



MINNESOTA MARSGRAM



January, 2004

Volume 8, Number 1

NNN0ALL Minnesota

by NNN0GAZ Tim

Happy New Year to you and yours. May the New Year provide each of you and your family with happiness. Unlike last year, the snow and cold this year reminds us that it truly is winter in Minnesota.

I must say that it seems like only yesterday I was writing the goals and expectations for 2003, my how time flies. So without further ado, here is what I would like to see us aspire to in 2004,

- Continue to conduct a minimum of one emergency communication exercise per quarter;
- Continue to plan and conduct joint exercises with other Region Five areas, in addition, work to include other MARS services in our exercises;
- Conduct at least one mini-lesson per quarter on an evening net – remember, training is not just the job of the training officer, each one of us can pass on our experience and expertise to our fellow members;
- Expand our presence on the internet, perhaps developing an informational web page for Minnesota Navy-Marine Corps MARS, we will continue to use of our internet resources at Community Zero for member only information; Continue to expand our digital capabilities by utilizing modes such as PSK31,

MT63, etc., with at least one net (administrative or special) per quarter and one ecom exercise during the year to utilize a digital mode, other than PACTOR;

- Improve our relations with various constituencies – such as the Association of Emergency Radio Operators (AERO), Minnesota Voluntary Organizations Active in Disaster (MNVOAD), and possibly local Emergency Operation Centers in various counties and the Minnesota Department of Emergency Management;
- Recruit, train and pass to full membership at least two new members during 2004 – this will require our presence at amateur radio functions – hamfests, club meetings, etc.. If you are attending a hamfest, ask GAZ for brochures to leave on a table, if fellow hams are looking for ways to be of service – suggest MARS membership, there are a multitude of ways to encourage and motivate fellow hams to join our ranks.

With the help of each and every member, these goals are achievable. I look forward to a New Year of

opportunities for Minnesota MARS. Together we can take advantage of the opportunities and meet the challenges. Enjoy this issue of the Minnesota MARSGRAM.



PSK Net

By: AI NNN0KZC

The PSK net follows the normal traffic net on Tuesday evenings. Our net time runs from 0030Z to 0130Z. Normally the voice traffic net will end about 0045Z so that gives us over a half hour for PSK.

Lately the propagation has been pretty poor but hopefully conditions will improve. This net is used primarily for practice and training in the event that a digital mode is needed during a disaster or when traffic cannot be passed on the voice net for some reason.

Net control will call the net shortly after the close of the traffic net. The NECOS will start by sending RY's, and after that a net call up for other stations. NECOS will then wait for other stations to log in.

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Content Contributions Welcomed and Encouraged

MINNESOTA TRAFFIC NETS

Designator	Frequency	Local Times
5G1B	Pri. NCE Sec. NBG Ter. NAR	18:30 Daily

MINNESOTA ADMIN. NET

5G4A	Pri. NCE	19:00 2nd Sunday
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MARS DATA SYSTEM

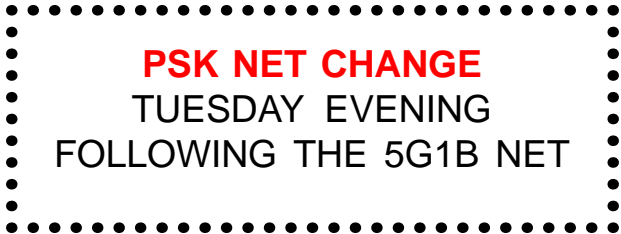
NN0DVD	Frequency NCO AFSK/USB
Intranet site	http://www.communityzero.com/mnmars

Training Corner: Operator's Notes

by Curt NNN0GAZ FOUR

We recently had a message on the net that had data lined up in two columns. Just reading the message would have left the recipient in a mess of confusion. The TREP chose to make some Operators Notes to clarify the message content. Not quite sure as to how to do the needed clarification the TREP gave the Operators Notes during the message. This was wrong in that every word (not counting Prowords like I SPELL, FIGURES and etc.) that is spoken must be written down as part of the message. Operators Notes are given before relay (or MESSAGE FOLLOWS) instructions or after the final break. In this particular case the instructions needed to be given before the start of the message. As there were two columns a good method would have been to say that there are two columns whose titles are "THIS YEAR" and "LAST YEAR" and that data will follow in pairs. The recipient would then know that when the words previously given during Operators Notes (THIS YEAR and LAST YEAR) were said it indicted the beginning of the two columns and should be laid out on his message form in that manner. Remember, Operators Notes are before or after the message, not during the message.

BTOVER



PSK NET CHANGE
TUESDAY EVENING
FOLLOWING THE 5G1B NET

BPL: *Continued from col 2.*

Likewise, FEMA pointed out, amateur HF transmitters could possibly interfere with and interrupt BPL service, leading consumers not familiar with Part 15 to blame licensed radio services.

Concluded FEMA: "The purported benefits of BPL in terms of expanded services in certain communications sectors do not appear to outweigh the benefit to the overall public of HF radio capability as presently used by government, broadcasting and public safety users."

Additional information about BPL and Amateur Radio is on the ARRL Web site, www.arrl.org/tis/info/html/plc/.

BTOVER

FEMA SAYS BPL WILL "SEVERELY IMPAIR" ESSENTIAL HF OPERATIONS

A proverbial monkey wrench in the works for BPL? Expressing "grave concerns" about likely interference from unlicensed Broadband over Power Line (BPL) systems, the Federal Emergency Management Agency (FEMA) told the FCC that BPL could "severely impair FEMA's mission-essential HF radio operations in areas serviced by BPL technology." FEMA responded December 4 to last April's FCC BPL Notice of Inquiry, ET Docket 03-104. Now part of the Department of Homeland Security—the agency said its primary worry is BPL's potential impact on the FEMA National Radio System (FNARS) on HF. FNARS is FEMA's primary command and control backup medium under the Federal Response Plan.

"FEMA has concluded that introduction of unwanted interference from the implementation of BPL technology into the high frequency radio spectrum will result in significant detriment to the operation of FEMA radio systems such as FNARS," FEMA asserted. "FNARS radio operators normally conduct communications with signals that are barely above the ambient noise levels." FNARS HF stations, FEMA said, typically are in residential areas of the sort that BPL might serve.

As part of the Department of Homeland Security, FEMA's perspectives on BPL could carry substantial weight at the FCC, which may issue a Notice of Proposed Rule Making as early as February. The FCC's BPL Notice of Inquiry has attracted more than 5100 comments—many of them from the amateur community.

FEMA said BPL also could render useless such "essential communications services" as the Radio Amateur Civil Emergency Service (RACES), the Military Affiliate Radio System (MARS) and the Civil Air Patrol. FEMA and ARRL last year signed a Memorandum of Understanding that focuses on how Amateur Radio may coordinate with the agency in disasters and emergencies.

Calling the HF spectrum "an invaluable and irreplaceable public safety resource," FEMA said there's no current alternative to HF in terms of meeting national security and emergency preparedness requirements at the national, state and local levels. The agency advised the FCC to beef up its Part 15 rules to ensure no increase in interference levels to existing FCC or NTIA-licensed communication systems. Otherwise, FEMA predicted, "any noise increase inevitably would diminish the ability to maintain essential communications" and would "directly impair the safety of life and property."

Cont'd Col 1

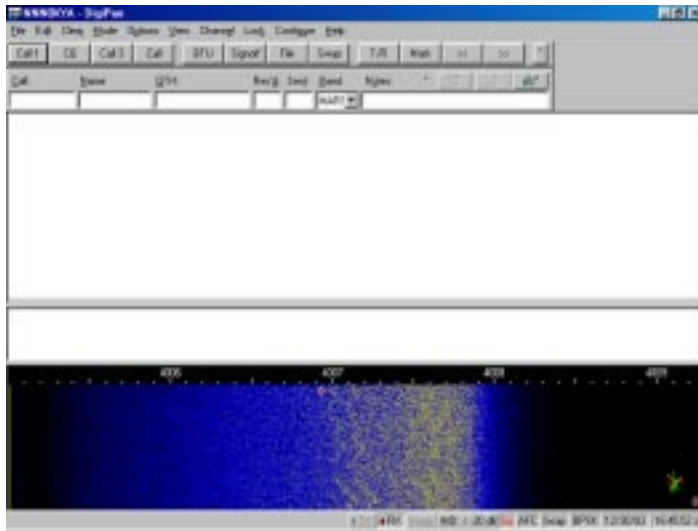
Over the Waterfall in the same Canoe! Configuring DigiPan Operating Frequency

On frequency and on time! These are two characteristics of communications in Navy-Marine Corps. MARS differ from regular amateur operation. MARS operation occurs in more of a channelized spectrum that most hams are used to. However, PSK, and other soundcard-based modes, add a new twist to tuning your transceiver.

The transceiver is tuned to get you in the ballpark and the software takes over setting the precise frequency. The key to being in the right place is configuring the software and radio to work together.

DigiPan is perhaps the most popular PSK software available. DigiPan was one of the first applications available and the price is a real bargain – FREE! Let's take a look at configuring the frequency in DigiPan once you have the audio IN/OUT interfaced to the transceiver.

Looking at the waterfall display, you can see the passband of the transceiver as shown by the blue area on the display. The yellow speckled band is where you want to locate your

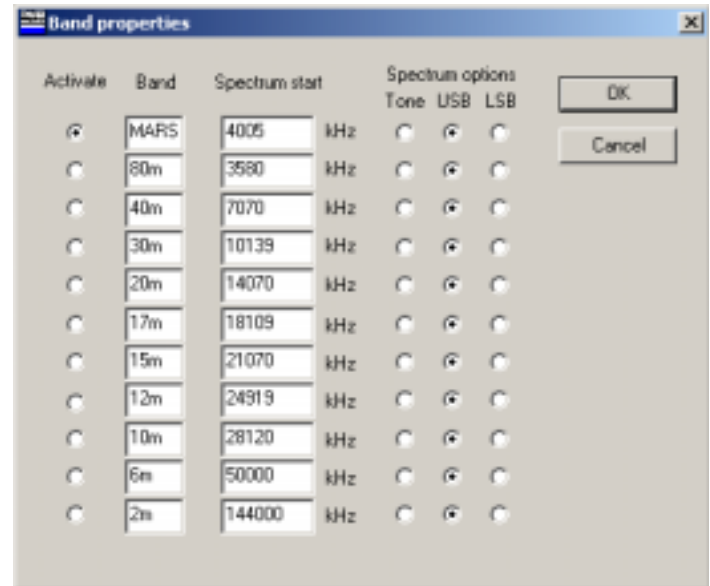


operating frequency. (Disregard the frequency scale on the waterfall at this time as it has not been coordinated with the transceiver.) This “sweet spot” will differ from one rig to another so some experimentation with your particular equipment is a must. This example uses an ICOM 746 operating in USB and a generic on-board sound card. From the frequency scale you can see the target area of the waterfall is about 2.5 KHz above the lower edge of the waterfall.

Let's assume, for an example that you want to hit an operating frequency of 4,007.5 KHz. This means you want that frequency in the sweet spot on the waterfall.

Navigate to the Band selection on the Configure menu. The Band Properties screen holds the key to pinpointing your operating frequency. The “Spectrum start” column indicates

the frequency of the lower (left) edge of the waterfall display. In this example we want to set this number 2.5 KHz below the target frequency. Set your transceiver VFO



to this frequency! Make sure to select USB under “Spectrum options” and change the name of the “Band”, MARS in this example, if you like.

When you go back to the DigiPan main screen you can select your Band as MARS, splat that cursor on 4,007.5 KHz and you will be right where you want to be, at least for this example! That takes care of getting in the right place, as for on time, well DigiPan can only do so much. Hey it's FREE remember! You can download the free DigiPan software at <http://mywebpages.comcast.net/hteller/digipan/>.

BT OVER



PSK Net - cont'd from page 1

As with most nets, wait a short time to make sure you do not double with another station.

NECOS will then acknowledge each station heard, then make another net call. After that he will ask each station for comments. When all stations have had a turn, he will call for additional stations or business for the net. If none heard, the net will be secured. Keep in mind that this net must end at 0130Z to prevent interfering with other nets on the same frequency. As with the traffic nets, if some else would like to take a turn as NECOS, please let AI, NNN0KZC, know. Remember this is a training net. NECOS will use several Q and Z signals so please review NTP 8(C) Para C100.h

Hope to copy you on a PSK net soon.

BT OVER

5G1B Net Schedule

6:30PM 4007 kHz USB

Day	NECOS	Tfc Rep
Sun.	XYA	XEE
Mon.	KZC	KZC
Tue.	XEE	XEE
Wed.	BQH	BQH
Thu.	SXU	SXU
Fri.	ACY	OCF
Sat.	Rotating Duty	

Don't be bashful, if the net has not been called by the net control station within 2 minutes, jump in and start things rolling.

MN MARS Intranet site

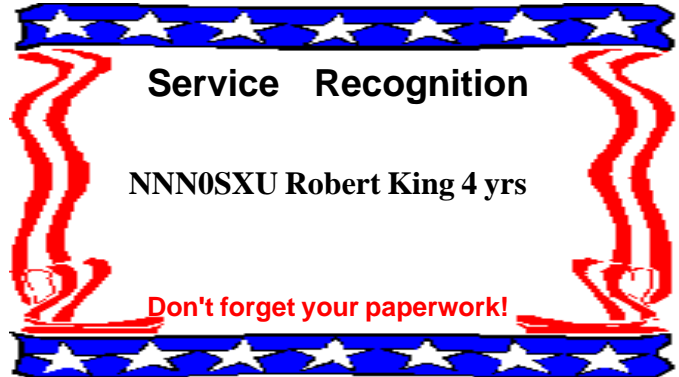
<http://www.communityzero.com/mnmars>

Spell Checker

Eye halve a spelling chequer
 It came with my pea sea
 It plainly marques four my revue
 Miss steaks eye kin knot sea.
 Eye strike a key and type a word
 And weight four it two say
 Weather eye am wrong oar write
 It shows me strait a weigh.
 As soon as a mist ache is maid
 It nose bee fore two long
 And eye can put the error rite
 Its rare lea ever wrong.
 Eye have run this poem threw it
 I am shore your pleased two no
 Its letter perfect awl the weigh
 My chequer tolled me sew.
 -Sauceunknown



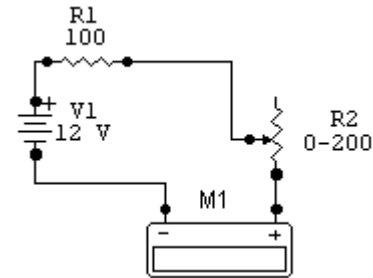
Sorry - No party in January!
 Check back next month.



December Test: Your "EIQ" 2

Series Circuit consisting of a load ($R_2 = 0$ TO 200 OHMS linear Taper) and voltage source internal resistance ($R_1 = 100$ ohms) and battery voltage E of 12 volts

Question: What will meter M_1 read when $R_2 = 200$ ohms?



Discussion: The current is found by Ohms Law. $I = E/R$, in which R is the series combination of $R_1 + R_2$.

Answer: 0.04 Amps or 4 mA.

Test Your Analytical Skills

How High is That Antenna?

Courtesy of *The Electron*, Cleveland Institute of Electronics

There are various ways of finding the height of an antenna tower, most of them difficult. The one easy way is to ask the man who put it up – if you can find him. A drastic way is to take the tower down and measure its length. Another possibility is to wait for an airplane to hit it, then ask the pilot how high he was flying. Each case must be considered separately as to the best method.

Consider a vertical tower supported by guy wires all of equal length. One set of guy wires supports the top of the tower and another set supports the tower further down. The tower with two of the guy wires is shown in figure 1. The distances from the tower to where the wires are anchored were measured and are as shown in the figure. Since the wires cross only 25 feet above ground, it was

possible to directly measure that distance. How high is the tower? Figure 1 gives all the needed information.

