day including several girlfriends who became brothers' spouses.

About a dozen years ago we began to have reunions each summer. These gatherings were held over lunch under a tree outside the "Shed" at Tanglewood. This is where the Boston Symphony Orchestra practices and performs during summers.

In 2020, the COVID pandemic closed Tanglewood for the season. House organizers came up with the idea to hold a Zoom reunion since we still wanted to get together somehow. It was great, since brothers from far away who never made the trip to Tanglewood showed up, some to be seen by brothers for the first time since college. Over two dozen brothers attended.

The format was simple. Each brother had just a few minutes to share where they were living, some family details, and what they were up to: working/retired, and recent activities.

When it came around to brother Len Lavenda, he shared that he had just gotten his ham radio license. A bit later, when the circle advanced to me, I mentioned to Len that I was also a ham and that we should make a "sked" to meet on the air.

Two months later, I was activated at Talcott Mountain State Park (US-1724). After a pileup that lasted over an hour with almost 50 QSOs, things slowed so I could engage in actual conversations. Out of the blue, I had a call from KC3OND. When I asked the operator for his QTH and he answered Stroudsburg, PA, I said that I knew a guy there, and maybe they had connected on the local repeater. Then I recognized his voice. "Len?" "Don, Is that you?"

Len had recently bought an Icom IC-7300. He had just put up a 75m dipole in the back yard that afternoon. This was his very first HF contact ever, and it was with a fraternity brother. He was just tuning across the band and ran into me calling CQ completely by accident.

How cool is that! Given the number of available frequencies we are authorized to use, even the number of bands that I activate on, It was statistically more likely for us to coincidentally meet at a gas station on an interstate highway than on the air during his first ever ham radio QSO.

Since then we've had several enjoyable conversations on the air, and last year we met at Kent Falls (US-1686) for lunch and a hike with our wives. While there, I also gave Len a quick POTA demo with 33 QSOs and 6 P2Ps in about a half hour.

Len is now a communications guru for Stroudsburg's Red Cross chapter, and we share radio and family tidbits regularly.

We had a warm day late in the fall of 2019. I decided to get out and activate a park before winter arrived and the ground was covered with a blanket of snow. This was only my twelfth activation and I decided to try Wadsworth Falls (US-1726).

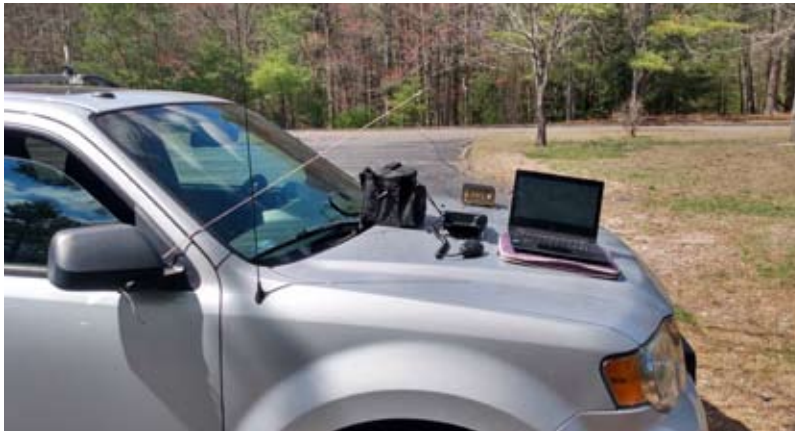
When I arrived, I gave the grounds a quick survey and found a spot in the sun. Back then I was logging on paper so didn't have to worry about being able to see a computer screen.

I started out on 75m. There was an "old farts" roundtable every morning on 3.999 MHz from 9 to 10am and I took advantage of this to log a half dozen QSOs right off the bat. Then I switched to 40m for a while and snagged 27 more. I finished up on 20m with a total of 123 QSOs and 11 P2Ps. This was a new high water mark for me!

One of my contacts was a fellow only a few miles away, Paul (N1SFD). I casually mentioned he was welcome to stop by for a visit in the park, and about a half hour later he showed up! Paul had just been hired by the ARRL to work at HQ as their new contest manager. I think it was his first exposure to POTA.

POTA at Wadsworth Falls (US-1726)

I'll continue with an encounter at Stratton Brook State Park (US-1721) in Simsbury, CT. It was a picture-perfect day in April of 2021, so nice I had set my station up on the hood of the car to enjoy the outdoors. Bands weren't great, so I called it a day after only 26 QSOs.



Hood-Top POTA Station (US-1721)

I was packing up when I noticed a pair of bear cubs crossing the field less than 25 yards away. Right behind them, keeping a watchful eye, was their mom!

I didn't have the presence of mind to switch my camera from wide-angle to telephoto, but I did manage to snap a photo. This experience was one of several similar encounters I have had.

Bear at US-1721

Bear at US-1706
picnic table provides size reference

That's nothing. But wait, there's more! When I told Marc Goldstein (K8LSD) about my encounter, he shared his.

Marc had activated at Horse Guard State Park (US-6862) in Avon, CT. He operates predominately CW and usually sets up a small table for his rig and Morse key near the back of his car when a picnic table isn't available in a park.

He was totally preoccupied in a QSO when he felt something brush his leg. People frequently let their dogs off-leash in parks, and he naturally assumed that's what happened. He glanced down from the table where his radio was set up and saw a large black dog sniffing around his feet.

He bent down to pet it, but when the dog turned his head upward Marc realized that it was a bear cub, not a dog! He slowly turned around to find two more cubs sitting behind him flanked by mama bear.

Without even soiling his underwear, Marc remained calm and motionless during a 15-second staring contest, after which the bear family wandered off, back into the woods.

This past fall I invited Dimitris (NE1D) to join me for a 10-park rove. It was a spectacular day. On our 6th activation, we parked at the far end of the lot at Stratton Brook (US-1721) next to a car that appeared abandoned by a hiker or dog walker.

The ground in this park is very sandy with poor conductivity, so I suggested a 40/20m linked inverted V antenna which doesn't need a counterpoise. After a lengthy setup, we quickly banged out 16 QSOs and were in the process of tearing down when the driver's window of the car next to us rolled down.

Apparently a fellow had been taking a nap, and our POTA activities woke him up in a rather nasty mood! I was worried he might get out of his car and confront us face-to-face. Fortunately, he just started up the engine and drove away, yelling a few not-so-nice things on his way out of the park.

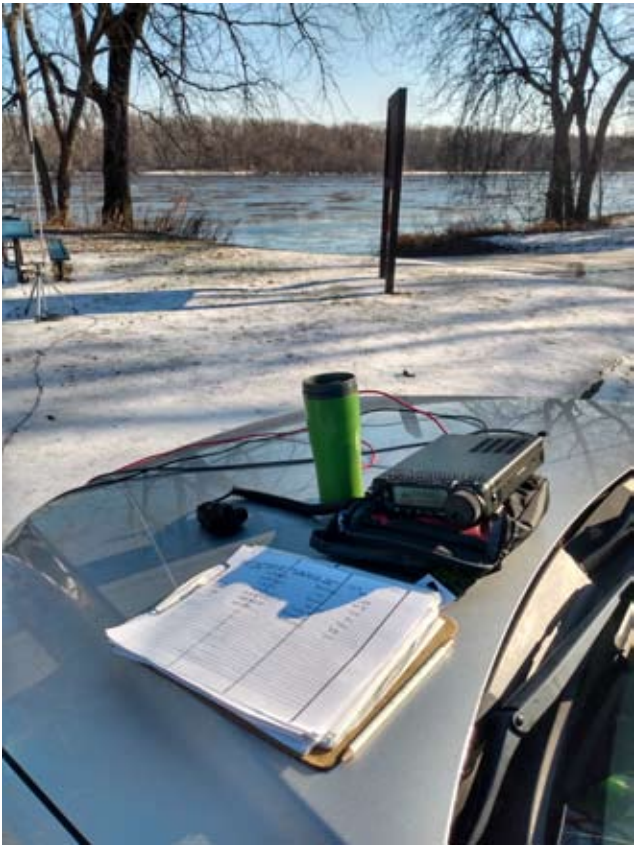
This story comes from Jim (KC1FNM). Jim owns a business in Simsbury that's less than a mile from Stratton Brook (US-1721). He makes frequent runs over to the park for quick lunch break POTA activations. In fact, he completed a "Kilo" there almost exclusively from over 70 activations lasting less than 45 minutes each.

One such lunchtime, Jim was at one end of the parking lot and a couple at the other end of the lot were playing what sounded like Christmas music, and rather loudly at that. This might have been seasonal in December, but it was early November.

Jim operates FT8 most of the time, and has mastered it such that he can multi-task making phone calls, texting, and also looking around. The couple had begun to "frolic" a bit and one thing led to another. Pretty soon they had climbed into the back seat. You can imagine the rest. Jim wasn't even sure they had noticed him or if they cared. It didn't seem to matter at all.

During the winter and spring of 2020 the entire country was in the throws of the COVID pandemic. My state, like many others, put restrictions on what residents could do. Fortunately, allowed activities included walking, hiking, and recreation. I took advantage of activating parks for mental health as well.

One warm early spring day, with snow still covering most of the ground, I headed to a park which will remain nameless to avoid identifying the town where it was. After setting up my antenna on top of the snow, I decided to activate from the hood of my car to get some fresh air. I attached the rig's power cable via an alligator-clip adapter to run off the car's battery.



Hood-top POTA
rig powered by car battery

Ice on Connecticut River in Early Spring

Band conditions weren't great, but I managed to fill the log pretty fast. I was just about to take a break when a police officer drove by on his rounds through the park. He asked what I was up to, and I briefly explained ham radio and POTA.

This officer had come into police work after serving as a radioman in the Navy. He was very interested in my gear, frequencies I was using, and even took a look at my log to see how far away my contacts were. We shook hands as he left to park a short distance away and have lunch in his patrol car.

After I took down the antenna and went to start my car, I found that my rig had drained the car battery enough so it wouldn't turn over. This normally would not have happened, but my car had been parked for weeks due to the COVID restrictions.

I walked over to the officer and asked if it was legal for him to give me a jump. He said he didn't know, and wasn't going to ask his boss, but that he was willing to help me out.

The lesson here is to take time to be polite and advocate in a positive way for our hobby. On several occasions I have run into people with a genuine interest in radios, and good relationships are possible. This time it also saved me from calling my wife on the phone for a rescue.

This story is actually about a group of encounters which I am sharing only to increase awareness of a danger more likely to affect our YL and XYL operators.

I'll begin the story on 25 January of 2022. I was activated at Windsor Meadows (US-1729) in Bloomfield when I contacted Bean (KC1MEB) and Shawn (KC1NQE) P2P. They were doing a POTA rove at several parks about 20 minutes away from me in Simsbury. I tossed out the idea that we meet up somewhere before they headed to their next park. We had all worked each other many times but had never met in-person. They agreed, so I wrapped up my activation ASAP and headed to Simsbury.

We reconnected on VHF simplex, and I suggested we converge on a parking spot just south of a bridge over the Farmington River on CT-185. After the exchange of greetings I said, "Hey, you guys want to POTA?" They both said, "Where?" I replied, "Right here!" With quizzical looks on both faces, I explained that we were only a few feet from a section of water which had recently been added to the Wild and Scenic River system (US-0882). Our QSOs on 2m had actually been P2Ps and they didn't even know it!

This is only important to the story in that our face-to-face exchange helped solidify an already present on-air friendship. A month or two later, Bean called me on 40m during an activation. She mentioned that she too was activated, so I logged the QSO as P2P.

Then, I noticed that she wasn't spotted. When I offered to spot her she said, "NO! Can I give you a phone call?" Bean explained off-the-air that someone had been stalking her. Apparently, a guy was watching the POTA spotting page and showing up in his pickup truck at her activations. When it happened several times in close succession, she figured out what was going on, and she was terrified.

I offered to help by riding shotgun or meeting her for activations whenever possible. Fortunately, Shawn was available and provided "security" many times. When nobody was available to POTA with her, Bean smartly activated the Air Line Trail (US-7528) so the spot would not give her actual location away. Eventually, the stalker broke off his chase.

Very sadly, we lost Bean in July of 2023 to complications from Auto Brewery Syndrome. Shawn and I attended her wake, as did other members of Connecticut's POTA community. I cherish the 71 QSOs we enjoyed and hope to continue this with her husband Art (N1UUJ) who is also a POTA activator.

Sara "Bean" Lefebvre
KC1MEB (SK)

The last encounter I'll mention didn't actually involve me or any other POTA operator, but I'm including it as a warning in case it might keep one of us safe down the road.

In June of 2023, three adult counselors were leading a group of young campers overnight on the island in Selden Neck Park (US-17141). Early in the morning, one of the counselors was asleep in a hammock when he was attacked by a rabid bobcat.

According to the State Department of Energy and Environmental Protection, "The man, and two additional adults, subsequently killed the bobcat." All three adults were taken to a hospital and treated for non-life-threatening injuries.

Bobcat
Attribution: Bill W Ca at English Wikipedia

When we're out POTA-ing in the parks, be mindful that we are guests at the resident animals' pleasure!

Videos to Watch

Start by watching the video guides at parksontheair.com in the Help/Getting Started section. There are useful tips for both activators and hunters.

There are several successful POTA activators who are also stars on YouTube. You can learn a lot about POTA including reviews of antennas, rigs, batteries, accessories, and logging applications by watching some of their shows. Videos are a great option when bad WX keeps you from activating!

One YouTuber with lots of relevant POTA content is Michael Martens (KB9VBR). He also makes and sells J-pole antennas, and his YouTube channel is *KB9VBR Antennas*. Michael offers interesting regular Ham Radio Q&A sessions on his channel. He is a professional videographer, and it shows in his work. Check out his video about my POTA book in March of 2022.

Another prolific YouTuber who stands out from the crowd with lots of good POTA material is Mike Dahlhofer (K8MRD). You can easily find his channel: *Ham Radio Tube* (formerly *K8MRD Radio Stuff*). Hardly a week goes by without a new video or two of some sort. Check out my January 2023 livestream with Mike in the *LIVE* section of his channel.

There are several other great YouTube channels to watch. While not specific to POTA, check out Julian White (OH8STN) an American ex-pat who now hails from Finland, and his channel is *Off-Grid Ham Radio OH8STN*. You can also find Julian on Facebook at *SurvivalTech Nord* and at his own blog/site: oh8stn.org

From France, check out Gil Cruson (F4WBY) also known as the *RadioPrepper*. He offers lots of reviews, including some home-brew antennas, baluns, and other interesting gear like his PRC-320 military man-pack radio. You can also find Gil on his website at RadioPreppers.com

From Canada, look for Tracy William McKim, (VE3TWM). His YouTube channel is *Outdoors On The Air*, and he has over 50 interesting videos to watch covering antennas, rigs, and operating outdoors.

Also from Canada: Dennis Rule (VE3BF) has some videos taken while operating at his campsite. While not strictly for POTA, they are nonetheless completely relevant to portable operations with a wide variety of interesting product reviews. To find his channel, simply search YouTube for VE3BF.

Finally, honorable mentions go out to a bunch of good ham radio YouTube channels to check out in your spare time:

- *Ham Radio Crash Course* by Josh Nass (KI6NAZ)
- *Ham Radio 2.0* by Jason Johnston (KC5HWB)
- *Ham Radio Concepts* by Eric Hofer (KI4YZI)

POTA on Social Media

From my experience, the world would probably be much better off without Facebook than with it. I say this because people comment on FB without the filter they'd hopefully use in face-to-face conversations at a local ham club meeting with friends.

For example, when I posted my tip on how to use unmodified household extension cords for radials (as documented in this book) several members of the POTA FB group commented that it was a good way to get electrocuted. The adapter was a socket, not a plug, with no way to energize it from a 120 VAC outlet. These folks demonstrated how little they know about electricity and probably don't deserve an FCC license. Yet, they felt compelled to write off my "stupid idea" when others with more background saw it as "simply brilliant."

That said, if you're into Facebook, there's a POTA group you can join. If you post suggestions or tips, you can turn commenting off and save yourself a lot of grief. Nuff said.

I don't have any experience with Slack, so won't offer any comments regarding it except to say that it is the preferred channel to use if you have some gear to offer for sale.

If you want other operators to be able to contact you, join and log onto the QRZ website. Then, type your preferred address in the "Public Email" box on your "callsign data" page. The default is blank, and thus your email address is hidden from view. You can always wipe it out later if you start to get spam.

Useful Links

If you design and build your own antennas, there are several useful calculators available on the web. Because these change all the time, it is better to offer you suggestions for what to search for. Try the following in your favorite search engine:

- *dipole antenna calculator*
- *inverted vee antenna calculator*
- *shortened dipole antenna calculator*
- *shortened vertical antenna calculator*
- *coil inductance calculator*

Visit
wv1w.us/links
for info on stuff in the book

Reading a paperback or Kindle Paperwhite?
Visit the links page to see photos in color!

Register your book for FREE updates at
wv1w.us/register

Meet the Author

Hello! I'm Don, WV1W, author of this book. 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 POTA Station at US-0882

Sample POTA Checklist

- Transceiver
- Transceiver Power Cord with Powerpoles®
- Transceiver Hand Mic
- Antenna Tuner with data and RF cables
- Antenna Analyzer, charged
- 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
- Linked Vertical Wire Antenna
- Arborist Throw Line with Weight
- Tent Pole Antenna with Loading Coil & Jumper
- 40m & 20m Hamsticks with 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
- Mallet
- Leatherman Multi-Tool
- Spares: antenna wire, crimp connectors, paracord
- Electrical Tape
- Folding Chair & Folding Table
- Thermos (with hot coffee) & Cup
- Water Bottle (with fresh water)
- Hat & Sunscreen
- Bug Repellent

Suggested POTA Frequencies

BAND	BOTTOM	TOP
80m	3.803	3.999
40m	7.178	7.299
20m	14.226	14.347
17m	18.111	18.165
15m	21.276	21.447
12m	24.931	24.987
10m	28.301	29.697
10m (T)	28.301	28.497

Suggested SSB POTA Frequencies

BAND	BOTTOM	TOP
80m	3.5255	3.5995
40m	7.0255	7.1245
30m	10.1005	10.1495
20m	14.0255	14.1495
17m	18.0685	18.110
15m	21.0255	21.1995
12m	24.8905	24.930
10m	28.0005	28.300

Suggested CW POTA Frequencies

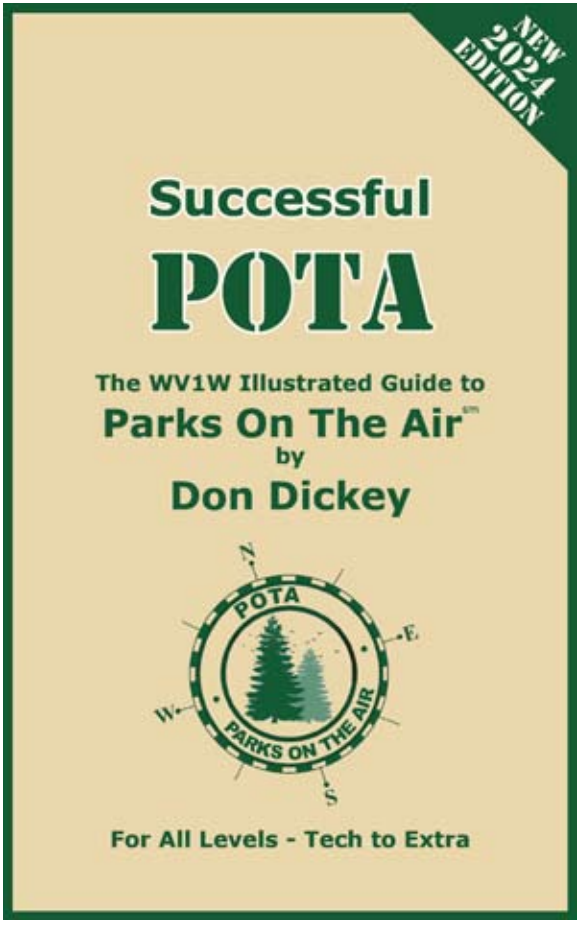
The suggested POTA frequencies shown in these tables avoid band edges and are within US General allocations. Frequencies for 10m (T) are within the US Technician SSB allocation to maximize opportunities for contacting those operators. Even if you hold an Extra license, it makes good sense to activate where you can enjoy the most QSOs with all license classes.

Phonetic Alphabet

A	Alpha	• –
B	Bravo	– • • •
C	Charlie	– • – •
D	Delta	– • •
E	Echo	•
F	Foxtrot	• • – •
G	Golf	– – •
H	Hotel	• • • •
I	India	• •
J	Juliett	• – – –
K	kilo	– • –
L	Lima	• – • •
M	Mike	– –
N	November	– •
O	Oscar	– – –
P	Papa	• – – •
Q	Quebec	– – • –
R	Romeo	• – •
S	Sierra	• • •
T	Tango	–
U	Uniform	• • –
V	Victor	• • • –
W	Whiskey	• – –
X	Xray	– • • –
Y	Yankee	– • – –
Z	Zulu	– – •

If you liked this book...

The only complete guide to POTA!

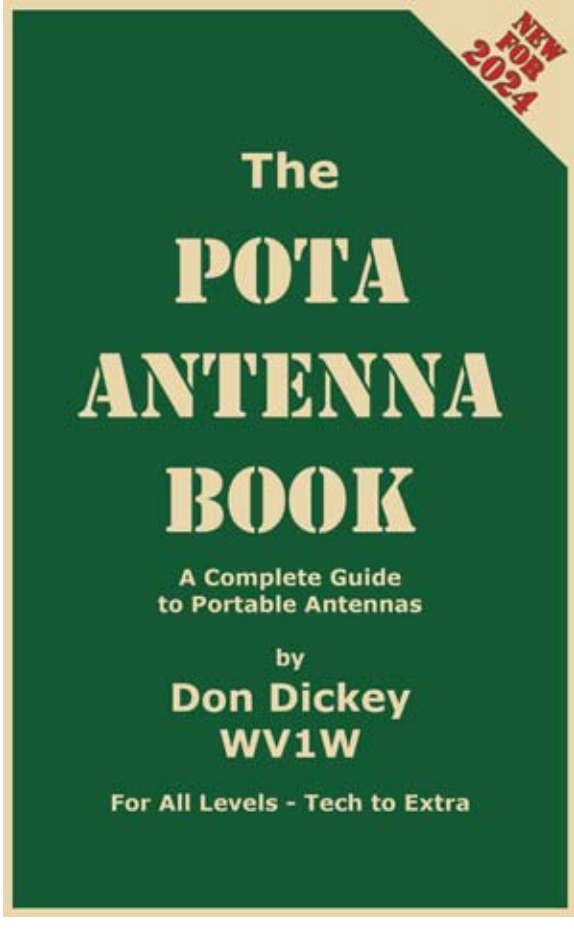


This book pays for itself in time and $$$ saved!

- What's POTA? Getting Started
- Rigs for POTA
- Power for POTA
- POTA Antennas
- Mounts & Masts
- Logging for POTA
- Frequencies for POTA
- WebSDR, RX for POTA
- CW & Digital POTA
- QRP POTA
- Late Shift POTA
- POTA Tricks & Hacks

For even more antennas...

Be sure to check out...



Chock full of more POTA antenna stuff:

- Vertical & Wire Antennas
- Magnetic Loop Antennas
- VHF & UHF Antennas
- Low Bands Antennas
- Crossed Fan Inverted V
- My Favorite POTA Antenna

and for antenna builders:

- Basic Antenna Theory
- Dipole Construction
- Linking Methods
- Locally Available Parts
- How to Test an Unun

Parks On The Air activations will challenge your ability to cope with a variety of issues on-the-fly. The examples shared in this book offer concepts to help you solve problems and have fun in the outdoors. It's time to POTA, anywhere—anytime!