

ARCC C-Notes

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Some Misc. Notes

What Happened To “X” On The Website?

To answer some recent questions: “What happened to X on the ARCC website?”

Repeater Directory: An update to the repeater directory is long overdue. That admitted, I counter with the creation of the online directory is currently a manual process and, every time we update it one or more unethical folks STEAL the data for their own directories – some of them for sale or charge to access. So, we put in hours preparing and posting the data and watch as our efforts are put to someone else’s benefit. When we find a method to publish in a form that is a real ass-ache to rip off we’ll once again consider updating.

Coordination Status: Likewise, coordination status postings do no good if they aren’t frequently updated and updating them takes time away from our prime task of the coordinations themselves. Currently there is a 3 month “backlog”, if backlog is the right word. Currently we have 8 coordinations pending, the oldest, with issues, from January and only two of them “untouched”, both recently received. Five additional coordinations are in the cross-coordination process, two of them with issues.

Coverage Maps

Some of you might have received coverage maps from me (WB1GOT) as part of your coordination process. Some comments are in order.

I routinely produce those maps for our internal use using Radio Mobile with some custom parameter files. What you receive is a map generated on a 2000 x 2000 pixel “playing field”, usually with a 200 km map overlay and a resolution of 5 pixels (5 x 5 pixels). While each pixel encompasses a 100 x 100 meter area, the 5 pixel resolution (a “dot” on the map) represents a square of 500 meters by 500 meters. Yes, I can do 1 meter resolution but:

- 1) The processing time to resolve 4 million complex calculations is significant.
- 2) Unless you view it as a Google Earth overlay you can’t resolve the detail and
- 3) It is meaningless for most practical uses.

So then, you can resolve 500 meter square areas, so what? What does it mean?

Well, it means that if the block is green then somewhere in that block there is a signal level that meets or exceeds the level criteria. No green and . . . Well, I’m not going to say there will be no signal, just that it doesn’t meet the criteria set in that run.

What are the criteria used in a coverage run?

For all runs we use the technical data provided with the application or on file in our database. That said you should never forget: “Garbage In, Garbage Out”. Bad criteria produces bad results – one reason I’m going after bad or ambiguous coordinates currently in the ARCC database.

Where the map shows green there is somewhere in that area that meets our coverage criteria for mobile coverage. We don’t and can’t predict for either portables or base stations, there being tremendous variants on antenna and power.

Then I can do my own coverage maps to prove (whatever) to you and get my coordination?

In a word – NOT! The quality of the coverage map produced by ANY coverage calculation programs are entirely subject to the quality of the input data. Given the opportunity to “play” with the input to produce “desired” output (fudging the data) is not now, nor has it ever been acceptable.

You provide the REAL data on our form and we will run OUR coverage estimate and make the determination from there. You send anything else in an attempt to justify a coordination and it gets ignored and your app placed WAY in the back of the pile

CONTACTS! CONTACTS!! CONTACTS!!!

I continue to run into bad contacts – mostly missing or bad E-Mail addresses.

When I catch a bad contact it becomes official and the coordination holder has to fill out a form.

If you update them it can be informal - all we need is an E-Mail from the coordination holder.

Why A Repeater? – The \$\$ Side

With the apparent proliferation of reasonably priced repeaters appearing on the market, many folks think it is a good idea to put up a repeater “on the cheap”. Guess who is going to get a not-so-nice surprise? You need:

- A sub-\$1,000 “repeater”
- A power source if the repeater is not AC powered
- A REAL duplexer with double-shielded connecting cables - NOT braid over foil!
- Back-up power (battery, generator)
- A cabinet (locking?) with lots of fans to protect your investment
- Half inch Superflex (in a shared environment) or LMR 400 (at home) to run to the antenna entrance
- PolyPhaser or other lightning suppressor
- Appropriate hard line (commercial) or LMR transmission line to the antenna; objective < 2 dB loss
- Antenna, preferable not an offshore toy antenna
- Oh! And a tower to put it all on.

IF the repeater is going to be located stand-alone with NO other co-located repeaters, ham band or otherwise, you can sometimes get away with using the “cheap” stuff: notch only (flat-pack) duplexer, LMR cable and a “Ham Special” antenna but don’t expect to get away with that at a commercial site, even if a buddy owns it.

Cheap duplexers, AKA “flat packs” are notch only. That is the tuned circuits (helical resonators, NOT cavities) are tuned to notch (reduce the level of) the transmitter on the receive side and notch the receive frequency on the transmit side, hopefully providing enough attenuation of the transmit signal to avoid overloading the receiver and causing desense. Notch duplexers do NOTHING to protect other users on the shared tower from the effects of your transmitted signal! At the VERY least, EVERY repeater should provide protection from out of band emissions to their neighbors. Add a single pass cavity between the transmitter and the transmit side of a notch duplexer or at the very least, stick a quality helical bandpass filter (<http://www.ocicom.com/>) between the output of the duplexer and antenna. At \$159 for a 2 meter filter and \$219 for the 440 you provide protection both to and from other non-amateur users. Even if you aren’t on a commercial or shared tower they are CHEAP insurance. No financial interest in them, just a damn satisfied user! So – yes, flat-packs are cheap and real, cavity based duplexers are expensive, you get what you pay for. Cheap is.

In the cable arena, NOTHING beats real hardline. Properly installed and left alone, hardline can have a 100+ year lifetime. Some time back I had the need to remove connectors from some 7/8” jacketed, aluminum (half the cost of copper) hardline that was buried from our transmitter hut to the tower. The connectors were properly installed and weatherproofed – and a bitch to remove. Inside I saw bright, shiny copper and aluminum and crisp insulation – just like the day it was made. Oh, and it had been installed 22 years prior. Yes, you can “get away” with coax but even LMR is going to deteriorate, especially if the connectors aren’t correctly installed and weatherproofed. Even if they are, you can expect 10 years at the most before it deteriorates. If you are lucky. Yes, it costs more but Cheap is cheap is CHEAP.

Antennas are an issue today, even in the commercial arena. Three years ago we had to replace several NEW antennas produced by the company that now owns the Stationmaster name. If I didn’t know otherwise I’s swear that they were made on the Pacific Rim, especially the thin fiberglass radome which is a kissin cousin to the D, C, T and J ham antennas. I’m still looking for suitable replacements but nothing so far. The real issue is that to replace a \$900 antenna you may need a \$3,000 climber. Tis far cheaper to put up the good stuff in the first place.

So – are you SURE you can afford that repeater? You might get away with the cheap stuff – the first time at least but what are replacement costs going to do with the budget? It’s like a “cheap” tower – the tower cost isn’t half (or even a quarter) of the final costs

Odds and Ends

Out of article space error – Reboot Universe!

C-Notes is a monthly publication of the ARCC and is provided as a communications channel between ARCC and our members and coordination holders. Opinions expressed herein are solely those of the author.