



RADIO AMATEUR NEWS & VIEWS

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FIELD DAY TRAINING

The June 14 RANV Meeting

Our June meeting will be on Field Day. There are a number of new issues to learn about, plus some old recurring issues to deal with.

There are two new bonuses this year. First, we will have a safety officer (Jeff N1YD) who will oversee all things safety related and report on specific items in our Field Day submission. The second new bonus is engaging in social media. We will discuss ways to earn that bonus as well.

On the technical front, we will be putting in new RFI suppression techniques in all the stations. That means ground rods at the towers and generators, all equipment grounded via braid to the tower ground point and RFI chokes on the AC lines. We want everyone to understand what we are doing so that shortcuts are not taken in the implementation.

The GOTA station has been an issue for a few years. While we usually earn a lot of bonus points, we regularly find problems there. With the experienced ops busy doing other things, the coaches have to come up a steep learning curve to make sure the GOTA ops do it right. Some of things I regularly see include tuning instead of calling CQ and calling CQ on top of another station. We want to make sure everyone knows what to do and what not to do when running that station.

While this is all under the guise of Field Day, we will be covering a lot of valuable topics necessary at your station outside of Field Day: safety, RFI and operating. Be sure to come down and find out about all this good stuff!

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Meetings: 2nd Tuesday • 7:00 PM
113 Patchen Road
South Burlington
The O'Brien Civic Center

Repeater: 145.150, PL 100; WB1QR

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VHF QSO PARTY THIS WEEKEND

Mitch W1SJ

The ARRL VHF QSO Party, the premier VHF/UHF operating event, will take place Saturday-Sunday, June 11-12. Things get underway at 2PM Saturday afternoon.

June is often the peak of Sporadic E season and lots of stations can be worked - IF the band opens. But you won't know that unless you get on. Look for activity at 50.125 MHz and up on 6 meters. If there are no large openings, 2 meter activity can be found around 144.2 MHz. You might find FM activity on 146.55 MHz, too. VHF activity can be fleeting. Don't just listen for 5 minutes and give up if you don't hear anything. Instead, leave the radio on the aforementioned calling frequencies for a long period of time - you'll hear something after a while.

I plan to be up on Mt. Equinox in Southern Vermont. I will point the yagi north at the top of the hour, so that is a good time to listen for me. I'll be on 146.55 and 144.2 MHz and wherever I can find a clear spot on 6 meters. If you have an outside antenna, or a high powered mobile, there's a good chance I'll hear you, so give it a try. Consider driving to a high spot to really explore what you can hear on VHF. Mt. Philo and Mt. Mansfield are two popular hilltops to try in our area, but even some smaller hills in our area will enhance reception. You might combine the QSO Party with some SOTA operation, but remember that contest QSO's are not permitted on 146.52 MHz.

FIELD DAY JUNE 25-26

Mitch W1SJ

Field Day is coming up on June 25-26. Are we ready?
NO!

We will be challenged like we never had been before. We have lost W1LWH, K2MME and AB1T on CW and N1YWB on phone. Attempts to recruit other operators have not borne fruit. Everyone seems to be going away to attend yet another stupid and pointless wedding (IMHO). Things have gotten desperate to the point where I'm looking to promote some of our GOTA operators to the phone station. And then that leaves us with less GOTA operators!

Our key needs are overnight operators – midnight-6 AM. We need 3 operators to keep the site running (2 ops and 1 to rotate). Secondary needs are GOTA operators (always looking for more) and youth operators. One doesn't need a license to do GOTA – warm blooded creatures will do. In fact, we'll even accept cold blooded creatures who can keep a rate.

We also need setup people – lots of them. Not only have we lost the people mentioned above, some of us are getting old and feeble and cannot do as much as we have done in the past. Compounding the problem is the extra setup we will need to do to ground towers and put RFI suppression in. Not a big deal, but there is extra work to do.

Our June 14th meeting will be on Field Day training. A consistent problem is lack of direction and coordination at the GOTA and VHF stations. We need to make sure that the folks who operate and/or coach there know exactly what to be doing (and not to be doing). We will also go over what steps we will need to take to keep RFI out of the power supplies and computers. And finally, we will review the steps necessary for a quick and safe breakdown. Monday June 20th is the Field Day planning meeting at my QTH. At that time, we decide if everything is in readiness and put extra effort into making sure things get done. Field Day setup is Friday, June 24th at 2PM, with Field Day starting 24 hours later.

BUSY OPERATIONS AT THE 2016 MARATHON

Mitch W1SJ

Over the last several years, communications for the Vermont City Marathon were rather routine. At times, things were downright sleepy. This year, we had the ice water thrown in our faces as the proverbial you-know-what hit the fan early and often. A harbinger of what was to come started early when the race start was delayed 4 minutes due to a gas main leak near the course!

There was no surprise, really. Forecasts were calling for hot and humid weather a full week prior to the event. Plans were put in place by the Marathon people to deal with the hot weather. Ultimately, those plans fell short. Before the race started, all the Gatorade at the Battery Park station was consumed and there was no more to be had. And quickly after the race started, desperate calls for more water were lodged from the first three stations on Church Street and along the Beltline. Both resupply trucks ran out of water. Stations were advised to locate water from garden hoses along the route. With no water source on the Beltline, one of the stations was completely out of water for some 20 minutes until water barrels could be refilled from a nearby church on North Avenue.

As all this was going on, we were also trying to get a plan in place for pickup of dropout runners along the course. A workable plan was never forthcoming. The already busy supply trucks were pressed into service for this.

It goes without saying that Net Control at the Emergency Operations Center (EOC) was crazy. With Steve KB1IVE out for this year, Jay K3BH and I handled the ham net, plus monitored FOUR other non-ham nets (Officials, Medical, Rescue and Busses) and the phone. What everyone heard on the ham frequency was just the tip of the iceberg.

And then, what everyone feared, happened at 11:50. We were just about at the tipping point of the Marathon - when supplies become less of an issue and medical problems take over. At this time, roughly 4 hours into the Marathon, black flags were raised and the race was called off for safety reasons. And then the fun really began.

For several years, the Marathon Organizers have worked on Emergency Evacuation plans for various scenarios. Many of the scenarios involve extreme weather - high heat and lightning. We ultimately dealt with both. The Medical team uses a standard wet bulb globe temperature measurement. This is a measurement of temperature, humidity, sun and wind, measured at several places along the course. I already had a pretty good feeling that the Marathon would not be completed. The day before, we did communications for the Essex Memorial Parade and some folks were having trouble walking the 1.5-mile route. Sunday's forecast promised the same thing. By 9:00 we were already at red flag conditions - extreme caution. It was not looking good.

While we had a working evacuation plan, the 3 groups who had to implement it (Marathon, Police, Medical) all had their own interpretation. The Marathon called for "hold for 15 minutes until we get resources (water, ice, busses) in place". Medical was trying to stop everyone and the Police were attempting to shut down the bike path totally. Yes, it was cat herding time.

Eventually, the Marathon Technical Director came up to the EOC to assume control of the event. Ham radio became the means to get everyone on the same page and eventually runners were either directed to busses or clearly told that the race was called and if they continued running, it would be at their own risk and without course services. The ham net communicated with Bob KB1FRW in the lead bus, who passed the word to the other busses on their frequency. Our Trail Bike operator, Chad KC1CZA swept the course, informed the runners of the conditions and then relayed to us who was running where. Police and Fire at the EOC watched our status board for where the runners were. Meanwhile, I got Police and Medical on the same page so we presented the same story to the runners. We kept in

communications with the remaining aid stations to track the runners who continued on.

And then things went from bad to worse. The Fire Department was watching the weather radar and some very ominous dark blotches were heading straight for Burlington. They were counting down where that storm was. Meanwhile, things were fairly normal at the finish line area at Waterfront Park. The runners who continued were still crossing the finish line and people were wildly cheering. From my vantage point at Battery Park, I could see some 1000 people on the Waterfront. And then at 1:45 The Fire Department gave out the call - Evacuate the park - lightning is immanent. Inside of 15 minutes, the busy park became a ghost town. I quickly pulled down the antennas from EOC as we continued on HT's until the net was shut down at 2:15.

So what do we make of all this? We did our job of keeping the operation on the course together. It would have been a lot more chaotic if we weren't there. Given the tough conditions, the operators and equipment did an excellent job. The multiple receivers on the repeater pulled everyone in with a good signal and the operators knew what to do. Joe the Race Technical Director, has never seen our operation, even though we all have planned Marathons many, many years. He was impressed!

There were 31 ham operators involved with communications for the 2016 Vermont City Marathon. RANV members included: Paul AA1SU, Paul K1PJM, Kathi K1WAL, Chuck KB1RQX, Bob KB1FRW, Bryan KB1OAH, Tim KB1THX, Bob KB1WXM, Dave KB1YGP, Rich KB1YTO, Larry KB1ZEB, Beverly KI6ISG, John N1LXI, Debbie W1DEB, Mitch W1SJ, Bob W4YFJ. We had 3 new operators this year and 8 operators traveled over an hour to get on site. Super job, everyone!

HAMS LEAD THE PARADE

Mitch W1SJ

Last Saturday, 11 ham operators got together to serve as marshals for the Essex Memorial Parade. The Parade keeps on going, even though the original organizers have long since burned out or moved on. There always is a call for volunteers to help organize things before the event.

While we had very hot and humid weather to deal with, the parade was complete at 11:45 before things got too brutal. A number of missing groups and changes were reported to Glenn at the Reviewing Stand at the Five

Corners. All of the parade marshals were ham operators this year.

Debbie commanded the RANV Float at mid-Parade while I terrorized Parade marchers in the RANV Go-Kart. It was something I HAD to do – it was very hot just sitting in one spot or moving slowly. We had to watch out for participants doing bad things like throwing candy and handing out political literature – both prohibited. I found several examples of both transgressions and quickly corrected the offenders. Right toward the end of the parade, we had to clear the line of march to allow an ambulance to get through. Besides that, things were nice and organized all day.

Thanks to volunteers Paul AA1SU, Jay K3BH, Bob KB1FRW, Dave KB1YGP, Larry KB1ZEB, John N1LXI, Glenn N1WCK, John N1WQS, Debbie W1DEB, Mitch W1SJ, Bob W4YFJ.

SECRETARY'S MINUTES

by K1WAL

We began our May meeting with announcements. Bob W4YFJ asked for a final count of those interested in operating on the SS Ticonderoga at Shelburne Museum for the Museum Ships Weekend Event. Unfortunately, there were not enough folks interested or able to commit to a block of time so the Ticonderoga remained off the air.

Mitch W1SJ talked about the upcoming Essex Parade followed the next day by the Vermont City Marathon. More operators were needed for the parade but the VCM was in good shape for staffing.

We discussed Field Day preparations briefly. Several members agreed to provide ground rods, copper strap, etc. Adam KB1LHB will follow up on the little 'Blue Hut' and Paul AA1SU will follow up with the Chittenden Solid Waste district regarding the field.

Paul AA1SU will provide snack for our June meeting – and he was even there to agree to it this time!

Presentation: Enhancing the Forty-9er 40-meter CW QRP with an Arduino and a Director Digital Synthesis (DDS) VFO by Chris KC1BGK

Like many, Chris KC1BGK read an article about a project in the March 2016 edition of QST. The article was about how to build a modular 40-meter CW transceiver with VFO for around \$50. Chris, being a new ham who likes to tinker, thought this would be a

good project to get his feet wet, as it were. He was nearly drowned but persevered!

The article made it sound as if it was so simple a kid could do it. As Chris pointed out, the kid would have to of been a child prodigy. The project consisted of 5 components – the Forty-9er transceiver kit, an Arduino board, a Rotary encoder, an AD9850 DDS module, and a 2-line LCD display.

The Forty-9er 40m XT is very popular kit which utilizes a fixed crystal VFO. It ranges in price from \$5-\$15. While low cost versions are available from China Chris strongly recommended to avoid these. Along with other issues, the Chinese version have a limited coverage with up to 3 to 5 watts output with modifications.

The Prolog LCD comes in various sizes. They can be parallel or serial, 8 pins or 4. The serial uses fewer pins. They range from 2x16 to 4x20 characters, text only.

The VFO crystal in the original Forty-9er kit ranges from 7.023-7.000 MHz. The first modification was to replace the crystal with a digital AD9850 DDS module which is easily connected to an Arduino and produces a sine wave at less than 30 MHz and is controlled programmatically.

The VFO was a headache for Chris! The instructions from the article were not very clear. The software needed major debugging and sections of code were missing. He also discovered some missing parts in the Forty-9er kit. Since Chris works as a software engineer he was able to work out these issues after contacting the article's authors and conducting his own research. There is a user group for modifications to the Forth-9er kit that Chris took advantage of. A big hurdle was to understand the communications between the modules.

Chris brought his successfully completed project, which run on a 9v battery, to the meeting to show us. He also brought a second version which he modified with more bells and whistles which allowed the frequency to be displayed. His next generation of this project will include a TFT display.

Chris ended his presentation with a little poem:

Once upon a time there was a project a kid could complete
But evil schematics and missing parts turned the fun to defeat

The kid would need magic or a college degree
And that broke the budget with a much bigger fee!



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Upcoming, Notices, & Misc

- Steering Wheel: 3rd Tues 6:30; Ninety-Nine Restaurant, Taft Corners, Williston
- VE Exams every 2nd Friday; Red Cross Building 29 Mansfield Ave, Burlington
- Dues due? Pay online at www.ranv.org/ranvpay.html

NEXT MEETING Field Day Planning

Tuesday • June 14th • 7:00pm
O'Brien Civic Center • Patchen Rd
South Burlington, VT