

" S P A R K S "

THE NORTH SHORE AMATEUR RADIO CLUB INC.

FEBRUARY 1981 EDITION

EXECUTIVE & OFFICERS:

President	Don Cole	VE3HYW	985-8197
Directors	Bob Elston	VE3LLE	725-5124
	Glen Flintoff	VE3AEQ	725-6408
	John Pluister	VE3FGL	655-4269
	Ron Wragg	VE3AIY	723-4925
Treasurer	Glen Flintoff	VE3AEQ	725-6408
Secretary	Ron Wragg	VE3AIY	723-4925
Registrar	John Pluister	VE3FGL	655-4269
Get-Well Cards	Ted Brant	VE3ADD	668-3561
Editors	Randy Hill	SWL	579-4577
	Man McFarlane	VE3IKG	723-8484
Tech Editor	Gary Heagle	VE3EPY	298-9353

Club Repeater: VE3OSH            147.72 In  
   147.12 Out

Club Station: VE3NSR

2 Meter Net - Meets Thursdays at 19:30, with Roy  
VE3AAF at net control.

10 Meter Net - Meets Sundays at 10:00 on 28.200Mhz.  
with George VE3GOU at net control.

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N E X T   M E E T I N G

Tuesday 10th February, 1981, in the cafeteria of O'Neill C.I.

Time - 20:00

The guest speaker will be "Bill Smith" from CN/CP who will have  
some slides to show. Please plan to attend.

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From the President:

As we start a new year I would like to take this opportunity to thank the outgoing executive and club members for all they have done, and also express my appreciation to "Gunter" our past-editor for the last year. The new executive, editors, and members, I wish success in 1981.

Last year we hit records - membership was up to 146, let's aim for 150 this year; Field Day was a successful experiment, showing what we can do; and, as many people have told me, we had a very sober December meeting (remember the Wine & Cheese party? ed.) but this will only make the wine and cheese taste better this coming December!!!

Our club, like all others, exists because of its members, so if anyone has any suggestions, comments, or complaints, please pass them to your executive so we can make this the best club anywhere.

73's Don VE3HYW.

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FIELD DAY - At the time of this printing there will be only 136 days left till "Field Day". It takes a lot of planning and organization even for a fun type field day. Think about participating. Tent Managers, Ops, Loggers, Coffee-makers etc. are all badly needed. The pay isn't much but the fun and rewards are tremendous.

THINK ABOUT IT !!!

N E W S

The following is forcasted "Budget" for 1981:

Bulletin	\$600.00
Field Day	\$200.00
Repeater	\$250.00
Corn Roast	\$100.00
Christmas Party	\$200.00
Misc.	\$250.00
	\$1600.00

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The following is an abridged version of a memo regarding "duty-free" Amateur equipment.

Policy re. T.I. 44534-2

NOTE: 1) End user not a criteria.

- 2) It is obvious the Operator will have a Certificate of Proficiency in Radio to operate any Amateur Experimental Station in accordance with Schedule V General Radio Regulations Part II, Jan 13, 1978 and a Radio Station Licence.

HAM RADIO (COLLOQ.)

i.e. Non-commercial amateur radio communication between licensed individuals.

- Frequencies used are restricted to internationally agreed values in order to prevent interference with commercial broadcasting transmission, shipping or aircraft communication.

For purposes of tariff item 44534-2 Amateur radio transmitters, receivers, and transceivers cover only those frequencies defined as amateur bands under regulations provided by the Radio Act.

(Here it lists freq's now in use  
as listed in the ARRL handbook)

The memo finishes with:

- NOTE: 1. 1 Khz. = 1000 Hertz  
1 Mhz. = 100,000 Hertz (??? ed.)
2. Equipment as outlined in tariff item 44534-2 must be designed solely for the in the amateur bands as stated above.
3. Be watchful with respect to accessories.
4. Further information will be distributed at a later date.

The above is for info only, the interpretation is all yours.  
Some of it is obvious and some not so.

Mac.

## COMPUTER CORNER

Starting with this issue we will attempt to explain a few things that you may be interested in regarding computers. Since they are now appearing in the home in large numbers and are available at a fairly reasonable price, and the modern automobile is using a microprocessor chip to control certain operations and give a number of readouts on the status of the engine etc., we are all affected by the computer whether we like it or not.

First, as many books will tell you, the computer is stupid - it doesn't know anything except what you tell it, but it is tireless and has the ability to come up with an answer in microseconds. It is also very stubborn. If you decide to try to change it's ways, just like some children, it will sit there and absolutely refuse to budge. If you follow a preset plan, though, it will do your bidding without any hesitation whatsoever, and sit there wondering when you are going to ask it to do something else.

Actually the computer does know something. It understands off and on. Not only as in a switch, but when we refer to off and on in this case we are referring to the fact that it does all its calculating and other operations with only a high and (or) low level which we refer to as "1" or "0". Besides the memory, which is really the largest part of a computer, there are a number of registers in the microprocessor chip, which is the heart and real brains of a computer.

We will actually be dealing with what is called a microcomputer which we can call MC for short. A minicomputer is too expensive for the average person and sometimes people confuse the two. Many MC's have a capacity of 64K bytes of memory, which means 64,000 actual memory locations. A byte is composed of 8 bits in the computer we are going to be interested in, although there are some 16 bit machines.

Since the computer only understands a high or low level (the 1 or 0 mentioned earlier), some sort of order is maintained by dealing with each byte, or 8 bits, as a separate unit and with the various combinations of these bits being high or low we can have 256 different combinations from "00000000" to "11111111". The actual value of a 1 is different depending upon where it is in the line. Starting from the left side of the line, the first value is 128, the second is half that or 64, and so on until the one at the right, which is the same as our decimal system, or "1". The above is called a "binary" system.

More about computers in next month's bulletin, but think about the fact that our decimal system came about because man had ten digits, or fingers and thumbs, and started by counting out pebbles and putting them in piles of ten. The word "calculus" is the latin word for pebble.

Bernie

VE3ATI.

## Technical Topics

### Physical Ground vs. Electrical Ground:

Grounding of an antenna for the most part is a mystery to most amateurs. We know that by increasing the electrical ground under our antenna the radiation is increased.

But what is a good ground?

Soil is composed of two parts; "voids" (air + water or other liquid) and "earth".

<u>Ground Material</u>	<u>Relative Conductivity</u>
Sea water	4500
Flat, rich soil	15
Average flat soil	7
Fresh water lakes	6
Rocky hills	2
Dry, sandy, flat soil	2
City residential soil	2
City industrial soil	1

The chart shows that sea water is the best reflector because of its salt content.

Owners of vertical antennas know that a ground-screen of half wavelengths is desirable.

One thing that is not readily realized is that by favouring the ground-screen in one direction a "beam effect" is noticed.

The method generally used by amateurs today is to bury a ground rod or rods in a hole filled with salt. The reflected value of the soil may be naturally increased by a snow blanket in the winter or a water sprinkler in the summer. Another method of increasing reflection is to run a ground wire from the antenna to a garden shed, wire fence, or any other metal object with a large area, even though these fixtures are not really grounded, a counter-poise is achieved and reflection is realized.

Randy Hill.

Remember - "Baluns are Better" (with antennas of course).

The "TVI" you save could be your own!!!

S E L L - S W A P - B U Y

FOR SALE - Johnson Viking I, 160-10mtrs. CW/AM c/w ant. rly.  
Gunter VE3LHM 263-2180

FOR SALE - From the estate of Percy VE3AEX - SB102 c/w p/s,  
HW-12A 80mtr SSB c/w HP-23B p/s,  
HM102 swr bridge. Contact Bill Hart 655-4985.

FOR SALE - Heath SB300/400 c/w spkr and manuals. Can be hooked  
up for transceive. Al VE3LUS 725-5620

FOR SALE - Realistic DX150A all-band rcvr. \$100.00.  
Les Ricard 623-7338

FOR SALE - Kenwood TS-120S Transcvr. 200W input, solid-state.  
\$850.00. Bill VE3KZL 263-2969

FOR SALE - Mod. 28ASR Teletype \$175.00 Call Hank at work,  
668-5811, ext.259 or have him paged.

SWAP - Variable p/s 3-25V @ 1.5A, dummy load, etc. Looking  
for older xmtr Viking II, DX100 etc. with push-pull  
output. Want to experiment with DSB.

WANTED - Operating manual (or schem.) for Geloso G.222 xmtr.  
(the fella who approached me last meeting pse  
contact me agn. tks). Mac VE3IKG 723-8484

FOR SALE - Bendix TA-12 HF xmtr. Well-built Air Force rig. Needs  
p/s, \$25.00 or best offer. Also large qty. of period-  
icals, mostly Popular El., plus some recent QST's and  
reference books. Would like books to go as one lot.  
MAKE OFFER. Bernie VE3ATI 655-4156

INFO - For those people who have trouble locating a service  
or operating manual for a particular piece of gear, the  
company listed below has a catalogue of almost 2000  
different manuals available at what appears to be a  
fair price. Send a dollar to HI - MANUALS  
P.O. Box 864,  
Council Bluffs, Iowa,  
51502.

FOR SALE - CRESTS: CRESTS, CRESTS, Have we got CRESTS?

We are down to about 140 club crests. Those new  
and old members who do not have one should beat  
the Field Day rush by obtaining theirs at the up-  
coming meeting. Cost is \$4.00 cheap. Let the public  
know we are not CB'ers.

NOTE - - Next month's issue of "Sparks" will contain the club  
roster, complete with addresses and landline nrs. You  
won't be on it unless you have paid your 1981 membership  
dues.

John VE3FGL.

NORTH SHORE AMATEUR RADIO CLUB INC.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1980.

<u>INCOME</u>		<u>1979</u>
MEMBERSHIP DUES	\$ 1,021.00	\$ 1,421.00
RAFFLES & DRAWS	53.75	64.75
REPEATER DONATIONS	258.00	112.00
CREST SALES	12.00	60.00
MISCELLANEOUS	125.10	158.70
TOTAL INCOME	<u>\$ 1,469.85</u>	<u>\$ 1,816.45</u>

EXPENDITURES

BULLETIN	\$ 533.81	\$ 247.45
REPEATER OPERATION	240.32	264.18
FIELD DAY	284.88	81.90
CORN ROAST	62.34	70.00
XMAS PARTY	44.51	110.00
MISCELLANEOUS	252.35	425.14
TOTAL EXPENDITURES	<u>\$ 1,418.21</u>	<u>\$ 1,198.67</u>

CASH IN BANK AND ON HAND JANUARY 1, 1980		\$ 1,009.37
TOTAL INCOME TO DECEMBER 31, 1980		\$ 1,469.85
		<u>\$ 2,479.22</u>
TOTAL EXPENDITURES TO DECEMBER 31, 1980		\$ 1,418.21
CASH IN BANK AND ON HAND - DECEMBER 31, 1980		<u>\$ 1,061.01</u>

