



RADIO AMATEUR NEWS & VIEWS

The Official Journal of the Radio Amateurs of Northern Vermont

March • 2014

An ARRL Special Service Club

Vol. 24 • No. 3

NEXT MEETING: MARCH 11 – MOVIE NIGHT

Kiritimati – A Tropical Paradise

Come and enjoy the video of the 2011 T32C DXpedition to Kiritimati (Christmas Island) organized by the Five Star DXers Association (FSDXA). This DXpedition ran from October 1-24 2011 with 38 amateur radio operators from 11 countries from the Island of Kiritimati in the Northern Line Island, a part of the Republic of Kiribati.

While this DXpedition took over two year's planning not everything went as planned. Come and see what goes into planning and organization of a major DXpedition in a very remote location! This video also shows the unique lifestyle and culture of the Christmas Islanders and some rare tropical wildlife not seen anywhere else on the planet.

The entire island is a wildlife sanctuary and access to some particularly sensitive areas is restricted. The island is probably best known for the nuclear tests conducted in the region around Christmas Island by the UK in the last 1950s and the US in 1962. During these tests the islands were not evacuated.

HAM-CON: IT REALLY WAS A REALLY GREAT SHOOOOW!

Mitch W1SJ

Each year, HAM-CON works very hard to be the best little Hamfest in the world. It's much like the little engine that could. We're a small show and likely the smallest ARRL Convention. But we put on a program rivaling much larger ham shows.



Often we are dealt a tough hand. While the weather was thankfully not an issue, we did lose major vendors Ham Radio Outlet and Dave Schneider for reasons beyond our control. And, you know what – it really hardly mattered. A whole bunch of hams came in with exquisite junkie in tow and filled the room anyway. Quickly, a pattern emerged. Everyone who came in at the opening headed right for the vendor room and there was a big crowd in there early in the morning. Then, as the morning progressed, folks gravitated back out to the lobby and into the forums.

The forums were very well attended – even the early and late forums, which tend to have smaller numbers. Most of the forums had over 15 people with the Digital forum bursting the room with 36 attendees! We had not one, but two Skype forums which came off perfectly – big thanks to our Skype Technical Manager KK1L. And the ARRL Forum took on added significance as it became the place to discuss and learn about the H.62 Portable Electronic Bill being considered in Vermont. (Continue on page 2)



Bob KB1FRW operating W1V

HAM-CON
 (Continued from Page 1) The W1V special event station was hopping all morning. Some 200 QSO's were logged by a group

of operators, both experienced and

brand new. We even got our Skype speaker John NN6JA his first Vermont QSO! In and around the W1V operations were mini-forums, the Tech table and videos. In fact, what makes the Holiday Inn venue so great for us is that there are numerous places for people to hang out and chat: the Vendor Room, the Activities Room, the sizeable Lobby and even the restaurant, earlier in the morning.

Logistically, this was one of the best shows we have ever run. There were hardly any problems to deal with all morning. The Closing and door prize drawing actually started ON-TIME! That's a first.

The show was again financially successful. I did notice that attendance from the distant areas was down some, while we had slightly better attendance from locals. The reality is that as our clientele ages, there is less a willingness to travel distances. I'm starting to give some serious thought to putting parts of the program on-line so that hams all over Vermont can participate from home (for a nominal fee). We will hash these and other HAM-CON details out over the course of the year.

How does HAM-CON happen? It takes a village to put on a show. These are the club members who played a part in making this happen. If I left your name out, I'll buy you a drink at the next meeting! Thanks to AA1SU AB1DD K1CRS K1EUH K1WAL KB1FRW KB1IVE KB1LHB KB1LOT KB1MAQ KB1MDC KB1PDW KB1THX KB1WXM KB1ZEB KE1AZ KK1L N1CAI N1LXI N1PEA N1WWW N1YD VE2EQL W1DEB W1SJ W4YFJ WL7CVD



Members of the Military Auxiliary Radio System MARS get together at HAM-CON L-R Jeff N1MZE, Ray KC1BT Kathi K1WAL, Betty KC1YW, Bob W4YFJ, Marian AA1VU, Spencer KB1PDW

H.62 BILL STILL PLUGGING ALONG

Mitch W1SJ

Just in case you have been hiding out under a rock all winter, the Vermont Legislature is moving towards banning ALL handheld devices by use of a driver of a motor vehicle. The bill is H.62 and it has passed the House and is now being considered by the Senate.



The Montpelier Four L-R Jeff N1YWB, Steve KA1LHZ, Bob KB1FRW, Mitch W1SJ

The wording of the bill is quite vague and casts a large net. While the intended target is cell phones, the bill, as currently written,

also includes things like electronic cigarettes, electric shavers and... ham radios. That's where we get involved.

Hams all over the state were quite instrumental in communicating with their legislators and this greatly helped us when it was time to offer testimony. On Friday February 21st, the day before HAM-CON, N1YWB, KB1FRW KA1LHZ and W1SJ (the so-called Montpelier 4) testified before the Senate Transportation Committee, where the bill is being considered. They made the argument that amateur radio is already recognized by both the Federal Government and the State of Vermont for providing emergency communications in disasters and that continued and daily use of amateur radio in moving vehicles is necessary to ensure our ability to provide a timely response in these emergencies. But the key point was that we don't look down at our equipment to dial phone numbers.

Last Wednesday, KD1YT and W1SJ attended the second committee meeting. Our presence was noted and at several times, it was mentioned that some changes needed to be made to accommodate amateur radio operation. We have also met up with Legislative Council – the lawyer whose job it is to craft the wording of the bill. We will offer our help to help everyone understand the differences between the various communications devices.

The Transportation Committee will pick this back up the week after Town Meeting day. We will make sure we have amateur radio representation at these meetings until the bill eventually becomes law or is stopped.

Stay tuned to the RANV Reflector for up to minute reports.

Secretary's Minutes

Kathi K1WAL

Business –

- We discussed details and assignments for HAM-CON and voted to spend \$65 to cover the cost of the VT Amateur Radio Directory.
- Jim KB1LOT will bring snacks for the March meeting. We voted to increase the reimbursement for snacks from \$15 to \$20.
- Bob W4YFJ and Carl AB1DD talked about the upcoming Museum Ships Weekend onboard the Steamship Ticonderoga at the Shelburne Museum on June 7 & 8. We voted to spend up to \$200 for admission fees to the museum for those (and only those) who will be operating.

Presentation –

Bob KB1FRW discussed the basics of using a voltmeter, ammeter. While this is something many of us do all the time it is always good to step back and review the basics. For newcomers and those not electronically literate this was a great introduction.

The presentation started with important tips:

- Read the instructions! What is it rated for?
- Know what you are testing. Know the voltage levels and frequencies
- Watch for moving parts
- Make sure your meter works
- Make sure you stick leads in the right hole!
- Don't measure voltage on the current setting
- Pretest your meter
- If you have to work on a "live" box you will need good visibility. Turn the power off, attach the leads, make sure you can see them, and turn the power on.
- Don't kill yourself!!

Bob demonstrated several pieces of test equipment explained their strengths and weaknesses and which he liked best.

Welcome New RANV Editor

Congratulations and many thanks to Adam KB1LHB for stepping up help with the NEWS & VIEWS! Kathi and Adam will work as co-editors initially. You may see some changes to our newsletter!

VT QSO PARTY 2014 – LARGEST EVER?

Mitch W1SJ

I have been up to my neck in logs! The tally is 95 logs – 23 from Vermont and 72 from outside Vermont, representing over 7000 QSO's. This is higher than the past several years, and perhaps the largest ever. Since I don't have access to data from years ago, I'll assume this is a new record.

For those who complain that Vermont is hard to find in this contest, there were over 600 QSO's made with 55 different Vermont stations. The scores listed here are preliminary pending final checking.

The Vermont competition was very exciting. Bob KB1FRW ran up a tremendous score of nearly 1200 QSO's and 94 multipliers for 224,000 points while operating on phone. Joe K1VMT only logged 500 QSO's and 93 multipliers on phone. But, he also put in a considerable effort on PSK-31 and CW, which produced double points and 50 extra multipliers per mode. When the dust had settled and after several recounts, Joe ended up with 303,000 points and takes the top spot this year. Zach K1ZK at the helm of WB1MG put up 90,000 points for 3rd place. Ed WA1ZAM just edged out Steve W1SFR, who operated the whole contest QRP. Paul AA1SU, who had the 3rd highest QSO totals in only 4 hours of work on 40 meters ended up in 8th place. There were 11 Vermont stations who made at least 100 QSO's.

The outside Vermont competition was very tight with razor thin margins. Mark KI0I from MO takes the top spot with 24 QSO's and 14 multipliers for a score of 784. Close behind is Ken KS4X from TN, last year's second place finisher who logged 22 QSO's running QRP. Dick W7KAM, another MO station, who finished 4th last year, ran up 25 QSO's for third place. The top three in this competition get a souvenir bottle of Vermont maple syrup, which I hear is highly fought over! Fifth place goes to Laci OM2VL from Slovakia who tied the high QSO total of 25 from 4000 miles away. I heard him calling CQ Vermont on 40 meters with a BIG signal. There were 18 stations who qualified for the 10 Vermont QSO's award.

When you consider that this year's QSO Party was supposed to be passed to another club and that didn't happen, we are very happy that we pulled it off at the last minute. We'll hope that things are smoother next year and the Party is even larger!

W1AW/1

Mitch W1SJ

There are only three weeks until the W1AW/1 operation from Vermont. There is a lot to do. With HAM-CON and the H.62 bill, things have gotten sidetracked. A forum at HAM-CON helped to provide details on what has to happen before we go on the air.

First thing is to identify the players. If you plan to operate in this, I need to know that immediately. There will not be any opportunity for operators to drop-in at the last moment. There needs to be a good deal of training and information collecting by all of the operators prior to going live. Once we get on the air, things will start happening fast and furious.

Everyone who will be an operator will need to register on the RANV Reflector, as this will be our point of discussion about the event. Training materials and manuals will be available so that everyone will know what to do when we start.



Tim KB1THX operates a RACES station at the State Emergency Operations Center (SEOC) in Waterbury at a recent VT Yankee Drill. RACES provides back up communications to the EPZ towns – those towns within a 10 mile radius of the VT Yankee facility – and the SEOC during its quarterly drills. RACES operators are also placed throughout the EPZ at town EOCs and staging areas.

The event starts Tuesday, March 25th, at 8 PM and runs for a full week until April 1st at 8 PM. We share the week with W1AW/0 in Iowa. Only operators signed up with the coordinator (me) can put W1AW/1 on the air. We have to make sure that we cover as many bands and modes as possible and not duplicate band/modes (i.e. only one 20 meter phone W1AW/1 at a time).

So far, there will be three key stations operating most of the week: W1SJ Essex, K1LI Craftsbury and K1VMT Jeffersonville. Other stations will join in at various times and other operators will help out at W1SJ. We need more operators, especially experienced ones. Folks who are not operating can help by spotting us on the DX Cluster and keeping us abreast of what is happening on the bands. It is very hard to tune around while managing a pileup!

We will get one more chance to discuss this at the March RANV meeting and then it's time to get on the air at the end of the month.

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Web: www.RANV.org

Reflector:
groups.yahoo.com/group/RANV

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

Repeater: 145.150, PL 100; WB1QR

New Hams, Mentoring:
RANVMentor@gmail.com

Adventures in Ball Grid Array Reflow

Bob KB1FRW

For some you out there I can guess that you are thinking, Ball Grid Array?? What the heck is that? It is (stolen right from Wikipedia):

A ball grid array (BGA) is a type of surface-mount packaging used for integrated circuits. BGA packages are used to permanently mount devices such as microprocessors. A BGA can provide more interconnection pins than can be put on a dual in-line or flat package. The whole bottom surface of the device can be used, instead of just the perimeter. The leads are also on average shorter than with a perimeter-only type, leading to better performance at high speeds. Soldering of BGA devices requires precise control and is usually done by automated processes. BGA devices are not suitable for socket mounting.

The leads all come out the bottom and sit on pads on the PCB and are soldered by printing eutectic solder paste onto the PC board and then running the PCB through a precisely controlled oven that ramps up the temperature to around 225-250 degrees Celsius, holds it there briefly and then cools the board at a fixed rate. The ReFloLeo temperature controller that Mike, N1JEZ, mentioned on the RANV reflector and showed us at the Sept. 2013 club meeting can run these temperature profiles.

Why do you need to think of these devices? They are becoming more common every day and in my estimation not the most reliable way to connect a device that heat cycles for two reasons. First the failure rate seems to be right up there in laptop video chips, TVs and gaming consoles (when are they going to show up in radios?), second repairing them requires learning how to try to recreate the oven reflow process on your bench.

That is what I have had to do twice now, one device was a removable video card from a high end Dell laptop, it was a known fault with that laptop and the second was the main board from a Samsung 46 inch LCD TV manufactured in April of 2010. The TV started failing in early 2013 (lasted 3 years!!), the failures in both devices start off as odd artifacts showing up on the screen, sometimes colored lines, or colors are missing completely. With the TV giving it a bit of a bump would restore the screen for a while but it was getting progressively worse.

With the laptop I found a procedure online called the “Shake and Bake” repair. It consists of removing all parts that melt (plastic) at 385 degrees Fahrenheit and making 3 small balls of aluminum foil to keep the card off the

bottom of a cookie sheet. Put the cookie sheet in an oven preheated at 385 degrees F and bake for 8-9 minutes. Turn off the oven, remove the card when cool and reinstall. There are a bunch of technical flaws in this process but it has appeared to work for many people, myself included. My unit has been operating well for around a year or more. One thing I did was to change the cooling fan turn on profile with a cool program that runs on some Dells.

With the TV PCB it would have been very time consuming to remove all the melty things so I opted for another technique which involves applying “No Clean” liquid flux to the PCB next to the chip so it runs under it, masking around the chip with aluminum foil to protect the other parts, placing a thermal probe from my Fluke 87v DMM on the chip surface and heating the chip with a high temperature heat gun (paint stripper) trying to adhere to a 4 minute process curve that I saw being used on a U-Tube video. The temperature was controlled by watching the temperature on the multimeter and having the kitchen timer counting down 4 minutes. I brought the temperature to about 225 Celsius trying to be cautious as you can overheat the chip and ruin it. At the end of about 3 minutes I started backing the heat gun away to ramp down the temp. Again this process has some technical flaws but when I reinstalled the board it worked as it should and I couldn’t get the screen to show anything but what it is supposed to. It has been on for 12 hours now and is A-OK as of today Feb. 16, 2014, sometimes these repairs fail very early on after being fixed so time will tell.

BTW I found which chip that was causing the artifacts by pushing a prying on everything on that board with the set on until I could reliably get it to repeat by pushing and pulling this chip, when I was done reflowing that same technique didn’t produce any changes at all, Yeah.

You can find more information than you can read in your life time on the internet by searching for “soldering ball grid array” and the manufacturers of these chips tend to have white papers on successful soldering of devices, I found these by searching for “ball grid array melting temperature”.

I know this sounds removed from Ham radio a bit but it would surprise me if some of us already own equipment with these chips and when you are facing \$300 + replacement costs for the PCB you might try this as you will have nothing to lose. Make sure you apply some science to the process or the odds of failure are high.



NEWS&VIEWS

INSIDE

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- HAM-CON Recap
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NEXT MEETING

TUESDAY • March 11 • 7:00 PM
O'Brien Civic Center • Patchen Rd
South Burlington

Movie Night:
T32C DXpedition to Christmas Island

Upcoming, Notices, & Misc

- W1AW/1 March 26 – April 2
- Museum Ships Weekend June 2-3
- 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