Pacific Northwest SOTA Newsletter

Time to Mark Up Your Calendars for 2018 SOTA Events – Guy-N7UN has assembled this informal list of SOTA events that occur during sponsored contests. Suggested North American SOTA activities for 2018 are:

- April 21-22: North America SOTA Spring Activity Weekend + QRPTTF Spring Event (April 21)
- June 1-3: SeaPac Northwest Ham Convention, Seaside, Oregon
- **June 1: SOTA Northwest Gathering, Pizza Harbor, Seaside, Oregon Friday, 6pm**
- Jun 9-10: North America SOTA Summer Activity Weekend + ARRL June VHF Contest
- Jul 21-22: SOTA Optional Activity Weekend + CQ WW VHF Contest
- Aug 4-5: North America SOTA Rocky Mountain Rendezvous + Colorado 14er Event + W7 SOTA Activity Weekend + ARRL UHF (222MHz+) Contest
- Sept 8-9: North America SOTA Fall Activity Weekend + ARRL Sept VHF Contest

These SOTA "Activity Weekends" focus on getting many activators out on peaks with an added bonus of potential Summit-to-Summit contacts. With the weekends at the same time as VHF contests, there should be a chance for everyone to work lots of folks on FM or better yet, SSB on the high frequencies.

The QCX QRP Transceiver Kit – Hans-G0UPL of QRP-Labs has a story to tell about the development of the QCX Transceiver. There are currently four or five QCX being put together in the Northwest by SOTA Activators.

> The initial development was motivated by the RSGB-hosted YOTA 2017 summer camp buildathon. It's a funny story. The RSGB sent me an email back in February, asking for proposals for the buildathon. I saw that they were planning to have 78 attendees from around IARU region 1, and then I saw that their entire budget for the kits was 1,000 Pounds. Which came to around $16/person at that time. I just laughed and clicked "delete". What can you do for $16?
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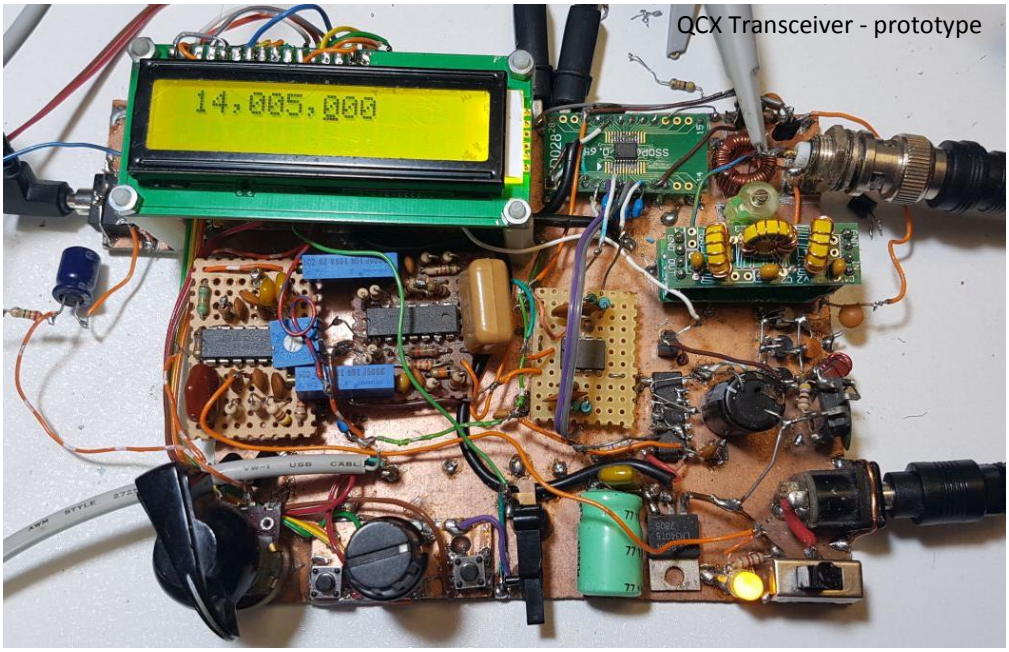
> But then I remember well, it was a Friday, and my mind just kept coming back to that deleted email from RSGB. I realised that the email must have gone out to several kit producers. I speculated that most (if not all) of those would be answering with a proposal for some shack accessory or some simple toy, a CW practice oscillator perhaps. I thought that



QCX Transceiver - prototype

this is about "Young persons ON THE AIR" so a proper transceiver would be best. I know there are some very cheap radios around, particularly things like Chinese Pixie clones on eBay etc. But I am not a fan of these radios, particularly for newcomers. Even let's not start to discuss the build quality, component quality and total lack of support. Even if a Pixie is perfect and working as designed, it is still not great for beginners. The low output power makes contacts hard and the very poor receiver performance makes them even harder. A pixie might be a nice challenge for an experienced operator with a tri-band beam but not a beginner. I know it well, from my own experience - the Pixie was one of the first radios I ever built, and the performance was so bad I never had a contact with it – it was just totally discouraging for a newcomer. I thought – well, what if that $16 could be used to produce a really clever radio, with top performance, and simple to build – that I could supply at cost (or small subsidy) to the RSGB YOTA 2017 summer camp buildathon - then sell the rest of the batch of 500 at a profit (I am a business, after all). I wrote an email reply to RSGB with my idea.

QCX Transceiver - production

So that Friday night I could hardly sleep, my mind kept turning this problem over and over. By the morning, I had most of the design figured out in my mind. I would include built-in test and alignment equipment, so that it could be built by ANYONE even with no test equipment at all: DVM, Frequency counter, RF power meter, Signal generator - as well as being able to inject the signal generator into the front end and have the microprocessor assist with the alignment adjustments. I would use a receiver architecture with top performance and all my experience with QRP Labs kits to date, to source good quality components at good prices. The Si5351A synthesiser at the heart of it would be used with all three oscillator outputs to achieve lots of functionality, like the signal generator etc. The microcontroller in charge of everything, providing many convenience features like dual VFO, split operation, stored messages and frequencies, and I could even add a CW decoder using some simple DSP (Goertzel algorithm). I'd use a Class-E PA design and aim for a full 3-5W output, a decent power with which making contacts is easy, even without a fancy antenna.

At that stage I did not include the WSPR beacon, that was a later idea! It is "free" since it requires no additional hardware, only firmware - and I already had experience of WSPR encoding from my Ultimate3S and its predecessors. The WSPR beacon was this later bonus feature, that provided some link to the QRP Labs heritage and userbase. Also a nice introduction to WPSR and digital modes, for CW operators who have never tried WSPR. And frankly, an additional business opportunity for me – since a reasonable proportion of QCX customers also purchase a QLG1 GPS kit to go along with it – so adding the WSPR feature provides an additional sales opportunity.

It was hard to wait until Monday (after the Friday's email), so I could begin work on the first development version (photo above). By the end of the week, I was on air on 40m. Then there were months of work to productionise this – to make a PCB layout, procure samples of all the parts, build prototypes, manufacture the

kits – and not least of all, write the 138-page assembly manual! Later I changed the radio to 20m, and then 17m (the RSGB wanted their transceivers to be 17m (since it IS in fact, 2017 hi hi).

The YOTA kits were due for delivery at the end of July and I made it just in time. Earlier in July I attended Friedrichsafen hamfest (largest in Europe) where I had a small booth. I had a crowd of people round my table solidly for all 3 days. On the first day I did not even take a 30-second toilet break from before 9am to after 6pm. I demonstrated my pre-production QCX, and took pre-orders. People brought me coffee and Coke and chocolate to sustain me. It was hectic! On the second day, a gentleman from the huge shiny Kenwood booth opposite came over, before the show opened. He wanted to know what was going on over here. So I said take a seat (there was only one seat, normally nobody could use it, but this was pre-open so the crowds weren't in). I showed him the QCX, and he ordered one! Selling a pre-order to one of the Kenwood staff was a show highlight! :-)

The YOTA buildathon went very well, by all accounts. When the kits went on general sale on 21st August, the remainder of the first batch of 500 sold in just over 24 hours - I was NOT expecting that! I immediately started producing a new batch and taking pre-orders and that situation has continued ever since, we are still fighting to cut down the waiting list, get the QCX kits shipped out!

Some order statistics:
QCX is sold for the 80, 60, 40, 30, 20 and 17m bands. 40m is most popular, followed by 20m. Over 3,600 orders have been taken to date with QCX kits having been shipped to 54 countries (the US accounts for 46% of QCX orders). See http://qrp-labs.com. (Story adapted from the ARRL Contest Update for December 13, 2017.)

Highlights of an Epic 11 mile, 12-point Traverse – activating three summits in the W7W Lower Columbia region by Matt-KF7HIZ. How did you get your first SOTA points? Matt tells his tale…

I was trying my best to stretch my legs in the back seat when a voice from the front broke the silence. "Not cool, newbie!" It was Mark -K7EEX.

"What do you mean?" I wondered.

He chuckled, "It took me almost six months to get my first twelve activation points…and you just did it all in one day."

"Yeah, and I'm feeling every one of them in my legs right now," I replied.

"Not bad for your first day of SOTA activations." Added Scott-KI7EMX as he drove us down the dark and bumpy forest road back to civilization.

I had just finished a grueling 9.5-mile traverse of Three Corner Rock (W7W/LC-101), Birkenfeld Mountain (W7W/LC-094), and Greenleaf Peak (W7W/LC-104) with Etienne-K7ATN and Darryl -WW7D. Our route had an accumulated elevation gain of 3,839 feet and loss of 4,642 feet. And it included everything from smooth hiking along the Pacific Crest Trail, to bushwhacking through briars and downed trees along an overgrown path, to clumsily stumbling along a steep utility road covered in loose boulders and scree.

I stayed up way too late the night before prepping for the hike. It wasn't as much for packing my bag. I've done enough backpacking and hiking that it's fairly easy to assemble the essentials. But as I double-checked that I had my flashlight, pocketknife, extra clothes, etc., a bit of anxiety overcame me…

I only have my Technician license. And I haven't really been that active with it, save the occasional check-in on local repeaters. Did I remember how to operate my radio? Would I be able to make any contacts with my 5W

handheld on 2-meters simplex? I vaguely remember something from the Technician's exam about simplex being "channelized". What the heck does that actually mean and what frequencies can I use? What's the National Calling Frequency again? What are the rules for Summits on the Air? How do you give a proper signal report? Google can be your best friend or your worst enemy as it sends you down one rabbit hole after the other…


Three Corner Rock W7W/LC-101

After a few hours of this, my body and brain finally said enough is enough. I shut down my computer and plopped in bed to get at least a few hours of sleep.

It was still pitch black outside and my family was snug in their beds when I crept out the door into the cold car. It was finally warming up by the time I pulled into the parking lot next to Jim-AF7JT's car. We weren't sure if we would need an extra car for the traverse, and decided to caravan the hour or so drive to the Gorge.

It was my first time in the Columbia River Gorge since the forest fires earlier in the summer. Night was turning to dawn. There was barely enough light to make out some charred trees as we drove through. It was sad to know that some of my favorite hiking trails will be closed for quite some time, but glad it didn't look as bad as I expected. I turned on my radio and tuned to 146.520.

"This is KF7HIZ… Kilo Foxtrot Seven Hotel India Zulu…KF7HIZ…Monitoring."

"Hi KF7HIZ. This is K7ATN. Are you on your way to meet up for SOTA?"

"Yes, I'm approaching Multnomah Falls."

"Good. You're just a little ahead of us. We'll see you there."

"OK. See you soon. Looking forward to meeting you. KF7HIZ clear."

In less than half an hour, AF7JT and I were pulling into the parking lot to meet up with everyone. I got on my radio to let K7ATN and everyone else know our whereabouts. "This is KF7HIZ. K7ATN, we just arrived in the parking lot. We're in the back corner and…I think that's you that just pulled up beside me." K7ATN gave me a wave. Everyone assembled between the cars before we split up into two groups. The plan was that each group would start at opposite ends of the traverse, meeting in the middle before continuing on to a parked car on the other end.

Roland-K7FOP joined us to this first peak and planned to stay there for a while before returning back to his car. We arrived at a clearing with several radio towers. The wind was remarkably stronger here. Three Corner Rock was a noticeable prominence just above us. I had to hold my hat to my head as we continued up the rocks to

find a place to set up radio equipment. As we nestled into the side of the rocks, we all needed to squat and brace ourselves against the wind so as not to take an unexpected tumble.

I watched as everyone set up antennas and connected them to various radios. The wind whistled and hissed through the wires. I listened in as K7ATN made a few contacts and jotted down notes in his log. Then he turned to me with his radio and said, "Here you go".

"Oh no, I'm just observing and learning," I replied.

"You can't climb all this way and not make any contacts. Did you bring a log book?"

I pulled out my "log book," a generic spiral notebook that I crammed into my backpack at the last minute the night before. I struggled to juggle my notebook, pen, and K7ATN's radio as I asked, "What do I do?"

"You can start with your call sign and Summits on the Air."

"OK… This is KF7HIZ – Summits on the Air."

My first four contacts needed to activate the summit were a complete blur. Several times I found myself turning to K7ATN and asking, “Who did I just talk to? What summit is he on?” etc. Although I've known the phonetic alphabet since I was a kid in Boy Scouts, knowing it and being quick with it on the air are two different things. My ears were a little slow and my short-term memory seemed hazy when it came to those first contacts. And my "log book" was a mess of scribbles in no particular order. But I was able to decipher enough to later enter everything on the SOTA database.

After we worked everyone we could, we packed up, leaving K7FOP to continue making contacts on CW and headed onto the middle summit of our journey. Along the way we decided to make a call to our other party and see how they were progressing toward our meeting point on Birkenfeld Mountain.

"Uh, we're heading back to the car," was the reply.

Confused, K7ATN asked, "Is everything OK?"

"Jim's legs are cramped up pretty bad."

We were all concerned. But after some more back and forth it sounded like Jim would be OK and that they decided to do the prudent thing and turn around rather than add several more miles to already sore legs. The change of plans was that K7ATN, WW7D and I would continue on to Birkenfeld and Greenleaf while KI7EMX and K7EEX walked with AF7JT back to the car. They would then shuttle cars around so that we had transportation on the other end of the traverse.

My hat goes off to KI7EMX and K7EEX. Lesser guys might have just let AF7JT walk back alone, left him to wait for us, or pressured him to continue in the pursuit of SOTA points. But they made sure he was OK. That really impressed me about them and every other SOTA activator I've met since. We take care of each other and make sure everyone is safe first.

Matt, with “graham cracker on a stick”

The final ascent to the top of Birkenfeld took us off the trail through some thick brush and downed trees. By the time we arrived on top, KI7EMX, K7EEX, and AF7JT had made it safely back to the car and AF7JT was feeling better. After logging our contacts with them, K7ATN handed me a radio with what looked like a graham cracker on a stick plugged into it. I pressed the PTT button and made a contact. I later learned that this was a small yagi antenna on a printed circuit board for 1240MHz…my first contact ever on the 23-centimeter band.

Shortly after rejoining the Pacific Crest Trail, we came to a wide clearing that stretched on forever under the high voltage power lines from Bonneville Dam. Between us and Greenleaf Peak was a long and steep descent, climb, descent, and climb on the rough utility road under the power lines. I normally wear lightweight trail running shoes when hiking. But heavy-duty boots with support would have been much better on this roller coaster of a "trail" over loose gravel and scree. This section was slow going and tough on our bodies. We were running behind schedule and debated whether to skip the side trail to Greenleaf and head directly to the trailhead. The side trail to Greenleaf was almost completely overgrown and steep. We were all pretty tapped out by this point and took lots of breaks on the way up. But we were so close and determined to make it to the summit.

Finally, we made it within range of the summit and we immediately threw off our packs in the middle of the trail to get our radios out. We made two contacts each on 2-meters but needed two more. I think K7ATN got on a repeater and asked if anyone could head over to 146.520 to make a contact with us. The minutes were ticking down to 23:59 UTC. If we didn't get the remaining contacts within the next 5 minutes, we would need to start again to get our required four contacts. WW7D got his. Then I got mine. I was watching the clock as K7ATN got his with seconds to spare. We had a mini celebration as we rushed to pack up our stuff.

The sun was setting as we descended from Greenleaf Peak. Along the way the radio crackled that KI7EMX and K7EEX were on their way to help shuttle us back to civilization. We had another mile and a half to go to reach our planned extraction point. And it consisted of switchback after switchback over the loose gravel and scree of the utility road that runs under the high voltage power lines. Later I discovered that we descended nearly 2,000 feet during this last part of the trail. And I could see why AF7JT's legs cramped up. Mine were starting to feel pretty stiff and sore as well.

Along the way, K7ATN told us about the Mexican restaurant in town that serves giant burritos. And for most of the last mile, all I could think and talk about was how a giant burrito sounded pretty awesome.

As it started getting darker we wondered aloud where the trail intersected the road down below us. Was it the first hill? Or the second? Or the third? Or the… Just then, out of the corner of my eye, I caught a brief glimpse of headlights near the first hill.

"I saw headlights!" I'm not sure if K7ATN and WW7D believed me or thought I was hallucinating. We were all pretty exhausted at that point. The kind of full-body exhaustion that makes you a bit giddy and giggly, where the things you and your companions say seem more humorous than usual. K7ATN and I stopped and doubled over in

laughter when WW7D made the forlorn call to KI7EMX and K7EEX, "This is WW7D. We think we saw you. Honk your horn. It may give us some hope to continue on." We couldn't hear a horn. But a few minutes later we could see two dark figures coming toward us on the trail below. As we got closer WW7D joked, " They're either here to rescue us or mug us." making K7ATN and I erupt into laughter again.

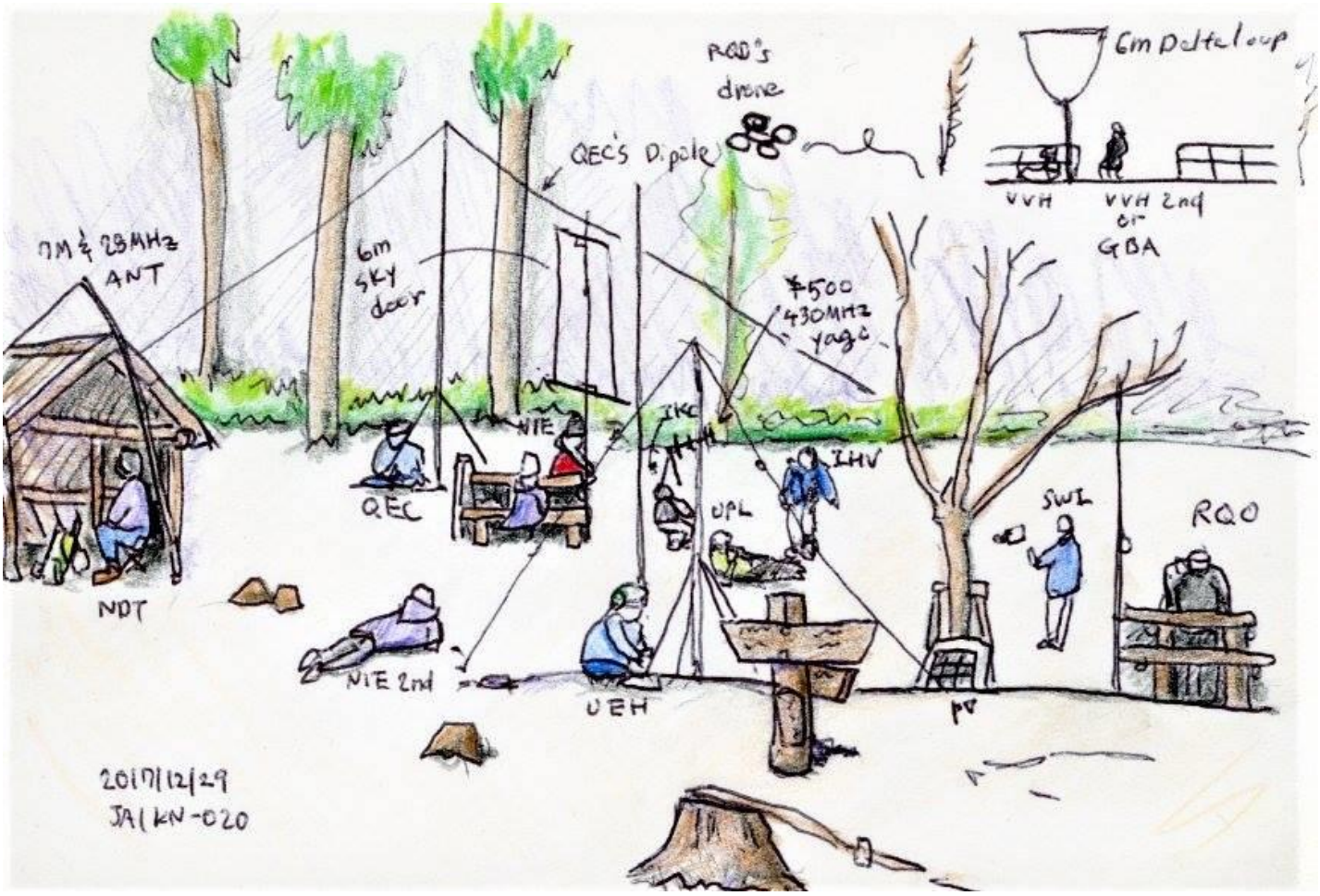
Moments later and even closer we could finally recognize KI7EMX and K7EEX and we all let out a big cheer. They walked with us the last few hundred yards. Dusk was turning to night by the time we made it back to the cars and loaded up to head into town for what was the largest and best burrito I have ever had.

A few weeks later, I opened my mailbox to find my first QSL card ever from my first SOTA contact with Mark-K7EEX. Since then I've gone on a few more SOTA activations, including some 1 pointers with my wife, 4 year old, and 2 year old joining me. SOTA has re-ignited my interest in ham radio. It's motivated me to start studying for my General license. It's given me a good excuse to exercise my body with some outdoor activity, explore places I might not otherwise see, and stretch my mind with learning more about radio.

Group Activations – We have had the occasional group activation here in the Pacific Northwest, with three or four or even, five Activators on the same peak. But how about eleven Activators – or, or…SEVENTEEN? I don't think the Pacific Northwest could gather this many Activators in one place as these two examples, but perhaps we should take a picture, or do a little sketch, when we next bring together a group on a summit.

Shown below is a bluebird January 2018 day in Switzerland on the summit of Fänerenspitz-HB/AI-008. Eva-HB9FPM captured these 17 Activators. QSOs for each Activator ranged from five to 37 for a total of 219!

Takeshi-JG1GPY prepared this fantastic illustration of an activation party on Nagamine-JA/KN-020 where 11 stations enjoyed SOTA in December 2017.



Three Resources – Here are three resources for your Activation daydreaming.

- **http://www.pnwsota.org/sotatool** – Dan-KK7DS built this **Google Earth Overlay** to provide custom databases for Google Earth and also waypoint files for your GPS. (Note that some GPS have limits to the number of waypoints they can store, and so you can limit by Region, grid square or lat/lon.)
- **http://www.sota.org.uk/Associations** – Want to be the first activator of a peak? Access to the **SOTA Summit Database** provides information on each summit, but also a list of summits by Region that clearly shows which summits have been activated – and those that have not.
- **http://www.sotadata.org.uk/summitReport.aspx** – Want to see if anyone worked 2m FM from a summit, or who used 80m? This **Summit Report** gives you the number of QSO by band for each activator. Yes, the full SOTA RF history is here.

Your Assignment – Read the SOTA General Rules – There's nothing like knowing the rules for our radiosport. I recommend that each of you look through the thoughtfully crafted guidelines that make our passion for hiking and radio together successful for both Activators and Chasers: http://www.sota.org.uk/Joining-In/General-Rules.

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