



THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

MARCH 2001

<http://www.barconline.org>

HAM PROFILE

By Boyd Humpherys W7MOY

From the onset it looked like a whole family involvement so within the restrictions of a page we decided it ought to be done. The Neil Dabb family is a dedicated bunch, Neil, KC7GCL heads the troops who like to get involved. Daughter Julie, KC7RPP is our recently elected BARC secretary, and at 16 may be the youngest yet to keep tabs on this motly bunch of ether disturbers. Neil caught the bug at Skyview a few years ago, thanks to one of our fraternity Arol Maughan, then came back later after a brief lapse and picked up his license again in 94. Remember that most anti biotics only whet the appetite and the tendency to transmit generally comes back with a vengeance if given enough time. Neil and his good frau Carrie are both natives of Cache Valley, Neil being born in Smthfield and Carrie calling Logan the starting gate.

Neil has been involved with BARC for several years and has been engaged in some of the good things we do. After graduating from Sky view, he went on to get a BS degree from

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PRESIDENT'S MESSAGE

Cell Phones and Such

We have been hearing plenty about the proposed legislation to ban cell phones while driving. No doubt these can be a distraction to drivers, and distracted drivers often make mistakes that have traumatic consequences. The truth is though, distractions come in many disguises; tending children, putting on make-up, adjusting the radio or tape deck, eating or drinking, or a bee flies in the window, just to name a few. Driving while emotionally excited or upset can also cause our attention to drift. As we in the ham fraternity pick up the mike to talk while in route we can also be distracted, and especially if trying to program the radio or make an auto patch call. The problem is not so much trying to drive with one hand, but keeping our attention on the main objective; arriving in one piece. Here are some suggestions to help us do that and still enjoy the hobby as we drive. Whenever we get behind the wheel we can pre-program ourselves by saying, "I will not allow myself to be distracted. I will make driving my first priority." When we pick up the mike, we then shift into a multitasking mode and perhaps at this time we could repeat our earlier oath. It is extremely dangerous to attempt to program the radio while driving. I suggest we can have our three favorite frequencies in consecutive memory banks then all we need do to change channels is click the up or down button once or twice. No need to even look at the radio. We can also be familiar with the volume control and learn to adjust that without looking at the radio. Keep a sharp lookout for upcoming driving situations that should demand our full attention, (such as an intersection where we must turn) and lay the mike down until we get that behind us. It is better to

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Do you have an interest to volunteer as a communicator in the 2002 Olympics?

Read on:

Thursday January 18th I attended the State Emergency Coordinators Meeting at the State Capital. The main topic was the 2002 Olympics!

The "Utah Olympic Public Safety Command" has asked for the help of the Ham Radio operators in the state of Utah. This is not working for SLOC but all the public safety organizations for the Olympics! namely the FBI and the Secret Service! And believe it or not they came to us and asked for assistance. They are trying to place amateurs in all the venues, on busses and all over the place for emergency communications!

If you have any interest in this or even a remote interest look at the CEM site-

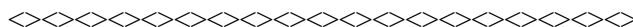
<http://www.cem.state.ut.us/Radio/2002Quest.htm>
for a application. They are asking that even if you have a remote interest in this to fill out the form with approximate times you would be available because you could change your time later. The reason for getting forms into them soon will to be so they can complete back ground searches on each ham that volunteers. Also on the CEM site is more information on RACES and ARES along with the RACES forms.

There also was some talk of getting an official letter from the State or Federal level so you could use it to approach you employer for the time off to participate and the possibility of getting UOPSC to come and do a presentation to the hams in our area.

It was also discussed that we not let SLOC or any other agency use our ham frequencies, and they have already asked. The general consensus was NO! At the Olympics in Sidney Australia they let them use some of their ham frequencies and never got them back.

If you need more info please feel free to contact me!

Later,
Tyler N7UWX
tyler@n7uwx.net



VE TEST SESSION

A VE test session will be held at Campbell Scientific on March 10, 2001 at 8:00 A.M.

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USU in Liberal Arts and is now working on a Masters in Instructional Technology. He is presently involved in the Jr.Engineering programs at the Elementary School levels. (Good on ya Niel, make sure they know _._ . _ _ . _). He also worked for Thiokol for some 15 years, working on the nozzles that direct the thrust on the big stuff they make over there. Incidentally Neil has contributed some articles to CQ in the past on getting kids involved in productive endeavors. He also served a mission for his faith in Taiwan in 79-81, learned some Mandarin Chinese, and can adequately talk shop with the cooks downtown who offer those kinds of dishes. Neil sports an HT, a mobile Kenwood, and to show his true colors, even tweaked with a 40 m CW rig several years ago.

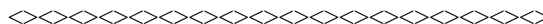
Carrie teaches child development at USU, keeps peace with crew in their comfortable trailer at USU, as well as tolerating two and one half Hams in the family. It was mentioned that two others of their five children are hot on the trail to obtaining their licenses. She mentioned that another of our group Kevin Reeve, an associate, may have convinced her that Hams are really great individuals down deep, good PR Kev. She also indicated an affection for murder mysteries and cross stitching. Not sure what those two avocations have in common, perhaps a secret desire to be a Doctor. Neil and Carrie met while involved in the USU marching band, playing the Tuba and Flute. They must have made sweet music together on the run.

Daughter Julie received her tech ticket in 96, and presently attends that audacious institution of learning west on 1st. South in Logan, plays the viola in the school orchestra, takes math and business courses to get a head start at USU. She presently has possession of an HT and if the truth be known, probably acquired it due to some obscure arrangement with old dad. Details were a little sketchy here, however the procedures seem to be fairly well known amongst us. She mentioned that the Patriarch of the family did make some suggestions as to her running for club office and she decided to give it a whirl. This is excellent experience and that fact alone on her resume probably

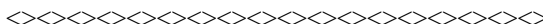
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have a short lapse in the conversation than the alternative. Avoid subject matter that is likely to bring on an emotional response. Rampant emotions cloud our judgement, and distract us. Auto-patch calls are a bit tricky while driving, and it may be best to find a safe spot to pull over and use the patch. This has another plus, as the call should then be solid and not busted up with mobile hash as we often hear.

Lets try to be safe and enjoy the hobby.
73, Jim K7OA



Julie Dabb
BARC Club Secretary



ought to increase her annual salary several thousand a year, wouldn't you think?

BARC needs some more of these good supporters, good luck to the Dabbs.

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ble. (When you make an isotee, it is suggested that it be painted so it won't be confused with an unmodified one.) The diagram on page PS4 shows the connection of a signal generator to the base station with an isotee for noise floor measurement. A directional coupler is a good device for this application and is preferred. However, the isotee is inexpensive and can be fabricated on site if the directional coupler is left in the shop. Connect the isotee to the receiver input, and connect the other end with the appropriate termination, usually 50V. The isolated port is connected to the signal source. Then adjust the signal generator to some reference point, usually 20dB quieting or 12dB SINAD for the analog world. Note the output level of the signal generator in decibels above one milliwatt. Remove the termination and connect the base station antenna to this port. Adjust the signal generator to a level that gives the same previous reference point, 20dB or 12dB sinad. The difference between the two signal generator levels is the site noise. If you don't see any change, you are fortunate. If the readings are from 6dB to 30dB, you are not alone - your station is somewhat "deaf." A good practice is to take these measurements at least every six months and keep a log on site. It will answer lots of questions later when your coverage seems to have evaporated for no apparent reason. There are various sources of noise, including: remote network terminals, (i.e. trunking computers), synthesized equipment (see below); battery chargers that use silicon-controlled rectifiers for voltage regulation; switching power supplies; commercial cell/PCS transmitters, adjacent channels; T-1 modems connected to the cell/PCS station; tower strobe light equipment; and most often, FM and TV transmitters running high power. The mobile One major and often overlooked item is the antenna placement on the vehicle. The optimum location on a car is the roof. However, as seen in the photo on page PS6, other appliances installed nearby not only affect the antenna's performance but often are the source of noise when operating. The antennas mounted as shown on page PS8 not only have higher VSWR, their radiation is limited to the direction having the most metal. Any of these installations should be checked for desense. To measure desense of a vehicle, do not use the isotee method. Extra cabling for instrumentation will cause errors. Park the vehicle in a clear spot, engine off, with only the radio on. Place a signal generator about 50 to 100 feet away, on-frequency with the correct deviation and connected to a short antenna. (The antenna that came with the generator will do.) Apply enough signal to establish a reference point, such as where the squelch opens, and note the RF signal generated. Now start the engine, turn on all appliances, light bar, air conditioner, fans

and anything else that is normally used. Note the increased signal generator level required to achieve the same reference point. If the signal generator's output was increased to 2.5dB or 3.5dB, you're not alone. This additional noise is often overlooked. Any desense greater than 3dB, however, should be corrected. Some of the problems with ambient noise at the receiver's location arise when the area itself is extremely noisy. Faulty neon signs, concentration of computers, digital telephones, ignition noise of a nearby vehicle and (in the case of portables), noise generated by the user's clothing can cause extra noise. Although these noise sources are always present, the portable/mobile is usually not near any one of them for a long period of time. In any case, ambient noise limits reception. If this affects the only location in which you need coverage, then the system does need to be balanced in your favor. Instrumentation Attempting to use a digital spectrum analyzer to find noise and/or noise floor is a "no-win" situation. Noise is generally ignored by digital processing, which is one of its strong points. One case involved a PCS operation interfering with a low-band base station. The PCS engineers set up a digital spectrum analyzer and found no noise. They ultimately had to rely on the lowband base station's receiver as their troubleshooting monitor. The problem was eventually fixed, but their expensive digital spectrum analyzer showed no change. Noise investigation needs to be conducted in the AM mode if possible. Synthesizers Frequency synthesizers for frequency control are used in signal generators, receivers and transmitters. Although they offer frequency agility, they also generate noise. For example, a current-model mobile transceiver was undergoing an intermodulation test to see if it performed within published specifications. The test was conducted using several Cushman service monitors as signal sources, and the receiver failed the test. The receiver did pass the test when older Measurements Corp. signal generators were used. These old devices have oscillators that generate RF on-frequency, have little harmonic content and have virtually no noise. The Cushman service monitors are synthesized sources that not only generate the "on-frequency" signal but have spurs close to the desired signal. (For the curious, check the Cushman with an analog spectrum analyzer.) For transmitters, synthesizers seem to be the industry standard today. However, they also generate noise as a byproduct of operation. Case in point, one of the major brands of base stations was recently installed, replacing an older crystal-controlled radio. Two mountaintop base stations on adjacent channels just 30 miles away immediately experienced noise from this new product. The reason: This product is nothing more than a high-power, syn-

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thesized signal source with no tuned circuits anywhere in the transmitter line-up. The only tuned circuits used in this product are in the receiver. This manufacturer has chosen a fast AFC loop for the radio to "come up" on-frequency quickly. Other radios on the market have a slower AFC response time, which reduces the amount of sideband noise. Some of the cellular and PCS telephones operate in the milliwatt range, but the cell site transmitters are in the hundreds of watts - not a balanced situation, for sure. The real problem here is that when all the cell site transmitters are on the air, they can radiate near the kilowatt power level. It is impossible to receive anything if one needs reception nearby. Many 800MHz public safety systems appear to go deaf when a cell system is activated nearby - a classic case of an unbalanced system where there is more transmitter power than necessary. The Amateur Radio Rules and Regulations clearly instruct operators "to use no more power than absolutely necessary." Perhaps that concept should be implemented in the commercial world also. Most two-way radio coverage problems are due to the high level of site noise at the base station site, often caused by high power lev-

els, like those used by paging transmitters or many accrued transmitters. Also, the performance of a receiver is hurt when subjected to synthesized RF sources. The newer products create more noise than the older products they're replacing. The real question is why these base stations are being forced on the user when the base station's life will probably be at a fixed location and only on one frequency. Why is high power tolerated when the site noise prevents reception for portables and low-power radios? Isn't it time we reduced the transmitter power to something like 25W-35W? Why are all of the users on a common site forced to have additional noise as neighbors? To build a transmitter that is "one size fits all" might be a good sales strategy, but the increased noise limits the number of radios that can exist on a site. If the industry is having problems now with wideband, how can it meet the 12.5kHz and 6.25kHz spacing if the synthesized noise problem is not corrected? It is time we asked the radio manufacturers to keep the transmitter noise at least equal to the older crystal radios. Just because we can adjust the transmitter to maximum output of 125W-150W, is it necessary to do so? We should attempt to balance the RF environment now.

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