ARCC C-Notes

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SNP, Linking and Hot Spots, Oh My

Recently I received some questions regarding SNP coordinations and linking. For those not in the know, ARCC offers Shared Not Protected (SNP) pairs on both 2M and 440 MHz. SNP is a coordination tool that permits us to satisfy the high demand for coordinate repeater pairs on our two most highly populated bands.

Unlike standard repeater coordinations, SNP allows multiple repeaters to be coordinated and coexist on the same channel even if they share areas of overlapping coverage.   SNP pairs are ideal for "back yard" (limited coverage) repeaters, low-usage systems, closed repeaters, and other cases where time-sharing the use of common spectrum is practical.   As a condition of SNP coordination, the holder agrees to fairly share the channel with other SNP repeaters.

SNP pairs are generally not viable for busy repeaters, wide-area coverage systems, linked repeaters, or any operation or activity which renders the repeater busy, and thus the channel occupied, for extended periods of time.
Please note the emphasis on low-use and limited coverage.
We address limited coverage by restricting:
1. The EiRP to a maximum of 100W on 2M and 200W on 440 MHz,
2. The HAAT of an SNP coordination to 150' and, if the site itself is higher than 150' the EiRP is reduced accordingly.

In addition we restrict certain operations that might encourage usage beyond time limited, local use:
1. Remote bases are not allowed. Would encourage excessive use and possibility of linking to a busy system,
2. Split-site repeaters are not allowed. Repeater receiver and transmitter MUST be co-located,
3. Multiple receive sites are not allowed.   Would extend receiver coverage outside of the local area,
4. Linking is not allowed. SNP repeaters may not be linked to any other repeater or amateur station. This includes, but is not limited to, all forms of wireline, RoIP (Echolink®, IRLP, Asterisk®, etc.), and RF linking.

Each SNP repeater will be assigned a unique PL/DCS access control to prevent one user from keying up multiple repeaters. This, of course, dictates that the user must first monitor the channel to insure that the frequency is clear of all other conversations, not just on the target repeater.

The key to SNP is the SHARED aspect. SNP users and repeaters agree to share the channel equally, over time.
There are several linked (networked) reflectors that simply NEVER shut up. An SNP repeater linked to such a reflector would tie up the SHARED channel indefinitely, denying all other users from the channel which is NOT sharing.

No, we will not accept your promise to not connect to a busy reflector, we simply will not coordinate a networked, linked, whatever repeater to SNP. Should we discover that a SNP repeater has been "networked", even without the knowledge of the coordination holder, the coordination holder will be given ONE, and ONLY one warning.

Speaking of Echolink, there's growing concern about Echolink and other "simplex nodes" operating contrary to the band plan as well as being left running in unattended operation. These simplex nodes are neither repeaters nor auxiliary links, and as such are ineligible for automatic control, yet they are frequently left on 24/7 with no control operator present. If you MUST operate a "simplex node" pick a simplex channel in the band plan and either turn it off when you aren't in the shack or make provisions to remotely disable it – that is, be IN COMPLETE CONTROL at ALL times.

And then, there are all those "hot spots" and "micro nodes" and similar devices that are showing up not only in the repeater sub-bands, but even weak signal sub-bands, satellite sub-bands, etc.. The operators appear to believe that the sub-1-watt transmitter power is too low to possibly bother anyone or anything else, but we all know better. If a hot spot is operating line of sight, even at 100 mW power it can cause problems tens of miles away. User ignorance, and believing that 10 or 100 mW won't bother anyone else is a big part of the problem. After all, we can work satellites with an HT running a couple of watts and bounce signals off the moon with less than 100W. A repeater a couple of miles away is hardly DX, even at 10 mW.

On 2m, we have the "digital and experimental modes" sub-band (145.510-145.790) where some of these operations occur (mostly Echolink nodes) which is probably a good place for if finding an unused simplex channel is an issue.

On 70cm, we don't (yet – stay tuned) have an "experimental" sub-band. We have digital simplex (440.925-441.075), and we have FM simplex (445.925-446.075). Till such time as ARCC changes it's band plan to incorporate an experimental sub-band, digital hotpots (DMR, D*, etc.) should operate in the digital simplex sub-band, and analog "simplex nodes" (Echolink, A*, etc.) should operate in the simplex FM sub-band.

Back to linking. <Rant On> *(WARNING! The following is my PERSONAL opinion and NOT necessarily that of ARCC)*
I have a pet peeve (and I kiss him and love him and squeeze him and hug him and call him George. Some of you may get this . . .) and it is repeaters linked to reflectors that NEVER shut up. Tell me that there is someone on that linked in repeater that is really listening to that crap? Politics, religion, excessive sharing of personal health issues, it never stops.

I'm glad I'm not paying the power bill for that linked repeater! Or for the overheated finals, or seemingly wasted Internet access. Yes, I eventually flip the dial and remove that repeater from my programming, never to use it again. I wonder how many other local users have also voted that way?
Is there ever a non-emergency need for a repeater to transmit for more than 20 minutes or so without a break?
There is a simple technological fix:
1) On transmitter key up (Tx PTT not Rx COR) start a timer. Let's call it a Watch Dog.
2) When the timer is about to expire send a couple of beeps out the local transmitter to warn local users that the dog is about to bite, allowing them to key up the local receiver to reset the timer – assuming there IS a local user that hasn't died of over-exposure to the linked nonsense.
3) When the timer times out it knocks down the link – nobody is listening.
4) When transmitter PTT drops, reset the timer.
5) On the next local key up send LTO or something indicating that the link timed out and was shut down.

Ideally the Watch Dog is a stand-alone (Arduino?) circuit separate from the controller or controllers and watches only the transmitter PTT and the local receiver COR. How it knocks down the link depends on the type of linking and controller but most modern micro-controller can generate DTMF, simulating a local user killing the link.

A Watch Dog can also save embarrassment when Murphy comes to visit. There is nothing like being called at 2 am by someone telling you that the repeater has been locked up in transmit since 9 pm.   <Rant Off>

Finally
ARCC is currently looking to fill 2 positions on the Coordination Committee:
- Regional Coordinator (and assistants) for EPA-SW consisting of Adams, Berks, Cumberland, Dauphin, Lancaster, Lebanon and York counties.
- Regional Coordinator (and assistants) for NJ-NWNJ consisting of Hunterdon, Mercer, Sussex and Warren counties.
Please note that the positions actually have responsibilities and are not just titles to wear. If you are interested please send me an inquiry at wb1got@arcc-inc.org.

Be sure to pass along the news about C-Notes to your fellow repeater owners, club members as well as anyone else with an interest in repeaters. So far, I have received little feedback save several kind intentioned folks telling me I should write for a living. Unfortunately, I have the T-Shirt, bruises and scars. Bob Heinlein got it right, twice:
'Writing is not necessarily something to be ashamed of, but do it in private and wash your hands afterwards.'
"...writing is a legal way of avoiding work without actually stealing and one that doesn't take any talent or training"
73,
WB1GOT

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