RADIO AMATEUR NEWS & VIEWS
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LOTW AND RANV

Mitch *W1SJ*

You may have heard about *Logbook of the World* (LOTW). LOTW is basically a giant database run by the ARRL to which hams upload their logs. When two stations upload the information for a QSO and the information matches, an electronic QSL is issued. There is no card, per se, simply a record which states that a QSL match has been found. This record can be used in lieu of a physical QSL card for all of the ARRL awards. The two key issues are that *BOTH* stations have to upload their logs and the information must match (QSO time is allowed to deviate by 5 minutes), otherwise no QSL is indicated.

The numbers are pretty stagging. From just my *own* operations as *W1SJ* and *WB-1GQR* from Vermont, *FS5KA* and *PJ7/ W1SJ* from St. Martin, *W1NVT* from Field Day and *W1V* from various special events, I have 152,000 entries in a database which has over 360 million records (my uploads are .05% of the entire database!). The system has matched 43 million QSL cards, and I have some 15,000 QSL cards, which is impressive since only 43,000 hams worldwide have submitted logs. I have submitted logs to LOTW only asa far back as 2000. I could go back further, but I've found that few QSL's get issued if the logs are too old.

LOTW has a nifty feature which allows you to check how you are coming along

Continued, page 3

Next Meeting:

SEPTEMBER 13, 2011—SURPRISE!

The September meeting will be a Complete Surprise to all, especially the meeting planners. And—as always—snacks!

CRYPTOGRAM

Kathi *K1WAL*

The following quote is written in a substitution code. *Hint*: look for single-letter words and for common two-letter words. To get you started, the letter T=R (replace the letter 'T' in the puzzle with the letter 'R'). The solution will appear in the next edition of the RANV newsletter.

WSQJXWSQ PQ TGISP

"S GD PAXWQ GJYWI NPO TGISP OPTYJ. OWEE, MPF JWW, OSTW XWEWLTGCNM SJ ESYW G HWTM EPQL KGX. MPF MGQY NSJ XGSE SQ QWO MPTY GQI NW DWPOJ SQ EPJ GQLWEWJ. IP MPF FQIWTJXGQI XNSJ? QPO, TGISP SJ WBGKXEM XNW JGDW, WB-KWCX XNGX XNWTW SJ QP KGX."

VEC Exams
Every 2nd Friday
6:30–8:00PM
29 Mansfield Ave. • Burlington
Tech, General, Extra class licenses. Bring 2 forms of identification, copies of existing license and CSCE (if applicable), pens and pencils, and the exam fee ($15—exact amount only please).
??s Email Ralph *KD1R*@arrl.net or the GBA ARRL VE Team website at *BARCVT.net*

Upcoming, Notices, & Other Misc

- **RANV: October Meeting**—10/11
- **NEAR-Fest**—Fri/Sat, 10/14 & 15 *www.near-fest.com/*
- **Steering Wheel: 3rd Tuesdays, 6:30-8:30**—Ninety-Nine Restaurant, Taft Corners
- **Dues due?** Pay online at *www.ranv.org/ranvpay.html*
- **VT Ham Radio Calendar** *www.vthrc.net*

SOUND POWERED RADIO

Jeff *N1YD*

At the July meeting, Mike Rainey, *AA1TJ,* spoke about his experiments with sound powered radio. He discovered that a microphone could output 10 milliwatts, which was enough to get some RF out of a 1-transistor, no-gain, heterodyne oscillator. He tried double sideband, but only the lower frequencies were heard. CW "by mouth" worked, but is not really legal.

Mike then set out to make a voice-powered CW transmitter. First, h found a more efficient microphone and baffle (the horn for the microphone). Then, using some ideas from Germany's prewar Telefunken RF alternator station, he designed and built a circuit based on capacitive frequency multiplication. One of the key components turned out to be a ferrite core from an early computer. He put 80 turns of fine wire through a donut less than 4mm wide. In the end, he got 350 milliwatts of RF output on 80 and 40 meters. All this work earned him a 599 signal report from a station 60 miles away without shouting, and also reached North Carolina, Georgia, and West Virginia.

On a different note—Mike is pondering the possibilities of a "Sputnik QSO Party" to commemorate the October 4th 1957 launch of Sputnik. It would run for 22 days, which is how long Sputnik lasted. The suggested transmitter would be 1 watt with two tubes, transmitting on 21.060 MHz, just like the satellite. Mike has designed a replica of the Sputnik transmitter and posted the schematic on his web site <*http://www.aa1tj.com/radio.html*>.

A man of many interests, Mike also introduced us to the "Reverse Beacon Network" <*http://www.reversebeacon.net/*>." Instead of beacons actively transmitting signals, the RBN is a network of stations listening to the bands and reporting what stations they hear, when and how well." The RBN utilizes the large number of amateur stations running a program called *CW Skimmer* which—among a great number of other multi-tasking abilities—decodes CW. For the RBN's purpose, the software at each station decodes call signs, generates a time-stamped list of the stations and their frequencies, and sends a status report over the internet. Check out their website!

WOULD *YOU* KNOW?

Hurricane Irene just missed the US mainland but you might never know it from the damage totals and news videos. Even downgraded to a tropical storm by the time of landfall over Long Island, NY, there was still plenty of punch. Before the roads are even cleared, however, tropical storm Katia has formed and is expected to reach Category 3 status in a few days. It promises to be a stressful hurricane season for the Caribbean, the Gulf of Mexico, and the entire eastern seaboard. So why wait until the sound of plywood being nailed up is on the evening news?

- Do *you* know the frequencies of the Hurricane Watch Net <*http://hwn.org/*> and your ***State and local emergency nets?****
- Do you know how to check in to such a net and submit or accept "traffic"?
- What would you do if you heard a distress call on the bands from a station in an affected area?
- If a person asked you to get a message into an affected area, how would you do it? ...

Competitive radiosport exists not because the FCC thinks we should have fun on the air, but because our *Basis and Purpose* (Part 97.1) states that ***we are expected to provide emergency communications,*** among other things. By building competition-grade stations and training competition-grade opera-

Continued page 3

HAM RADIO CLASSES IN OCTOBER

A one-day Ham Radio Class will be offered in the Burlington area this fall. The class will be a training for the ***Technician*** license and will be on Saturday, October 8th, 8:30 AM until 6 PM at the Essex Town Office.

A ***General*** Class course will be on the day after (Sunday October 9th). This will allow currently licensed Technician operators the opportunity to upgrade. Or else, students can take class both days and go directly to General. Exams will be given at the end of class each day.

This is a great opportunity to bring in new blood into amateur radio! If you know of someone who is interested, get them enrolled in a class today. Students need to preregister prior to class. At that point they will receive course books and on-line training to prepare for the one-day classes. Details on the classes can be found at *www.ranv.org/weekend.html*. To enroll, contact Mitch at 879-6589.

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US Mail: POB 9392
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Web: *www.RANV.org*

Reflector:
groups.yahoo.com/group/RANV

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

Repeater: 145.150, PL100; ***WB1GQR***

New Hams, Mentoring:
RANVMentor@gmail.com

You cont.

tors, so the theory goes, Amateur Radio will be a resource to the nation in time of need. It doesn't matter much that you can "run rate" though, if you don't know how to use those skills.

* *Click on the* ***Members*** *tab at* ***http://www.vtares.org/****, then click on "Repeaters and Nets."*

(from the ARRL *Contest Update*, August 31, 2011

LOTW cont.

qualifying for the various awards. In searching the database, one can find some interesting facts. For example, *W1NVT,* used in our Field Day operations, has enough QSLs to earn *Worked All States*. The database breaks it down further to show that we have earned *Worked All States* (WAS) on phone and are missing only Delaware on CW. Now the CW guys have something to gun for! Based on the strength of this year's VHF opening, we have 29 states and 70 grid squares confirmed on 6 meters! And just knocking around with *W1V* during hamfests and picnics, that call sign has 35 states and 33 countries confirmed! And remember, a lot of the stations we work are casual operator and they don't submit logs to LOTW.

Another interesting award is the *VHF/UHF Century Club* (VUCC). My operations as *WB1GQR* from Mount Equinox have netted QSLs from 30 states and 150 grids on 6 meters, more than enough to qualify for VUCC. Even more exciting, I've recently learned that I'm only 2 QSLs shy of SIX BAND WAS, missing only Alaska on 160 and 80 meters! I know I've worked Alaska on both bands, but those stations probably didn't submit their logs to LOTW. Looks like I'll have to go the old fashioned route and request a QSL card! And trust me, uploading logs to LOTW is a lot easier than answering a hundred QSL cards!

There are two key things to keep in mind. First, GET ON THE AIR! No one gets QSL cards just by thinking about it. It is fun to operate and make contacts. And if you have operated on the air and have not enjoyed it, then we need to talk! And it doesn't matter if you are a Technician class operator. If you were at Field Day, then you saw how we had fun putting nearly 500 QSOs in the log on 6 meters. Second, when you operate, keep an accurate log and submit it to LOTW. Even if you are not interested in awards at this time, your submission will help out a whole bunch of people who *are* interested. And, if you get interested in awards later in life, it is an easy process to collect the credits off of the LOTW system. This is a lot easier than sending a QSL request for a QSO which took place 25 years ago (as I often get!).

I'll sign off with the message LOTW sends you when you log off:

"Go work some new ones!"

DECIBELS DEMYSTIFIED *PART I*

Bob *W1ICW*

A recent Nerd Night discussion of decibels made me realize that although we, as hams, are surrounded by decibels, we don't always understand what they are, or how to use them properly. So, I will attempt to take some of the mystery out of things.

A decibel is a unit of measure of change in a signal. One decibel was chosen as being the smallest amount of change in a signal that a human ear could detect. Originally, that measurement unit was called the "Mile of Standard Cable" as used by the telephone company and represented the loss in a mile of standard telephone cable (roughly 19 gauge wire) at a frequency of around 800 Hz. In the 1920s, this unit of measure was replaced by the decibel, named in honor of Bell System founder and famous inventor Alexander Graham Bell. The *Bel* represented a gain or loss of 10 times (in terms of power) so the *deci*bel, or one-tenth of that, was adopted as the standard unit of measure.

We have all seen the famous decibel formula, (10*log b/a) but what does it really mean? We take the log (base 10) of the ratio of the powers, and multiply it by ten. In the old days, when dinosaurs roamed the Earth, and God wore knee pants, we nerds used to carry a small black book around (no not THAT kind of small black book) of log tables. We could look up the number in the log tables, and find the logarithm for it. We would multiply this out on our slide rules...

Now, even the computer you may be reading this newsletter on most likely has a logarithm function on it. All "scientific calculators" will have a log function, making these small black books nothing more than an interesting historical curiosity.

So, what do we do with these stupid decibels anyway? Well, I am here to teach you a couple sneaky little tricks that will take all the sting out of decibels.

First, there are a couple common numbers that it is extremely handy to remember:

1. A change of twice or half the power is approximately + or - 3 dB
2. A change of four times, or one-fourth the power, is approximately + or - 6dB
3. A change of ten times, or one-tenth the power, is + or - 10 dB
4. Additional multiples of ten merely add additional zeroes on the end (see below)
5. You can add or subtract dB values to get additional ratios as needed.

Here's a perfect example: A two-meter vertical antenna has a gain of +3 dB.

That means our Effective Radiated Power is twice as much as what we started with. Another example: On the way to that vertical antenna, our feedline has a loss of -3 dB per 100 feet at 150 MHz. If we have 100 feet of cable, we have a net result of... you guessed it, no change. The -3 dB loss in the cable is overcome by the +3 dB gain in the antenna.

Another example: my old Cushcraft 215WB Boomer antenna had a gain of +13 dB. So +13 dB is +3 dB plus another +10 dB, but because of the way logarithms work, instead of getting 12 times as much power out (twice plus 10 times) , we get 2 TIMES 10 or 20 times as much power. We can use this handy little rule to come up with other numbers.

Part II in October

RANV
PO Box 9392
South Burlington, VT 05407

NEWS & VIEWS

September • 2011

INSIDE

NEXT MEETING

Tuesday • September 13 • **7:00 p**m

O'Brien Civic Center

113 Patchen Road • South Burlington

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www.RANV.org