



# RADIO AMATEUR News & Views

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## RANV SUMMER PICNIC SATURDAY AUGUST 12<sup>th</sup>

Join us for the gala RANV Summer Picnic on Saturday August 12<sup>th</sup> at Kill Kare State Park in St. Albans Bay. This will be a special event as we plan to activate two parks, Kill Kare and Burton Island, simultaneously. The picnic will be a two-site affair across these two parks. Visit one or both sites!

If you will be activating Burton Island, we will need to be assembled at Kill Kare by 10:00 so that we can pack everything on the Ferry for a 10:30 departure. We hope to get over to the island and get on the air with a single station by 11:30. The Kill Kare group will get set up around the same time and will be on the air by 11. Both stations will shut down around 4 PM. As always, RANV will provide park admission, drinks and charcoal for the barbecues. You bring the rest. Make sure you do not bring pets, as they are not allowed in the park and cannot be kept in vehicles. If you are at Kill Kare, the ferry goes over to Burton Island at 10:30, 12 and 2:30, allowing you to visit and operate from the other site as well.

The picnic will run, rain or shine – we have canopies to deal with bad weather. However, inclement weather will likely cancel the Burton Island operation. We will know more as we get closer to the date. Directions to Kill Kare can be found on the RANV web.

## FIELD DAY 2017 REVIEW

*Mitch W1SJ*

We managed to successfully complete Field Day, despite dealing with problems like: site relocation, monsoon rains and endless mud, equipment doing strange things and a reduced staff. We not only completed Field Day, we posted the third highest score we have ever posted - see the box for the numbers. However, with the great daytime conditions, other groups posted great scores too. I already know of one group

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US Mail: PO Box 9392  
South Burlington, VT 05407

Web: [www.RANV.org](http://www.RANV.org)

Reflector: [groups.yahoo.com/group/RANV](http://groups.yahoo.com/group/RANV)

Meetings: 2<sup>nd</sup> Tuesday • 7:00 PM  
Wheeler House  
1100 Dorset Street  
South Burlington

Repeater: 145.150, PL 100; WB1GQR

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New Hams, Mentoring:  
[RANVMentor@gmail.com](mailto:RANVMentor@gmail.com)

VT State Parks On The Air:  
<https://www.facebook.com/groups/292829457810746/>

who just squeezed past us. We had way more QSO's, but they stayed primarily on CW and picked up more points. I figure we'll be 3rd or 4th. It's the nature of the scoring and propagation which often determines the outcome.

2017 RANV FIELD DAY BOX SCORE			
80 CW	202	80 SSB	175
40 CW	408	40 SSB	182
20 CW	816	20 SSB	1790
15 CW	59	15 SSB	291
GOTA CW	0	GOTA Ph	500
VHF CW	6	VHF Ph	240
Sat CW	0	Sat Ph	2
Total CW	1491	Total Ph	3180
4671 QSOs 2470 Bonus 14794 Pts			
	<u>2016</u>	<u>2015</u>	<u>2014</u>
QSO's	3932	3675	4548
Bonuses	2530	2170	2410
Points	13018	12202	14016

It is worthwhile to discuss where we will be going with this in the future. We are one of the best Field Day groups in the country – other groups are amazed we score as high as we do without a battery of veteran contest ops. And along with the experience we have with myriad park activations, our core group is second to none in setting up a kick butt ham station in a very short period of time.

But there were a number of things I observed this year which I find distressing. First is the fact that the number of Field Day participants is steadily dropping from a high of 30 some years ago. We only had 18 participants on site this year, with only 12 doing the operating. This is out of a club with a membership of 100. It was tough finding enough GOTA ops – we are not training new people! We are back to the old discussion that we need to grow ham radio, and everyone is clueless on how to do this. The problem is that most hams are active in the hobby 2-3 years and move on. If new people are not forthcoming, the active participants virtually die out after a period of years. We can also point out the “graying” of ham radio – the average age of our participants was 61 this year. Look 10 years down the road and what do you see? Demographically, it ends up being a bunch of old guys with canes and walkers putting up towers. Let's save up a lot of money now so we can hire and train kids to do the dirty work of setup (hey, not such a bad idea!). Speaking of kids, we

entirely struck out on the youth bonus, losing 100 points in the process. For a group who prides itself in getting all the bonuses, this is a step down from where we should be.

Another problem with participants is scheduling. I took on the GOTA scheduling, and it wasn't pretty. I wasn't able follow up on scheduling while keeping focused on setup. Someone else will have to take that job on. This was compounded by situations where we thought someone would be on site and either a miscommunication or change in plans caused a snafu in scheduling. We will have to be crystal clear on who will be where at exactly what time – a well-oiled operation demands this.

The third issue I observed was implementation which was sloppy at times. The CW station initially was not grounded. We spent a great deal of time planning this out last year so that we would not have problems with the computer equipment. Our worst fears were realized when RF took down the computer network. The station was off for 54 minutes during prime time operating while computers were fixed. It cost us 80 lost QSO's or 320 points. Put another way, this one event might have dropped us from 2nd place to 3rd or 4th place. We can ill afford to be sloppy with the setup.

2017 RANV FIELD DAY HALL OF FAME	
AA1SU Paul	– CW op; VHF op; Equipment; Bonuses; Traffic; Set up; Tear down.
AB1DD Carl	– GOTA coach; Set up; Tear down.
AB1T Doug	– CW op; Equipment.
K1WAL Kathi	– GOTA op/coach; Set up; Tear down.
KB1FRW Bob	– Phone op; VHF op; Equipment; Set up; Tear down.
KB1LOT Jim	– Pre-Set up.
KB1MDC Alan	– Set up.
KB1WXM Bob	– Set up.
KB1ZEB Larry	– GOTA op/coach; Set up; Tear down.
KC1CZA Chad	– GOTA op/coach; Tear down.
KE1AZ Jim	– Phone op; GOTA coach; Tear down.
KI6ISG Bev	– GOTA op/coach; Site Safety.
N1GGU Bob	– Setup; Tear down.
N1YD Jeff	– Demos; GOTA op/coach; Set up; Tear down; Site Safety.
N1YWB Jeff	– Phone op; VHF op; Set up; Tear down.
N6PRT Doug	– Set up; Take Down.
W1LWH Linn	– CW op; Equipment; Set up; Tear down.
W1SJ Mitch	– Chairman; Phone op; Satellite op; Equipment; Set up; Tear down; Results.
W1ZN Craig	– Set up; Take down.
W4YFJ Bob	– Bulletins.

Additionally, the GOTA and VHF stations were also not grounded. While we got away with it in the last two years, this is a ticking time bomb. For the last couple of years, I hear stories of how CW interferes with GOTA and vice versa. But this only happens at specific times. No one has taken the time to detail the conditions leading up to the interference (frequencies, antennas, etc.). Without this information, cannot investigate the cause of the problem. And it will continue until we understand the problem and fix it.

In the ridiculous department is the story of how the tuner on the phone station was missing a balun. It was supposed to be in there, but it is a Heathkit and the original builder elected to leave it out. A missing balun is not obvious when you use the tuner. But it turns a dipole into a random length wire. Initially, I thought we lost several S-units of signal due to this. But tests and modeling (thanks, **W1ZR**) show that we lost around 4 db or about 1/2 S-unit. This certainly didn't help, but it was likely the horrible overnight conditions on 80 and 40 meters which really did us in. I will research further on how to better combat the poor overnight conditions. We really got our butts kicked overnight.

As one of the better Field Day groups, it is important to keep our eye on the prize and make sure we do things correctly and efficiently. And we need to bring new people into the activity. The bottom line is that our small group remains one of the best in the business. Glance at the Hall of Fame listing to see the myriad details our group takes care of. If you are listed in that group, we thank you for a job well done. If you are not one of that group, make sure you join us on the 4<sup>th</sup> weekend of June next year!

## UPDATE ON VERMONT PARKS ON THE AIR

Bob KB1WXM

A small core of RANV members and other hams have activated Knight Point, Niquette Bay, Mount Philo, Sandbar, Taconic Mountains Ramble and Underhill state parks so far this summer. The best attended events so far have been Sandbar and Underhill where we got 500, and 800 QSOs. Our larger events included two 500 watt stations on 20 and 40 meters.



Photo courtesy of KB1WXM

We want to reach out to other clubs in Vermont to jointly activate parks in their area; please contact [kb1wxm@arrl.net](mailto:kb1wxm@arrl.net) or [w1sj@arrl.net](mailto:w1sj@arrl.net) for more information.



Photo courtesy of KB1WXM

Our next activation will coincide with the RANV picnic on Aug 12 at Kil Kare State Park in St. Albans; please join us there for a great time on the radio.

Please see our Facebook page for pictures, videos and notifications of future activations

<https://www.facebook.com/groups/292829457810746/>

## SECRETARY'S MINUTES

Kathi K1WAL

We had 16 in attendance at our July meeting.

Bob **KB1WXM** offered to bring snacks to the September meeting. Thank you Bob!

Before our presentation we discussed the upcoming club picnic at Kill Kare State Park. This will be our August meeting so if you swing by our regular meeting place at the Wheeler House on August 8 no one will be there.

Bob KB1WXM announced a Vermont State Parks on the Air activation at Sandbar State Park on 7/15 rain or shine. Be on the look for future Vermont State Park activations!

Presentation: HamSCI Solar Eclipse QSO Party Presentation by W2NAF

Our presentation was a YouTube presentation by W2NAF to the W2LI club in New Jersey titled *HamSCI and the 2017 Total Solar Eclipse* on June 5, 2017. While the actual video quality wasn't so good the content was excellent.

The speaker, Nathan Frissell W2NAF is a Post-Doctoral Research Assistant at the New Jersey Institute of Technology (NJIT). His ham radio hobby led him to his PhD in



Ionospheric Physics and Electrical Engineering from Virginia Tech. He said ham radio is a hobby for communicators, builders, and experimenters.

Frissell began the presentation with an overview of ham radio and Space Weather and how radio waves from the HF radio bands propagate through the ionosphere (D, E, F1, F2 layers) on different bands at different times of day and season. The ham radio signals going through the ionosphere can give information on what the ionosphere is doing. He went into great detail on how he collects ham radio signals using the things familiar to many of us such as CW Skimmer, CW Skimmer Serve, DX Cluster, and the Reverse Beacon Network (RBN). NJIT has RBN receivers KTMFF-2 and KTMFF-3. I will not cover all that in these minutes so you are encouraged look at the link to watch (or re-watch) the video.

Frissell then explained using the RBN to calculate the foF2 value. The foF2 is a measure of the highest frequency of radio signal that may be reflected back by the F2 layer, and it is associated with ionospheric peak electron density in the F2 layer. Accurate foF2 values are usually derived from Ionosonde observations, along with other information. The issue with Ionosondes are that they are big and expensive and there are not many of them around the world and none in the ocean. Places you can get measurement from these are limited.

Using the RBN Frissell could use the ham radio QSO data to estimate the foF2 values using the Secant Law. During a contest measurements of the ionosphere can be made from a wide area around the world.

Then Frissell finally got to the important stuff: **The Solar Eclipse QSO Party!**

On August 21, 2017, a total solar eclipse will cause the shadow of the moon to traverse the United States from Oregon to South Carolina in just over 90 minutes.

HamSCI is inviting the amateur radio community to contribute to a large scale experiment by participating in the Eclipse QSO Party. Data from logs and automatic observation networks such as the RBN and the WSPRnet will be combined with the observations from existing ionospheric monitoring networks to better understand the ionospheric effects caused by a total solar eclipse.

Get on the air and make contacts on 160 to 6 meters from 10:00 am to 6:00 pm EST. There are many ways to participate! Modes include CW, Digital, and phone. In digital modes try to send data to PSKReporter if that is an option for you. Use the format "CQ CQ TEST DE callsign" for best automated receiving. The exchange is receiving callsign, signal report, six character grid locator, and your callsign. The actual signal strength is preferred but 59 or 599 are OK.

You may also want to set up WSPR on any sound card configured radio and computer to monitor (receive only) and

report. For a bigger challenge you can want to activate a WSPR beacon. Information on how to do this and where to get the (free) WSPR software as well as the full contest rules (with many possibilities for bonus points) is in Additional Links below.

The link to this presentation is

<https://www.youtube.com/watch?v=csULdTh7Xqs>

#### Additional links:

- Ham Radio Science Citizen Investigation: <http://hamsci.org>
- Solar Eclipse Project: <http://hamsci.org/eclipse>
- Solar Eclipse QSO Party: <http://hamsci.org/seqp>
- Reverse Beacon Network: <http://reversebeacon.net>
- WSPRnet homepage: <http://wsprnet.org/drupal/>
- Source for WSPR: <https://physics.princeton.edu/pulsar/k1jt/wspr.html>
- Frissell's article in Space Weather Journal: <http://onlinelibrary.wiley.com/doi/10.1002/2014SW001132/abstract?campaign=wlytk-41855.5282060185>

#### FEATURED QSL CARD OF THE MONTH



**Thanks Bob – KB1WXM!**

*Got a favorite QSL Card? Send us a picture and we'll feature it one of the upcoming newsletters.*

#### DXPEDITION TO SUTTON ISLAND, MAINE

**IOTA NA055 USIOTA ME029S**

*Bob – KB1FRW*

I have thought about a remote, never activated, Dxpdition over the years but never seemed to have the time for it, life is busy!

So how did I end up on a semi-remote island in Maine in the Atlantic Ocean that had never been qualified for US IOTA (Islands on the Air)? By chance mostly, in early spring I saw an ad for a house rental on a Maine island in the local Front Page Forum. Hadn't been on vacation for years so I called the family to see if there was any interest, soon I had all 8 beds

filled and I signed the rental contract, wasn't bad either, \$1215 for the week.

I hadn't even considered bringing a radio and I don't exactly remember how I came to realizing that this would be an opportunity to operate as a mini DXpedition. It may have been the conversation I had with Paul, AA1SU, when I mentioned the trip, he asked if I was going to activate it as an IOTA entity, that kind of got the gears grinding.



*Photo courtesy KB1FRW*

Sure, why not, locked on an island for a week just relaxing should leave some time for operating so I decided I could bring my Elecraft KX3 I had purchased mostly as a second radio when my K3 had to be sent in for repair. Why the KX3, why not some 100w rig around the same price? Well I have an amplifier so power at my QTH was not an issue and its portability played into my dream of portable operation.

The next thing I did was completely forget about the whole thing as I had months to go, this turned out to not be so helpful.

Near the beginning of July I started ramping up for the logistics of this trip, it was a bit daunting as we had to get 8 people to decide what they wanted to eat, make up a list, try to figure out how to transport all these things, deal with more minutia than you can imagine all the while dealing with a busy life.

It is a good thing that AA1SU asked me at the July meeting about the IOTA activation, I had completely forgotten! Turns

out that there was an IOTA contest on the day before I was leaving.

You had to see what went on for the days preceding our departure, finalize the list, buy the food, pack the food (there was a quite a load of food!), hastily amass KX3, antennas, coax and connectors, tuner, power supply and a laptop, stuff two cars full, realize it all doesn't fit, put the cartop carrier on, pack it full, break a glass jar (yes someone really brought glass!). You had to see it 6 people in two cars stuffed full, quite a sight. Off we went, US Route 2 almost all the way with a 4 PM ferry to catch, 320 miles, 7 hrs according to the routing software.

We got to Northeast Harbor here at 3:45 and had to unload the cars, slide it all down the ramp to the dock and heave it on top of the ferry "Sea Queen". Must have been 15+ fair size packages that all had some heft to them. We made the boat 4 minutes late, much to the captain's chagrin, left 3 people to park cars a 1/2 mile away and catch the 6 PM boat.

To my surprise they left us off at a different dock due to low tide but it didn't really effect the amount of work it took to haul all that stuff 70 to 100 feet vertically and 2000 feet horizontally, 4 trips with two carts and another hand carrying, took two hours which put us in time to meet the 6 PM ferry and retrieve another 18 gallon Rubbermaid container that got left on the dock that had in it, of all things, the radio!

We settled in, it is a nice house, 2 bedrooms on the second floor with a 10ft. x 10ft. 3 story tower (w/2 more bedrooms) with a crow's nest/widows walk platform at the 4 fourth floor level. Almost perfect, I get the tower room on the second floor with a good opening for coax.



*Photo courtesy KB1FRW*

The next day, Monday, I go scavenging for a pole to mount the antenna on and find a 10 ft. piece of 1 1/2" PVC pipe, strap it to the widows walk rail, haul up the 20 meter dipole, tie the ends to trees, put the coax inside, put the radio on the table and go to connect the coax to the tuner, trouble is the coax is BNC and the tuner is UHF, forgot the connector!



Turns out I forgot two important connectors, BNC female to PL-259 UHF, and 1/8" phone to 1/4" phone, whoops. This is what happens when you hurry (remember in the beginning when I completely forgot about this trip), that is when I should have gotten the radio ready.



Photo courtesy KB1FRW

Turned out the missing connectors caused no real operational issues, I couldn't try tuning the 20 meter dipole on 40 meters (would it have worked?) and the audio came through the built-in speaker.

There was no data service there, scratch plan to register island.

So I got on the air on 20 meters with a booming 12 watts! And made: 26 contacts 7/24 Monday 17:50-20:49

Changed to 40 meter dipole which yielded nothing on 40, then tuned it to 20 meters and made: 7 contacts 7/25 Tuesday 00:27-01:01

Skipped Wednesday due to off island adventures and no signals on 40.

Changed back to the 20 meter dipole and made: 17 contacts 7/27 Thursday 21:19-23:57

After another day off playing: 18 contacts 7/28 Friday 00:00-23:37

Saturday was the IOTA contest, things liven up some for: 71 contacts 7/29 Saturday 16:00-18:56

Most of the contacts were expected first skip stuff, places like PA, SC, TN, WI, IL, MI etc. until Saturday that is, all of a sudden I could hear and work all of New England! I was getting ME, NH, VT, MA, and CT.

I worked WINVT at Underhill State Park which I didn't think would happen on this trip due to the bad performance of the 40 meter dipole, pretty unusual propagation I'd say. I don't remember ever hearing 20 be like that for so long in the middle of the day.

Every QRP station I heard I would work on 5 watts and never missed one.

I found out afterward that I had qualified Sutton Island for the first time ever in the US IOTA program as ME029S. Not much chance under the IOTA program as Sutton is part of a group of islands which includes Mount Desert Island home of Acadia National Park.

When I was on the air Saturday I worked two stations that were on Mount Desert Island so I expect many contacts have been made from there!

Carl, [AB1DD](#), emailed me that Arnie, [W2HDI](#), kept a boat in Southwest Harbor which was a few miles across the water and he monitored 146.520 but I never was able to raise him.

Here are the two unusual contacts of the trip:

OE3IDE and KP2XX

I mostly worked near in USA and Canada especially Ontario for some reason.

What did I learn? Plan better and earlier, when you are packing double check everything and have a list. The radio part of this trip could have been brought to a standstill for the lack of one connector!

I figured out what went wrong, my normal mode is to bring extras of connectors and coax and analyzers. The lack of available room made me forgo these things.

Being that this was a first outing I guess it turned out fine and I learned that you need to put all your gear together and make it work before you embark on this type of undertaking as there is no easy way to get things you may have forgotten.

All in all it was a great time, very relaxing cut off from the world with a low noise floor (except for the computer power supply) and the family all around. We all had a blast and I'm going to do this again, not sure where and not sure when but it will happen.

## CONGRATULATIONS!

Congratulations to the following new licensee and upgrade:

- **KC1HWQ** – Jim Boyken (Grand Isle) - TECHNICIAN
- **N1EQP** – Stephen Edwards (Williston) - EXTRA

## FEATURED PLATE OF THE MONTH



**Thanks Zach!**

*Got a ham plate or Amateur related vanity? Send us a picture and we'll feature it one of the upcoming newsletters.*

## POP QUIZ – Answers below

Technician Question: T0A11

*What kind of hazard might exist in a power supply when it is turned off and disconnected?*

- A. Static electricity could damage the grounding system
- B. Circulating currents inside the transformer might cause damage
- C. The fuse might blow if you remove the cover
- D. You might receive an electric shock from the charged stored in large capacitors

General Question: G0B15

*Which of the following is true of an emergency generator installation?*

- A. The generator should be located in a well-ventilated area
- B. The generator must be insulated from ground
- C. Fuel should be stored near the generator for rapid refueling in case of an emergency
- D. All of these choices are correct

Extra Question: E7C01

*How are the capacitors and inductors of a low-pass filter Pi-network arranged between the network's input and output?*

- A. Two inductors are in series between the input and output, and a capacitor is connected between the two inductors and ground
- B. Two capacitors are in series between the input and output, and an inductor is connected between the two capacitors and ground
- C. An inductor is connected between the input and ground, another inductor is connected between the output and ground, and a capacitor is connected between the input and output
- D. A capacitor is connected between the input and ground, another capacitor is connected between the output and ground, and an inductor is connected between input and output

Answers: T0A11-D G0B15-A E7C01-D Good Luck!



## NEWS&VIEWS

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### NEXT MEETING RANV Summer Picnic and Dual Activation of Vermont Parks On The Air

Saturday • August 12<sup>th</sup> • 10 am

Kil Kare State Park  
Saint Albans, VT

### 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](http://www.ranv.org/ranvpay.html)