NEW 2025 EDITION

Successful POTA

The WV1W Illustrated Guide to Parks On The Air

by

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Pictures Only Edition

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This book is dedicated to volunteers who
make POTA fun for operators worldwide.

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
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for info on stuff in the book!

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Portable Station at a Park
and coffee with K1DFS and W1CKV

Introduction

I have been a licensed amateur radio aka “ham” operator since 1975. Likely with many others, hobbies ebb and flow. Fifteen years ago, I wasn’t on the air much and donated my Yaesu FT-301 HF and FT-221R multi-mode VHF rigs along with many accessories to the American Red Cross’ local chapter.

For reasons I have yet to discover, the ham bug bit me again, and I ordered a new radio for myself for Fathers’ Day in 2019. I wanted to be able to enjoy it outside on the deck in our backyard as much as in the shack, which led me to choose the Yaesu FT-891. I will share more reasons for this decision later, and it is with no regrets and one I would gladly make again.

Before even ordering the rig, I had been busy getting an antenna up and ready, a very simple center-fed 80-meter dipole, made from materials already on-hand. I had a good Daiwa power supply for the shack and a 12-volt battery from a weedwhacker for portable power. The afternoon the rig arrived, it took less than a half hour to put it on the air. Most of that time was soldering Powerpole® connectors onto the power cord. Fortunately, the SWR was quite low in the phone band.

My first QSO with the new rig was with long-time friend Chuck, K1DFS. After over a decade off the HF bands, I was like the proverbial kid in a candy store. A few days later I met Chuck and Fred, W1CKV (now SK) at a local park for coffee. The timing was perfect as there was a U.S. contest running called 13 Colonies at the same time our neighbors to the north were celebrating Canada Day! Putting out about 25 watts powered by the small battery, we made ten contacts in as many minutes before switching into coffee club mode to catch up on each others’ lives since our last get-together over a decade ago.

My POTA journey began the following month in August when I answered a CQ from Patrick Gearty (W0YES).

He was operating at US-2497, Judge C.R. Magney State Park in Minnesota. Patrick said he was doing something he called POTA, and I asked, “What’s that?” I had never heard of POTA, and Patrick gave me a brief description and suggested I check it out on their website. The rest, as they say, is history.

Patrick and I have subsequently talked with each other several times, mostly on the air but also a couple times by phone. During one such conversation we learned that we shared a common project during our careers. I worked on a pager watch at Timex and actually was awarded a patent on the antenna. Patrick worked on the same project for Motorola, Timex’s business partner responsible for marketing and distribution.

This is what differentiates POTA from regular HF operation: you will likely talk with other POTA hams multiple times. Some contacts will be so consistent you actually expect to hear them every time you operate at or to a park!

Generally, I have found the folks doing POTA have better than average on-the-air manners. Sure, there will be an occasional operator who forgets to move off your calling frequency when tuning up, but these are, fortunately, in the minority.

Because over half of the contacts I make at a typical POTA activation are hams I’ve spoken with previously, I make a point to log their names and locations. That way I can reply to their calls in a more personal manner than is typical on regular HF operations. Unless you have an exceptional memory, electronic logging makes this possible even without internet access to QRZ.com, and I will discuss this later in the book.

There are a wide range of ways to operate POTA from just sitting in your car with a regular mobile setup to elaborate portable stations with more efficient antenna systems. I’ll explore several of these options, and you can pick and choose which ones suit your personal operating style. Let’s get started!

What's POTA?

POTA, short for Parks On The Air, is an amateur radio activity involving portable communications to and/or from a park. It 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 Lesnick aka VE3FAL, Kyle Jeske aka N4NSS, and Pete Spotts (SK) aka N1ABS and W1PNS. The original domain was HamParks.org but the site ceased to function in 2022.

Note that their original website was not copyrighted and the name was not registered with the patent office, so "POTA" can be freely used as published into the public domain in 2010.

Note also that POTA pre-dates ARRL's National Parks on the Air by a half dozen years which was an event that ran in 2016. Some hams seem to think that POTA came from the National program, but it appears the opposite is more likely the case.

POTA operators fall into two basic pools: *activators* and *hunters*. Operators who go to a park are called activators. The operators who contact parks, usually from home, are called hunters. Most activators also hunt parks as well, especially when the local weather is not conducive to being outside. They also hunt parks during activations which result in celebrated "park-to-park" QSOs.

All POTA activities are run by volunteers, almost universally fellow licensed amateur radio operators. Anyone activating or hunting parks must give these folks the utmost respect for their tireless efforts in setting this system up and keeping it running. Looking at the many online enhancements, added parks, and more countries participating, a lot has been accomplished.

Getting Started

The best way to get started with POTA is, like most ham radio activities, by listening. Fortunately, tools currently available make this extremely easy for anyone with an HF receiver and suitable antenna. No radio? No problem. Use WebSDR!

The easiest way to find POTA stations to listen to is by using a spotting page on the web. Just like those used to find DX stations, there is a dedicated spotting page just for POTA. To find it, go to either www.ParksOnTheAir.com and click POTA Spots or simply go straight to POTA.app which should load all active spots and update automatically every minute.

You can restrict the display to any mode that's active, whether that be SSB, CW, SSTV and digital FT8/FT4, etc. You can further restrict the mode to a specific band, and also choose to show historic/off-the-air (QRT) stations or hide them.

Feel free to contact any available station and get your feet wet! You don't have to be registered with the POTA system to do so, and the operator in the park will get full credit for the QSO whether you're a registered user or not. Give it a try. There's absolutely no down-side for doing this, and it can be a lot of fun. Just be prepared to get hooked and become a POTA hunter! That's how most of us got started.

POTA etiquette would be to say your call sign only once per request (QRZ), and be patient as pileups are common when bands are open and active. Some of the better activators will take a short list of several calls heard and then contact each one before saying QRZ again. If you listen first, you'll be able to figure out what is going on, so don't be quick on your PTT until you know how to do so without looking like a "lid."

After reading the Rules and Frequently Asked Questions (FAQs), you begin your official POTA journey by registering.

All participants, whether activating or hunting, register at the official POTA website: parksontheair.com

Why register? Even if you plan to stay home and hunt parks from your shack, you won't get any "credit" for QSOs without first becoming a member of the POTA community, and you do that by registering as a user. While you can sign in using your "social account" from Amazon, Google, or Facebook, I encourage you to register using your email address and also choosing a password unique to the POTA system. It seems to make the most sense from a security and simplicity standpoint.

Once registered, you can then log onto the database-driven system at POTA.app to check your account for QSOs and awards! You don't have to submit any logs as that is taken care of exclusively by the activators. It really is that easy. Just enjoy making contacts, meeting new friends, and getting awards if that's your thing, but no worries if it isn't.

As a hunter, there are a few ways you can contribute to the POTA community. One is by spotting. If you happen to be scanning the band and run across someone calling CQ POTA, check to see if they're already spotted. Occasionally, an operator will be in a park with limited or no internet access with which to spot themself. You will be a big help to this activator if you spot them. You should note their call sign and park number. Ask them if you need this info, and offer to "spot them up" and I'm sure your generosity will be appreciated.

You don't have to be logged into the POTA system to spot an activator, but if you are, your call sign as spotter will be automatically filled in. When you type in the frequency, do so in KHz like 7188 (not MHz like 7.188) or it won't be accepted.

You might also have to add a comment, which can be your signal report like "5x9 in Chicago" or something else like "Running QRP - give him a call."

You can also help by “re-spotting” and there’s a button for that if the station is already spotted. A comment is completely optional on re-spots but signal reports are common.

The POTA system chooses a Gravatar symbol for each registered operator. On the spotting page, you’ll see these besides each activator’s call sign. You’ll also see a symbol next the operator who last updated the spot. The first time, this is usually the activator who self-spotted, but later it is often a hunter who updated the spot, sometimes with a signal report.

If you choose View Profile, you’ll see the symbol randomly assigned to your call sign. You can easily change this by registering at Gravatar.com and uploading a symbol of your choosing. This can be a small photo of you, a radio, microphone, your cat, or whatever suits your fancy.

Just remember that everyone in the POTA community will see your symbol if/when you update someone’s spot! Note that because of the way the POTA system crops symbols (forcing it into a circle), it might take some experimentation to edit your symbol so it looks the way you want.

Most operators don’t bother creating a Gravatar symbol, but it can be a way to add some character to your spots!

One thing to remember... Operators out in the parks quickly figure out who the “nice guys” are who are polite to both them and the other hunters. They also have no trouble figuring out who the lids are, and can easily skip over them during pileups. Just as with life in general, treat others as you would like to be treated and you’ll have a lot more fun and gain much more respect in the community.

Before going much further, now would be a good time to review some of the POTA rules. There really aren’t that many, and it makes sense to get them sorted. While most of the rules pertain to activators, hunters must follow the Code of Conduct:

1. Threatening or abusing members of the Administration Team or any other POTA participants in any manner is prohibited.

2. Posts to POTA sites and forums (i.e. Facebook and Slack) are monitored and can not contain anything discourteous, offensive, argumentative, or any advertisement. They should also not be about another program such as SOTA or IOTA, etc.

3. Hacking or phishing the POTA website is prohibited.

4. Behavior that discredits the integrity of the POTA program is prohibited.

5. You must operate inside the ARRL's published Operating Ethics and DX Code of Conduct. See the ARRL website for details on these. The official document is called "Ethics and Operating Procedures for the Radio Amateur."

When/if you decide to activate, there is another list of rules that must be followed. While it may not be obvious, to get credit the park has to be recognized and in the POTA system. Recognized parks are easy to find on the Maps page.

These are some of the POTA rules for activating. As they are subject to change, check the POTA website for updates.

1. The activator and all the equipment the operator uses must be within the perimeters of the park. If it is a linear park like a river or trail, you must be within 100 feet of the river or trail.

Furthermore, it must be on public property. This requirement is especially important in parks like Adirondack which covers 20% of the State of New York. There is lots of private and commercial land inside Adirondack Park, and you can not activate on private property. This rule can often be met by operating from a road or parking lot that's on public property.

The park must also be open. Here in my state, parks often "hibernate" in an off-season mode. They are technically open for hiking and dog-walking but access roads are closed during the winter so they don't have to be plowed. As long as you can legally be in the park, it is OK to activate there. If the park is legally closed, you will have to find another place to activate.

In some states (like CT) parks close at sunset unless you are registered to camp overnight or there for an authorized special evening event like a star gazing class. Since other operators in the state might also know park rules, it behoves you to follow them. Besides, if you get caught operating in a closed park it could have a detrimental effect on other operators later on.

2. There are some places where parks overlap. This is called a "two-fer" and counts as 2 activations. As an example, it happens where a recognized trail or river runs through a recognized park. I have even worked a five-fer where a bunch of recognized trails crisscross. You will need to submit separate logs for each park to get credit for simultaneous activations.

3. You currently need a minimum of 10 QSOs in your log for it to count as an activation. As a courtesy, you should still submit a log even if you have fewer than 10 QSOs so your hunters will get credit for them even if you won't as an activator.

4. One log can cover multiple days, multiple operators, club call signs, etc, but you need a separate log for each park.

5. You can not use terrestrial repeaters, but satellite and EME contacts are allowed. I do not believe vocal relays are legit for complete QSOs, but I have heard stations relay a park number or signal report when someone is having trouble hearing it.

There are specific rules for getting new parks into the POTA system. Since this is the sole responsibility of that state's Mapping Representative, I won't go into much detail.

Suffice it to say that if you know of a state or national park that isn't in the system, the Mapping Rep is the person to contact and make your request known. I have found them to be responsive to questions and willing to investigate new park requests within the confines of current POTA rules. I was successful at helping get a new park in my area added to the system: US-7544, Windsor Locks Canal State Park in CT.

There are instances where a recognized park is expanded. As an example, the Farmington River in Connecticut is part of the National Wild and Scenic Rivers System and is recognized as POTA park US-0882. In March of 2019, new sections of the river were given the distinction of being added to the Wild and Scenic System. That automatically made these sections legitimate for POTA activations as long as you are on public property and follow other POTA rules.

After the activity has completed, the activator uploads their log in the specified format. Hunters do not submit logs. Hunting is passive, meaning hunters get credit for contacting parks entirely from the activators' logs. This makes it especially easy to get started with POTA as a hunter!

I will delay the discussion of the rules pertaining to logging until the section on this subject. Generally, you don't have to log anything unless required by the FCC, but you have a moral obligation to submit logs in a timely manner for your hunters' benefit. To activate a park and call CQ POTA without later submitting a log would be a good way to be excommunicated!

Also, remember, the folks behind the scenes in the POTA organization are volunteers. Most have paying jobs to go to, families to care for, and vacations to enjoy like the rest of us. If you want to help the process along, volunteer some of your time. I'm guessing they'll find something you can do to help.

Activation Options

A POTA activation can be as simple as driving your car into a park and tuning your FM HT or mobile rig to a simplex frequency. This might actually work in a metro setting like Washington DC, New York City or Boston, but the majority of parks are in more rural settings.

It should be noted that not all parks are viable. Before planning a POTA expedition, you should begin by checking the POTA website for official recognized parks near you. The POTA map tool makes this process very easy. Note that each park has a unique identifier. U.S. parks begin with "US-" followed by a four or five digit number. Parks in Canada begin with "CA-." You should write this down before heading out to the park!

Also note that the list of available parks is dynamic, meaning that new parks are sometimes added to the list. It's great to be the first to activate a newly authorized park since hunters are attracted to them like moths to a naked light bulb in the dark.

Most people activating parks fall into two camps. One would include those with a mobile HF setup, on a car or RV, using a standard mobile antenna. HF antennas can be fairly tall. You can attach the antenna to the mount when you arrive so you're not banging overhanging trees along the way.

The other camp uses a portable antenna of some type, hung from a tree or portable mast, ground mounted on a post or tripod, or secured to something else like a picnic table.

The type of operation you choose will likely depend on your physical ability and/or the time you allot to POTA. You might use a mobile setup for quick lunch break activations and more elaborate setups for a full day outings. As you will see later in this book, I am a proponent of having several options, especially for portable antennas. I often pack as many as a half dozen different antenna solutions in my POTA kit!

Buddy Systems

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.

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.

Buddy POTA with KB1ZKK
two-station setup at US-1729

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The author strongly encourage readers to observe common sense, manufacturers' instruction manuals and product warnings, and good amateur practices as covered in available literature from reliable sources.

Furthermore, the author encourages amateur operators and anyone assisting them in the installation of radios or antennas, either paid or unpaid, to follow the current National Electric Code plus any local codes and laws.

Rigs for POTA

Success feeds enjoyment. This is a basic premise of this book on POTA. If you are the type of person who relishes a challenge, you can take portable operations to the next level: SOTA, or Summits on the Air, where you typically hike up a mountain with ultra-light gear.

That said, I would discourage you from limiting yourself to low-power operation, usually referred to as QRP. I would pick a transceiver with a 100 watt output. If you feel the need for a challenge, you can always lower the output, but 100 watts is enough for consistently reliable communications even with the mediocre band conditions common these days.

An obvious option would be to begin your POTA journey with your current shack rig. This might be far from ideal if you have a large transceiver, but would allow you to get your feet wet without spending a large sum of money just to try it.

Without question, for better or worse, one of the most popular rigs going into many ham shacks during the last few years has been the Icom IC-7300, and for good reasons. It is reasonably affordable at around $1,000 after discounts and rebates. Given the capabilities and performance of this transceiver, it is considered a good value when compared to competitive models. The IC-7300 is ready to go on multiple phone (voice) modes, CW (Morse) with built-in keyer, RTTY (radio teletype), and many popular digital modes with a single USB connection to your computer.

A less-known secret feature included in the IC-7300 settings is called Emergency Mode which when activated greatly expands the range of the built-in antenna tuner while cutting the output power in half to protect the final output transistors. This feature might help make it even more suitable for portable operation

and POTA with certain “random-wire” antennas and a suitable matching transformer or “unun.”

Icom IC-7300 HF/50MHz Transceiver

The only legitimate downside of the IC7300 is its size. While not outrageously big for a shack radio, it is much larger than a mobile rig and might be a tight squeeze for a go-box portable setup. I don’t have personal experience with operating one from a battery, but I’ve seen other operators do it successfully.

Looking at currently available new models, one stands out as the perfect POTA rig: the Yaesu FT-891. It is compact, covers 160 through 6 meters in all modes (including FM), has output adjustable from 5 to 100 watts, and is relatively affordable at around $675 shipped. It also boasts one of the best digital noise reduction systems in any rig as of this writing.

Yaesu FT-891 HF/50MHz Transceiver

The only downside I've encountered with the FT-891 is what might be required to operate digital modes. While it has a USB port, this connection can only be used for rig control, not audio. To operate most common digital modes like FT8 you need to get audio from the rig into the computer for decoding and from the computer back into the rig for transmitting.

Fortunately, there is an inexpensive way to do this with the FT-891 using Yaesu's CT-39A Packet Cable. You do not need an expensive interface like a Tigertronics SignaLink, just a $10 cable with plugs for your computer audio in/out jacks. Details are covered in the Digital POTA section later in this book.

Competing with Icom's IC-7300, Yaesu introduced the FT-710 in both a standard version which includes AESS (Acoustic Enhancement Speaker System) and a "Field" version without the SP-40 speaker. The receiver has been very highly rated. While this radio costs quite a bit more than the FT-891, it should be a good choice for someone looking for a nice base station rig that's also small enough for POTA. One drawback I've found: the meter needle can be hard to see on a sunny day.

Radio manufacturers (including Yaesu) have never been known for great speakers, so you might be better off supplying your own external speaker to take advantage of AESS technology. I use small satellite speakers from a sat/sub audio system with my base station radios, and they have good sound on a budget.

Yaesu FT-710 HF/50MHz Transceiver

Mid-2025 Yaesu introduced the FTX-1 Series. This rig is available as a QRP transceiver with or without a mating 100-watt amplifier in the Field and Optima models, respectively.

Yaesu FTX-1 HF/VHF/UHF Field & Optima Transceivers

The Field rig is battery-powered for QRP output similar to Icom's 705 but can be mated to the SPA-1 amplifier when QRO power is desired, a fantastic concept. The main drawback with the FTX-1 in either configuration is cost, a whopping $1,500 for the Field and $1,900 for the Optima model. For less than $100 more you could get an Icom 745 for QRP **and** a Yaesu FT-891 for QRO and have the benefit of redundancy in case one of them had to be sent away for repair. 2-is-1, 1-is-0!

Another potential POTA issue is a screen like the FT-710 with a Power/SWR meter that can be difficult to read in bright sun. It remains to be seen how this new rig will be reviewed.

Yaesu also offers its FT-991A. This rig covers HF, VHF, and UHF bands in what some refer to as a "shack-in-a-box." It is, indeed, a very capable transceiver.

Yaesu FT-991A HF/VHF/UHF Transceiver

While it might look even better for portable operation than the IC-7300, with a slightly smaller chassis, factory-equipped carry handle, and even full digital modes via single USB connection, 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.

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 a 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 rig that might be good for POTA 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 touch-screen 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

While the IC-7100 does not include a built-in antenna tuner, it does have a port for controlling Icom's extraordinary AH-4 antenna tuner. More on this later in the Accessories section.

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 above 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.

While slightly larger, an Icom IC-7200 is another option:

Icom IC-7200
rugged HF/50MHz transceiver with optional handles

The optional handles on the IC-7200 not only make it easier to transport but provide some extra protection as well. In fact, there’s a company called Portable Zero that makes similar “tactical carriers” for other rigs like the IC-7300 and FT-857.

The only major feature lacking in many radios is a built-in antenna tuner, the IC-7300 and FT-991A being notable exceptions with automatic tuners under-the-hood.

That’s OK because external tuners typically have much better ranges of SWR they can handle as well as different antenna types like long wires. Plus, you can choose between a manual or automatic tuner. See the Useful Accessories section.

If you’re a Kenwood fan, look for a good used TS-480SAT. Like Icom’s IC-7100, this rig comes in two sections: the main transceiver and a separate control panel. It doesn’t have VHF/UHF bands, and the DSP is analog, not the more modern digital, but it does include a built-in antenna tuner.

Kenwood TS-480SAT
2-part HF/50MHz transceiver

Being discontinued, a downside is that useful accessories like the SO-3 TCXO (temperature compensated crystal oscillator) or the YF-107C 500 Hz CW filter might be hard to find.

Alinco, Icom and Yaesu have all offered basic transceivers and Icom continues to do so with their IC-718 shown below.

Icom IC-718 HF Transceiver

Basic rigs are typically marketed to new operators equipping their first shack, but also to experienced hams as a backup rig or an affordable second radio for a vacation home.

While I believe you would be much better off with a Yaesu FT-891 than the more expensive and less capable IC-718, a good deal on a used basic rig might be a viable option to consider.

If you're a new operator and already have an Icom IC-718 or the similar Yaesu FT-450 or Alinco DX-SR8T, then you might think about using your starter rig for POTA and upgrading your shack with something more sophisticated.

Yaesu FT-450D HF/50MHz Transceiver

Yaesu's FT-897 was an interesting rig that might be great for POTA if you can find one in good condition. It outputs 100 watts on external power but can also put out 20 watts using up to 2 internal 4.5 Ah Ni-MH battery packs. It was discontinued and some accessories could be hard to find. The later "D" version added the 60m band to 160-2m and 70 cm coverage.

There are also low-power rigs like Elecraft's KX2 and KX3 and Yaesu's FT-817 / FT-818. Icom has been shipping the new IC-705 for over a year now which is their first portable SDR rig. Again, I would caution you about limiting yourself with a QRP rig unless you plan on adding an amplifier to your kit.

Do not interpret this to mean I am against QRP operation! Just get some experience first and enjoy a bunch of successful activations. Then, turn the power down and see how it goes.

Icom IC-705
QRP HF/VHF/UHF transceiver

I do know several operators using QRP rigs like the IC-705 for POTA. I can also say that I usually know when they activate with their QRP rig instead of their FT-891 or IC-7300 because I have trouble hearing them! What might be perfect for SOTA isn't necessarily best for POTA. My advice: "Go QRO."

One exception might be a CW-only or digital-only operator. Those modes are significantly more forgiving than SSB, especially when HF bands are less than ideal. I have found this to be particularly true for FT8. It seems to work when nothing else does. While I'm not a huge fan of point-and-click digital QSOs, there is a time and place for it when the going gets rough! I'll cover this in more detail in a dedicated section.

Notably absent from my recommended radios: cheap Chinese HF rigs. These can represent excellent values for new hams getting started on a tight budget. I know several POTA operators using these rigs, particularly the Xiegu G90 because it puts out 20 watts instead of 10 watts more common with other models. They have gotten fairly decent reviews and show up in lots of YouTube videos.

So, why not recommend them? Simple: not enough history. When I buy a rig I expect it to last a while. My Icom IC-229A VHF mobile transceiver is still in regular use after 30 years! Ditto for the dual-band Icom IC-3220H in my shack.

I also have a pair of Standard C-510 dual-band HTs that are over 20 years old and still work, mainly because they're powered by standard AA batteries and not a proprietary pack that would have died long ago.

I just don't have the same degree of confidence in Xiegu and similar rigs. I do have a couple of TYT portables, and they were amazing values and seem to be very solidly built. One is a dual-band analog HT I got for under $30 and the other is a dual-band DMR HT caught on-sale for $85. I won't cry a lot if either goes belly-up after a few years. That said, I would be quite upset if a $450 HF rig died in the same time frame.

If you're OK with buying what I'd call a "disposable rig" then go ahead and give one a try. As long as it's not your only radio, you won't be sidelined if it fails.

When the COVID-19 pandemic went off the rails, I determined that getting outside and doing POTA was very important to my mental health. The thought of sending my precious Yaesu FT-891 off to the service center for a couple months was terrifying! That's when I bought an FT-991A for my shack, mainly to have a good backup for POTA. Now I have a Yaesu FT-710 that backs up both my shack and POTA rigs. Staying with one brand of radio also meant that most settings were familiar.

At least Icom, Kenwood, and Yaesu have stateside service depots in case something goes wrong.

Before purchasing a rig I encourage you to read some reviews. These come in two flavors: amateur and professional.

For reviews by amateurs sharing personal experiences, visit NA4M's website eham.net or just use your favorite search engine to find "FT-891 eham review" for example.

For a thorough technical and operational analysis, check out reviews published by the ARRL in *QST*. Examples:

- Elecraft KX2:
  QST Review, Mark Wilson, *QST*, May 2017, p 45-50

- Elecraft KX3:
  QST Review, Joel Hallas, *QST*, December 2012, p 39-44

- Icom IC-705 SD:
  QST Review, Steve Ford, *QST*, February 2021, p 40-48

- Icom IC-706MkIIG:
  QST Review, Rus Healy, *QST*, March 1996, p 61-66

- Icom IC-7200:
  QST Review, Steve Scant Andrea, *QST*, June 2009, p 51-55

- Icom IC-7300:
  QST Review, Steve Ford, *QST*, August 2016, p 41-46

- Yaesu FT-710:
  QST Review, Mark Wilson, *QST*, August 2023, p 35-41

- Yaesu FT-817/818:
  QST Review, Rick Lindquist, *QST*, April 2001, p 75-80

- Yaesu FT-891:
  QST Review, Mark Wilson, *QST*, June 2017, p 51-56

- Yaesu FT-991A:
  QST Review, Joel Hallas, *QST*, May 2018, p 50-57

Power for POTA

If you plan on operating from or near a vehicle, you could obviously use the 12-volt battery already in the vehicle for power. This is perhaps the easiest way to get started. I might caution you to pack a set of jumper cables or portable starting kit in the event that your radio runs the battery down enough so that it won't start the engine to get home. Yup, this happened!

Useful info includes how many amps your radio draws. For the Yaesu FT-891, this is about 1 amp on receive, and on transmit:

QRP: 5.7 @ 5 watts 6.9 @ 10 watts
QRO: 8.8 @ 25 watts 11.5 @ 50 watts 15.2 @ 100 watts

There are several battery technologies available for powering a 100-watt radio at full power. One of the least expensive is a U1 garden tractor battery available at most Walmart stores. While this battery is heavy at 15 to 18 pounds, has an expected life of only a few years, and has a typical lead-acid discharge curve, it is very affordable at under $30 for about 30 amp-hours (Ah).

U1 Lawn & Garden Battery
7.8" long x 5.2" wide x 7.5" high

I initially chose the U1 battery to power the GPS and running lights on my sailboat. It has proven to handle several hours of full power POTA activations nicely. For a full day of hamming (like at Field Day) I can always cut my rig's power in half with very little effect on HF communications.

U1 Battery in Camera Bag
with rig power cable in front pouch

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

After a couple of years doing POTA with the U1 battery I upgraded to the more modern lithium iron phosphate (LiFePO4) technology. These new batteries weigh less than half of a lead-acid battery, have a much flatter discharge curve, an expected lifetime of 2,000+ charge cycles, and a much longer shelf life between charges.

The only downside is the initial cost: about three times the U1 lead-acid tractor battery, and you might also need a special charger as well. The one shown below cost just under $90 in December of 2021, about half-price from a year prior.

ECI Power 20 Ah LiFePO4 Battery
weighs about 6 pounds

I used an old camera bag to carry the U1 battery. The LiFePO4 is small enough to fit in a lunch bag! Of course, it has Powerpole® connectors for my rig, and room inside for the power cord and spare fuses.

Lunch Bag Power Pack
with room for the rig's power cord

I found that after a 3-hour activation with 123 QSOs at full power, the 20 Ah LiFePO4 battery had only dropped from 13.6 to 13.3 volts. That is one of the huge benefits of this newer battery chemistry.

Had I been using the U1 lead-acid battery, I'd be well under 12 volts at this time, and the FT-891 would soon run out of gas and shut down. If I was using the FT-991A, I would have been off-the-air an hour ago!

For more portability, another option could be a smaller 12 Ah LiFePO4 battery like the model shown below. I bought this battery because it is the maximum size allowed by most airlines. Batteries this size usually have “F” tabs, but this one has threaded posts and screws, a nice feature to look for.

TalentCell 12Ah LiFePO4 Battery
weighs about 3 pounds

Other benefits of LiFePO4 batteries include faster charging, longer charged shelf life, and a dramatic reduction in weight. The 20 Ah LiFePO4 at 6 pounds is only 40% of the weight of the U1 lead-acid and provides more consistent voltage during the discharge cycle. This makes it equivalent to a much larger lead-acid battery in actual use powering a transceiver.

Many operators like to buy or make a “battery box” which includes not only their battery but also fuses, switches, outlets for 12-volt rig and accessory power but often USB jacks as well for charging their phone and/or tablet. Sometimes these boxes have a meter for volts or, perhaps more useful, power consumed. The latter is good for predicting battery life.

Battery Box
with power switch and 12-volt outlets

The most important function of the battery box is to protect the battery and make connections easier. Just providing a simple handle helps a lot when toting gear to a POTA activation.

Of course, most operators prefer to have Powerpole® connectors for their rig and 12-volt accessories. Including a standard cigar lighter socket is also useful for things like a fan or other automotive device. A lighter plug-to-USB adapter is a simple way to add a jack for charging your phone without buying a special USB socket.

Battery Box Panel
power switch and outlets

I'm not a big fan of generators for POTA. They're noisy, though somewhat quieter than they used to be. They're smelly unless there's a good breeze in the opposite direction. They require fuel, one more thing to pack that's potentially very dangerous. Lastly, they wear and require maintenance.

That said, I am including some comments and suggestions for the sake of completeness because some of my readers will be hell-bent on using their generator instead of a battery or to charge a battery when they're not operating.

First off, be careful when selecting a generator for powering your rig and other sensitive electronics. Some are much better than others when it comes to filtering and power cleansing. It won't matter how much power you have if it causes such a high noise floor on HF that you can't hear anyone.

Gasoline with MTBE additive has a notoriously poor shelf life. I have a generator for power failures and store it with the tank and carburetor drained and dry. If you aren't going to POTA off-season, then I suggest you do the same. This works much better than fuel additives, and I use the same storage system for my lawn mower and snowblower. They always start first-pull.

Another solution is to use fuel without MTBE like aviation gas if you have access to it. Home improvement stores carry clean fuel for gas-powered tools, but it can be expensive.

When buying a generator for home backup, more power than you need is often a good thing for starting compressors. For portable operation, it makes more sense to lean the other way. This will make the unit lighter, quieter, and use less fuel.

A small inverter type is probably the best way to go for POTA. You might look for one with both 120 VAC and 12 VDC outlets. That way you can top up a battery without carrying a separate charger. It can also help start your car in a pinch.

Honda EU1000i
900 watt portable inverter generator

When looking at specifications, pay attention to the weight and noise, usually rated in dB(A). Visit the local dealer where you can take your portable HF radio and mobile antenna to check it for RF noise before purchasing.

Remember, using a generator instead of a battery will mean you also have to pack a power supply. If yours is a traditional one using a transformer, your kit is going to be pretty heavy! If it's a newer switching type, you'll have to add that hash to the noise coming from the generator and/or inverter.

Some parks prohibit or restrict the use of generators to certain hours of the day. Check the parks you plan to POTA at before showing up with a generator, and be considerate of your neighbors if you are in a campground.

Antennas for POTA

Nothing in your POTA kit will be more important than the antenna. Here, one size almost never fits all. In fact, I always pack more than one antenna.

Portable antennas fall into two basic types: those made of wire, and those made of other things including aluminum and plastics. They also fall into two basic categories: home-made and purchased ready-to-use, sometimes in a kit with multiple components. This book covers both types from both categories.

A basic theme of *Successful POTA* is to provide simple and affordable solutions to encourage new operators to give it a try. Easily the least expensive way to go is with a simple dipole made from wire you may have laying around. You really don't need a balun, and the coax can be soldered directly to the elements for simplicity.

Before you settle on an antenna, it's important to know that most POTA operations right now seem to happen on two primary bands: 20m and 40m. I suggest that you begin with a mono-bander cut for 20 meters. You can easily attach extra wire later on for 40 meters.

Park rangers might frown on using their trees for antenna supports. That said, it is possible to do so if done carefully. I recommend the inverted-V configuration because it usually requires only one tree. This design is also more omnidirectional than a "flat top" dipole.

Segment lengths are available in this section. Start with a pair of wires 16 feet long, one for each side. The final length after tuning will depend on the angle of your V and whether you operate using phone or CW/digital. The wire for my first POTA antenna was actually free, scavenged from a discarded vacuum cleaner a neighbor put out on trash night!

Set the antenna up in your yard or nearby park. Check the SWR and trim equal amounts (a couple inches at a time) off both sides to bring it into resonance.

A more ideal POTA antenna would be resonant on both 20m and 40m with as little effort as possible. The off-center-fed (OCF) dipole or inverted V seems perfect. The only drawback is the need for a very good 4:1 current balun. The better baluns are heavy, requiring a very sturdy/strong center support. The OCF dipole also needs a fair amount of room as the long leg is about 44 feet long.

A less expensive alternative is a linked dipole. This is a mono-band 20m wire antenna with an additional length on each side for 40m. You can bolt these extra sections on using ring terminals at the ends. I use alligator clips to link the sections, and it takes only a few minutes to lower the antenna and change bands.

40/20m Linked Dipole Kit with Coax
includes throw line with weight and lines for ends with pegs

Wire Antenna Lengths

USA BAND	CW BOTTOM	CW TOP	CW MID	DIPOLE LEG-FT	INV-V LEG-FT
160	1800	2000	1900	123.2	117.0
80	3525	3600	3563	65.7	62.4
60	5332	5405	5369	43.6	41.4
40	**7025**	**7125**	**7075**	**33.1**	**31.4**
30	10100	10150	10125	23.1	22.0
20	**14025**	**14150**	**14088**	**16.6**	**15.8**
17	18068	18110	18089	12.9	12.3
15	21025	21200	21113	11.1	10.5
12	24890	24930	24910	9.4	8.9
10	28000	28300	28150	8.3	7.9

USA BAND	SSB BOTTOM	SSB TOP	SSB MID	DIPOLE LEG-FT	INV-V LEG-FT
160	1800	2000	1900	123.2	117.0
80	3800	4000	3900	60.0	57.0
40	**7175**	**7300**	**7238**	**32.3**	**30.7**
20	**14225**	**14350**	**14288**	**16.4**	**15.6**
17	18110	18168	18139	12.9	12.3
15	21275	21450	21363	11.0	10.4
12	24930	24990	24960	9.4	8.9
10	28300	29700	29000	8.1	7.7

General Class Frequencies in KHz
Bold = Primary POTA Bands
Inverted V Angle = 45 Degrees
Leg Lengths in Feet
Overall Length = Leg x 2

Always Cut Long - Trim to Resonance

As an alternative to building one, a commercial model of this design is available ready to deploy from SOTAbeams and their distributors for about $90.

SOTAbeams Band Hopper Linked Dipole
available for 80m, 40m, 30m, and 20m bands

The speaker wire dipole is a favorite of many successful SOTA operators. Theirs are usually made from thin 24 or 26 gage wire for minimum weight. Mine, designed for POTA, is made from 18 gage wire for more strength and durability. Look for stranded copper wire and avoid CCA (copper-clad aluminum). If you can't find good speaker wire, Home Depot carries 18 gage lamp "zip" cord which would fill the bill nicely.

20m Speaker Wire Dipole Antenna
simple, inexpensive, & effective

As with any dipole, cut it longer than you think you'll need and trim it to resonance. Start with 17-foot legs for 20 meters and 33-foot legs for 40 meters. Tune for 20m first, then add 17 more feet and trim for 40m. Use alligator clips or connectors between sections for quick and easy band switching. There are plenty of dipole and inverted V antenna calculators on the web which you can use to figure out how much wire you need.

You can skip the PL-259 connector and use a simple banana plug for the rig's antenna jack and a push-on "F" terminal for the rig's ground terminal. You don't need a separate feedline as it is part of the antenna. You can carry add-on linked sections to resonate on lower frequencies.

There are a number of ways to support a dipole or inverted V antenna. A suitable tree limb can be used in some situations. To raise the dipole, you will need a throw line with weight attached. Fortunately, arborists have figured out how to do this, and their tools and gear are perfect for antenna work.

The throw weight is a small fabric or leather sack filled with lead shot. It is less likely to hurt you if it comes down on your head than a rock or piece of metal. Also important, it is more likely to drop freely through foliage than other weights. You can buy arborist equipment online and from the Home Depot.

You can buy the throw weight separately if you already have an appropriate line. A highly visible color is best so you can see where it went after launching. You can use this to pull up your antenna or use it to pull up another support line.

Arborist Throw Line and Launcher
with throw weight

I use an swinging underhand toss to loft my throw line over a branch and can reach limbs as far as 40 feet up. Sometimes it takes a few tries to get the right spot.

If you have limited dexterity, a “Big Shot” launcher may offer a viable solution. The launcher uses a slingshot type device to propel the weight in the direction you point the pole. The pole comes in two 4-foot sections to easily transport. Cost is about $150 without the trigger accessory which adds another $60.

Sometimes the limb you want to hang the antenna from is out of reach for an underhand toss of your arborist throw weight. Instead of purchasing an expensive dedicated launcher to tackle this problem, I take a simpler almost free approach.

My current POTA kit includes an 8-foot spinning rod and reel. The rod breaks down into a pair of 4-foot sections, so it fits easily in the car trunk. There are travel rods that break down into smaller sections if desired for even more portability.

The reel contains about a hundred yards of 20# monofilament line. You don't want really strong mono because you may have to break the line if it gets hung up in a tree. My guess is that many POTA operators already have a setup they can use.

2-Piece Spinning Rod
medium-duty, 8-feet long

To deploy this system, you will need a weight to cast over the desired tree limb. I use a half-inch bolt about 2 inches long with a nut attached. A better solution would be a 3 or 4-ounce "bank-type" lead sinker available on Amazon or at your local tackle shop. Get some spares as you will eventually need them.

Tie your mono line to the sinker. You can use a snap swivel if desired. Cast the weight over the desired branch. It should drop through the foliage. If not, try again.

Then, remove the sinker and attach your regular throw line to the mono. When you reel it in, you will replace the mono with the heavier line used to raise your antenna. Do not attempt to raise your antenna with the light-duty mono line.

Another popular wire antenna design that works well for POTA is end-fed. This can be either random-length (non-resonant) usually fed by a 9:1 transformer or a resonant half-wave fed with a 49:1 to 64:1 transformer. Sometimes these transformers are called an “unun” and sometimes they are an “auto-transformer.” In both, it is typically a wire-wound toroid, often in an enclosure, attached to a length of wire used as the radiator. Sometimes a ground and/or counterpoise is added.

The random-length version usually requires an antenna tuner and the one in your rig might work, but sometimes an external tuner with expanded range will be needed.

The resonant half-wave version usually does not require a tuner unless you try to operate at the opposite end of the band for which it was designed, on CW or FT8 for example.

MyAntennas End Fed Half Wave Antenna
resonant on 40/20/15/10m without tuner

You can wind your own transformer or use a kit, but many POTA operators choose to buy it with or without a radiator. Search the web for “end-fed antenna” and you’ll find sources such as Balun Designs, Chameleon, MyAntenna, and Nelson. Portable models often skip the enclosure and use shrink-wrap.

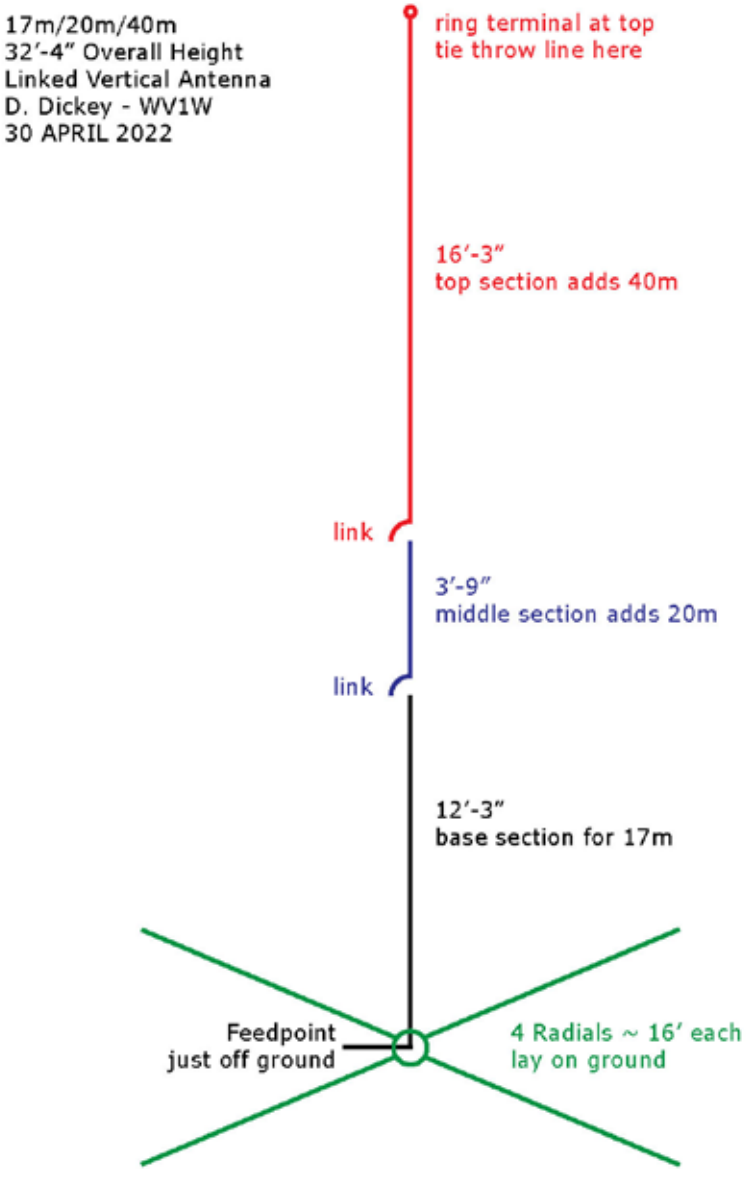
Other popular POTA antennas are verticals. This can be a self-supporting antenna made out of aluminum tubing or a wire antenna supported by a mast or suitable tree if available. Both work quite well when a good counterpoise system is added.

One of my favorite portable antennas is a full size quarter-wave linked vertical. When I designed it I had never seen one like it before either home-made or commercial. It simply takes the concept of a linked dipole, turns it 90 degrees, and uses a set of radial wires at the base for the counterpoise system.

I created two designs, one for 17m/20m/40m SSB and another for 20m/30m/40m CW & digital modes. The links can be like those shown previously for a linked dipole. The base is terminated with a banana plug to fit any standard female UHF connector. The top has a ring terminal where I tie a nylon line to hoist it from a tree limb. It's much quicker and easier to lower for band changes that a linked dipole, and radiation is omnidirectional at a low angle for good DX. Dimensions are similar to a dipole and can be found on the next page.

Tri-Band Linked Vertical

Linked Vertical Antenna Drawing



This is a high-performance low-cost antenna. Band changes are quick and easy. There's also a 20m/30m/40m design available from the Links web page for CW and digital operators.

I also made a self-supporting vertical antenna using a bunch of swaged aluminum tent poles. It offers good performance when there aren't any trees to support one of my wire antennas. It can be ground mounted via a pipe driven into the earth, attached to a heavy duty camera tripod, or clamped to a picnic table. Examples follow on the next page.

Mine has 3/8-24 threads at the bottom, which is a standard for many ham and CB antennas and mounts. A pair of counterpoise wires complete the design.

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

The perfect metal vertical for POTA would have a coil to resonate the antenna on 40m but also resonate on 20m as a full size quarter wave without the inductance of the coil.

A jumper bypassing the coil is used to switch bands in seconds. I used right-angled push-on terminals for my jumper. I suggest using a bright colored wire so it's easy to see if you set it down on the ground to help prevent the jumper getting lost.

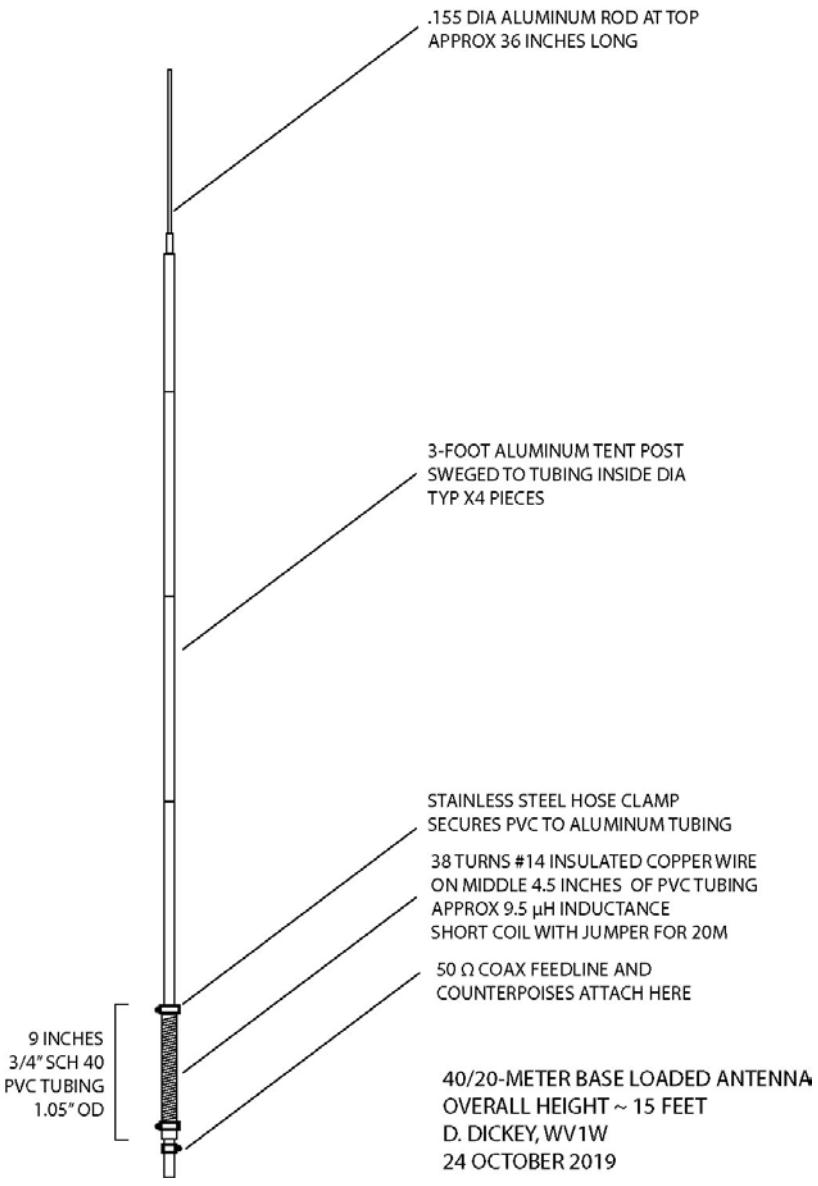
40m Loading Coil
with easily removable jumper for 20m

The top tent pole section has a through cut that can be squeezed together with a small 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

If you aren't an antenna builder, check out the "Sporty Forty" from Wolf River Coils to use with their 213-inch telescoping whip. Tune the antenna by collapsing a whip section. You can bypass the coil with a jumper for a quick band change to 20m.

Vertical Antenna Drawing



TIP: Don't buy anodized aluminum tent poles from Amazon or REI and expect them to work well as an antenna because they will not have electrical continuity end-to-end.

Vertical Antenna with Coil & Counterpoises

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

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

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

One downside of hamsticks is their relatively limited bandwidth. This is a function of all shortened antenna designs

which present a high “Q factor.” I prefer resonant antennas because I can usually leave the tuner in the car. Nevertheless, the tuner can come in handy for widening the usable bandwidth of a high-Q antenna like a hamstick.

A counterpoise is an important part of most vertical antenna systems, J-poles excepted. Radials used as the counterpoise system are discussed later in this book.

Elevated antennas usually require more radials and, more importantly, they should be tuned to the frequencies you plan to operate on, usually a quarter wavelength. This is why I don’t use a magnet mount on the roof of my car. It may work on the upper bands, but a 40m hamstick can be problematic so I prefer a low mount with a few radials laying on the ground.

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

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

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

My third trick is to make single-band hamsticks work on two bands! I got a 20m hamstick to work nicely on 17m by using my 19” 2m quarter-wave antenna (with 3/8-24 threads) on top instead of the regular 4-foot stinger. Similarly, I got a 15m hamstick to resonate on 17m by using a piece of coat hanger wire to lengthen the stinger.

If you aren't handy or don't enjoy building antennas, there are several good commercial models to choose from. I'd start by looking at the *Take It Along* kits by Wolf River Coils.

Wolf River Silver Bullet 1000 coil with military whip

Similar kits are available from Super Antenna and Buddipole.

Deluxe Super Antenna Kit

Deluxe Buddistick Kit

These kits include everything you need except the feedline:

- loading coil
- telescopic element
- tripod and/or clamp mount
- counterpoise wire
- carry bag

Yaesu offers a particularly interesting portable antenna system in their ATAS-25. I'm guessing it was originally designed to be used with their FT-817 / FT-818 QRP transceivers. Being so small (~ 7 feet tall), it might be a poor choice for QRP where antenna efficiency is paramount, but it could be a useful piece of kit for a POTA setup running QRO at 50 to 100 watts. The ATAS-25 covers 10m through 40m plus 2m and 70cm.

Yaesu ATAS-25
Portable Antenna Kit

What makes this antenna completely unique is how it was designed to be mounted on a standard camera tripod or any mount with 1/4-20 threads. Like other manual screwdriver designs, it has a movable coil for tuning it to resonance. This operation can be very tricky and time-consuming, so I would strongly recommend using an analyzer to speed up the process.

Yaesu ATAS-25 Deployed

I prefer resonant antennas because I can usually leave the tuner in the car. Nevertheless, sometimes the antenna which worked perfectly in my yard refuses to present a low SWR in the field. That's why I don't leave the tuner home. Every once in a while, for reasons out of my control, even a normally resonant antenna wants help from a tuner. It's best to be prepared.

There are some POTA operators who use non-resonant antennas and simply rely on a tuner all the time. Chameleon's *Hybrid-Mini* and *MPAS* kit are examples of very good non-resonant antennas. This approach can indeed remove lots of frustration from the process. It's much easier to push a button and tune the antenna automatically than fuss with adjustable coils, telescopic whips, and linked dipole elements.

Non-resonant antennas are almost universally less efficient than resonant ones, but sometimes this is a small price to pay for the best use of your time and energy. This is one of the decisions you'll make, and the choice you make for one activation might change for another!

While I prefer to use my linked vertical wire because I think it works the best, I bring the tent pole vertical to give me an option when there's no way to hang a wire antenna. Similarly, I also carry a long wire (~ 62') and tuner for situations where the supporting tree is not near where I want to operate. This is essentially an end-fed antenna, and it works quite well on all HF bands with SWR adjustments as required via the tuner.

A good basic vertical antenna kit for POTA might include:

- Wolf River *Silver Bullet Mini* coil
- Chameleon *CHA MIL 2.0* whip (AT-271 equivalent)
- Super Antenna *UM2* or jaw clamp mount (next section)
- Wolf River or SuperAntenna tripod (next section)
- Pedestal or spike mount (next section)
- Radials: 3 x 18 feet long with alligator clip (2 sets)

The last category of vertical antennas I want to cover includes remote-tunable models. These typically employ a coil of some sort with a motor-driven wiper or contact. They are often referred to as “screwdriver” antennas. Once tuned to resonance, they can be fairly efficient, though this depends mostly on the ground or counterpoise system.

One such system is the Tarheel family of products. Their HP or high-power models can handle full legal power. Their smaller Baby Tarheel and Little Tarheel are more appropriate for POTA and can handle 200 watts on SSB and 50 watts on CW and digital modes. Using a standard 3/8-24 threaded mount, installation is similar to many other mobile antennas, except you must also run control wiring to operate the screwdriver.

Another remote-tuned antenna worth considering is Yaesu’s ATAS-120A. What makes this system unique is how it is automatically tuned by circuitry in several Yaesu transceivers including the highly recommended FT-891. This antenna 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.

Of course, every antenna has pluses and minuses. The big plus of remote-tunable antennas is their ease of use. You don’t have to climb up on the top of your RV to adjust a coil or change a resonator. However, there are basically two serious downsides.

The first negative is cost. Without doubt, these are the most expensive mobile antennas you’ll find. Yaesu’s ATAS-120A is close to $400, and Tarheels start at close to $500. These prices don’t include the extra-sturdy mount they also require.

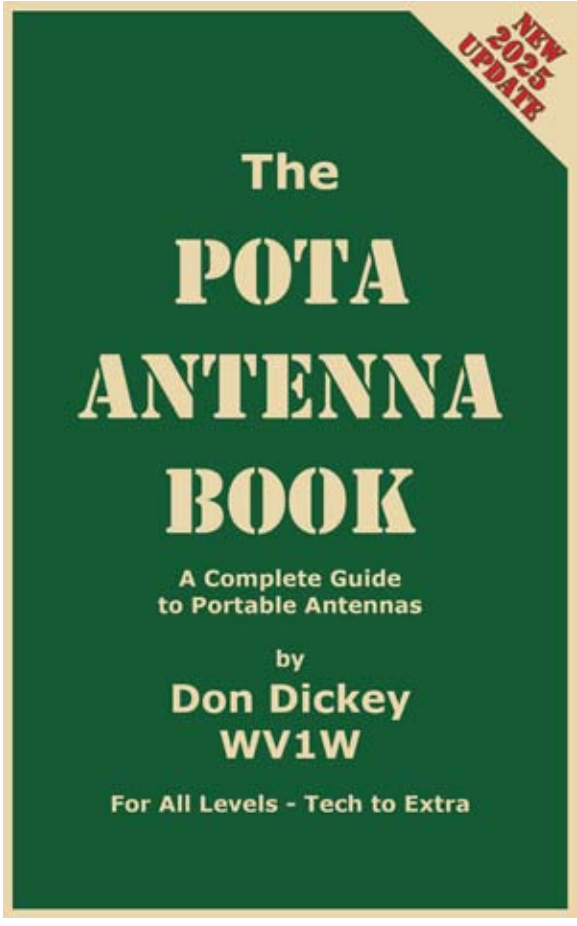
The second negative is durability and reliability. There is simply more that can go wrong inside these antennas, and they are more likely to fail, especially during foul or cold weather.

I encourage you to give yourself options, so when you arrive at a new park you will always have a good solution to the issues at hand. At one park there were lots of tall trees but too many branches and foliage for hanging my inverted V or long wire. The self-supporting vertical saved the day and also gave me the option to operate on 80m with a longer coil in my kit.

Vertical on Tripod with Counterpoise Wires

For Even More Antennas

Be sure to check out...



with lots more antenna stuff:

- More 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

Mounts

A CB-type mirror mount can be very useful. While obviously designed to clamp on a horizontal or vertical tube ("V" plate works both ways), using a standard "C" clamp you can also attach just the angle bracket to things like a sign post.

Stainless Steel Mirror Bracket with 3/8-24 Stud Mount

The mirror mount can be used for adding your hamstick to a balcony rail or fence. I use mine on the stern of our sailboat.

Ready for Maritime Mobile POTA
mirror mount on sailboat stern rail

A mirror mount attached to a piece of pipe or angle iron driven into the ground can get you on the air fast and within budget. Some operators use a 12-inch spike from the Home Depot or a 12.5-inch tent peg from the camping section at Walmart. I have such a setup for days when I feel like activating with as little effort as possible. You might want a mallet in your kit if you use a spike mount and encounter hard packed earth.

Note that this arrangement is not ideal in cold weather when the ground is frozen.

Spike Mount
with SO-239 connection and right angle adapter

TIP: If using a piece of pipe, put a large bolt in the top of it to take the brunt of being hammered into the ground.

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

Pedestal Mount
with SO-239 connection and right angle adapter

Pedestal Mount in Ground

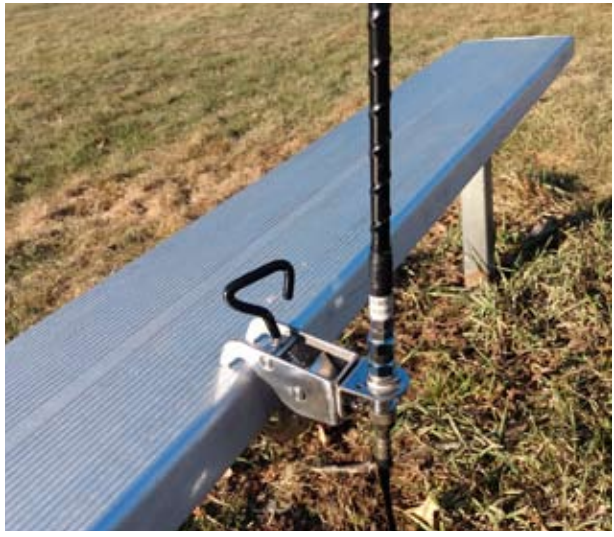
The Super Antenna UM2 is a clever gadget. It has tapped holes for both 1/4-20 and 3/8-16 tripod screws, a U-bolt for fastening to a pipe or railing, and it also comes with a large C-clamp which can fasten it to a picnic table or other fixed object.

Super Antenna UM2
universal mount for 3/8-24 antennas

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

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

Here are examples showing the versatile jaw clamp deployed with a hamstick. Radials can be attached to the mount using alligator clips if required. Sometimes the object clamped to provides a suitable counterpoise and radials aren't needed. "Even the blind squirrel finds a nut once in a while!"



Aluminum Bench

Guard Rail Cable

Tripods are very convenient. They work almost anywhere: on top of concrete, asphalt, wooden decks and also frozen ground.

Models from SuperAntenna and Wolf River Coils are perfect for hamsticks, Hustlers, and similar mobile antennas. They are lightweight, and legs are only about a foot long for good portability. Their 3/8-24 mounts include standard SO-213 coax connectors. The SuperAntenna hub also includes push-on tabs for fast and reliable radial connections.

Antenna Tripod Components

SuperAntenna Tripod
shown with 20m hamstick attached

TIP: For a 17-foot whip or other large antenna, you should consider a heavy-duty camera or field tripod instead. Wolf River Coils and SuperAntenna offer tripod antenna mounts.

Radials

No discussion of antennas would be complete without talking about a counterpoise or radial system. The typical vertical antenna will not function very well without one, J-poles excepted. In particular, all popular commercial POTA antennas like the Wolf River Coils TIA, Buddystick, and Super Antenna require a good counterpoise to work well and include some kind of counterpoise with their kits.

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

There is considerable discussion as to how long radials should be and how many need to be deployed. Here, views from knowledgeable sources vary widely. HyGain recommends a minimum of four 33-foot radials for their simple AV-18VS vertical antenna. Wolf River Coils includes three 33-foot radials with their antenna kits.

Many operators think that several times that number is required for good communications. My experience tells a somewhat different story. Most of the time, I've deployed just three or four 18-foot long wires laying directly on the ground for a counterpoise. When needed to lower my SWR at some parks, I actually prefer six 18-foot radials to three 33-footers. Over 60,000 documented QSOs and several dozen "Kilo" awards prove my system works well enough indeed.

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

Also, more radials might be desired at home, but for POTA (or EmComm) expediency is often more important than efficiency.

WRC puts large ring terminals on their supplied radials which go between their tripod legs and the mount. There are several problems with this arrangement. First, you must remember to attach the radials before you set up the antenna. Second, ring terminals have a limited lifespan, eventually break off, and will need to be replaced. Lastly, all their radials are black. They can disappear in low light situations and are a mess to untangle.

REZ and Chelegance have a quicker and easier attachment method using banana plugs, but their radials only work with their mounts and, again, their wires are all the same color. At least Chelegance picked a brighter color than black!

My crazy simple system attempts to solve all of the above issues. I attach radials using a copper alligator clip. This is actually faster than banana plugs because it can attach more than one at a time. Alligator clips work with ALL mounts, not just one brand. And, by using different color wires, they're much easier to untangle, even when the Sun is going down.

Sometimes I clip radials to the mount, but I also can clip them to the outside of a plug or coax connector. With my linked vertical plugged directly into the FT-891's antenna jack, radials can even attach to the outside of the same SO-239.

Radials Clipped Onto Mount

I've even found a way to get radials literally for free!

Radial Adapter

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

Radial Kit
adapter, triple tap, and extension cords

Radial Kit Deployed
with hamstick antenna and tripod mount

Deployment:
- Set up antenna on tripod, post, clamp, etc.
- Connect coax from antenna to transceiver.
- Clip radial adapter to antenna mount or outside of coax.
- Plug in a regular UNMODIFIED extension cord.
- If you want a long radial, chain cords together.
- If you need more radials, use a cube tap.
- Then, plug in 3 UNMODIFIED extension cords.
- Stretch out extension cords on the ground.
- For 40m/80m use long cords (on a reel) for best results.
- Check SWR, adjust antenna and radials as required.

Portable Masts

There is another solution to not having a perfect tree for hanging your antenna: bring your own! Many POTA operators carry a portable mast to support their antenna. If sturdy enough, it can be used to hang a resonant dipole. To save weight, a thin flexible mast can support a simple resonant quarter-wave wire or an end-fed antenna element.

There are several sources for antenna masts. Some are designed just for this purpose. Examples include the 32-foot Travel Mast from SOTAbeams. It is made of telescoping fiberglass sections and under 27 inches long when collapsed.

SOTAbeam Travel Mast

Another option is a windsock pole. Jackite's 31-foot Thick Tip Fiberglass Windsock Pole is available for around $80.

Jackite Windsock Pole

TNØ7 Engineering's 31.5-foot long Lightweight Portable Antenna Mast is relatively new to the market arriving in 2023. It weights just over 4 pounds and collapses to 45 inches, so it is a bit longer but appears to be much more rigid than some of the light-weight models from other companies. The outside diameter is 2.06 inches at widest point.

TNØ7 Engineering Portable Antenna Mast

While commercial telescoping masts are nicely compact for transport and up to 32 feet long when deployed, they can be expensive and exceed the budget of some POTA activators.

Fortunately, there is a solution you could try: a home-brew antenna support made with off-the-shelf schedule 40 plastic pipe from your local Home Depot or plumbing supply shop.

Nom. Pipe Size (in)	O.D.	Average I.D.
1	1.315	1.029
1-1/4	1.660	1.360
1-1/2	1.900	1.590
2	2.375	2.047
3/4	1.050	0.804

Schedule 40 Plastic Pipe Dimensions

You can see in the table above that some sizes will just fit inside the next larger size. Those two sizes could be used to construct a 19-foot mast with a foot of overlap inside. Combining a 1-inch pipe with a 1.25-inch pipe you could have a 20m quarter-wave mast for about $20 at current prices.

While you could use an aluminum or steel telescoping painter's pole to support the feedpoint of a dipole, the metal would de-tune a vertical wire antenna running up the pole. Plastic or fiberglass are better solutions because they are non-conductive and gives you the option of using a simple straight or even helically wrapped wire antenna fed at the bottom.

To support a portable mast I use what is called a sand spike for a surf fishing rod. Push the sharp angled end into the ground about six inches. Then, use a set of three guy lines out to tent stakes to steady it. The portable mast simply drops into the flared opening on the top of the tube instead of a fishing rod. You could make a similar spike with a piece of PVC pipe. I used stainless wire lines from my parts bin, but highly visible yellow or orange heavy-duty paracord guys would be ideal.

Sand Spike Portable Mast Holder
shown with tent stakes and stainless steel anchor lines

Snap Links at Top of Spike
secured with hose clamp

3 Guy Lines
attached to tent stakes

There are several other ways to support a mast: secure it to something else like a heavy-duty tripod or speaker stand, or use a drive-on pedestal mount (available from SOTAbeams).

Drive-on Car Stand
from SOTABeam

Trailer Hitch Mount
from Max-Gain Systems

Speaker Tripod Stand
from Sweetwater

Cables & Connectors

Most POTA antennas will require some kind of feedline, with the speaker wire dipole being one notable exception since the feedline is part of the antenna.

Unlike your shack at home, in a park the rig will usually be relatively close to the antenna. My POTA kit includes one coax 18 feet long and another 24 feet long. A pair of 25-footers with connectors would be a reasonable alternative and easier to find.

Because you won't be running a lot of power, 100 watts maximum, and the lengths are relatively short, 50 feet or less, you don't need full-size RG-8 or LMR-400. Indeed, RG-8X, sometimes known as mini-coax, might even be over-kill. Most of my cables are RG-58, and at HF frequencies the loss for 50 feet is under 1 dB.

I also carry a double-female barrel connector so I can join two sections of coax together. If possible, get one that's knurled in the middle for a good grip when disconnecting the cables.

25-Foot RG-58 Coax Assembly
with knurled barrel connector to join sections

SOTAbeams uses RG-174 coax on their lightweight Band Hopper linked dipole antenna. While this is very light and works fine, I prefer the added durability of heavier RG-58. It is also easier to put standard connectors on RG-58.

It may be easier to find ready-made RG-58 cables with BNC connectors installed because these types have also been used for computer network wiring. It's OK to use most RG-58 network cables for HF communications at 100 watts, but you will probably need a BNC-to-PL-259 adapter at the radio end and a BNC-to-BNC barrel connector to join sections if desired.

BNC to PL-259 Adapter

BNC Barrel Connector

When I make homebrew antennas, I sometimes use a standard RCA phono jack at the feedpoint. At POTA power levels and frequencies, this is adequate and they are easy to work with.

RCA Feedpoint with Tabs for Counterpoise Wires

Useful Accessories

There are several useful accessories to consider when preparing your kit for POTA activations. A wide-range external antenna tuner immediately comes to mind. If your transceiver has an internal tuner, it most likely has a limited range, typically handling an SWR of up to 3:1. Portable antennas, particularly non-resonant ones, can often present a more significant mismatch, and an external tuner can often make such a situation tenable.

Furthermore, internal tuners only work with coax-fed antennas. You may want to deploy a long wire, and many external tuners can handle this because they have a built-in balun or unun.

I carry a Dentron Jr. Monitor (no longer manufactured, but often available used) which has connections for coax, random wire, and parallel feedline.

Dentron Jr. Monitor

Similar recently discontinued MFJ tuners like the one shown below may also be available on the used market.

MFJ Travel Tuner

Most modern rigs have a built-in SWR meter. If yours does, you can use that to tune the antenna. If not, you should choose a tuner that includes an SWR display.

Many operators prefer an automatic tuner or "coupler" to a manual model. Instead of fiddling with multiple knobs and adjustments, a single click on a button is all it takes!

There are really two kinds of auto-tuners. One is designed specifically to tune a random wire or element. This type would include Icom's AH-4 and Yaesu's FC-40. These tuners are installed right at the antenna element (wire or whip), not at the radio. They typically require a decent ground to work best.

Icom AH-4 Remote Antenna Tuner
controlled by circuitry in specific Icom radios

The other type of automatic tuner usually goes right next to your rig, connected with a short coaxial jumper, and is used to tune a coax-fed antenna. Because it tunes the coax and not the antenna, there can be considerable loss as some of the transmitted energy never reaches the antenna.

Because the Yaesu FT-891 is my POTA rig of choice, it seemed to make sense to get their matching FC-50 tuner for it.

Yaesu FC-50 Antenna Tuner
made specifically for the FT-891

Benefits of this choice include its control being well integrated with the rig. You can easily assign one of the "soft keys" on the front panel to turn the tuner on and off. Note that the tuner has to be attached before the rig is powered ON for it to be recognized. If you happen to attach it with the rig ON, no problem. Just power-cycle the FT-891 and all is well.

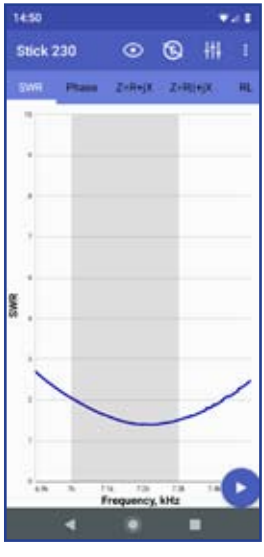
Yaesu FT-891 with FC-50
tuner fits conveniently under radio

Another very useful tool, especially if you are trying to make an antenna resonant without a tuner, is an antenna analyzer. This tool can show you the resonant frequency of your antenna. If it is too high, your antenna is too short, and if too low, your antenna needs to be trimmed.

An analyzer also makes it much easier to adjust the coil on a system like the Wolf River TIA or Buddystick. The time saved will make your experience a lot more productive and fun.

I chose the Stick-230 from RigExperts. There were several reasons I liked this model: it has a very long lasting battery and is extremely compact (fits in your hand). The small paper-white display can be supplemented by viewing high resolution plots on your smartphone via bluetooth (see example below) or on a PC via USB. The rechargeable battery is a standard 18650 lithium-ion type that is user-replacable.

An antenna analyzer makes checking and adjusting an antenna much easier and faster. This translates directly into more fun.



RigExpert Stick-230
with sample plot of 40m antenna on a smartphone

Logging for POTA

I started logging POTA operations on paper. This had the advantage of being simple, easy to see in bright sunlight, and a continuation of practices I had followed since being licensed in 1975. A big downside of the paper log was the time and effort required when I got home to type all the data into my computer and create an ADI log file to submit for credit.

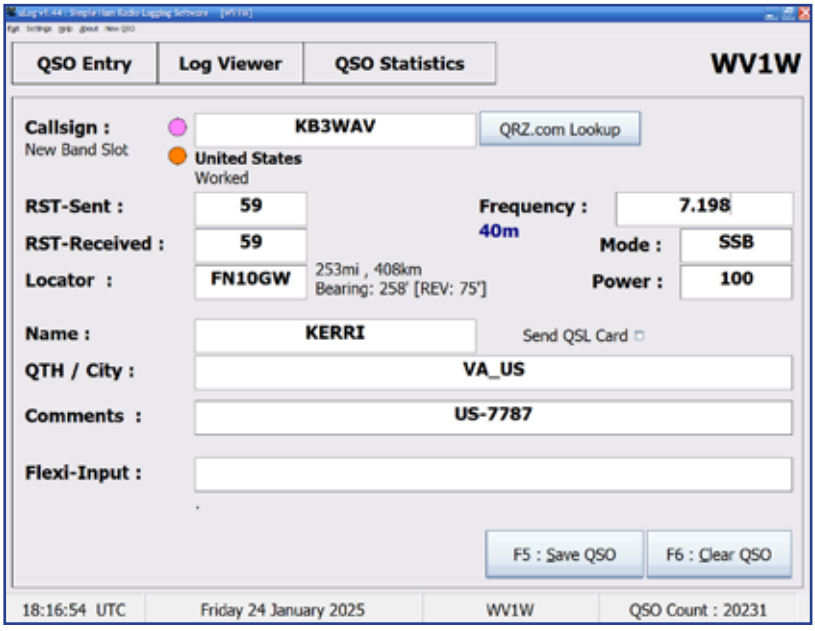
I'm not a paper chaser. I've probably worked all 50 states multiple times but never made the effort to get a WAS certificate. I've never been a contester either. The driving reason to submit POTA logs is for the hunters. They count on activators for credit. Consider it your duty to submit logs.

What you use for logging might be dictated by the computer hardware you already have, be it a Windows or Mac laptop or an iPad or Android tablet. In any event, you will certainly want a keyboard of some type instead of relying on an on-screen virtual keyboard. For an iPad, check out Bluetooth keyboards.

I had only one requirement that might not be inherently obvious. When I enter a call sign I want to immediately know if I had previous QSOs with the operator and see their name and QTH. I wanted the utmost in simplicity and settled on uLog by M0PZT (free). I just type the call sign and press Enter. If I have previously contacted the operator, their name and QTH are automatically filled in for this QSO. Pressing F5 records the contact. It doesn't get much simpler than that.

This lets me respond to their call with something like, "Hey John, how are things in Kansas today?"

Before I activate, I change the "My Locator" setting to the park designator I was at, like 5678. If the contact is park-to-park, I note the other operator's park designator in the Comments field, like US-1234. You will see the reason for this shortly.



uLog QSO Entry Screen

To make the log ready to submit a few simple changes are required. I use another (free) application called ADIF Master from DX Shell to simply change the My Location column (with my park number) to MY_SIG_INFO and the Comments column (with any Park-to-Park numbers) to SIG_INFO. If you didn't have any P2P contacts you can delete this column.

I also delete the other columns that aren't needed. The only required fields are: DATE, TIME, BAND, MODE, and CALL plus MY_SIG_INFO and SIG_INFO if you have any park-to-park contacts. It's also a good idea to include the OPERATOR column containing your call sign. Removing unnecessary columns makes the ADIF file as small as possible and ready for the POTA system to process.

Here are the steps to follow:
1. Open uLog. In Settings, change My Locator to your park designator and click Save Settings.

2. In every contact with another park be sure to type their park number in the Comments field. You can edit each park-to-park contact to add their park number in Comments if you didn't do it during the QSO. This is only necessary to get credit for park-to-park contacts.

3. Set the Log Viewer window so you can see all the POTA contacts from your recent activation. You might need to change Filter Log from the default of Last 25 QSOs to Last 50 or ALL if you had more than 25 contacts during the activation.

4. Highlight the POTA contacts from your recent activation by clicking on the last one then hold down the shift key and click on the first one.

5. Right-click on the highlighted contacts and choose Import/Export from the pop-up and then Export Selected QSOs to ADIF. It will save the ADI file in the same folder as your log, usually in the uLog folder at the root of your hard drive: C:uLog

6. Use ADIF Master to OPEN the ADIF file for editing. You can remove all unused columns by right-clicking in the column and choose Delete Column. Click the column heading to change the name for MY_GRIDSQUARE to MY_SIG_INFO and COMMENT to SIG_INFO.

When you get done editing, the only columns you need to submit are:
QSO_DATE, TIME_ON, BAND, MODE, CALL, MY_SIG_INFO, plus SIG_INFO if you have any park-to-park QSOs. Put your call sign in a column labeled OPERATOR (recommended).

7. Save the ADIF file (with your call, park designator, and activation date in the filename).

8. Upload to the POTA system (covered in the next section).

File Edit Search View Tools Settings Help

Line	QSO_DATE	TIME_ON	CALL	BAND	MODE	OPERATOR	MY_SIG_INFO	SIG_INFO
1	20250118	2005	KO6EEY	10m	SSB	WV1W	US-9896	
2	20250118	2004	KF0HZN	10m	SSB	WV1W	US-9896	
3	20250118	2004	KJ5IXL	10m	SSB	WV1W	US-9896	
4	20250118	2003	W1SDS	10m	SSB	WV1W	US-9896	
5	20250118	2001	W2KF	10m	SSB	WV1W	US-9896	
6	20250118	1954	N5WQ	10m	SSB	WV1W	US-9896	
7	20250118	1953	AJ6V	10m	SSB	WV1W	US-9896	
8	20250118	1948	K7LWL	10m	SSB	WV1W	US-9896	US-4566
9	20250118	1936	AK7LV	12m	SSB	WV1W	US-9896	US-7494
10	20250118	1936	N4RHM	12m	SSB	WV1W	US-9896	
11	20250118	1935	WB8VNH	12m	SSB	WV1W	US-9896	
12	20250118	1934	K0BHB	12m	SSB	WV1W	US-9896	
13	20250118	1933	W6PNQ	12m	SSB	WV1W	US-9896	
14	20250118	1930	AJ7BR	12m	SSB	WV1W	US-9896	
15	20250118	1929	KO4ZOG	12m	SSB	WV1W	US-9896	

ADIF Master Screen

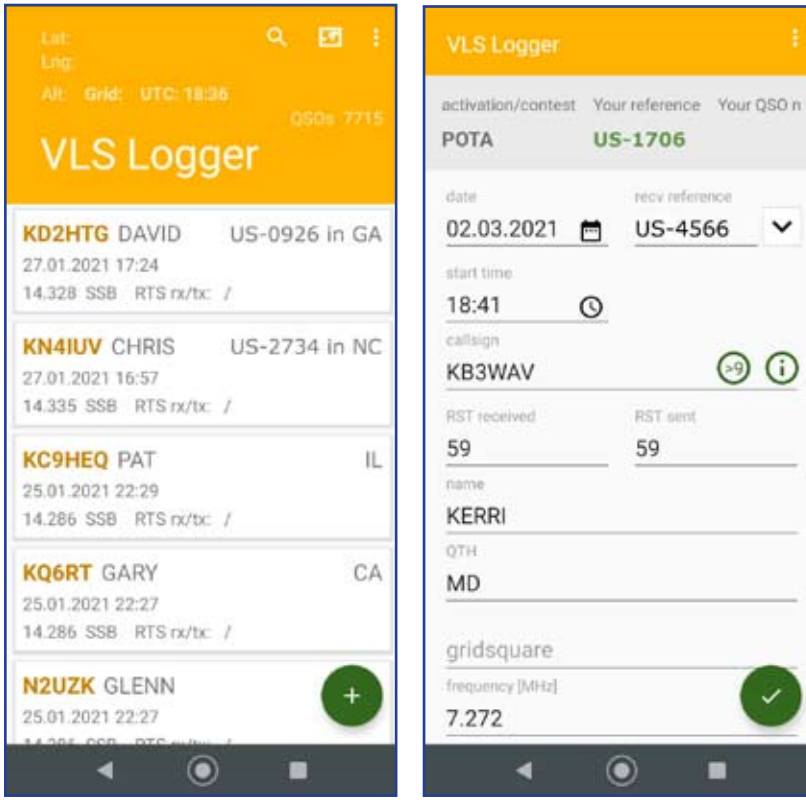
uLog shares the same data format as PZTLog, another excellent (free) logging application by M0PZT. They work the same way, but PZTLog works best with a larger screen.

I use uLog on a netbook when activated, and I use PZTLog in the shack on a desktop PC. It is easy to point both programs to share the same “Log.mdb” database file. Just don’t run both programs at the same time!

One issue of note with both uLog and PZTLog is how they handle the difference between local time and UTC. The “UTC Offset” is entered manually in the settings, so you have to remember to change it twice a year if you live in a state or territory that observes Daylight Savings Time. TIP: Put a reminder in your calendar app so you don’t forget to change it!

If you don’t want to learn another program, you can even use Microsoft Excel for logging. Just use ADIF Master to convert an Excel CSV into an ADIF file for submission.

If you don't have a laptop you can log on a smartphone. I use the free app VLS Logger on my Android phone and tablet.



VLS Logger Log and QSO Entry Screens

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. My solution is to log on an inexpensive Lenovo Android tablet, and the screen is easier to see in bright sunlight than my laptop.

One caveat of computer logging is the data connection required for some of the apps to work correctly. If the app needs to access an online database and you don't have a connection, not only will spotting yourself be a problem, but logging will be impacted as well.

For example, your log might not populate the other fields like name or QTH. POTA doesn't require this data, so it might not matter. But, if these fields are as important to you as they are to me, this might impact your decision on which app to use for logging in the field when doing POTA.

The apps I use and are recommended in this section all use a local file instead of a remote database, so they work independently of a data connection. I copy the database file from my desktop PC to a USB thumb drive, and then I copy the file from the thumb drive to the netbook I take with me to the park. This way I have an up-to-date copy of my log including the most recent contacts. I reverse the transfer process when I get home.

It is considered good practice for the name of the ADI log file you submit to include the activator's call sign, park number and activation date. Examples:

WV1W_US-1724_20240520.ADI

WV1W US-1724 20MAY2024.ADI

WV1W US-1724 20240520.ADI

The POTA system uses the park number in the MY_SIG_INFO field for determining where you activated. This is a change from past years when the park in the file name was used.

Unless your logging program automatically checks for "dupes" you should do this manually BEFORE submitting your log!

Open your log in ADIF Master. Click on the top of the CALL column and choose “Sort This Column.” This should make it easy to spot duplicate QSOs. I do this before I delete the NAME and QTH columns for submission. This way, dupes are even easier to find.

So, what constitutes a dupe? Contact with the same operator at the same QTH on the same band using the same mode on the same UTC date is considered a dupe for POTA logs.

• If two contacts are on different bands they are **not** dupes. If two contacts are on different frequencies but on the same band they **are** dupes if nothing else changed.

• If one contact is CW and the other is SSB they are **not** dupes. If one contact is SSB and the other is AM they’re both “phone” and **are** dupes if nothing else changed.

• If one contact is SSB and the other is FT8 they are **not** dupes. If one contact is FT8 and the other is FT4 they’re both digital and **are** dupes if nothing else changed.

• If the contacts are P2P (park-to-park) and the operator changes parks, they are **not** dupes. Note the different park numbers in the SIG_INFO column to prevent a rejection.

• If you contact an operator at home and later in a park (P2P) they are **not** dupes as long as you enter SIG_INFO correctly.

• If one contact is before 0000 UTC and the second is after they are **not** dupes because they are on different UTC days.

If you find a dupe, it is easy to remove right in ADIF Master. Right-click on the duplicate entry and choose Delete Row from the pop-up menu. Re-save the ADI file before submitting.

Update: The current POTA system will automatically purge dupes if you haven’t removed them.

If you operate during the transition from one day to the next at 2400Z you do not need to start a separate log. The system handles multiple activation days as long you were in the same park. Whenever you change parks a new log will be required.

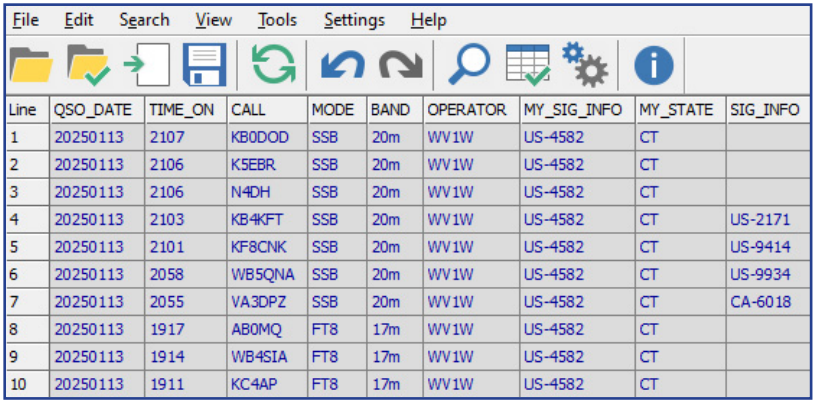
Linear parks are rivers and trails. Logging requires special attention to detail if the park crosses a state line.

A few examples include:

- US-4556 Appalachian National Scenic Trail
- US-4561 New England National Scenic Trail
- US-4582 Washington-Rochambeau National Historic Trail

So how do you log contacts in a park that crosses state lines?

A) Make sure your log includes the MY_STATE field (column) with the 2-letter abbreviation for the state you were in. You can add this with ADIF Master if your logging program didn't already include it.


File Edit Search View Tools Settings Help

Line	QSO_DATE	TIME_ON	CALL	MODE	BAND	OPERATOR	MY_SIG_INFO	MY_STATE	SIG_INFO
1	20250113	2107	KB0DOD	SSB	20m	WV1W	US-4582	CT	
2	20250113	2106	K5EBR	SSB	20m	WV1W	US-4582	CT	
3	20250113	2106	N4DH	SSB	20m	WV1W	US-4582	CT	
4	20250113	2103	KB4KFT	SSB	20m	WV1W	US-4582	CT	US-2171
5	20250113	2101	KF8CNK	SSB	20m	WV1W	US-4582	CT	US-9414
6	20250113	2058	WB5QNA	SSB	20m	WV1W	US-4582	CT	US-9934
7	20250113	2055	VA3DPZ	SSB	20m	WV1W	US-4582	CT	CA-6018
8	20250113	1917	AB0MQ	FT8	17m	WV1W	US-4582	CT	
9	20250113	1914	WB4SIA	FT8	17m	WV1W	US-4582	CT	
10	20250113	1911	KC4AP	FT8	17m	WV1W	US-4582	CT	

ADIF Master With MY_STATE Column

B) Add the state's 2-letter abbreviation to the ADIF filename before submitting. Example: WV1W_US-4582_CT_20250113

Update: The current POTA system will prompt you for the state if you haven't added the MY_STATE field.

Log Uploads

Previously, you were instructed to email logs to your Regional Coordinator based on the number in your call sign. This is no longer the correct procedure. Now, you are instructed to upload POTA logs yourself. It's simple provided you take care to provide good ADIF files and name them correctly.

1. Sign into POTA.APP on the web.

2. From your drop-down menu (top right corner) choose My Log Uploads.

3. If your screen resolution is high enough there will be a box that says, "Click here or drag and drop to upload ADIF logs from your activation"

TIP: If you get a message that your screen doesn't have enough resolution, try turning your device from portrait to landscape mode. This might solve the problem as it has for me when using a 10-inch Android tablet.

4. The system will pre-process your log based on the file name. The filename must be in the format already discussed.

5. Verify that the info (date, call sign, park number, and location) has been parsed correctly! Click the X to wipe out this file and start over.

6. There will be 2 boxes below that need to be checked before uploading where you confirm that you've followed the specifications and rules.

7. Click UPLOAD FILE FOR VERIFICATION. The log will be processed and the screen will refresh.

Note that while the log will appear in your activations, it may take some time for it to appear in your stats.

Before You POTA

In keeping with my theme of "success breeds enjoyment" it is very important to avoid simple mistakes that will detract from your fun at the park. The best way to do this: get organized.

Start by making a packing list, to include everything in your kit: rig, microphone/key, power cable, battery, antenna, and feedline. Don't forget your log, a water bottle, and I also pack a POTA sign so visitors know what I'm doing. See the sample POTA checklist in the reference section at the end of this book.

Next, assemble everything on your packing list. If something looks like it needs attention, like a weak crimp on a cable, fix it before you pack it! Leave as little to chance as possible.

Pack your kit in something that makes it easy to transport and deploy. I pack my radio in a padded nylon lunch tote bag I bought at a local supermarket. This protects the radio from scratches, and my bag has a separate zippered compartment for the antenna tuner with cables and hand microphone.

Lunch Bag with Radio, Tuner, and Mic

My inverted V is packed in a separate hard plastic tote with support rope and throw weight, ropes for the ends, a pair of tent pegs, and the feedline with BNC to PL-259 adapter already installed. I also carry a coax extension in case it's needed.

Everything else goes into a heavy-duty nylon backpack: spare feedline, miscellaneous adapters, analyzer, water bottle, etc.

Finally, have a test run in your backyard or nearby park. This way you can mitigate any major problems before you head off to your first activation. Practice makes perfect!

Complete Station Packed in a Briefcase
rig, tuner, battery, mic, and antenna

Your First POTA

Before you leave home, you can schedule your activation on the POTA website. This is optional but highly recommended for CW activations due to RBN integration. It also tells hunters how many parks will be activated that day and help them decide to tune in or pursue a non-ham activity instead.

Before I leave home, I also write down the park reference number for the park(s) I plan to visit. You will need this to get spotted, whether you do it yourself or ask someone else do it.

The last thing I do before leaving home is make sure the log on my portable computer is up to date with all recent contacts.

When I arrive at a park, particularly if it is a new one to me, I survey the situation and decide what antenna to use. If I can operate near an appropriate tree, I'll set up a linked dipole or end-fed wire. If there aren't any desirable trees, I'll deploy the vertical along with some wire radials.

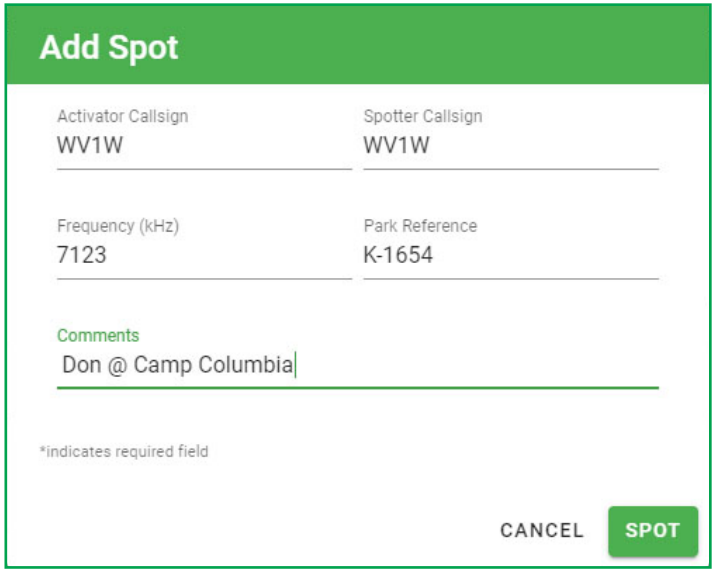
Setting Up at a Park

If it's a nice day, I'll set up to operate at a picnic table, on top of a large rock, or sometimes on the hood of the car. If it's not so nice, I'll set up to operate from inside the car.

Once I'm set up, I'll choose a band to start on. I use my phone to check the currently active POTA spots at www.pota.us looking for park-to-park opportunities. If I can't hear any, I'll look for a clear frequency in the general class portion of the chosen band. You don't want to exclude anyone by operating on the advanced or extra class frequencies.

Be sure to call, "Is this frequency in use" a couple of times. This is always good practice. Sometimes you will find that you can't hear a nearby station on the frequency, but a far away station can hear you both and advise you to move. Be sure to check your SWR when you transmit and adjust if needed.

Once you've settled on a frequency, lock your tuning dial so you don't advertently move off. Then get your log ready, whether that's on paper or your computer.



Getting Spotted

Finally, get spotted by going to www.pota.us and clicking Add Spot. You will need the park reference number along with your frequency always entered in KHz (not MHz). Use your call sign for both Activator and Spotter.

After seeing yourself at the top of the spots, get ready for action! Take a sip of coffee or water because you might not get the chance for a while if there's a pileup.

Start by calling "CQ, CQ, CQ for Parks on the Air. This is WXYZ at US-1234 calling CQ and listening." If you don't get a reply right away, wait about 15 seconds and try again. Repeat until someone shows up to the party. This will often result in a pileup which can test your skills at sorting things out. I sometimes start with, "Any park-to-park, mobile, or QRP stations out there?" to give those weaker signals priority.

Take Time to Enjoy the View
a body of water can help boost your signal

Ham Radio on the Rocks

Try not to get flustered, and realize that this will be a learning experience the first few activations. You don't want to be pulling the plug with a pileup clambering for contacts because you have another pressing engagement. To avoid this, try not to plan anything right after your activation, so you can stay as long as necessary to get as many folks in the log as possible.

Note that if you change bands, you can repeat contacts on the new band as separate from the first band.

You only need 10 QSOs for the activation to count. Sometimes, you'll be happy to get to 10. Other times you'll be amazed to get more than 100. The variability is what can make this so interesting. Weekends tend to be busier, but I also enjoy activating on weekdays since they are less stressful and there can be time to engage in real conversations instead of just an exchange of signal reports.

Some of the challenges you will hopefully experience will be your own huge pileups! POTA has become very popular, and pileups are common, especially on weekends. For this reason, it may be a good idea to start off activating on weekdays. You can then "graduate" to weekends once you get the hang of it.

There are several ways of dealing with a pileup. One would be to just let the stronger stations sort themselves out naturally. I do not advocate using this method unless the pileup is small.

A better way would be to separate hunters by calling in groups. If I get a pileup I first ask for any park-to-park contacts. After clearing the P2Ps, I ask for QRP (low power) and mobile stations. Lastly, I separate hunters by call district. You can start with 0 and work up or down; it doesn't matter too much. On the east coast some western districts will go really fast.

Another system experienced POTA operators use is to take lists. Announce that you are making a list and ask for stations to space themselves out when you call QRZ. Write down 3 to 6 call signs and then start calling them back, one at a time.

You can use any order you like, but make sure you call everyone on the list. After this cycle is done and you've logged all the stations in the first group, take another list. If it's really crazy you can do this by call districts. People listening will soon figure out what's going on and hopefully be patient and get on one of your lists. It does bring some order to the chaos.

I admit to having a special place in my heart for Canadians. My family's heritage is Canadian (Nova Scotia) but, more importantly, I remember how gracious our northern neighbors were on 9/11 in 2001 when flights to the U.S. were diverted primarily to Newfoundland and Nova Scotia. Residents there brought toiletries to the airport for the stranded passengers. Some even took people home for a shower and a hot meal.

It isn't unusual for me to start with "Any Canadians out there?" especially when I hear a VE in the pileup. If the bands are really hot with some DX coming in, you can also call for anyone outside the U.S.

Whatever method you use, be gracious and courteous. Remember, the goal is for everyone to have fun!

Another challenge will be taking a break when there's lots of activity. Plan ahead with coffee and/or water bottle at your operating position. You can also spot yourself with the note, "QRT for a short break. - will return at 1500 UTC." That way anyone who was waiting to get through knows that you'll be back and to continue checking the spotting page if they want to contact you.

Frequencies for POTA

First off, there are no particular frequencies designated for POTA, either officially or otherwise. There are, however, frequencies to be avoided!

Right off the bat, you should avoid band edges, especially on SSB where your modulated signal width would make you illegal at the band edge.

Phone operators should stay at least 3 KHz up from the bottom of the segment when using LSB (lower sideband) and similarly at least 3 KHz down from the top edge when using USB (upper sideband). That should be an SOP even when you're not doing POTA. It's the law!

CW operators should stay 500 Hz from band edges due to the carrier's bandwidth and dial inaccuracies. While CW is permitted in phone segments, most operators observe the ARRL band plan out of courtesy.

Secondly, you should avoid the frequency of another operator. It is especially easy to avoid another activator. Before picking a frequency, you'll probably already be looking at the POTA spotting page. Sort the data by Frequency. Then you can look for spots to avoid and good places to check for an opening.

Next, it just makes good sense to avoid the Advanced and Extra band segments. Sure, you can operate there if you hold the appropriate license class, but you will automatically exclude some of your potential audience by doing so. The only reason to use these segments might be during a contest weekend when the band is really busy and there's nowhere else to operate.

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

Suggested SSB POTA Frequencies

BAND	BOTTOM	TOP
80	3.5255	3.5995
40	7.0255	7.1245
30	10.1005	10.1495
20	14.0255	14.1495
17	18.0685	18.110
15	21.0255	21.1995
12	24.8905	24.930
10	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 shown for 10T are within 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.

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

Finally, you should avoid popular nets. In particular, avoid 14.300, the Maritime Service Net. 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.

If you are alerted by another operator that a net is about to start up, take the high road and QSY. It's much easier for you to re-spot somewhere else than for the net control to move the whole net to a non-standard frequency that late-comers may not find.

A tip from Rick, K3IW (formerly K3WPI) is that QRP ARCI has designated operating frequencies. Rick suggests, "That would make a combo of official QRP and POTA CW operating possibly more satisfying for both organizations." For info visit: www.qrparci.org/qrp-update/qrp-frequency

Lastly, contest weekends can be very challenging when trying to find an open spot for POTA. I often avoid activating during particularly busy contests focused on the modes I prefer. So, it makes a lot of sense to use CW during an SSB contest and vice versa, or try FT8 for a change.

One suggestion that might work is to operate on a band not included in the contest. Check the contest rules. Many don't include the WARC bands, so it might be a good time to try POTA on 17 meters or use CW on 30 meters.

Etiquette, Safety & Wellness

When you arrive at a park and survey the layout, pick a spot for your setup that will have a minimal impact on other park patrons. For example: avoid trailheads, fishing spots, swimming holes, and being right next to the latrine, water fountain, or other high-use facility.

Be careful about using trees for antenna supports. Many parks prohibit attaching anything to trees, and you don't want to have a confrontation with a ranger. If you do, be courteous!

Don't place wires or guy lines where other patrons might trip on them. It is a good idea to use highly visible lines or flags so patrons don't cross them by accident while you are busy concentrating on making a contact.

Many parks have limited hours i.e. sunrise to sunset which must be observed without advance permission to do otherwise. Some parks permit overnight camping, and this is a way to legally circumvent regular park hours. Pack and use a headset during evening quiet hours to avoid disturbing other campers.

Holiday weekends can present unique challenges to POTA. You might be better off activating on weekdays when parks are less busy. This also gives hunters more parks to contact during the week.

Expect curious visitors to wonder what you are doing. Take a break from operating to explain the hobby and how POTA helps keep us ready to communicate for the Red Cross during emergencies like floods and storms.

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

Sample POTA Sign

Etiquette should extend from the park to your on-the-air presence as well. 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 local operator. That operator might even be a member of local club who's repeater you frequent! 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 goes without saying that you should do the normal things like getting enough sleep, good nutrition, and exercise. There are a few other things directly related to POTA I'm going to cover here.

The first is hydration. I probably drink as much coffee as anyone. I love the stuff. The problem is simple: coffee is a diuretic. That means you loose more water than you gain from it. We call it "anti-water" in my family! So, for every cup of coffee you drink, try to consume an equal amount of water.

Next up are ticks. I live in Connecticut. Lyme Disease was discovered here, and we've been dealing with it longer than any other state. It's a nasty bug that causes nasty diseases. POTA will possibly expose you to more ticks than at home, so be extra careful, especially if you go into the woods. Check yourself when you get home. They're easier to spot on light colored clothing. They take a few hours to attach to the skin, so I shower shortly after I'm back from a park. Wear a hat.

A local ham got bitten by a tick that came home on his clothing. They can actually live for weeks in your hamper. Now, the first thing he does when he gets inside from mowing the lawn (or doing POTA) is throw the clothes into the washer. Next, the heat in the dryer should kill any living bugs.

If you operate in parks where tics are prevalent, consider treating your POTA clothes with Permethrin. This is sprayed on fabric and allowed to dry. Follow package instructions.

When I do POTA, I try to stay in the shade. While I'm usually more comfortable there, it's also the only way I can see the screen on my netbook for logging. Sometimes, I get more sun than I should, especially if I'm in a park at the beach. Skin cancer is a clear and present danger as we age. So, put a small bottle of sunblock in your POTA kit, and remember to use it if you're in the sun. Another good reason to wear a hat!

If you POTA a lot, you might even consider getting one of those pop-up canopies which will also be useful if it rains.

Don't do anything stupid, like POTA during a thunderstorm. Once I was setting up, and a woman asked if my antenna was some sort of lightning rod. I answered, "Only during a storm!" If a storm is passing through, you can grab your rig and other expensive gear and wait it out in the car. The antenna should be fine, and it won't take long to set your station back up.

There's absolutely no need to go out to POTA when conditions are bad, like when roads are icy or snow-covered. This is a good time to stay home and hunt!

Be extra careful to stay away from power lines. If you're throwing a rope up to raise an antenna, it sometimes doesn't go exactly where you thought it would. We've all had this happen. If a bad throw or the wind carries it over a power line, any moisture in the rope may allow enough current to flow to electrocute you. The upper wires on most poles is 13,000 volts!

This book was written during the COVID-19 pandemic. I have heard enough misinformation being shared on the radio to make me sick. My suggestion: get medical advice from your doctor, not friends and family, not your pastor or rabbi, not your chiropractor, and definitely not your ham buddies.

As an EMT, I look for reliable information from trained professionals. You should do the same. If you can't trust your doctor, you need to find a new one. If you won't follow your doctor's advice, you need to have your head examined, and that requires another doctor! Nuff said.

Lastly, if you're already out in a park, go for a walk or hike. Get some exercise and enjoy the views. My wife (N1GDW) and I have even learned how to forage for mushrooms!

Hunting

While this book is primarily for activators, I'm going to make a few comments regarding hunting because most activators also hunt parks. In fact, I usually start activations by hunting other parks. On one recent activation, I secured enough park-to-park contacts to be legitimately activated even before I got spotted! I encourage you to start your activations this way as well. I also hunt when the WX at home isn't conducive to operating in the field or when I don't have time to go to a park. Other activators have hunted me while they were home for lunch or sitting in their car while their spouse was in a store shopping.

It would behoove us as activators to set good examples when hunting. In other words, we should hunt the way we would like others to hunt us. This leads me to a few suggestions.

First, you should wait for the operator at the park to call CQ or QRZ. He/she might be busy listening to another station that you can't hear from where you are.

Second, you should only say your call sign once, preferably using phonetics. When you call more than once you are probably doubling with someone else. If it takes a couple of tries to get through to a park so be it. Patience is a virtue.

Third, there is no reason to output more than 100 watts. The operator at a park is often running much less power and never more than 100 watts, so there is little reason to use more. If you can hear the portable station, usually on a compromised antenna, the portable station will probably hear you easily. It is also illegal to use more power than necessary for successful communication. Turn your linear amp off. Nuff said.

Lastly, use the quick-recall memory slots in your rig to save portable stations' frequencies when they are busy so you can continue hunting and switch back easily in a few minutes.

Internet Tools for POTA

Perhaps the best reason to activate POTA is to get away from electrical noise at home! When I'm in a park I can hear weak signals that would be completely nonexistent on the radio in my shack.

So how do I hunt from home? WebSDR to the rescue! It can be a real solution to electrical noise in your neighborhood.

If you see a station spotted but you can't hear them give it a try. Start at WEBSDR.ORG with your favorite browser.

I usually select North America in the "region" drop-down option list. You can also filter by band to eliminate receivers you don't need.

Choose a location most likely to work for the band you're on. In other words, for 40m you want a receive station that's not on the other side of the country from the park you're trying to hear. If you're on 20m you'll want a station that's far enough for skywave propagation to work.

Some RX systems are better than others. Some even have multiple receivers and you'll have to choose the one for the band of interest. It might take a few tries with different systems before you can hear the station of interest. Be sure you're on the correct mode and click "Start Audio" if necessary for your browser. I use headphones on my PC to separate the audio from that coming from my radio.

Don't be surprised if the best signal comes from the opposite side of the country. Once I was trying to hear my POTA buddy Mike K8MRD on 20m in Texas, and the WebSDR signal I used was in San Francisco! I'm in Connecticut and by some miracle Mike heard me fine. I could even hear myself coming back from the WebSDR in California!

Another great web-based tool for POTA is PSK Reporter. This site lets you see in near-real-time how well your signal is propagating throughout the world. While you can use it at home, it can be even more valuable while activating a park.

After you get set up and are ready to activate, switch your mode to FT8 and contact another station or call CQ. Then, point your web browser at PSKREPORTER.INFO to see how you're getting out. Just enter your call sign and click Go! You can restrict it by band or mode if desired.

While the POTA spotting page can show you a single RBN signal report, PSK Reporter may show you dozens of receiving stations all over the world. In the example below, my 20m signal was heard across the US (also in the EU, not shown).

PSK Reporter Map

Tags will display how long ago your signal was received. Hover your mouse pointer over any tag for even more details: location, signal strength, distance, bearing, RX antenna, etc.

TIP: Enter a buddy's call sign to see if they're on the air!

Going Further

While Summits On The Air (SOTA) could be your next step in portable operations, there are several ways to “up the ante” or push the state of the art within the scope of POTA without backpacking an ultralight station and climbing mountains.

One obvious way would be to try QRP or low-power operation. The output limits for QRP vary, but 5 watts for CW and 10 watts for SSB have been embraced by the ARRL and other amateur radio organizations. This will make your pack lighter because you can get by with a smaller battery. Most rigs can dial back the output power, so you need not invest in a QRP transceiver unless you want to.

A less than obvious challenge is to simply focus on hunting park-to-park contacts. These can be more difficult because they usually involve weaker signals than QSOs with home stations. I usually start each activation by looking for other parks, and the spotting system makes this possible.

You can also challenge yourself to try another mode. If you’re in a SSB rut, pack your key and try CW. If you have appropriate equipment, even FT8 might be possible.

Another option is to try RaDAR or Rapid Deployment Amateur Radio. The concept originated in South Africa, and you can learn more at http://radarops.co.za

RaDAR POTA would typically entail activating multiple parks on the same outing with a certain minimum distance between them. RaDAR operation forces you to pack carefully, and repack equally carefully for subsequent activations. Antenna selection 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 better efficiency and more contacts.

CW POTA

There are several advantages to using CW for POTA. The first is obvious. CW communications are less sensitive to being disrupted by noise on the HF bands than phone modes. By conveying simple on/off keying, less complex waveforms are being transmitted resulting in a higher signal-to-noise ratio.

For the same reasons, CW is also more efficient and useful when using low power or operating QRP with as little as 5 watts. While the new Icom IC-705 might be almost useless for SSB QSOs in poor band conditions, it becomes a viable POTA rig when switched into CW mode.

It is also possible to use significantly more restrictive filtering techniques, either mechanically (i.e. with Collins filters) or digitally using modern DSP circuitry. Either can be used to effectively block unwanted interference and noise. It is really important to know your rig when doing CW, especially how to use the passband shift and notch tools.

Honda Element Tailgate Desk for CW POTA

Another less obvious advantage is that CW seems to attract sophisticated operators who are more focused on the hobby and less likely to offer critical commentary on divisive political issues, for instance. During a pandemic, I have noticed plenty of misinformation being shared on the radio. It appears from a cursory listen that this is significantly less prevalent on CW where QSOs are more to-the-point and often restricted to signal and WX reports.

From an operator's perspective, you can call CQ POTA or simply CQ. It may actually be a disadvantage to call CQ POTA because this can imply to non-POTA folks just tuning through the band that you're looking for POTA operators exclusively. They may not realize that you're happy to take calls from anyone. The only time to call CQ POTA is when there are lots of hunters trying to find you after seeing your spot.

There's no need to broadcast your park number unless, of course, someone asks for it. Many of those contacting you will be members of POTA's CW community who have seen your spot (and your park designator) and have come looking for you.

Another tip is to take advantage of the Reverse Beacon Network. Begin by scheduling your activation on POTA website. Scheduling may not be as important for SSB (phone) activations, but it is really important for CW POTA!

When you're heard calling CQ by the RBN, the POTA system will pick up your presence and post a spot! As long as you stay on the air, it will even update your spot periodically. This will automatically terminate when you post QRT on the spotting page. How cool is that!

TIP: Watch how you zero-beat. It is commonly believed that you should tune exactly onto the caller's frequency usually referred to as "zero-beating."

Unfortunately, when there's a huge pileup on CW, the activator will hear a cacophony of signals all at the same audio frequency and won't be able to single out anyone for a reply.

If you move ever so slightly off zero-beat, then the activator will hear a slightly different tone and might be able to pick you out of the crowd!

Taking the last tip one step further, if someone else does this and is successful at making the contact, you'll hear the activator reply to that off-frequency operator. Then, when you answer the next QRZ, you should also transmit on that same off-frequency spot to be heard.

Use the CW memories in your rig to send CQ and give your fist a break. This might even give you a chance to scarf down some coffee between QSOs!

Suffice it to say that POTA operators using CW are a pretty close-knit group who enjoy each other's attraction to this mode. You will run into each other again, and often, and good behavior will only lead to more fun down the road.

Digital POTA

Digital modes may seem like the perfect marriage with POTA… low power, weak signal capability, and more. But, it's not all that simple, and that is why there is a dedicated section in this book on it to help keep you out of the weeds.

I'm not a huge fan of FT8 (or FT4, for that matter). It usually works so well that, once you figure it out, is simply too easy! More importantly, it is not conversational enough for my operating style which prefers old-fashioned rag chewing. That said, it does fill a couple of needs and I use it occasionally.

For an example, my shack is in our family room which is also where we watch TV. If my wife is also there enjoying an episode of CSI, I really can't fire up my station and chat on the radio without bothering her. I can, however, run FT8 with the speaker muted and make a few contacts since the mode can be completely silent… unless you count mouse clicks!

The more obvious time for FT8 and other digital modes is when HF bands are simply too noisy for SSB to work or for CW to be enjoyable. This sometimes happens during storms and solar events. This is where digital modes really shine, because that's what they were designed for in the first place. It always amazes me when I can't hear a single POTA station and I fire up FT8 to see QSOs start marching down the computer screen almost like magic.

Just as you began your POTA journey as a hunter, I encourage you to do the same when exploring digital POTA. Assuming you have already gotten your rig and computer "talking" with a digital application like WSJTX, open up the POTA spotting page and look for parks activated digitally on FT8 or FT4. If you see any that look promising, like an activation you would expect to be able to contact on SSB, start up your application, switch to the corresponding band, and look for the activator's call sign. Give it a few minutes, and don't assume the station will be calling CQ POTA as some don't.

What I sometimes do is let the application run a few minutes. Then, I copy all the QSOs (on the left in WSJTX) to the clipboard and paste them into Notepad or other text editor. Then, use the Find command to search for the activator's call sign. If it is only on the RX side of the string you probably won't be able to hear it. But, if you see it as a sender in a QSO or two, double-click it to give the station a call.

Digital activations require a bit more planning. First off, you'll need power, and maybe lots more than you used for SSB or

CW. I found that while my U1 garden tractor battery was fine for the better part of a morning of POTA QSOs using SSB, my Yaesu FT-991 choked in 2 hours, and my FT-891 killed it (below 11.5 VDC) in 3.5 hours. The duty cycle can approach 50% TX/RX, and when the key is down the radio uses all the power it is set for whether that's 25 watts or whatever.

Next, your antenna needs to be up to snuff. Before you even connect it you need to think about whether it can handle the power your rig will send to it. For example, the original Wolf River Silver Bullet 1000 coil is de-rated from 100 watts on SSB to only 20 watts when used for digital modes. If you plan to run digital, it might make sense to choose their upgraded Silver Bullet Platinum model which is rated for 100 watts digital. Sure, it costs more than twice as much as the original model, but it can handle the duty cycle of digital modes (and high-speed CW) significantly better.

Then, you also need to see if your antenna can even tune down to the digital part of the band. If you cut your hamstick for SSB, chances are it won't go low enough for digital modes which are at the bottom of the band. The solution is simple. When you get a pair of hamsticks, like one for 20m and another for 40m, cut one of the whips for SSB and leave the other full-size for CW and digital band segments.

That is what I did, and while I had to cut several inches off to resonate in the SSB band segments, almost magically, the full-size whip was perfect for FT8 without being trimmed at all.

For SSB, your computer is normally just used for logging, which is hardly time-critical. For FT8, timing is REALLY important! At home, your computer probably synchronizes its clock with the internet. In the field, without a data connection, this won't happen, and the clock can be off by enough to be a problem. This happened to me, and there are a couple solutions.

In the field, you can manually set the clock so the time in WSJTX (or whatever you are using) agrees with the time on your cell phone. It might take a few tries, but as long as you get it within a second or two, it should be good enough. The better solution is to synchronize your computer's time with the internet BEFORE you leave home.

Just getting the connections between your rig and computer can be an issue. My FT991A and, similarly Icom's IC-7300, handle both control and audio over USB, the perfect solution. However, my primary POTA rig is an FT-891, probably the most popular POTA rig currently used. It does rig control via USB but relies on the Data port for audio in and out.

Fortunately, there's an inexpensive (< $10) way to enjoy digital modes with the FT-891 using Yaesu's CT-39A "Packet Cable." This cable has a 6-pin mini-DIN plug for the rig's RTTY/DATA port. The other end has tinned wires. Just add 3.5mm plugs for your computer audio jacks. Not handy with a soldering iron? No problem. You can buy a ready-made 6-pin mini-DIN to 3.5mm audio cable for about $25 on Amazon or eBay. Check this book's Links webpage for details.

Digital Mode Cable for the Yaesu FT-891

Laptops sometimes have a single 3.5mm audio port. It can be an output port for headphones, an input port for a microphone, or a headset port for both. Get the 6-pin mini-DIN to single 3.5mm TRRS cable OR use a TRRS adapter for your laptop.

Another option is to connect the audio cable with 3.5mm plugs to an inexpensive USB sound card for about $10. This will also free the PC audio jacks for speakers or a headset if desired.

Sabrent USB Sound Card
3.5mm jacks for audio in/out

These simple data options will save you from needing an expensive (>$100) Tigertronics SignaLink, Yaesu SCU-17, West Mountain RIGBlaster or similar interface. Sweet!

Another issue is getting credit for Park-to-Park contacts. This is easy on SSB because you typically initiate the contact with your call sign followed by “Park-to-Park” and both operators know to log each other’s park identifier. When you contact a park on FT8, sometimes you know the activator’s park number from the spotting page, but there isn’t a convenient way to tell that ham your park number! Being spotted might help, but

contact with using a digital mode, just so the other ham's log can properly show my SIG_INFO and we both get credit for the P2P QSOs, especially important when 2-fers are involved.

OK, you've checked your antenna, your rig is connected to a portable computer, the software is installed and running, and you are ready to activate digitally for the first time. I encourage you to try it at home first. Set up in your backyard. Use your system to make a few digital contacts. FT8 would be my choice for a place to start. It is the most popular digital mode and with 30-second cycles it is probably less sensitive to timing issues than FT4. Look for strong signals calling CQ and try to establish a few good QSOs. You could even look for active POTA stations and get some credits for hunting!

If all goes well, you can plan your first digital activation in a park. But, if you discover any problems, you can take your time correcting the issue at home instead of potentially wasting a trip to a park.

Yaesu FT-891 Digital POTA Station

QRP POTA

OK, you've already seen that I'm not a strong advocate for using low power or QRP for POTA. It's not that it isn't possible, but I do feel that QRP is the wrong place to begin your POTA journey.

Operating with QRP requires patience, sometimes a lot of it. As a hunter, trying to break a pileup full of operators running anything from 100 watts all the way up to full legal power will be a real challenge. As an activator, with a compromised portable antenna system, the difficulty of hunting park-to-park contacts will be even greater. Just understand what you will be up against before investing in a QRP rig as your primary and only radio. Start QRO, enjoy some successes as you learn how to POTA, and then graduate to QRP when you're ready.

That said, this section of the book will offer some advice to help make your QRP experience more productive and rewarding. My recommendation would be to start with a 100-watt rig and simply turn the power down! This way, if band conditions are really bad and you get frustrated or in jeopardy of having an unsuccessful activation, you can turn the power back up and try QRP another time when conditions are more conducive to success. Remember that the underlying goal is to have fun in this endeavour.

Once you've gotten your feet wet and determined that you really like the challenge of QRP or that you want to lighten your pack and get further from your vehicle, maybe it's time to consider some dedicated QRP gear.

QRP rigs are by design simpler, smaller, and lighter. They offer the advantages of less weight and more portability. Perhaps the biggest advantage is their lower power consumption and the ability to run off a much smaller battery. While you may have wanted 30 Ah for QRO, you might need only 3 Ah for QRP.

Rig choices include the somewhat dated Yaesu FT-817/818 which have seen their prices fall precipitously due to the introduction of Icom's incredibly popular IC-705. The new rig, while exceptional in design, might also be over your budget. This being the case, don't be too quick to write off a good deal on a used Yaesu QRP rig.

Take a serious look at Elecraft's KX2 and KX3. These excellent transceivers have strong followings for good reasons. They are reliable and work well. They both have an option not available on anything from Icom or Yaesu: an internal antenna tuner. That's another piece of gear you can leave home.

Elecraft KX2

QRP transceiver with optional built-in tuner

In 2021 I might have discussed the Lab599 Discovery TX-500. Unfortunately, after the Russian invasion of Ukraine, I can no longer recommend it. Besides being unavailable, it goes against my conscience to support the Russian economy now.

For power, LiFePO4 is the best way to go. You can find 5~6 Ah batteries weighing under 2 pounds on Amazon for around $20~$30 as of this writing. Don't forget a suitable charger.

Pack a lightweight earbud headset instead of a speaker to save more weight and power. You can leave the laptop home and log on a small tablet or even your smartphone.

Running low power, you can't afford to waste any of it with an inefficient antenna system. I would recommend something resonant.

If you're looking for something light and portable, a simple half-wave dipole or linked dipole would work nicely. See the SOTAbeams Band Hopper described in the antenna section of this book.

If you prefer an end-fed design for ease of deployment, check out the Par "Trail Friendly" EndFedz antennas from Vibroplex.

Par End Fedz QRP Antenna
K4SWL photo

New in 2023 from Chameleon is their CHA OCF40 introduced at $99. 25 feet of RG-316 coax can be added for $75, but you can probably find a similar product elsewhere for much less.

Chameleon CHA OCF40
shown with optional RG-316 coax

Michael (KB9VBR) activated US-9840 with this antenna using his Yaesu FT-817 QRP rig and it seemed to perform very well. You need a tree or mast 25 feet high to deploy as an inverted V.

The main advantage of its off-center fed design is the capability of operating on several bands without a tuner: 40, 20, 10, and 6m. Primary issues are its size: 66 feet long (44’ on one side, 22’ on the other) and power limits of the included 4:1 balun: 50 watts SSB, 25 watts CW/digital. If you have room and can live with those constraints it might be worth trying.

If you're like me and enjoy building antennas, there are several options. A speaker wire dipole made with 22-gauge OFC conductors (not CCA) is inexpensive and eliminates a separate feedline.

For a more traditional dipole or end-fed design, I recently discovered copper fishing wire sometimes called trolling line. It is available in 20#, 32#, and 45# test. Some are plated with tin/nickel alloy for corrosion resistance.

Copper Fishing Wire
32# test ~ .030" dia ~ 22 AWG

You can pack the wire in a chalk line reel available at the Home Depot or Lowe's. Don't get plastic-coated wire or the reel could become an inductor! Pull out as much wire as you need. When you're done, just wind it back in.

DeWalt Chalk Line Reel

Late Shift Activations

Activating during the “late shift” offers several unique opportunities for POTA. As the day ends propagation often increases, sometimes dramatically. More operators are home from work and on the air than during the day. If you live in a hot climate, the evening is usually one of the more comfortable times of the day to be outdoors without air conditioning. Finally, with the UTC day ending at 8PM locally, you can actually squeeze in 2 days of activations in just a couple hours.

Challenges, however, are numerous but not insurmountable with some planning. The first is park availability. Here in CT, all state parks are officially open from sunrise to sunset. Even if a sign isn’t posted, parks officially go offline to POTA activations when they are legally closed.

There are some solutions. One is to register as a camper and set up on a site. This allows you to stay in a park overnight. It doesn’t mean you have to sleep there unless you want to, and this option is only available in parks that permit camping. Pack headphones so you don’t bother neighbors during quiet hours.

Another solution is to activate at a POTA site that isn’t in a state park. These include numerous recognized trails and even some rivers. As long as you aren’t on private property and within 100 feet of the trail or river you’re fine to POTA during the late shift.

Almost one fifth of the state of NY is inside Adirondack State Park, and there are many public locations to activate in US-2001. Perhaps you have a similar situation to take advantage of in your area.

Another challenge is darkness. I often comment when going out with a flashlight that there may be only a 10% chance of rain, but there’s a 100% chance of darkness!

To meet this challenge, I recommend arriving well before it gets dark so you can set up with the benefit of natural light. This is especially true if you will be deploying a wire antenna using a tree for support. It isn't quite as important if you will be using a mobile antenna like a hamstick. I park my car so I can use the headlights to see during teardown.

It helps if antenna ropes are bright colors or reflective so you don't get tripped by one in the dark. Fortunately, yellow and orange paracord is easy to find at your local Walmart. If you deploy radials it helps to see them if they are insulated with white or yellow instead of black. (Try my FREE extension cord radials!)

When I activate inside the car, I hang a tactical flashlight over my logging laptop by capturing the lanyard (attached to the endcap) with the sliding sunroof cover. If you plan to set up on a picnic table, be sure to pack a lantern.

Bugs and critters can be another issue at night, so come prepared to fend them off with repellent or by operating inside your vehicle. A skunk would make a nasty POTA companion, and I've had bears get pretty close in a several local parks.

The most significant challenge might be handling pileups! With so many hunters available in the evening, pileups are common and can test the on-air skills of even the best operators. Practice activating during less crazy times to learn how to handle the process of sorting things out.

I recommend having a system, like taking a short list of 5 or 6 call signs and then calling each hunter back one at a time in order. Another system is to ask for hunters by call districts. Be sure to occasionally call for Park-to-Park and QRP/mobile stations as they will have the hardest time breaking through to you. You should try to be courteous while attempting to control chaos.

POTA Tricks

This section will share some of my secret tricks to get POTA contacts. Some of them may be familiar to experienced operators, but there might be a new one or two here for everyone to try!

I'll start with VHF and UHF tricks. It's no secret that you can spot yourself on a popular simplex frequency like 146.52 MHz and occasionally scare up a contact or two. In a big city like New York or Washington, D.C. you might even get enough contacts this way to be officially activated.

Trick #1 is that VHF and also UHF work especially well when you're activating up on top of a mountain, so pack your HT or 2m mobile rig with a good antenna. 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 this. I have personal experience with success making contacts on "52" at the last one, US-1699.

Trick #2 may surprise you. We have a fairly active club repeater that happens to be on top of the same hill where there is also a state park, US-1724, Talcott Mountain. 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.

Trick #3 takes the last trick 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! Just don't try this when the repeater is busy.

If you have an active UHF repeater or linked system in your area, you might be able to use these tricks on the 440 MHz band as well. It might actually be possible to successfully POTA with a $25 dual-band Baofeng! You won't know unless you try. I wonder how POTA would work from the top of the Washington Monument, US-0794?

Trick #4 involves using nets. We have a weekly VHF net on Tuesday evenings at 7PM. That's when there's the most local activity on VHF. It is very informal, not a super-serious directed traffic net, so there's no problem with some extra chatter, particularly at the end when the net is closing down. You can use this time to try the previous tricks with a lot more success than during the day when the VHF band is quiet.

Trick #5 takes this further, using an HF net. We have a local pseudo-net every morning at 9AM on 3.999 MHz. It covers most of the northeast states including New England, NY and NJ. Some call it a net, but it's really a random roundtable ragchew group. It is not a directed traffic net.

Sometimes I'll pack the 75 MHz coil for my portable vertical and get to a local park in time to check into this morning "old farts" net. Since POTA contacts don't have to be registered, anyone I chat with on the net counts as a POTA QSO. I typically get a signal report from each person to make it legit. Sometimes there are enough folks on this net to add up to the 10 required for an activation! There are a couple operators on the net who also do POTA, and they'll usually follow me up to 40m after the net, which adds even more to the log.

Trick #6 pertains to spotting. Like many activators, I usually hunt parks before I spot myself. You can let hunters know you're in a park and will be available for contacts in a little while by spotting yourself at something like 7000 KHz with "Hunting before activating" in the comments field.

Trick #7 is to post "Last call" as a comment a few minutes before you plan to go QRT or "Last call for 40m" before you QSY to another band. Somehow, it often seems to pull hunters out of the woodwork and snag a few more last-minute QSOs.

Trick #8 is to use another activator's frequency when you are sure they're done with it. If you hear someone say they are almost done, just wait it out and ask them if it's OK to take their spot. If you see someone post they're QRT, and you verify that they have gone off-the-air, then you should be free to spot yourself on their old frequency.

Trick #9 is to do the same in reverse. If you have a park-to-park QSO and you're ready to call it quits, offer your spot to the new activator and build some good will in the community.

Trick #10 is to use existing hardware in the park for mounting your antenna. I pack a mobile mount attached to an angle bracket and a strong C-clamp. I've used this, for example, to attach the mount to a galvanized guard rail, giving me a solid connection for a hamstick or WRC antenna system, plus a decent counterpoise, with little time and effort expended.

Trick #11 is to make friends with the rangers at a park you visit frequently. I was at a park so many times last year, the rangers and I are on a first-name basis. This can come in handy if you're a little late packing up as the park is closing for the day.

Trick #12 is to fire up your 2-meter mobile rig as you leave the park and see if you can use previously described Tricks 2 or 3 to get a couple more contacts as you drive to the park exit.

Trick #13 is to wrap your throw line using a figure-8 pattern around your hand or other object. This prevents you from putting a twist in it. Later, it will pay out much better. I use the figure-8 wrap for my end-fed long wire too.

Figure-8 Wrap
prevents tangles - pays out nice

Trick #14 is to build a long wire (end-fed) antenna from multiple sections. Mine is 62 feet long made from 4 sections: a pair that are about 15 feet long each and another pair that are about 16 feet long each. I can use as many sections as I need for a given installation, or I can use sections to make a dipole or inverted-V antenna. I can use a section on each side for 20m, or two sections on each side for 40m. My sections have ring terminals crimped and soldered to the ends. I literally bolt them together with short 6-32 machine screws and hex nuts.

Trick #15 is to make and pack a short jumper with good alligator clips on both ends. You can use this to ground your antenna mount to a sign post or short out turns in a coil.

Trick #16 is to wrap a half dozen turns in your coax to make a choke. This can be particularly useful with end-fed antennas to prevent the coax from radiating when that is a problem. You'll know when you get "bit" by RF at your rig or on your key!

POTA & EmComm

Each year Field Day is partially billed as an exercise in emergency communications (EmComm). POTA is basically Field Day any day you want! With some POTA hams activating over a hundred times each year, they often represent the most prepared operators in their communities.

Many activators have a dedicated POTA rig instead of using the one in their shack. POTA can provide frequent opportunities to become familiar with this radio as well as a selection of portable antennas and accessories. Some POTA hams spend more time operating portable than in their shack.

Unfortunately, this potential EmComm talent is often wasted unless it is affiliated with some organization like their local fire department or Red Cross chapter. I am active in my town's Community Emergency Response Team (CERT) as the comms group leader. Previous experience as a fire/rescue/EMT adds to my background as a ham. I encourage POTA activators interested in EmComm to seek out opportunities to volunteer.

In reality, HF plays a relatively small roll in EmComm. Many EmComm operators focus on providing backup communications to existing municipal systems. In my town, their 800 MHz P-25 digital radio system already has redundancy, so I focused our efforts on providing EmComm for situations where there isn't an existing backup system.

For example, the Red Cross disaster plan relies almost entirely on telephone networks for communications using a combination of landlines and cell phones. Events like the recent fires on Maui demonstrated the pitfalls of such a plan.

Many disaster scenarios require the setup and operation of a shelter for residents forced to leave their homes. It is mission-critical to have reliable communications within the shelter areas: registration, infirmary, cafeteria, dormitory, and kennel.

Indoor traffic is best handled using UHF or VHF HTs (amateur or even FRS). This is where an EmComm team can help.

Most ham HTs have a rechargeable pack that might not be ready in an emergency. If your HT has an AA or AAA battery tray available as an accessory I encourage you to get it. This allows the use of AA/AAA lithium batteries which have a 20-year shelf life and are always ready for an emergency.

Yaesu FB-25A Battery Tray
fits their popular FT-60R dual-band HT

It will also allow your HT to function many years after the proprietary battery pack has failed. The 12-volt adapter cord with cigarette lighter plug can be another useful accessory.

It is also vital to link a shelter with its supporting Red Cross chapter, and licensed operators can provide this link. We actually used our POTA gear to practice setting up such a link using Yaesu FT-891 radios on 6m simplex.

While HF represents a relatively small portion of EmComm, there are times and places where HF can be useful. The same FT-891 radios providing our 6m link can also connect a shelter with the rest of the world for health and welfare messaging to loved ones outside the disaster area.

Note that POTA antennas are also an important part of the HF kit, but longer coax feedlines might be needed for EmComm deployments than for typical POTA activations.

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!

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. Mike was an early reviewer of this book. Check out my January 2023 livestream with Mike in the *LIVE* section of his channel.

Another YouTuber with 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 Michael's video about this book in March of 2022.

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 Gruson (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 (KJ4YZI)

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!

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Visit the links page to access color photos!

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

Meet the Author

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

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

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

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

WV1W 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
Fishing rod & reel with casting weights/sinkers
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

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	– – • •

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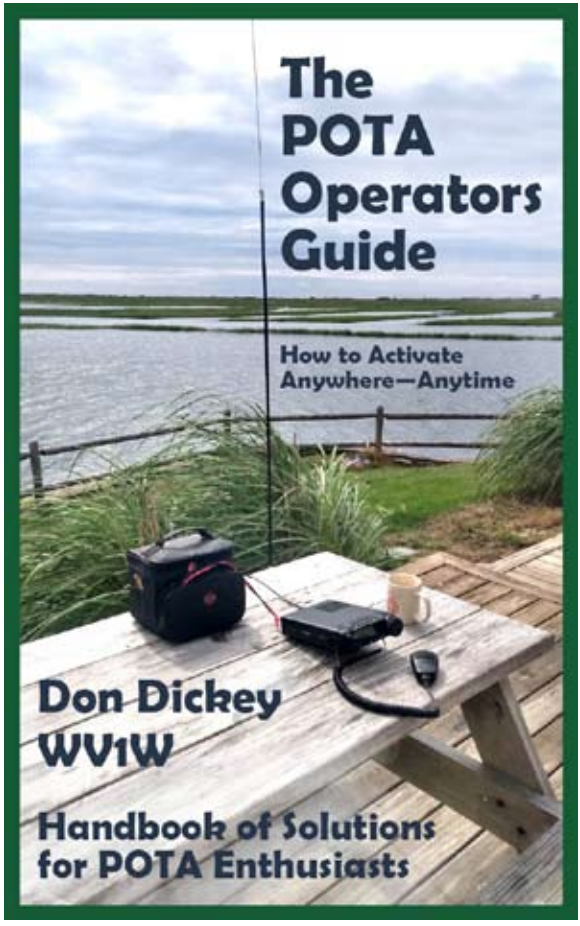

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