



# RADIO AMATEUR

The Official Journal of the Radio Amateurs of Northern Vermont

# NEWS & VIEWS

September • 2014

An ARRL Special Service Club

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**NEXT MEETING:** September 9

## BEHIND THE SCENES AT WRTC

We had two RANV members who volunteered with the World Radiosport Team Championship (WRTC) held in the Boston area this past July.

The WRTC is known as the “Olympics of Ham Radio.” This event is held every four years around the world and invites the world’s best operators to compete. The competitors use identical stations to provide a level playing field to test each team’s operating skills.

Both Mitch W1SJ and Charles N1CAI assisted with the preliminary testing in the years leading up to the event as well as serving as site volunteers who got things set up, kept running during the competition, and take down afterwards. Think of Field Day on steroids!

They will share their stories and some pictures and what they took away from this Olympic event!



## ADVENTURES WITH JT65

By Cathy N5WVR

I have been a heavy user of digital modes during my ham career, ranging from 2-meter packet (remember that?) to Hellschreiber to the ever-popular PSK31. Recently I started hearing more about JT65, so I decided to give it a try. There is plenty of information on the Web explaining how to set up your station to operate JT65, so this article will concentrate on my personal experiences with the mode. If you already are able to operate PSK31, all you need is some additional downloadable software. (Check <http://jt65-hf.com/downloads> for more information.)

If the term “digital modes” brings to mind RTTY and PSK31, you need to understand that JT65 serves a very different purpose. There are standard text strings that send “CQ”, your grid location, the signal report in dB, “RRR” (roger and QSL), and “73”. Custom strings can be sent, but they are limited to 13 characters per message. This is a DXer’s mode, not a new way to rag-chew. Initially the lack of flexibility disappointed me, but I came to see that it has real advantages.

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## Don't talk with your mouth full!

Everyone had a good time at Kill Kare State Park for the annual RANV picnic enjoying good company, eating, and DXing!

## Secretary's Minutes

Kathi K1WAL

Our August meeting was the Annual RANV Picnic. The weather was superb. This year the picnic was held at the same time as our second round hosting the W1AW/1 ARRL Centennial QSO Party.

Several stations were set up along with several grills. Antennas were strung among the trees where other park visitors got to see how a ham station is set up "in the field".

Many thanks to everyone who helped to set this up and make it another fun time!

Other Business: Elections are coming up! If you are interested in serving as a club officer please let us know! Snack for the September meeting will be brought by Kathi K1WAL. Keep the antacids handy!



Left: Bob KB1FRW aiming the Launcher with Adam KB1LHB as spotter as they string up a dipole at the RANV picnic.



*I shot a Tennis Ball into the Air,  
It fell to earth, I knew not where;  
For, so swiftly it flew, the sight  
Could not follow it in its flight.*

Apologies to Henry Wadsworth Longfellow but that is what is happening here! If Longfellow had a length of fishing line at the end of his arrow he would have known where it landed!

### September 13th & 14th is the annual "Summits-on-the-Air" 2014 Activity Weekend

*(Editor's note: We've had a couple of articles in the News & Views about RANV members who have participated in SOTA. Recently Scott WIZU and Cesar KITNT did an ambitious foray into the Adirondacks! Check the reflector for information on upcoming local SOTA activities!)*

North America SOTA Activity Weekend is a casual event involving tiny battery-powered radios on mountain summits. It is not a contest but is intended to introduce "Summits on the Air" to newcomers with home stations who try to work summit operators during one or two days. There are no rules regarding power levels, modes or number of bands worked, but please be courteous when more than one station is trying to talk to a SOTA operator on a summit. The SOTA operators have just climbed mountains as high as 14,000 feet; they use low power; and they don't receive on split frequencies.

Check SOTAWATCH.org to spot who is on which mountain. Summits are numbered, and you can hover your cursor over the number to see the name and point value for each summit. Expect the website to show activity near 7.032, 7.185, 10.110, 14.342, 18.095, 18.155, 21.350, 24.905, 24.955, 28.420, 146.52, 446.00, and 61 KHz up from the bottom of 20, 15 and 10 meters CW. Participants are invited to collect points toward certificates and trophies offered by the twelve-year-old international SOTA group (SOTA.org.UK). As we learned in past years, this is a barrel of fun for both hill climbers and home operators. See you then.

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Meetings: 2<sup>nd</sup> 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](mailto:RANVMentor@gmail.com)

## ADVENTURES WITH JT65

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It takes a minimum of 7 minutes to do a full JT65 exchange. You receive for 48 seconds, decode and plan how to respond in 12 seconds, transmit for 48 seconds, and repeat. Each round therefore takes one minute. So a full QSO is a 1 minute CQ (which includes your grid), 1 minute response with grid, 1 minute signal report, 1 minute response with signal report, 1 minute “RRR”, 1 minute “73”, 1 minute response of “73”. (In practice, the last “73” is often omitted in favor of calling CQ again, for a 6-minute QSO instead of 7.) If at any point you don’t copy the message sent, you resend your last message to tell the other party to resend his own last message.

Why such a slow transmission rate? *It takes a full minute to get 13 characters sent?* Yes, because there is redundancy in the signal, so it is often possible to copy under conditions where PSK31 could not get through. I have successfully copied JT65 signals that barely showed on the waterfall at all. Because of the redundancy and data checking built into the protocol, you will either get 100% copy or nothing at all.

However, the effectiveness of JT65 is often exaggerated. I have seen claims online that JT65 is so good as a weak-signal mode that very little power is needed, that QRP is normal, and that 20 watts is the most ever needed. My experience does not confirm that. I usually run 35 watts, and nearly every time I have worked a DX entity I have wound up turning the wick up to 50 watts because of difficulty in being copied. Going to 50 watts invariably improves copy and often lets me complete the contact.

While my station is hardly a Big Gun, it’s a pretty good Little Pistol, with a 20 meter beam (admittedly at low height) and a 150-foot-long inverted-vee with feedpoint at 60 feet. Many hams using the mode don’t even have this level of antenna. So be realistic about your power needs, and remember that digital modes such as JT65 (and PSK31) have a 100% duty cycle. Be kind to your finals; don’t use your 100 watt rig at more than 50 watts for PSK31 or JT65, and keep it lower than that unless really needed. (If you are looking for a low-duty-cycle digital mode, check out Hellschreiber. I’ll write an article on it at some point in the future.)

If you are not a contester and are used to a the more laid-back pace of PSK31, it may take some time for you to adjust to the 12 second decision-time of JT65. Some of that time will be needed by the decode software before you see anything at all, so you typically have less than 10 seconds to scan the list of stations who were sending, decide whether to respond and to which one, and double-click on that message. The software will automatically

populate the grid location, signal strength, callsign, etc. fields, so if you are not sending a custom message that double-click is all you need. But I still find myself pressed for time when the band is busy, because the 2 kHz of band you are seeing can contain ten signals, and you need to look at the callsigns (*have I worked him?*), grid squares (*do I need that location?*), and automatically-generated signal reports in dB (*can I realistically expect him to hear me and respond?*) to make your decision.

One of the best parts about JT65 is the high level of activity, most of which takes place in a small part of 20 meters and, to a lesser extent, 40 meters. Don’t expect to find much JT65 on other bands. Key frequencies are 14.076 MHz and 7.076 MHz. I have found at least one JT65 QSO on 20 meters taking place pretty much any time the band is open, and more often there are a couple of kHz of nearly solid JT65 on the waterfall on 20. I don’t recommend 40 meters unless 20 is dead, since you will usually only find 2 or 3 stations there at most. But because 20 meter JT65 is so popular and so easy to find, you can rack up states and countries quickly. My efforts toward WAS and DXCC from Vermont have leapt forward rapidly since I started having a regular presence on this mode.

If you are working JT65, you are probably “paper-chasing” for some kind of award. You will be looking for stations in certain geographical regions that you are missing and need to fill. For DX, the callsign and grid location can tell you a good deal, but for WAS, it’s harder to tell at a glance whether you need that US station that just called CQ. You will probably not be able to look him up in a callbook before someone else replies to him, and then you will have to wait 7 minutes for him to become available again. Or you can take a chance by responding immediately to a call you’ve never heard, only to discover that he is Yet Another Florida Station. If you can’t quickly translate a four-character grid into a reasonable guess about his state, it’s worth the effort to develop this skill.

It is difficult to call CQ and request a particular state, DX entity, etc. The standard CQ message doesn’t support this, and because of the 13-character limit it would be necessary to omit your grid to make room. Worse, JT65 operators generally expect to be able to respond by double-clicking on your message, but this only works for standard messages! You will be more likely to get a response if you stick with the standard CQ. The only time that custom messages are used is typically as the very last one in a QSO, where ops may share the power they are running, or antennas, or combining “RRR” and “73” in one message.

Give JT65 a try. It’s a great addition to the operator toolkit.



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### NEXT MEETING

TUESDAY • September 9 • 7:00 PM  
O'Brien Civic Center • Patchen Rd  
South Burlington, VT

*Behind the Scenes at WRTC 2014*

### Upcoming, Notices, & Misc

- Elections coming up – are YOU interested in being a club officer?
- Sept. 13-14 Summits On The Air Activity Weekend
- Steering Wheel: 3<sup>rd</sup> Tues 6:30; Ninety-Nine Restaurant, Taft Corners, Williston
- VE Exams every 2<sup>nd</sup> Friday; Red Cross Building 29 Mansfield Ave, Burlington
- Dues due? Pay online at [www.ranv.org/ranvpay.html](http://www.ranv.org/ranvpay.html)