



RADIO AMATEUR NEWS & VIEWS

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An ARRL Special Service Club

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NEXT MEETING:

FEBRUARY 8, 2011—THE LINKED 440

WARREN SEVERANCE, *KB1BKK!* will give short presentation on the Northeast FM Repeater Association's North-to-South system of linked 440 repeaters. The system spans the length of the state and covers into parts of New York, New Hampshire, and Massachusetts. RACES makes use of it during drills and monitors in event of emergencies. Others use it as they travel up and down Vermont or along the New York shoreline. We encourage all to come and learn how the system evolved and what might be in store. The NFMRA website is at www.nfmra.org.



GOT STUFF? LOOKING FOR STUFF?

The RANV Flea Table at HAM-CON is Your Answer!

GOT YOUR STUFF ROUNDED UP and sorted out, want-lists made? If not you'd better hoppin'—time's almost up!

Table rules are pretty much as in the past: radio related only (includes laptops, APRS, etc)—rigs, accessories, connectors, antennas, tools, wire—you know the drill. Magazines: boxed only and sold by-the-box. Table-sitter has final decision on items and quantities accepted.

All items are to be marked with:

- + your *call*,
- + your *price* (no cents),
- + item's *condition* and any *known issues*.
- + Table-sitter must be given a list with **your call**,
 - + each item's **lowest acceptable price**, and
 - + your HAM-CON **contact info** (cell, frequency).

When you're ready to leave, stop by and collect your money and any unsold items.

No charges or fees for this service—this is a benefit of your RANV membership.

There will be a bulletin board for photos/listings of station furniture, boat anchors, things too big for the table. Bring photos if you wish, and all the pertinent info from above on an index card.

Contact NIWWW@arrl.net with Qs.



HAM-CON

MITCH W1SJ

HAM-CON IS SATURDAY, FEBRUARY 26th at the Hampton Inn, Colchester. This year, we are proud to feature Joel Hallas/*W1ZR*, *QST* Technical Editor, more commonly known as the author of the "Doctor Is In" column. Come with all of your technical questions! Joel will also do a talk on Multiband antennas.

New this year will be the Microwave Forum by *QST* Editor Paul Wade/*W1GHZ*. Another new topic is Software Defined Radios, where you turn your computer into a high performance receiver! Then, find out how to make your VHF signal mighty in the Mountaintopping Forum. When you figure out what antenna you want to use, we'll show you how to get it up using a Compressed Air Antenna Launcher.

Our old favorites, the Contesting and ARRL Forums round out the schedule. This year's video is about the 2009 Midway Atoll DXpedition.

Vendors KJI, Quicksilver, Webster and Schneider (connectors) will all be back. The RANV Flea table will be back too—see details on that in this issue. Our demonstration station will include W1V on 20 meters and a Software Defined Radio Receiver.

The Closing Ceremonies will be back where we will show weird videos and draw tickets. Our Grand Prize in the door prize drawing is a Vizio 26" High Def TV—but you gotta be there to win!

And at the end of the show the VE session will be held. New this year is Vermont ARES' DEC/EC RoundTable, also at the end of the show. If you're one of them, be there!

Check out activities and schedule at www.ranv.org/hamcon.html. While there, don't forget to buy your tickets in advance and get a discount!

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Upcoming, Notices, & Other Misc

- + RANV: March Meeting—2/8; Movie Night
- + HAM-CON: 2/26, Hampton Inn, Colchester; Exit 16 off I-89
- + 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

RANV: NOVEMBER MEETING SECRETARY'S REPORT

JEFF N1YD, SECRETARY

The door prize at this year's HAM-CON will be a 26" high definition flat screen TV, donated by WCAX. Forums will include Bob/KB1FRW's compressed air antenna launcher; Microwaves; Joe Hallas/W1ZR who writes "The Doctor is In" column of QST magazine; Gene/W1EBR on software defined radio; an ARRL forum; a contest forum; and a Mountaintopping forum. Special event station W1V will be on the air, and once again we will have the ever popular RANV flea market tables where you can drop off your items and pick up cash later.

Admission is free for anyone under 18, \$8 at the door, or \$6 online. Early admission (6:00 AM instead of 8:00 AM) is \$12 online or \$15 at the door.

We voted to spend up to \$200 on Softrock kits. Gene is gathering the parts, and they will be available to those who have ordered them for \$20 or \$50 each depending on model.

Mitch/W1SJ gave a presentation on ionospheric propagation. Long-range radio communication is made possible by radio signals refracting off various layers of the ionosphere. One hop off the ionosphere can be good for up to 2500 miles, and multiple hops are possible. Australia usually takes 10 hops. Meanwhile, transmissions can skip over nearby areas. 20 meters can have a 600-mile skip, and 10 meters a 1000-mile skip.

Hints about what bands to use can be found from the DX cluster online.

The LUF (lowest usable frequency) and the MUF (maximum usable frequency) can be a good starting point. Just below the MUF is often best. In general, higher HF bands are better for daytime, and lower bands at night. Propagation varies according to a 28 day solar cycle, a seasonal cycle (lower bands tend to work better in the winter), and a somewhat overdue 11-year sunspot cycle. The sun can have 0 to 250 sunspots at any time, and increased sunspot activity improves propagation. Two other useful values available online are "K," the noise level on a scale of 0-9, and "A," the average noise over the last 24 hours on a scale of 0-100.

Solar flares and auroras wipe out propagation. "Scatter" has a characteristic echo sound and can make it possible to contact a station in what is normally the skip zone. Sporadic E, though unpredictable, can give remarkable band openings on 10, 6, and 2 meters. May and June are best for Sporadic

RANV THE PREZ SEZ

BOB KB1FRW, PRESIDENT

HAM-CON 2011!! IT IS ALREADY UPON US, CAN YOU BELIEVE IT? RANV's busy month; Field Day is the other really busy one, of course. It is hard to tell which event takes more time or work or which one is more successful. We do pretty darn well at both of them it is hard to choose.

Now don't go thinking it is all roses and cream and there is no room for improvement, because there is. It is just a good idea to keep taking a look at what you are spending your time on to make sure you are spending your time to good benefit and at least with a hobby you are feeling good about doing. Well, are you feeling good and having fun? I hope so.

Now, since I have been duly elected to provide leadership, guidance and ah, ah (where is that darn ARRL leadership manual?) oh, there it is, **inspiration** to the members, here is where I talk about what you can do to help with HAM-CON and make it a successful event that isn't put on by three people who will burn out on it and retire leaving no local Hamfest.

So step up and volunteer!! We need you for a variety of things:

- Three or four bodies to erect the tower and antennas on Friday (this is a great opportunity to practice setting up an AB-577 rocket launcher tower, used at several Field Day ops), contact Bob/KB1FRW or else I'll hunt you down anyhow and beg you in person.
- One person for early morning crowd control. Carl/AB1DD
- Volunteers to man the W1V special event station as control ops and mentors in one-hour shifts would be nice, contact Gene/W1EBR; you will get to operate a state-of-the-art radio with antique amp and a tri-bander at 40 ft or so in a sought after QSL state—how do you say pile-up?
- A few one-hour stints on the RANV table, See Mitch/W1SJ.
- Help at the RANV Flea table, Robin/N1WWW
- After event tear-down of tower, remove signs, and help vendors out, Carl/AB1DD or Bob/KB1FRW.

All above-mentioned people have their email addresses on www.ranv.org/memb.html.

Have a great fest!!

Bob/KB1FRW



E, usually at night. Gray line propagation can give a certain improvement at dawn and dusk. Trans-equatorial propagation can help you reach South America. Various 14.1 MHz beacons are helpful in checking band conditions.

Having both beam and wire antennas gives a choice in takeoff angles. Each has its advantages.

This was a snackless meeting, since we failed to designate anyone at our holiday party. But good things are coming because Jim/KE1AZ volunteered to bring snacks in February.



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Web: www.RANV.org

Reflector:

groups.yahoo.com/group/RANV

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

Repeater: 145.150, PL 100; **WB1GQR**

New Hams, Mentoring:
RANVMentor@gmail.com

MOONBOUNCE FROM THE BOTTOM UP PART II

Bob W1ICW

LOOKING AT THE SOFTWARE...

FIRST AND FOREMOST OF COURSE IS JOE TAYLOR'S WSJT. This program has done much to put EME within the grasp of the average ham. And the best part is the cost... ZERO. Joe's excellent software has already been discussed in the pages of *QST* and I will not attempt to explain its operation here.

During the planning phase, it can be helpful to try out antennas, power amplifiers, and potential preamps, preferably without actually paying for them. A good computer simulation is needed, and this is exactly what VK3UM's EME Calc software delivers. I have spent countless hours poring over the calculator software trying out different ideas, and calculating what the impact will be for me. In the process I have saved a lot of money and frustration by discarding designs that didn't pan out. Doug has also written a nice EME scheduler software program to help you plan when would be the most opportune time for a mutual schedule with a DX station.

Another excellent planner is GM4JJJ's MoonSked. This is the one I use more often than not. So far, all the software has been free. I will not go into the actual use of the software here; that is an entire article unto itself.

Another article could be written on the vagaries of EME "propagation," encompassing such arcane topics as libration fading, Dpol, Faraday rotation, and degrade. After almost 10 months of operating and nearly nightly research, I still have a long way to go to completely understand some of these. Already, knowing what I now know, I am amazed that I made some of my early contacts. It has been fun to go back with MoonSked and see what the conditions were like when I made some of my early QSOs. To say that the stations on the other end of these QSOs had to work would probably be an understatement.

Degrade is a number, expressed in dB, of the degrading effects of two very different things: the background cosmic noise behind the moon that can mask the infinitesimally small echoes we are trying to copy, added to the additional loss from the slightly eccentric orbit of the moon (the orbit of the moon is slightly elliptical, not circular). Nearly every part of the sky has some inherent cosmic noise from the explosion of stars. This background can be fairly minimal, or quite active. The actual degrade number on 2 meters can go from a low of around zero dB, to well over 10 dB within the same month. The sun itself is a huge noise source on 2 meters, and can contribute at least another 3 dB or more

of noise or degrade, if it is within the beamwidth of your antenna array. This is one time when having a broad beamwidth is not quite so beneficial! When you are a station that is already operating on the edge of things, it is important to choose the best times of the month to operate. These are published monthly in several V/UHF magazines, are available online (just Google EME calendar) and can be predicted by all of the programs previously listed.

The larger an EME station is, the less it is affected by these factors. Hence, the more of the month it can operate. Life is about tradeoffs. In the sales business, where I am it would be called a "good price point." To make a significant improvement to my station would also take a significant amount of investment. For the time being, I am very satisfied with my results.

I will not attempt to discuss Dpol, Faraday rotation, or libration fading, because they really wouldn't add much. Suffice it to say that looking them up on the Internet will give you lots of reading material.

In the final tally as of November 3rd, I stand at 171 EME QSOs with stations in 23 states and 36 DXCC entities. I have worked 113 grid squares, and qualify for a 2 meter WAC award. All but 10 of these contacts have been made since erection of the new array in mid May, so I think that is a very good tally for only 6 months of operating. Of the 171 QSOs, I have worked 139 discrete stations, so there have been some duplicates, particularly since I worked both weekends of the ARRL EME contest.

I have had an enormous amount of fun, and learned a lot along the way. By all accounts, my experiment has been hugely successful, and I stand poised for a coming winter of more EME fun.

HAM-CON cont.

HAM-CON is a show which enjoys a great following. We have a great lineup of vendors, forums, and activities. But... I am very concerned. For starters, we didn't have a spectacular turnout last year. I look around and I see ham radio activity waning. Folks are not going to hamfests like they did in the past. Activity is scarce on VHF and local activity is dropping on HF too. When I get a call about ham radio, it is often someone trying to sell off their old equipment. We have lots of new hams getting their license, but many do not buy equipment or take part in activities.

And when I look around at non-ham events, the story is really scary. Just last week Vermont's professional basketball team, the Frost Heaves, folded in mid-season. The Heaves were very successful on the court, winning two championships in their 5 seasons. A few weeks ago, the highly popular Mozart Series folded after 40 years, victim of rainy summer weather. The Champlain Valley Folk Festival almost folded last year due to similar reasons but were fortunately bailed out of some serious debt at the last minute. And several years ago, the Green Mountain Food Festival folded due to poor attendance. It is getting harder and harder to keep shows running and financially viable. And those who think we don't live and die by the weather, we are one well placed snowstorm away from disaster.

But our biggest enemy is apathy. If you care about ham radio and are concerned about the health of ham radio and the club, you'll be at the show. To put it another way, supporting HAM-CON is of utmost importance, following breathing, eating, and family. If hams don't support it, instead opting for excuses like, "I forgot," "I'm going to the Mall," "I'm vacationing that week," etc., this show too will eventually fold. I hear all too often folks saying, "It's too bad they don't hold the Hamfest at Charlotte anymore." Yet I was there in the last years of that show and the attendance was extremely poor.

We have 80 primary members, not counting family or distant members in the club. If each brought just 3-5 pals (licensed or not) with them, we wouldn't have to have this discussion. Support YOUR Convention!

VEC Exams

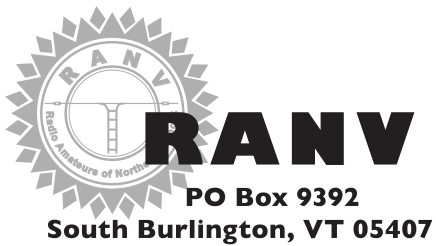
Every 2nd Friday
6:30-8:00^{PM}

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 KDIR@arrl.net
or the GBA ARRL VE Team
website at BARCVT.net





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NEXT MEETING

Tuesday • February 8 • 7:00 pm

O'Brien Civic Center
113 Patchen Road • South Burlington

“The NFMRA Linked 440 System”

www.RANV.org