SVARC GAP

SEAWAY VALLEY AMATEUR RADIO CLUB
P.O. BOX 462, CORNWALL, ONTARIO K6H 5T2

VOLUME 2, NUMBER 5, - NOVEMBER / DECEMBER, 1994

DUMMY LOAD

Well, it's time for another Dummy Load Column. We've tried some of the changes that were suggested in the club to make things more interesting and run more smoothly, both in the Net and at the meetings. They seem to be working. I think the Business section of the October meeting was about 15 minutes. That's a record for any meeting that I've been to here.

I must admit that last month's presentation on Moonbounce was spectacular. Those of you who missed it really missed it. The presentation was multimedia - video, OHP's, slides, audio recordings and, of course, a real live human in the person of Dennis Mungum who has been involved in Moonbounce Experiments for many years.

The Net seems to be working somewhat better too (except on the days when I'm supposed to do it and fall asleep). Most of the members with VHF or UHF stuff seem to be coming back out of hiding now that the risk of being nailed to do the net is somewhat diminished. Kudos to Bert VE3TNL for his re-organization of the net procedures.

The Basic course is progressing. The students seem to be learning the stuff. We'll find out soon, about the time the progress test hits them. That's about now. Good luck, and study hard.

For those of you who are patiently awaiting a Code course, John Wood (VE3WJF) and Richard Lemay (VE3SPD) have agreed to start one after Christmas. Sometime in December we will call for registrations from those who are interested.

We've also tossed around the idea of doing an Advanced course. Lots of us have the basic qualification and would like to go further, but don't really know which direction to go in. I think I may volunteer to teach part of that. I might even learn something.

I've always wanted to get into RTTY (RadioTeletype). However, with the increase in the usage of packet radio on VHF and on HF, I may find that I'm the only one doing RTTY when I finally get there. "Aaaallloooo RYRYRYRYRYRYRYRY anybody out there ??????".

At the November 7 meeting, we are expecting to have a discussion led by Diane Dumoulin VE3YDI on the City's Emergency Plan. It should be quite interesting, and it relates directly to our hobby. Be there. Participate.

We want to hold a straw vote at the November meeting (actually a By-Election) to add a couple of new people to the executive. We need more members on the executive, and Andy VA3TEE and I need help eating all those banana splits at the Miss Cornwall. We need a secretary and a person to do the newsletter.

Ahhh... The Newsletter! This is the last issue that Doug, VE3HTR will be producing. He's done them for a couple of years now, and he feels that it's time someone else took it over. We need two or three people to work on preparing a newsletter every month or two, primarily gathering input from various sources, hammering it into shape and getting it printed and distributed. The Dummy up front at the meetings (that's me!) gets to write a column - usually rambling in all directions - and that takes up a chunk of the space. Filling the rest of the space is not too difficult. Volunteers???

Doug.. Our most heartfelt thanks and several attaboys for the newsletters that you have prepared for the club. We thank you.

Hey! I actually got Leonard VE3OLB's name right the other day. Now, if I can just find out who VE3HYB is.....

Tim Smith   VE3HCB

EDITOR'S CORNER

A few readers have asked how the newsletter is produced, so, in this my last issue, I reveal some of the gory technical details.

The first few issues were produced on a MS-DOS computer using a 16 Mhz. 286 and Microsoft Word for Windows, version 2.0. Currently, Microsoft Word for Windows, version 6.0 is being used on a 486DX33 MS-DOS machine. A 270 MB 11mS. hard drive (already too small!) and 8 MB of memory make things a little more responsive, but if you have ever tried running today's software on yesterday's hardware, you will see why I consider a 486DX33 computer to be practically an entry level platform.

When I learned that Jacques d'Avignon VE3VIA was resigning as President and I was inheriting the job, with newsletter editor duties included, I knew that a dot matrix printer would not do! Thus, I justified in my own mind the purchase of a laser printer, a Hewlett Packard LaserJet II P plus, even then long out of production! Guess what? You can't print much on a 300 dot / inch laser printer with only the 512 KB of memory the printer comes with! A page of text will emerge eventually, but graphics are another story. The entire image has to fit into the printer memory before a page will print, and I was getting "Out of Memory" error messages whenever I would try to print any but the simplest of graphic images. Guess what else? Memory costs three to ten times the normal price when it comes installed on a special printed circuit board made to fit your printer, especially if it is from the same company that manufactured the printer! Aftermarket printer memory works just fine. With the addition of 2 MB, for a total of 2.5 MB, I have yet to run out of memory regardless of the complexity of the page. The are empty sockets on that memory board for another 2 MB, but I see no reason to ever fill them. Bottom line: don't use a laser printer, you will be spoiled and never want to go back to an impact printer again!

The font (typeface) used almost exclusively is 10 point "Arial" (chosen because it sounded like "aerial" and so seemed relevant to radio, somehow), with headings in 12 point point Arial Bold and the club address in 14 point Arial Bold. *(For those unfamiliar with the term, the "point" is the usual way of indicating typeface size in the printing industry. One point equals 1/72 of an inch. Therefore, "12 point" type would occupy 12/72 or 1/6 of an inch. This is just about equivalent to six lines per inch (6 LPI) character height, not including the space between lines.)*

The "SCARC GAP" masthead was produced in Micrografx Draw using an unusual font called Eurostile Extended in 50 point size, and electronically "pasted" into the Microsoft Word main document. Times New Roman 10 point font was used for footers (the repeater frequencies etc. at the bottom of each page), and the same font italicized was used when the President's "Dummy Load" article ran past the end of the first page and a *"(continued on page 2)"* was required. Two column full justification newspaper column layout was generally used. Some articles were not done on an MS-DOS computer at all, but on an Apple Macintosh, graphics and all. (VE3KCP's article "Duplexers Explained, ... Almost" is an example of this.) And some articles used no computer at all. One would be surprised to learn how often even professional publications resort to manual "Cut & Paste", using scissors and a glue stick!

Graphics were usually done using Micrografx Draw for Windows, and when that came up short on features, Micrografx Designer for Windows provided the necessary additional horsepower. An example of this is the SVARC logo shown below:
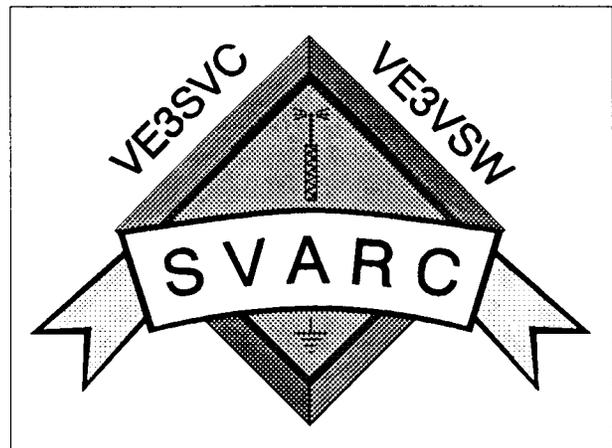
This started out as a Micrografx Draw clip art image. The ground and antenna were added, inspired by the ARRL diamond logo, but our antenna is the VE3SVC repeater antenna and tower. The Draw program, however, steadfastly refused to fit the SVARC name to its proper curved shape. Designer did this without a shrug.

In all, the job of newsletter editor was a burden at times, but it did introduce me to an area of computers which I had little knowledge of previously, the vast subject of desktop publishing.

Please support your new editor be keeping those articles and newsletter submissions coming.

73, de Doug VE3HTR.

WEDDING BELLS!

Congratulations are in order for club member Christina MacDonald VE3CGM, on her recent marriage to Gordie Van Putten on Saturday, October 29, 1994, at St. Columbans West Church here in Cornwall. The trip to the church was featured in Cornwall's daily newspaper, the Standard Freeholder, (Tuesday, November 02 , page 8), due to the fact that it took place in her father's antique car, a 1915 Gray Dort which has been in the family since Christina's great-grandfather's time. In fact, her parents left the same church in the same car following their own wedding in 1970. Christina, daughter of Graham VE3IGM and Gail VE3WGM was a graduate of the club's Basic Amateur Radio Course two years ago, and this ham radio family has been featured before in our local newspaper.

Pictured are VE3IGM chauffeuring VE3CGM to the wedding, but there are no signs of radios or antennas! I guess even a dedicated ham like Graham could not bear to drill a hole for an antenna in a 1915 car! Talk-in must have been via portables and rubber ducky antennas!

The groom, Gordie, is the son of Mr. & Mrs. Winston Van Putten of Apple Hill, Ontario. There is no word on whether he is an amateur radio operator or not, but if not, can it be very far off?

The couple will be residing in the outskirts of Ottawa as Christina finishes her university studies and Gordie pursues his career.

Again, on behalf of the club, congratulations and best wishes to Christina and Gordie.

PACKET NEWS

Some of you may remember the old antenna for the Transport Canada amateur station VE3MTA. This was a three element Hi-Gain tri-band beam, installed on two sections of Delhi tower on the TCTI residence overlooking the St. Lawrence river. That tower has been devoid of any antennas for about two years now, since the station was relocated to the Northwest part of the academic section, with a new tower and antennas for 80m through 70 cm.

What has that got to do with packet, you may ask? Well, take a look at the old tower location now and you will see a Sinclair 210A-2 two element folded dipole array, donated to VE3MTA by Jim Brelsford VA3SPY. This antenna is set to produce a cardioid (heart shaped) pattern, with 5 dB gain in the forward direction (right now Northwest to favour the

city of Cornwall), with 3 dB gain at right angles to this and 0 dB in the "null" to the rear. This antenna will be connected to RF hardware on 145.030 Mhz., our local LAN frequency, and will make the new VE3MTA-2 BBS, alias BBSTC, available to Cornwall area amateurs.

According to the Station Manager, Bob MacSween VE3KCP, initial operation will take place at 1200 bps only, using a Kantronics KAM TNC and an Alinco mobile radio, on loan from VE3KCP. An IBM Model 55 PS2 386SX computer, complete with 60 MB hard drive, has been obtained, on "permanent" loan to the BBS. Funding is about to materialize for a dual speed 9600 / 1200 bps TNC and a 9600 bps compatable radio. Earle Depass VE3IMP has agreed be Sysop (system operator) of the Bulliten Board System and has experience in this area.
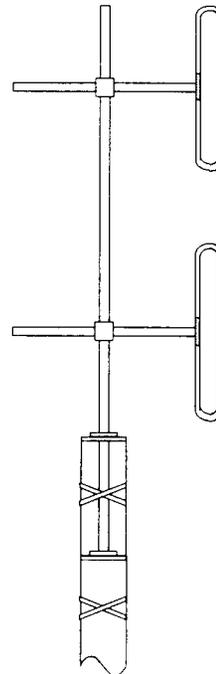
VE3MTA-2 BBSTC ANTENNA
SINCLAIR 210A-2, CARDIOID SETTING

The BBS is not intended to compete with any other local packet provider, but will instead make available to Cornwall amateurs the vast array of information presently contained on VE3NUU BBS without the necessity of going through a node. Traffic forwarding will hopefully take place via high speed (14.4Kb) landline modems, thus not tying up 145.030.

Look for testing to take place during November, and VE3MTA-2, BBSTC, to start operation on December 01, 1994. Early in the new year 9600 bps capability will be added.

SCANNER NEWS

Welcome to the fifth installment of the SVARC Gap Scanner News. This column focuses on frequencies above 30 MHz. and outside the Amateur bands. Please pass along any information of this sort which you think would be of interest to the membership. Packet is one of the better ways: VE3HTR @VE3IGM, or by phone (937-4755) or mail (P.O. Box 462, Cornwall, ON K6H 5T2).

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As promised in the last installment of Scanner News, we will take a look at CTCSS or "PL".

CTCSS, or Continuous Tone Coded Squelch System, is a scheme devised by the land mobile radio industry to allow more than one user to share a radio channel. It permits several companies to use the same carrier frequency by assigning each company a different subaudible tone frequency. These tones range from 67.0 Hz. to 250.3 Hz. (see the table below) and all fall below the voice band of 300 to 3000 Hz., hence the term "subaudable".

There are 38 different tone frequencies possible and they are identified by a two character code, as defined by the Electronics Industries Association (EIA) standard for the CTCSS system. These are as follows: (all frequencies in **Hz.**)

FREQ.	EIA Code	FREQ.	EIA Code
67.0	XZ	131.8	3B
71.9	XA	136.5	4Z
74.4	WA	141.3	4A
77.0	XB	146.2	4B
79.7	SP	151.4	5Z
82.5	YZ	156.7	5A
85.4	YA	162.2	5B
88.5	YB	167.9	6Z
91.5	ZZ	173.8	6A
94.8	ZA	179.9	6B
97.4	ZB	186.2	7Z
100.0	1Z	192.8	7A
103.5	1A	203.5	M1
107.2	1B	210.7	M2
110.9	2Z	218.1	M3
114.8	2A	225.7	M4
118.8	2B	233.6	M5
123.0	3Z	241.8	M6
127.3	3A	250.3	M7

PL stands for "Private Line" and should probably be written "PL®" as it is a Motorola registered trademark. CTCSS is the preferred, generic term, but PL and CTCSS refer to the same technique.

As an example of how this works, Company "A" might be assigned a subaudible tone of 100.0 Hz (1Z) and Company "B" assigned 136.5 Hz. (4Z). All of Company "A"s units transmit a low deviation (1 KHz. or so) audio tone of 100 Hz. continuously whenever the transmitter is keyed, and all of Company "B"s units transmit 136.5 Hz. Noise squelch, as we are accustomed to, is not used. The receiver audio path is enabled, not by the absence of noise (receiver quieting), but instead by the presence of the correct CTCSS tone frequency. So, Company "A"s receivers would unsquelch if they detected a 100 Hz. tone, and Company "B"s receivers would only unsquelch in the presence of a 136.5 Hz. tone. Thus, each radio would only hear its own company's units.

This creates a problem when both companies try to use the same carrier frequency simultaneously. A unit from one company could easily "double" with a transmission from another company's unit, as they cannot hear one another. That is why all CTCSS equipped commercial radios have a "Monitor" located near the PTT switch. This disables the tone squelch momentarily, allowing the operator to hear any unit of any company on frequency. If the channel is not busy with another company's traffic, the operator can proceed to transmit.

As you can imagine, this would not be very effective on a busy or important channel. The use of CTCSS to share a channel (or a community repeater) among several users is generally confined to companies which use their radios infrequently, and where a delay in sending their message is not life threatening. Public safety services may use CTCSS, but more for security of system access and for reduction of interference from other distant systems on the same carrier frequency.

More and more amateur repeaters are using CTCSS in order to prevent interference to or from other repeaters on the same frequency. Most currently manufactured amateur VHF and UHF transceivers are available with CTCSS, either as standard equipment or as an option. In order to fully enjoy the benefits of CTCSS, try to obtain an encoder/decoder rather than just an encoder, if at all possible.

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Next issue: Future columns will be irregular, and their content will depend on input from the membership. Lets hear from you!