

THE HAMILTON AMATEUR

HAMILTON AMATEUR RADIO CLUB INC.
P.O. BOX 253
HAMILTON, ONTARIO
L8N 3T8

FIRST
CLASS



Gerald Goldberg VE3HLI
17 Cottwill st.
Hamilton, Ontario
L8S 3L5

Feb 10/75



HAMILTON AMATEUR RADIO CLUB INC.

CLUB STATION...VE3DC....VE3RCB---REPEATER...VE3DRW

INPUT....146.160 MHZ
OUTPUT...146.760 MHZ

1975 OFFICERS and DIRECTORS

<u>PRESIDENT</u>	Wm. R. McCASLIN VE3ARX	704 CEDAR AVE. BURLINGTON , L7T 2R7	634-5190
<u>1st VICE-PRESIDENT</u>	JOHN DYKSTRA VE3BOY	TALBOT ST. CAYUGA ,	772-5372
<u>2nd VICE-PRESIDENT</u>	DAVE. E. WALTON VE3FLZ	421 LODOR ST. ANCASTER , L9G 2Z9	648-6872
<u>PAST PRESIDENT</u>	GLEN A. SIMPSON VE3DSP	61 BRIARWOOD CRES. HAMILTON , L9C 4C3	385-8478
<u>SECRETARY</u>	PETE. C. WALTON VE3FEZ	421 LODOR ST. ANCASTER , L9G 2Z9	648-6872
<u>TREASURER</u>	GERALD CRAWSHAW	176 WEST 35th ST. HAMILTON , L9C 5K8	385-2789
<u>EDITOR</u>	ROBERT G. CLARKE VE3ANW	420 COCHRANE RD. SOUTH HAMILTON , L8K 3G9	549-2916
<u>ASSISTANT EDITOR</u>	MAX. PIZZOLATO VE3DNM	65 ELGAR ST. HAMILTON , L9C 4E4	385-2530

COMMITTEE CHAIRMEN

Club Station Licencee(VE3DC)	VE3BKM	VERN. HUCKLE	388-6989
RED CROSS STATION LICENCEE (VE3PCB)	VE3FHQ	GLENN A. GIBSON	385-2786
REPEATER LICENCEE (VE3DRW)	VE3CFM	BOB. MILLER	529-2950
REPEATER TECHNICAL	VE3FHB	KEN. CHRISTMAS	383-5666
REFRESHMENTS	VE3DNM	MAX. PIZZOLATO	385-2530
MEMBERSHIP		GERALD CRAWSHAW	385-2789
HEALTH & WELFARE	VE3GFE	STAN. BOLIBRUCH	528-4002
PHOTOGRAPHER	VE3FLZ	DAVE. WALTON	648-6872
PUBLICITY & ADVERTISING	VE3DOU	PETER GOODSON	561-1659
PUBLIC SERVICE	VE3FHQ	GLENN A. GIBSON	385-2786
PROGRAM	VE3FLZ	DAVE. E. WALTON	648-6872
TECHNICAL	VE3DVV	JOHN VANDENBURG	692-3221

MEMBERSHIP YEARJANUARY 1st to the following DECEMBER 31st

MEMBERSHIP FEES.....\$6.00 per year (all classifications)

PLEASE ADDRESS ALL CORRESPONDENCE TO THE SECRETARY AT - P.O. BOX 253, HAMILTON. L8N 3T8

If we were to attach a theme to this past month's activities, it would be entitled "HARD WORK!" For it seems that many of us have been burdened to keep the club activities rolling in high gear, when other activities are pressing in on us. First there was the SRT exercises with all the planning it required, followed on its heels by the HAM day event at Southmount School. There was the programming, and preparation for this month's speaking event of the year of interest to Ham everywhere....TVI. Boy what a subject, and what hours our men have put in to find answers to their TVI problems. When Irwin Morris VEGARD announced he was having TVI problems, little did he know that this was a very important subject.

FEBRUARY 1975 MEETING

#####

PROGRAM

DATE WEDNESDAY FEBRUARY 19, 1975

TIME 8.00 PM

PLACE THE BROW INFIRMARY
CHEDOKE HOSPITAL
SCENIC DRIVE HAMILTON

BUSINESS GLEN SIMPSON WILL HOLD
AN OPEN FORUM AND WILL
HAVE A DISEUSSION ON
TVI .

REFRESHMENTS ... COFFEE AND SINKERS

ENTERTAINMENT ... EYE-BALL QSO'S

COME ON OUT AND ENJOY

#####

How one further admonition. The club can only be the great-est, if each man does his part, and walks that extra mile. One of the hardest jobs in any club is that which produces the bulletin. It is a job that is often overlooked, and yet it is the re-ports come from the editor, and/or at least get them in to the hands of the editor the first week of each month. The Editor shouldn't have to chase you for it. He has enough on his mind, and must have the bulletin printed 10 days before the club meeting. This includes...advertising, items for sale, news of those on the sick list, technical topics. Remember, your club is only as successful as your bulletin portrays it. It is the prime mover behind any club...make no mistake about it.

We have a great future ahead of us. We are just breaking new ground. There is much to be thankful for, and exciting ad-ventures lie ahead. We are proud of each one of you and glad that you chose to be a part of H.A.R.C. May you find interest- ing and lasting friendships as we fellowship together at the

THE PRESIDENT'S PAGE

If we were to attach a theme to this past month's activities, it would be entitled "HARD WORK!" For it seems that many of us have been burdened to keep the club activities rolling in high gear, when other activities are pressing in on us. First there was the SET exercises with all the planning it required, followed on its heels by the HAM day event at Southmount School. There was the programming, and preparation for this month's speaking event of the year of interest to Hams everywhere....TVI. Boy, what a subject!...and what hours our men have put in to find the answers to this thorny problem. When Irwin Moritt VE3AHB announced he was having TVI problems, little did he know that his misfortune would mushroom into driving the club to focus its full armament on this problem. Because of it, HARC will be the best informed trouble shooting club, second to none. So to Irwin we owe a vote of thanks. We hope these discussions will lead to sessions entitled "Basic test equipment every ham should possess" and "How to build and use your ham test equipment". We have men with the finest technical 'know-how' within the club and we plan to use them to our best advantage, so don't miss a club meeting. I believe this in turn will lead to greater building and experimentation within the club.

The S.E.T. exercise on Saturday January 25th, was a good test providing we learn and recognize our limitations and shortcomings. It took foul weather to deflate our self-satisfied ego. It also pointed up the need for the train of command, and the need of self discipline. The only answer to some of these problems is more exercises and experience. This is hard to work in, in the lives of busy people. But we should all review our actions of that day and take note of areas in our personality that need polishing for the good of Amateur radio and the club. It's too bad we couldn't swap personalities for a week just to straighten them out, we always know best how to cure the other fellows problem Hi Hil

Now one further admonition. The club can only be the greatest, if each man does his part, and walks that extra mile. One of the hardest jobs in any club is that which produces the bulletin. But it would be so much easier if those who have reports could put them on stencils, and/or at least get them in to the hands of the editor the first week of each month. The Editor shouldn't have to chase you for it. He has enough on his mind, and must have the bulletin printed 10 days before the club meeting. This includes...advertising, items for sale, news of those on the sick list, technical topics. Remember, your club is only as successful as your bulletin portrays it. It is the prime mover behind any club...make no mistake about it.

We have a great future ahead of us. We are just breaking new ground. There is much to be thankful for, and exciting adventures lie ahead. We are proud of each one of you and glad that you chose to be a part of H.A.R.C. May you find interesting and lasting friendships as we fellowship together at the "Brow" on February 19th. 1975.

General Meeting of the Hamilton Amateur Radio Club
Wednesday Jan. 22 at the Brow Infirmary of the Choke Hospital
6

The meeting was opened at 8:09 By BILL Mc CASLIN VE3ARX
Bill introduced the club executive and committee chairman and
also asked the visitors to the meeting to introduce themselves.
GERRY CRAWSHAW gave the treasurers report and stated that we
had a bank balance of 528.00 GLEN SIMPSON VE3DSP motioned that
the report be accepted as read and PETRE GOODSON VE3DOU seconded
the motion .

PETE WALTON VE3FEZ gave the secretarys report. It was moved by
FRED ROBINSON and seconded by BOB CLARKE VE3ANW that the min.
of the last meeting be accepted as read .

GLENN GIBSON , JOHN DYKSTRA, and GLENN SIMPSON gave a report
on the up and coming S.E.T. Exercise. They gave a brief run
down of the program for the event and asked any interested
parties to get in touch with them.

Bill announced the Club Theme for 1975 would be "Practical
Hamming ".

Bill also mentioned that he appreciated any suggestions as to
new speakers or improvements in our general program . Anyone
with some ideas should talk to DAVE VE3FLZ our PROGRAMME DIRECTOR .
The Administration Director for the Chedoke Hospital gave a
short talk and told au how pleased he was that we were able to
use the Hospital, facilities for our meeting.

Fred Robinson brought some goodies that were left over from the
fle market at the convention. This collection of goodies is av-
ailable to any club member who would like to make a small
donation to the club .

LES VE3COV announced that AM amplifier had been donated to the
club by his church. Les has all the details on this device.

Glen Simpsin announced that there were some G.E. Pacemaker rigs
available for about 25.00 to anyone interested contact STAN.

Dave VE3FLZ introduced our guest speaker Mr. Ken Smith who gave
us a really interesting talk on satellite communications.

MEETING WAS ADJOURNED AT 10:40.

2
9

Any suggestions or requests for specific types of information to be put in the bulletin would be appreciated by the editor.

SWAP SHOP

" 2 Motorola handytalkie 1 watt portables, one working on DRW complete with 12v d.c. supply and 110v a.c. supply. DE ve3cye

Heath TOWER lunchbox converted for FM TX. DE ve3ebf

Home Brew sstv monitor, with service for limited time. 100.00

DE ve3gzm

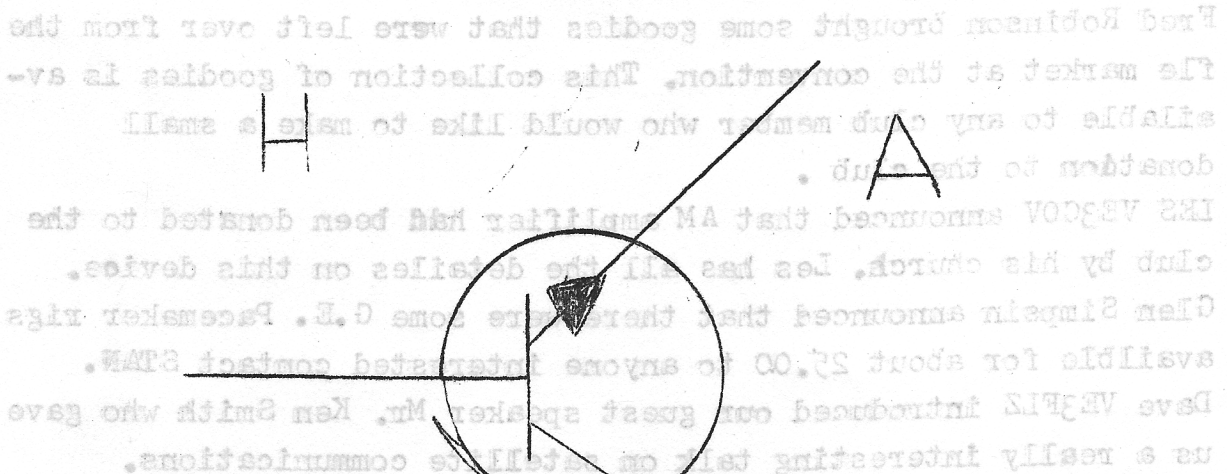
Wanted! 1 used rx, 100.00 range, for prospective ham. DE ve3dsp

Wanted! rx used, call George Jeffrey swl, 545 0770

NC303, viking Valiant, Johnson ssb adaptor, an tenna tuner.

DE ve3dou

Lets have your coments on the following as a possible club logo.



Bob



HW-202 SPECIFICATIONS—RECEIVER—Sensitivity: 2 dB SINAD* (or 15 dB of quieting) at 5μV or less. Squelch threshold: 3μV or less. Audio output: 2 W at less than 10% total harmonic distortion (THD). Operating frequency stability: Better than ±.0015%. Image rejection: Greater than 55 dB. Spurious rejection: Greater than 60 dB. IF rejection: Greater than 75 dB. First IF frequency: 10.7 MHz ± 2 kHz. Second IF frequency: 455 kHz (adjustable). Receiver bandwidth: 22 kHz nominal. De-emphasis: -6 dB per octave from 300 to 3000 Hz nominal. Modulation acceptance: 7.5 kHz minimum. **TRANSMITTER**—Power output: 10 watts minimum. Spurious output: Below -45 dB from carrier. Stability: Better than ±.0015%. Oscillator frequency: 6 MHz, approximately. Multiplier factor: X 24. Modulation: Phase, adjustable 0-7.5 kHz, with instantaneous limiting. Duty cycle: 100% with ∞ VSWR. High VSWR shutdown: None. **GENERAL**—Speaker impedance: 4 ohms. Operating frequency range: 143.9 to 148.3 MHz. Current consumption: Receiver (squelched): Less than 200 mA. Transmitter: Less than 2.2 amperes. Operating temperature range: -10° to 122° F (-30° to + 50° C). Operating voltage range: 12.6 to 18.0 VDC (13.8 VDC nominal). Dimensions: 2 3/4" H x 8 1/4" W x 9 7/8" D.

*SINAD = Signal + noise + distortion
Noise + distortion

New Heathkit 2-meter Transceiver ONLY \$237.⁵⁰

It's an all solid-state design that you can build and completely align without special instruments. And this compact little beauty gives you 36 channel capability with independent push-button selection of 6 transmit and 6 receive crystals. 10 watts minimum output into an infinite VSWR without failure. And for the ultimate in convenience there's the optional tone burst encoder for front panel selection of four pre-settable tones. The HW-202 kit includes two crystals for set-up and alignment and simplex operation on 146.94; push-to-talk mike; 12-volt hook-up cable; heavy duty clips for use with temporary battery; antenna coax jack; gimbal bracket, and mobile mounting plate.

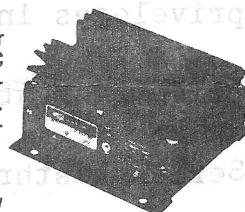
Kit HW-202, 11 lbs., mailable	237.50*
Kit HWA-202-2, Tone Burst Encoder, 1 lb.	32.95*
Kit HWA-202-1, AC Power Supply, 7 lbs.	39.95*
Kit HWA-202-3, Mobile 2-Meter Antenna, 2 lbs. .	29.95*
Kit HWA-202-4, Fixed Station 2-Meter Antenna, 4 lbs.	25.95*

... and here's 40 watts out for your 10 watts in

The Heathkit HA-202 2-Meter Amplifier works with any 2-meter exciter delivering 5-15 watts while pulling a meager 7 amps from any 12 VDC system. No additional power supplies are required. All solid-state components mount on a single circuit board for easy two-evening assembly. Manual shows exact alignment procedures using a VOM or VTVM. Connecting cable and antenna cable are included.

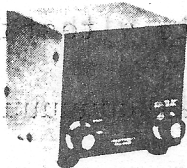
Kit HA-202, 4 lbs. 89.95*

HA-202 SPECIFICATIONS—Frequency range: 143-149 MHz. Power output: 20W @ 5 W in, 30W @ 7.5W in, 40W @ 10 W in, 50W @ 15 W in. Power input (rt drive): 5 to 15W. Input/output impedance: 50 ohms, nominal. Input VSWR: 1.5:1 max. Load VSWR: 3:1 max. Power supply requirements: 12 to 18 VDC, 7 amps max. Operating temperature range: -30° F. to +140° F. Dimensions: 3" H x 4 1/4" W x 5 1/2" D.



\$89.95

... then there's this perfect 2-meter tune-up tool



The Heathkit VHF/SWR Bridge tests transmitter output in power ranges of 1 to 25 watts and 10 to 250 watts ± 10% of full scale. 50 ohm nominal impedance permits placement in transmission line permanently with little or no loss. Built-in SWR bridge for tuning 2-meter antenna for proper match, has less than 10-watt sensitivity.

Kit HM-2102, 4 lbs. 39.95*

HM-2102 SPECIFICATIONS—Frequency range: 50 MHz to 160 MHz. Wattmeter accuracy: ±10% of full-scale reading.* Power capability: To 250 W. SWR sensitivity: less than 10 W. Impedance: 50 ohms nominal. SWR bridge: Continuous to 250 W. Connectors: UHF type SO-239. Dimensions: 5 1/4" W, 5 1/4" H and 6 1/2" D, assembled as one unit.
*Using a 50 Ω noninductive load.

\$39.95

See them at your Heathkit Electronic Center —

Vancouver, B.C.
3058 Kingsway Phone 604-437-7626
Edmonton, Alberta
12863-97th Street Phone 403-475-9331
Montreal, Quebec
795 Legendre St. E. Phone 514-384-9160
Ottawa, Ontario
866 Merivale Rd. Phone 613-728-3731
Mississauga, Ontario
1480 Dundas Hwy E. Phone 416-277-3191

OR SEND FOR YOUR
FREE CATALOGUE



DEPT N3
MISSISSAUGA ONTARIO

December 30, 1974

EXTERNAL LIAISON COMMITTEE REPORT

The Federal Communications on December 16, 1974, released a Notice of Proposed Rule Making governing the licensing of amateur operators in the USA.

This was in response to 35 individual petitions from interested parties, including one from the ARRL.

Comment must be filled before June 16, 1975.

Basically the proposal creates two separate incentive channels to reach the EXTRA class license. Series A with privileges in the hf bands below 29 MHz and Series B with privileges above 29 MHz.

Each Series has three levels, and above both Series is the EXTRA class which has all amateur frequencies.

The structure is as shown on the attached chart, with examination requirements and privileges as indicated.

The chart will be posted at the HARC meeting.

W.W. Loucks, VE3AR
Chairman

* * * * *

Sponsor is needed for a WHITE CANER.

Please call VE3GCP or VE3ARX for details.

A.R.E.C. NEWS

The big S.E.T. exercise is over, and most of us are wiser, due to the effort. While some may have been humming the tune "Raindrops Falling round my head" most of us had quite a time to make a go of it.

The following is a rundown of the exercise:

The Simulated Emergency Test was held Saturday January 25th. Prior to the exercise, a meeting was held to determine the general plan, disaster area, and routes. John VE3BOY and Glenn VE3DSP, the assistant E.C.'s set up the exercise and prepared the "sealed orders" for each mobile. Bill VE3ARX was unsuccessful in arranging participation by the St. John Ambulance Brigade, but they have indicated interest in joining us next year if desired. Thanks to all who participated including Max 'DNM who repaired the 75 meter club antenna. Thanks also to the base station operators at the "Brow"...VE3DC..was manned by VE3BKM, 'BOJ, 'HPB and SWL-Jim. John 'BOJ took the general traffic. VE3EYO acted as backup on 75 meters at home, relaying to local nets.

The weather deteriorated to heavy rain and wind. Thanks to 'BOY our headquarters at York was in the community hall. Max supplied all with coffee and donuts. After considerable effort a 2 meter base was established using the rig of VE3GCP. Information centre base operators were 'EVI, 'GYT, and 'GCP. Thanks to 'DSP and 'BOY for effort in establishing base station gear. Although antenna worked well when located on roof of building, weather conditions eventually proved too rough and we were forced to close down. However, the mobiles carried out their assignments. Formal Traffic from York was handled on 75 meters by VE3FHQ/3 but Q.R.M. was heavy.

Formal traffic from mobiles to VE3RCB/3 at York, as follows:
VE3ANW/3 - 2; 'FUF - 2; 'ARX - 2; 'DQS - 2;
'DQU - 2; 'EHL - 2; and VE3CYC - 1.

VE3RCB information Centre to mobiles - 2 pieces of traffic
VE3RCB information Centre from mobiles-11-pieces of traffic
Formal from York to VE3DC at "Brow" - 6 pieces
Formal from York to VE3EYO - 1 piece
VE3EYO back up on 75 meters relayed - 3 pieces.
Formal traffic received at Chedoke - 8 pieces
relayed - 2 pieces

Information centre VE3RCB at York closed at 3:55 PM and mobiles returned to the "Brow VE3DC" where coffee was served. Thanks to all who participated and helped make the effort worthwhile.

Next exercise...March 22nd 1975.

THE QUIET CORNER

Read: 2 Thessalonians 3:6-13

THE VALUE OF WORK

There is nothing better for a man, than that...he should
make his soul enjoy good in his labor.

Ecclesiastes 2:24

Man was created by God to work. Lack of industry and too much leisure time can easily lead to sin and misery. It has been wisely said, "Satan finds some mischief still for idle hands to do."

Charles Kingsley admonishes us, "Thank God every morning when you get up that you have something to do that day which must be done whether you like it or not. Being required to work and doing so to the best of your ability will breed in you self-control, diligence, contentment, and a hundred other virtues which the idle never know." Truly, these are words of wisdom!

Adam Clark is reported to have spent 40 years writing his commentary on the Scriptures. Noah Webster labored 36 years forming his dictionary; in fact, he crossed the ocean twice to gather material needed to make the book absolutely accurate. Milton rose at 4 o'clock every morning in order to have sufficient hours to compose and rewrite his poetry which stands among the best of the world's literature. Gibbon spent 26 years on his book The Decline and Fall of the Roman Empire, but it towers as a monument to careful research and untiring dedication to his task. Bryant rewrote one of his poetic masterpieces 100 times before publication, just to attain complete beauty and perfection of expression. These men enjoyed what they were doing, and each one threw all of his energy into his effort no matter how difficult the job.

The most happy and productive people are those who are diligent in their labors for the betterment of mankind and the glory of God.

They who tread the path of labor
Follow where Christ's feet have trod;
They who work without complaining
Do the holy will of God!

THOT: If you want to leave footprints on the sands of time,
wear workshoes!

Courtesy of 'Our Daily Bread'

Keep Smiling,

Bill VE3ARX

J-DAY AT SOUTHMOUNT SECONDARY SCHOOL 1975

January 29th was a big day in the lives of the faculty and students at Southmount Secondary School in Hamilton. This was the day when the students could view special informative classes on subjects of his own choice, for this was 'Learning for Leisure'. The subjects ranged from boxing, to music, to cooking, making jewellery, home movies, dancing, euchre, model-trains, languages, recreational facilities, hunting and shooting, camping, to mention only a few. Ham radio was another subject and H.A.R.C. was honoured to be invited to handle these sessions. Our heartfelt gratitude goes out to Mr. Ed Charlesworth VE3FSI and Mr. John Holland VE3BOJ and Mr. Stan Bolebruch VE3GFE, who gave of their time and talents to conduct two very interesting sessions to some 60 students. To these gentlemen may we say "Thank You" for a job well done! And now we'll let John Holland tell you in his own words the happenings of the day!Go ahead John.....

"We arrived at the school in plenty of time to set up our equipment before the session began. Mr Charlesworth gave the boys a talk on the procedure to follow, before actually going on the air, viz:- How to procure a certificate, and then a station license to operate. He gave a history going back to the very early days when the Amateur had to fight, as one might say, for his place on the air. He then showed the film issued by the Radio Society of Ontario, called "Fine Business", which was very good.

I then took over and gave a more practical demonstration of Ham Radio. With a small DX 40 and VFO plus lamp load we transmitted across the room to a transceiver. All the boys enjoyed playing around using the key and the mike. Finally, I had them take apart the DX40 and showed how easy it was to get a KIT and do the wiring etc. The questions asked were many, and I do feel there was a keen interest among the boys.

Now came a break for a buffet lunch. With our escort, a student assigned to us for the day, we enjoyed a splendid lunch.

The afternoon session was really a repetition of the morning session, excepting the film shown was the ARRL production "Ham's Wide World".

All in all a very enjoyable day. Mr. Stan Bolebruch VE3GFE was in our party all day and he enjoyed the outing.

Before leaving we approached Mrs. Burville, (the January Activities Co-ordinator) and thanked her for the opportunity which had been given us, to put on the demonstration, and also thanked her for the courtesy shown us by the school officials, and the student assigned as our escort.

Yours sincerely,

John VE3BOJ

May I just add, John, that the dignity with which you men carried out your assignment, is much appreciated by this club, and an inspiration to us all.

W.R. McCaslin President HARC

Dear Fellow Amateurs,

Here is ! Ready Reference Information ! that should assist you in your participation in the Ontario Amateur Radio Public Service Corps (AREC) operating in your city and under the sponsorship of the Canadian Division ARRL.

DO TRY TO KEEP IT UPDATED.

TELEPHONE NUMBERS:

- Emergency Coordinator (ec)
- Ontario Emergency Coordinator (SEC) Holland Shepherd, VE3DV 7330665
- Ontario communications Mgr (SCM)
- EMO Director
- DOC Field Office
- Police Dept.
- Fire dept.
- RCMP Dept.
- Ontario Dept. of Highways
- Winter Roads Reporting Svc.
- Telephone Company

NET FREQUENCIES:

<u>NAME</u>	<u>FREQ</u>	<u>TIME</u>	<u>DAYS</u>
AREC			
GBN	2645	1830 local	daily
ODN	3645	1700 local	M-F
OQN	3535	1900 local	daily
OPN	3770	1900 local	daily
NWON	2750	1950 local	daily
QRN	3775	1930 local	daily
ONTARS	3755	0700-1800	daily
CJN	3790	1830 local	daily

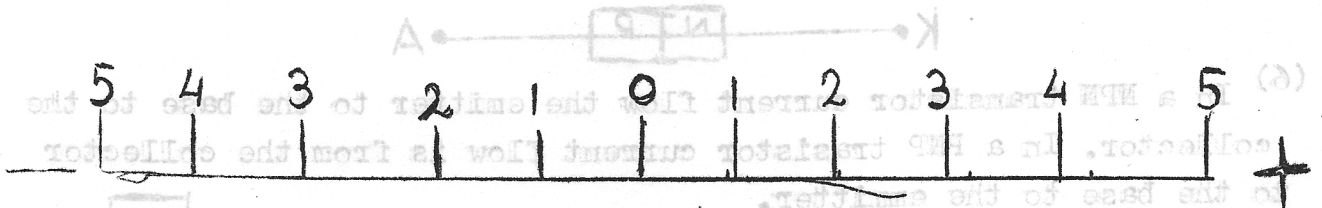
In the event you become aware of a need for emergency communications, or on direction from the EC authority, you will immediately inform the following stations by telephone :

GLENN GIBSON 385-2786

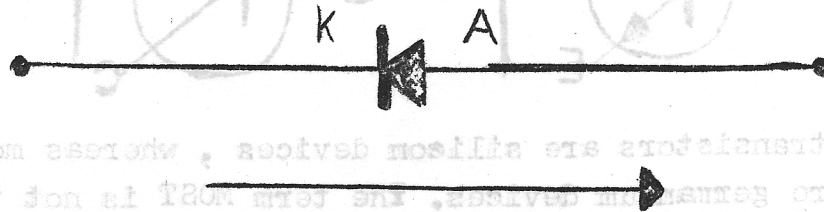
IMPORTANT SOLID STATE CONCEPTS

What this is all about can be summed up in a few words. Solid state statements, about solid state devices, for solid state technicians. Its sole objective is to present those concepts that are vital to a clear understanding of solid state devices, their application, and circuit parameters in a manner that is easy to grasp. The author assumes that the reader has had some previous training or experience in solid state electronics, and begins with the most basic concept of all:

- (1) Current flow (which the author to equate with electron flow) is always from negative to positive.



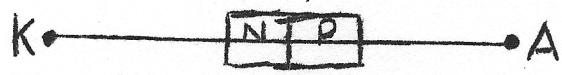
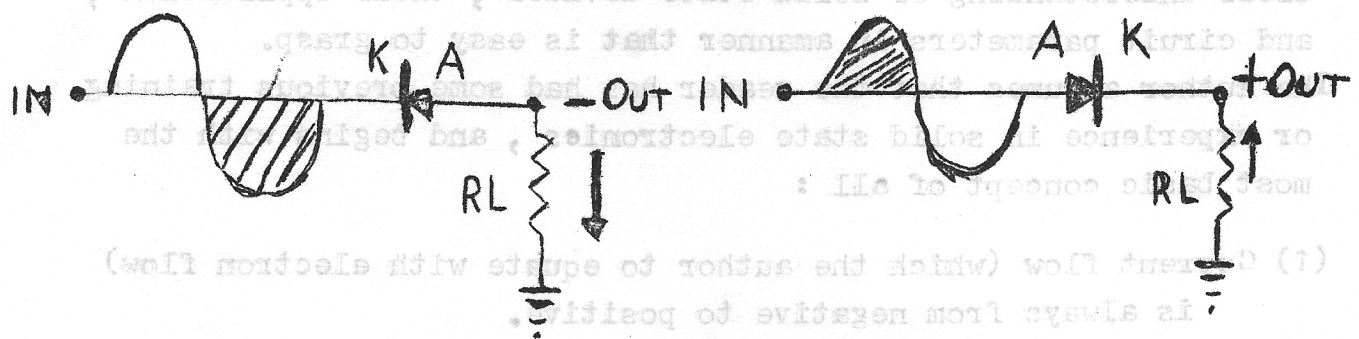
- (2) Current flow in a diode is from cathode to anode (negative to positive.)



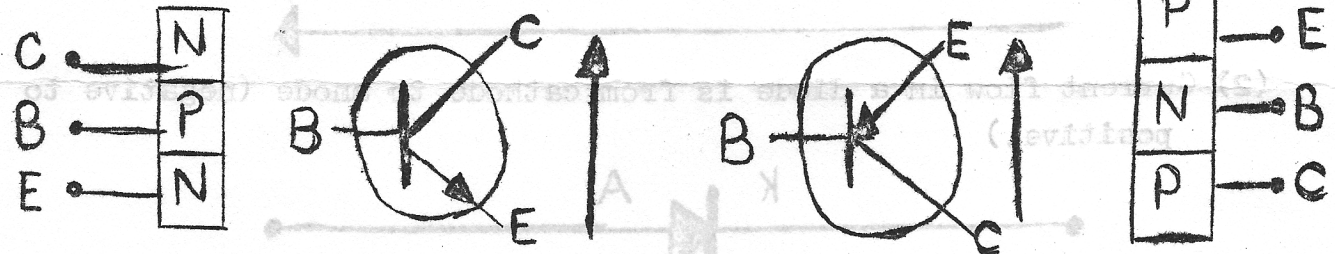
A silicon diode when forward biased will drop approximately .6 volts across its junction, whereas a germanium diode when forward biased will drop approximately .3 volts across its junction.

- (3) A diode that is forward biased (anode more positive than the cathode, or cathode more negative than the anode) acts as a closed switch.
- (4) A diode that is reverse biased (anode more negative than the cathode, or cathode more positive than the anode) acts as an open switch.
- (5) If we apply an AC signal to the cathode of a diode it will conduct on negative cycles and produce a negative DC voltage at its output. If we apply an AC signal to the anode of a diode it

will conduct on positive cycles and produce a positive DC voltage as its output.



(6) In a NPN transistor current flow the emitter to the base to the collector. In a PNP transistor current flow is from the collector to the base to the emitter.



(7) Most NPN transistors are silicon devices, whereas most PNP transistors are germanium devices. The term MOST is not to be confused with the term ALL.

EACH MONTH THERE WILL BE A PAGE PUT IN THE BULLETIN

SAVE THESE PAPERS

The above information comes to us through the courtesy of the Electrohme Co. in Kitchener, and the author, Allan Kleeger.

W.M. CALICE ELECTRONIC

60v 4a transformer will run 43GGT.....

Large sheets of unused copper clad board
plus all chemicals for making pc boards.

Full line of transistor circuit hardware
including transistors, integrated circuits
and heat sinks.

Surplus pc boards from computers etc. containing
transistors, resistors, caps, and diodes.

Top grade and quality 7400 series ttl 14 pin
dip ic's, in stock.

Read out displays...Lltronex dl33b 3 didget
7 segment led...1.50
N-S 338 3 didget 7 segment led....1.99
H-P 351s 5 didget 7 segment led....2.99
H-P 348s 4 didget 7 segment led....2.49
OPCOA Man-1 sla 7a 7 segment.....4.99