Pacific Northwest SOTA Newsletter

Photo by Travis-KJ7RTO, Mount Herman W7W/WH-136

July-August-September 2025

UPCOMING EVENT – 2025 CQ World Wide VHF Contest where the Hilltopper category is **PERFECT** for SOTA – limited to operating six hours and just 6m and 2m. (SSB/CW/FM July 05-06, digital July 19-20). Exchange is **grid square**.
UPCOMING EVENT – SalmonCon XX on July 12-13, 2025 is a gathering you might consider. They are not as much into SOTA as QRP, but there are summits nearby to activate and a friendly place to camp. Info from Bill-WA7NCL.
UPCOMING EVENT – the **ARRL September VHF Contest** is ANOTHER chance to make contacts on 6m and up on September 13-14. Exchange is **grid square**. If you have SSB on 6m and 2m and horizontal antennas, it'll be good fun.
UPCOMING EVENT – the **Colorado 14er & Mountaintop Event** (July 31-August 3) is an opportunity for Summit-to-Summit (S2S) contacts across western North America.

Ways to Avoid Being Skunked

Let's start with the reminder that while it takes working four or more unique callsigns for Activation Points, it only takes one contact to count as an Activation. Here are some ways you might dodge being skunked with no Points, or sadly and hopefully very rarely, not even Activation Credit.

Having valid and accurate SOTAWatch Alerts and Spots are your first steps to help you get contacts. Most Chasers are not tuning the band looking for you, but some committed Chasers do block out portions of their day to work Activators and new summits. Other Activators sometimes plan to be QRV when there's a S2S opportunity. If you are using CW, having an alert posted will give you a chance to be automatically spotted via the Reverse Beacon Network. This can be very helpful when cell service is too marginal or non-existent to spot manually via your cell phone. Other spotting options include APRS and SOTAmāt. If you are an SSB operator and have trouble spotting, check these options out.

Speaking of CW, it's an excellent way to make contacts when noise or propagation make SSB challenging. Some operators may even resort to using digital modes like FT4 and FT8. These modes are exceedingly efficient in many band conditions. Remember, ***any valid QSO with a call sign and signal report counts for SOTA***.

Planning on making 2m-FM contacts? Take a look at the SOTA Atlas summary page for your intended summit. If you see that relatively few contacts have been made on your summit using 2m-FM, then a 2m-FM only activation may not work well. In contrast you might see that 40m or 20m has done well in the past – a hint that lower bands HF would be a good choice. Also, many areas in the PNW use 146.56 or 146.58 for 2m-FM contacts. However, using the calling frequency of 146.52 may yield additional contacts, including passing mobile operators, which can net a few contacts in some cases. Finally, starting *and ending* your activation on 2m and/or 40m will likely help catch other locals who were not near the radio at the start of your activation.

Don't forget to leverage sites such as SOTAWatch or use apps like SOTA Goat to find other activators you may be able to work. These require some cell data service to work, however. Most activators will appreciate a chance at a S2S contact.

Another source for contacts are POTA Activators…you can look for spots on the pota.app website, or just tune across the busy bands for folks calling "CQ POTA." If you are activating from a combined SOTA/POTA entity, you can even post a spot on POTA for POTA contacts. When band conditions are good, this can yield a LOT of contacts (so be ready for a pileup) and valid POTA QSOs also count for SOTA.

A worthwhile suggestion, especially if you are running SSB, might be to operate QRO. Even 20W instead of 5W should put you in a much better spot to be heard when propagation is marginal. The Xiegu G90, FX-4CR and the Yaesu FT-891, FT-857, etc. could be options here.

An unconventional approach is to check in to a net if you are really hurting for QSOs. The net operator will usually be more than happy to give a signal report when asked. While I wouldn't make this a frequent practice, it *has* helped me in the past.

Finally, leverage local repeaters to drum up interest. While repeater-based QSOs don't count in SOTA, you can ask operators to move to another simplex frequency to complete the contacts. Letting your club members know you'll be out for an activation may incent them to try working you. In addition, other communication sites like Slack, Signal and WhatsApp are great places to communicate your activation, frequencies, etc. in short, leverage your social networks.

#QueensoftheMountains 2025! By Amy-AG7GP
The Second Annual "Queens of the Mountains YL SOTA Special Event" Weekend was held June 7-8. This year we invited YLs from around the world to activate summits. We encouraged all ops, around the world, OM and YL, to chase the Queens, and all SOTA YLs around the world to activate.
Announcement on SOTAWatch and Video

Driving Forest Roads – What Lies Around the Next Corner? by Bill-WJ7WJ

There is, in some quarters, an antagonism between "Citizen's Band" (11-meter) ops and ham ops. This is largely due to the general lack of professionalism and a plenitude of profanity on that band. One place you will find more professionalism is on forest roads.

SOTA ops may have noticed the CBXX signs at the start of forest roads. This will be either a real sign or paint on a tree. This may be in association with an active logging and hauling sign. Ops will also notice mileage markers on these roads every half mile. Again, either painted on a tree or a real sign tacked to a tree. The drivers of log trucks and other large vehicles use this mileage and the CB channel indicated to avoid each other. They do this by announcing on said channel where they are and what direction they are headed. E.g., "Mile 2 loaded", or "Mile 1.5 outbound". Sometimes you will hear the road name, but usually the channel defines the road. Ops will also possibly hear other communications by equipment operators, fellers, chokers, etc. This can be taken advantage of by having a CB in your rig, listening for the trucks, keeping track of your position on the road, and thus allowing the finding of a nice place to pull over before coming grill to grill with 80,000 pounds of moving obstacle.

Although I usually encounter commercial activity on weekdays, I have sometimes seen activity on weekends. The weekend's mobile hazards are usually smaller, faster, and unreported. In all cases the best defense is to figure that a vehicle of some sort could be coming around the corner and to set your speed appropriate for a quick stop. Also good to keep track of pull over places as you pass them to know how far you might need to back up. Note that the convention is downhill traffic has the right of way, but gross tonnage also is in play. Be sure and drive with your lights on so you are easier to see.

Small portable/mobile CB radios can be had for $100 +/- and a magmount for about half that. I use a very short antenna so that it is not dislodged by overhanging limbs. I am not trying to work the world, just get around the next few corners.

Driving Forest Roads – Hey Buddy, Can You Spare a Spare? by Bill-WJ7WJ

SUVs offer a reasonably capable way to get to SOTA trailheads. An op will be stopped sooner than a real offroader or 4x4 pickup, but one is happier at the pump or charging station. Most SUVs however are deficient in one critical area: no real spare tire. My Rav4 has a "full diameter" spare. Many have a donut spare, smaller in width and diameter, and some no spare at all. Here is a tale of woe.

The plan was an EV activation. We met our friend with her "SUV" a VW ID4, with our Chevy Bolt. The Bolt, of course, is no SUV, but it shares a common feature with the higher clearance ID4: no spare tire. None, nada, nichts, sans spare. We met at Cascade Locks and drove to the Rock Creek Pass Trailhead to do Three Corner Rock. Paved and good gravel all the way. After the activation we were driving home and crossed a concrete bridge. There was a clickity-clickity sound that I thought was rocks in the tread, but turned out to be a completely destroyed rear tire. At this point in the trip, we had no cell service and I suggested we proceed slowly until we had service as the tire was already gone and the rim seemed to not be experiencing any damage. After proceeding a bit farther, the warning light came on saying we had a low tire.

Expletive deleted! Had the warning light been more timely the spray can of air and gook might have gotten us to a tire shop. However, in the case of a bad cut on the tread or any kind of damage to the sidewall these cans do not provide better living through chemistry. Our next edification was that most tow truck companies will not come on gravel roads. Even the very good one we were on. It took several calls with poor cell service to get someone willing to come out.

In this case a donut spare would have been sufficient to get us out of there, but I worry that if you are on a road that took every bit of clearance to get there, will you be able to get out with the diminished clearance that the donut would provide? The full diameter spare on my Rav4 would give the same clearance, but less float and more importantly both types of emergencies only tires are not as strong in both tread and sidewall. So, the risk of breaking two tires on one trip goes up a bit. There are other restrictions on using a donut, such as maximum speed, maximum distance and on some cars, even a restriction on which wheel position can have the spare. Like changing tires in the woods? These cars give you the opportunity to do it twice as you relocate a real tire to the specified position. Check your manual (or buy a real spare?). Good luck on your next off pavement adventure.

Driving Forest Roads – Can I Borrow a Saw? By Etienne-K7ATN

Here are some tools you might wish you had with you while driving forest roads. In recent history we've seen a saw and a tow strap used to open (or reopen!) a road. On the left is Jeff-WJ7V, assessing a downed tree blocking our only way OUT after an activation. Jeff took the blockage apart with a Katana Boy folding saw. On the right is Corrinne-KK7ULL's team using a tow strap to get past a downed tree. Other tools you might find useful would be a jump starter (some can also power a radio) and an air compressor to deal with any slow leaks.

What Came Before the KX2 – Vintage Rigs: The AT Sprint and the Mountain Topper Radio – by Josh-WU7H
In this installment we will take a look at a legendary QRP radio: the Mountain Topper Radio (MTR). Although perhaps not particularly "Vintage," these radios were hugely influential as simple, lightweight and very capable transceivers.

Designed by Steve Weber KD1JV, this radio was the evolution of an earlier design: the 'AT Sprint.' There were many different versions of the MTR over the years, from 2 bands up to 5 bands. The early models had a single 7-segment LED while later versions had an LCD display. The original radios were only available as a kit directly from Steve Weber via an email list - when Steve had some kits available, he would post a message and you had to act very quickly to secure one. Later, LNR became involved and the MTR was available as a fully assembled radio.

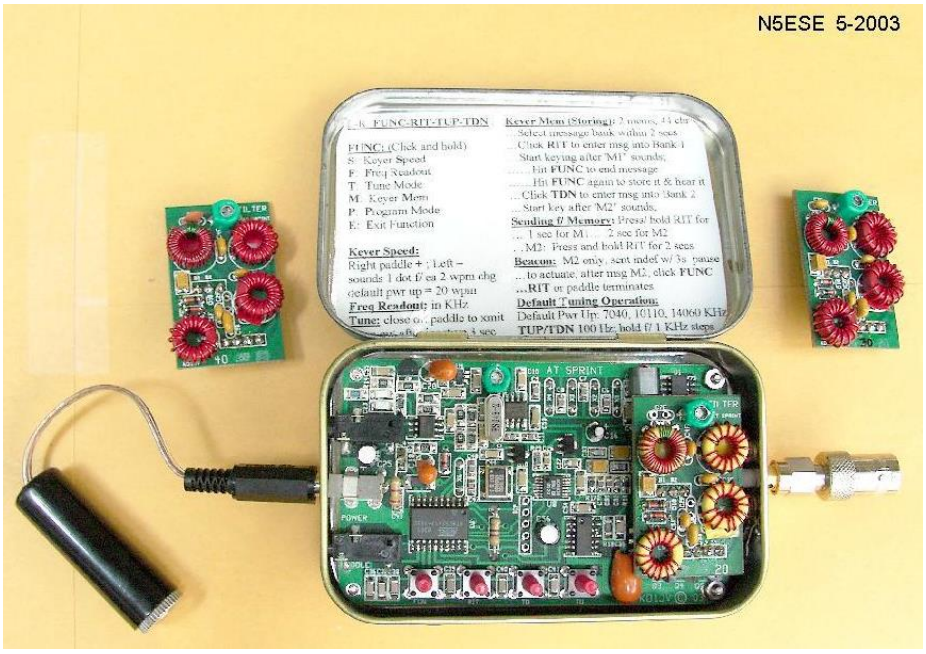
The MTR is about as minimalist as a radio can be while still being good. "The nominal" user interface consists of an on/off switch, three slider switches for changing the band, 4 buttons, and a 7-segment LED. The entire menu system is run via the 4 switches and your paddle, and announced in Morse code. The interface seems cryptic at first, but you soon realize just how efficient it is. For SOTA operation, the radio has everything you need and nothing you don't. My personal favorite feature is 'Direct Frequency Entry' or DFE: you can change the frequency by pressing a button and then sending the last digits of the frequency via the paddle. For example, if I am on 20 meters and want to QSY to 14.062 I just engage DFE mode and send '062'. You can even use 'cut numbers' (T for Zero, N for 9, etc.).

The receiver on the MTR is very good - the filter is not adjustable but works well for the average SOTA activation. There is no volume control or real AGC, but when used with earbuds I find the volume level works for me. The rig also has keyer memories so you can program in your CQ message and let the radio do your CQing. You get one frequency memory per band, and this sets the frequency at power up. My particular MTR 3-bander specimen was a kit-built version (pre-LNR). Most people opted for 20/30/40-meter bands, but there were other choices available when building the kit. Instead of 30-meters, mine has 17. The modification can be done to any of the early 7-segment LED radios and involves a software change, replacing a few parts on the radio, and some filter tweaking. The 17-meter band mod works great and is useful for getting DX, particularly Japan on those late afternoon activations.

While looking for some history on the MTR, I ran across a message that was posted to the 'AT Sprint' email list by Steve Weber. I have included it below, I hope you find it as interesting as I do!

> Group: AT Sprint Message: 2427 From: Steven Weber Date: 12/11/2007
> Subject: Re: History of ATS series
> The ATS series started out as a SMT project in an attempt to build a trail friendly rig into an Altoids tin. It was built on two boards which plugged in together, was a dual band 20/40-meter rig with relay switched filters. The PA was a NPN SOT-223 device with a fairly low Ft, so power out wasn't very good, even at 12 volts. Maybe 2 watts on 40 and 1 watt on 20.

Besides the low power output, the most serious problem was mechanical. The two boards were the same size and had common connections along both edges of the boards. Both boards had to be connected together for anything to work, so it was very difficult to troubleshoot if something wasn't working right. Longish jumpers had to be soldered between the boards so they could be placed next to each other, instead of being stacked so it could be worked on.



Despite this, I put pictures of the rig on my then new web site on qsl.net.

It wasn't long before I was getting requests to kit the rig. Since what I had wasn't real practical to kit or build, I went back to work on it.

The breakthrough which made the ATS rigs possible was the invention of the square wave, logic gate driven 2N7000 PA. At last, I had a PA which was simple, took up little board space, was efficient, had consistent power output on different bands, worked at low voltages and used common, inexpensive parts. The second innovation was to use the now familiar band filter module boards. I was now able to fit everything on a single board, despite using mostly 1206 sized passive parts.

As for functions, it only had the basics, because the processor used was an Atmel 90S2313 with only 2K of memory. It had RIT, keyer with one memory, Tune up mode, the push button tuning and frequency annunciation. Only about 50 of the original ATS rigs were produced.

A year or two later, some new parts became available, or I became aware of them, like the low power AD9834 DDS chip, the TI MPS430 processor and LM4808 low power headphone amplifier. I decided to try these new parts in a new ATS design to see if the current consumption could be significantly reduced. The ATS-1 drew some 50 mA on receive, which was a significant amount of current.
Thus, the ATS-2 was born. With the new parts, receive current dropped to a much more modest 25-26 mA, half of what the ATS-1 took. I also made the board much larger and put it in a plastic box which could also hold AAA batteries. The larger board allowed parts to be spaced farther apart, making it easier to build, adding a few slide switches and little volume control.

With more memory available in the MPS430 processor, DFE mode was added, along with XIT and the calibration modes. 80 meters was also added, making it a 4-band rig, instead of just the three bands the ATS-1 did. (40/30/20)

About 100 of these were produced. I might have done more, but the plastic box which was supplied had the front silk screened. This I did myself, which turned out to be a mistake. Most of them turned out okay, but not great. It was a lot of work. I resolved to go back to the Altoids tin format. While some liked the larger form factor of the ATS-2, most still wanted the smaller Altoids size rig. Besides, the KX1 came out about then and I wanted to have the smallest, lightest rig there was.

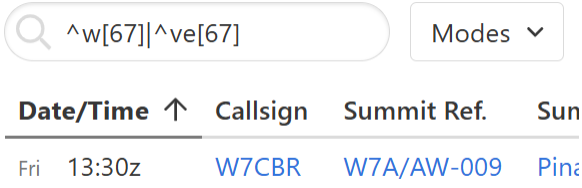
So, back to the Altoids sized rig with the ATS-3, followed by the 3A and finally, the 3B, each which had incremental improvements from things learned from the previous design.

72,
Steve, KD1JV
"Melt Solder"

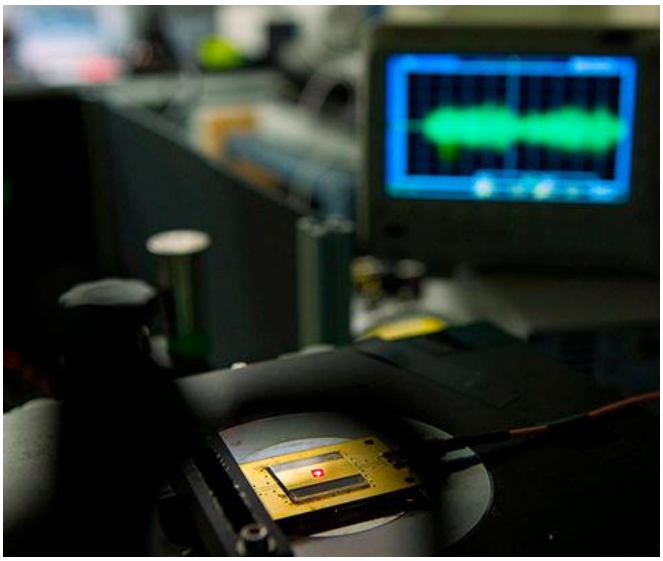
A Tale of Three (VHF) Antennas
What's the practical difference between an (aftermarket) 1/4 wave whip, a telescopic halfwave (RH770) and a Roll-up J-pole hoisted about 15 feet up (an Ed Fong)?

While activating Mount Sylvania (W7O/WV-096), with help from Brian-NR7Y and Jeff-WJ7V, the 1/4 wave was received with a signal report of S-5, the telescopic whip was S-9, and the RUJP came in at S-9…plus 20 dB. Those are big differences, suggesting that a few ounces of a simple antenna are better than a 50W mobile rig and the battery to run it.

Upgrade your spot and alert searches when using SOTA Atlas. This search term will find all activity in Oregon, Idaho and Washington; W7[oiw], while this jumble gets you western states and provinces: ^W[67]|^VE[67]. Thanks to Jeff-WJ7V.

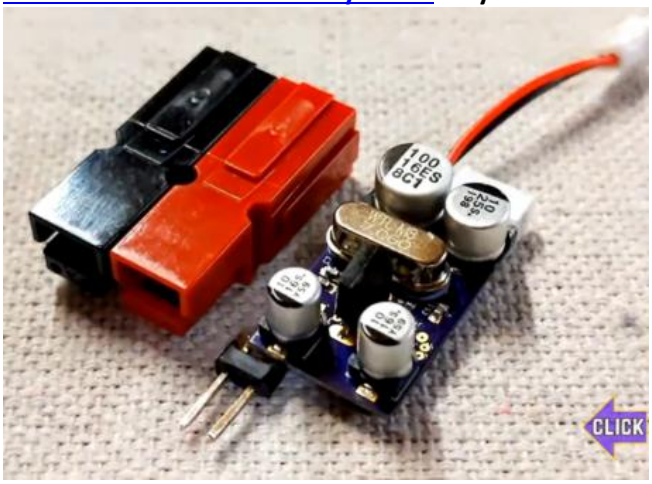


Tiny Radios and the Men Who Built Them by Dave Jensen-W7DGJ via QRZ.com
https://www.qrz.com/articles/node_1748637466



Rufus Turner in 1926, likely at his W3LF radio station transmitter.

One of Our Own and His Tiny Radio – by Adam-K6ARK



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