

A little about our weekend shenanigans on 40 meters for regional communications.

The weekly informal "Near Vertical Net" was started by new amateur radio operators Mark D. KE2DMC and Mike L. KE2AWY. It is the end result of ongoing practice between these operators who regularly test and seek to expand the use of radio communication capabilities between their two stations in Albany and Rensselaer Counties respectively.

A core goal between these two operators was to explore and establish reliable radio communications, and by extension, to establish reliable contingencies in the event that established infrastructure should fail. due. to weather or other events.

Because of geographical features in the Capital Region, and the challenges that this has posed with Line-of-Sight VHF/UHF communications between the home locations of both operators, other options were explored. This search led to the discovery of the tactical application of HF radio waves and how this has been utilized in the most harsh conditions by the fighting men/women of the US Armed Forces. One such application-specifically utilized for regional communications (0-300 miles), is called Near Vertical Incidence Skywave Propagation (or NVIS for short). Three considerations which have traditionally made this an attractive form of radio comms for the military was :

- 1) its use is not limited by line of sight (which negates terrain as a hindrance or having to deploy an antenna at high heights which may not be feasible),
- 2) because antenna deployment can be rapid and portable.
- 3) There is no need for infrastructure beyond the capabilities of the radio(s) being used.

Our Net operates 40 meters due to the frequency limitations that have to be observed in order to successfully cause radio waves to react effectively with the Ionosphere to get the radio waves to go where we need them to go.

For the Purposes of the net, Three target frequencies have been designated for operation. Use of a specific frequency will be determined by the operator at the starting time of the net. Frequency selection will be based upon priority placement on the established frequency list (Primary, secondary and alternative frequencies); whether the selected frequency is open for use at the time of the net; and finally, conditions of the band which may have differences at different regions of the general class portion of 40 meters.

Target Frequencies are as follows:

Priority: 7.238 MHz LSB (Center of the General Class phone portion of the band)

Secondary: 7.178 MHz LSB (Lowest transmission point allowed on LSB for General Class Operators)

AlternativeL 7.300 MHz LSB (Top edge of the 40 meter amateur band)

***Please be advised, that while the control operator will target these three frequencies, per this comm plan, actual band conditions may create the need to deviate considerably from the target frequencies. Participants are encouraged to tune above and below the target frequencies in order to sweep the adjacent frequencies for operator location. In certain situations, when the band is crowded or band conditions are particularly bad, none of the target frequencies may be usable. In these instances, participants are encouraged to slowly tune through the band manually to listen for the trade mark "CQ NVIS" call by the control operator.

Hide and seek portion of the net: While the net control will seek to establish the start of the net at one of the designated frequencies indicated on the communications plan, after initial contact has been made with station participants, Net control may choose to relocate the net location in the middle of the event to an undisclosed location on the 40 meter band. This is to encourage operators to be able to practice finding your regional operators on the HF band and to get practical experience with operators manipulating their individual stations in order to establish regional comms.

Because this is a net designed for practice and learning, participants also maintain communication during the net on a local UHF repeater (K2RHI - Grafton 70 cm). It has been found that using the 70cm band has allowed fairly reliable communication between net participants in the area, whether in rural or urban settings - and to be able to do so while using a simple handheld transceiver.

The repeater used is on 449.725 MHz for practice coordination/spotting and communications with participants who may not be able to work the band or are simply listening in on their shortwave radios. The Tone Squelch is 94.8 with a negative 5MHz offset. (K2RHI Grafton 70cm Repeater - which ironically is set up to run back up power during a power outage)

Short wave radio listeners are encouraged to participate by way of listening in on SSB to the frequencies designated during the net and spotted by participants on the K2RHI repeater, as in a grid down scenario, our local operators would find this form of communication to be of particular use to pass along any potential traffic or regional updates - which short wave listeners would find of use to themselves as well.....as you can see, there is plenty of opportunities for practice to go around, whether one wishes to actively key up on 40 meters, or by those wishing to spot or observe and report their findings when next we meet.