RAMBLER

AMATEUR RADIO

OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED

OTTAWA, ONTARIO

CLUB CALL: VE3RAM

MONITORED FREQS
3760 kHz 146.94 MHZ

Vol 11 No 7 OTTAWA VALLEY MOBILE RADIO CLUB, INCORPORATED, Ottawa, Ont. July 68

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1968 EXECUTIVE

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POT HOLE NET: Official Club Net. Meets every Saturday and Sunday at 10 AM local time on 3760 kHZ. On Saturdays only, the Club sponsored SWAP NET follows immediately after roll call. All amateurs are welcome to participate regardless of club affiliation.

MONITORING FACILITY: VE3CGO monitors 3760 kHZ SSB and 146.940 MHZ daily from approx. 8 AM to 6.30 PM for local mobile or out of town traffic. This Club Sponsored Service is available to all amateurs regardless of club affiliation. IF YOU HAVE NEED OF THIS SERVICE "Please give VE3CGOs call several times and have the courtesy to wait for at least a minute or more for a reply." VE3CGO does not normally respond to local "Anybody around" "QRZ the Freq" etc calls.

NOTICE OF MONTHLY MEETING

PLACE: Poolside at the QTH of VE3YC, 512 Sherbourne Rd

TIME & DATE: 7.30 PM , THURSDAY, 11 July 68.

PROGRAM

VE3YC has again offered his facilities for a Club evening of eye-ball QSOs and a refreshing dip in the pool for those so inclined. This is a rain or shine event so arrange for a sitter and take the XYL or YL out for an enjoyable evening. A modest repast will be served at Club expense. Bring along your own liquid refreshments and it might be an idea to have a couple of lawn chairs in the event that Jack & Yvonnes are taxed to the limit. NOTE: Due to space restrictions, it is necessary to restrict this event to Club Members & their XYL/YLs. Dress is informal slax , shorts and don't forget your suit & towel if you want a dip.'

REPORT ON THE LAST MEETING

The last meeting was an open air eyeball type held at Vincent Massey Park. Normally we have a drizzle just before or during the out door meeting but our Club witch doctor did an excellent job. The meeting was very well attended. It was nice to see the variety of mobile equipment and have an eyeball QSO with the ops and their families.

REPORT ON THE FAMILY PICNIC

Sunday 16 June 68 was our Club Family Picnic Day at Vincent Massey Park. Again our revered Witch Doctor made with the appropriate incantations and the weather was fine. The childrens races were run by Jackie (XYL W2YYP) and Doreen VE3CGO. There were many races and even more prizes. Free popsicles were provided for all the kiddies. The adults had their races too! A mixed wheel-barrow race and a shoe race were the main attractions. Needless to say these events provided

the children and other onlookers with much mirth. The "Piece de resistance" of the adult capers was the Tug of War between "The VHFers" and "The DC Banders" "The VHFers" won two out of the three spasms which constituted the contest. Some of the "The DC Banders" observed the fact that there were two professional atheletes on "The VHFers, W2YYP and VE3GX, which assured success for their team. Oh well in any sports contest, there is always a similar protest from the losers! It was a very successful outing and we all had fun!

FIELD DAY 1968

June 22/23 68 was "The Day" for that special breed of radio amateur, the Field Day Participater. This year the rule change extending the period from 24 to 27 hours including set-up time, made the event much more interesting. Three PM local time on the 22nd was "The Hour". At the signal, teams of dedicated men sallied forth unrolling ropes, antennas, power cables, erecting tents, locating generators. All of this was under the heavy"bow fire" of W5PSY/VE3 our Club Archer, who was shooting lines over trees for the antennas. It was reminiscent of the Battle of Hastings! Fortunately our casualties were low! Despite a few problems with the antennas twisting, we were on the air in 45 minutes! We had the usual two transmitter class, one multi-band SSB and the other multi-band C.W. VE3DMU Gord was the FD Manager, VE3GFL, Hutch the SSB Manager and VE3DNJ, Mike was the C.W. Manager. You did an excellent job gentlemen! Three doffs of our mobile whips to you ! After duplicates had been eliminated we had a total of 803 contacts for a claimed score of 4818 plus our additional points to be added by ARRL of 800 points for a Grand Total of 5618. All of this was done with 12 full time operators. A pretty good show! Last year we came 2nd in Canada in our class with a score of 4962 based on 727 contacts. Our thanks to all who participated. Special thanks to Bill Manson, VE3YK for the use of his very excellent FD site and for the many other favours rendered.

DEPARTURES

Several months ago Gary W2YYP left Ottawa for Baltimore. Jackie and the two children stayed in Ottawa to finish out the school year and to await a permanent assignment. Gary came back for the final pack-up recently and attended the Family Picnic as his last Club function. Gary was past member of the Club Executive and a real worker for our organization. Gary and Jackie hosted two family picnics at Constance Bay which I am sure will long remain in the memory of those attending. Not to be out done by Gary's contribution to the amateur scene, Jackie was a Brownie Leader in the Ottawa Elmvale District. We wish you good luck in your new assignment in Sacremento California and we will certainly keep in touch with you by amateur radio.

Read W5PSY and his charming wife Jean and family have also departed from Ottawa. Read, in addition to being Vice President was also a former Technical Adviser. He was also liaison man for the 2 meter repeater and general liasion man for matters between our Club and the OARC. Read contributed a great deal of time to the local 2 meter repeater. He was also most willing to assist anyone in difficulty with 2 meter or other equipment. His talent will be greatly missed by the Ottawa fraternity. Good luck and we will see you on the air !

APPOINTMENTS

The Executive wish to announce the following appointments to fill vacancies left by departing members. Publicity Chairman, held by Jack Whittingham VE3BYL who has departed for VE8 land and Vice President held by Read Easton W5PSY will be replaced by VE3GAH, Gord Hamilton and Dick Gamlin, K7LRV/VE3 respectively. Both of these gentlemen are active mobilers and will certainly be a great asset to our Club!

RAMBLINGS

The Dominion Day long weekend will be long remembered by Dick K7LRV/VE3 our new VP. He had three disasters in one day -...- The high winds took down his 50 ft tower -----his trailer was stuck in the mud and to top it off he was pranged by a taxi in a service station ---WOW one-day---do hope that your luck is on the upswing Dick -...- Boyd VE3CMO is back on the air with his new HW-100 which is doing a very nice job --sure good to hear you back on the air again Boyd -...- VE3ABC Tom has his new vehicle and has the KW mobile installation working fb in it -...- VE3DQM Bill is on 2 meter FM mobile -----the XYL Ruth is recovering from an operation ---Speedy recovery Ruth -...- Mobile activity from the campsites has increased -...- Have a Safe and Happy vacation everyone ! CU all at VE3YCs for the next regular meeting.

-30- CHECK PAGE 3 FOR TECHNICAL TOPICS

73 & HAPPY MOBILING --- DONT FORGET THE XYL/YL 11 JULY 68

TECHNICAL TOPICS--More on the Field Effect Transistor

Last month we discussed a few general features of the Junction Field Effect Transistor, or "JFET". This month we will look at its first cousin, the MOSFET or Metal-Oxide-Semiconductor Field Effect Transistor.

The "MOS" part of MOSFET refers to the sandwich type of construction employed in the device: a metal field plate or gate on top of a layer of silicon dioxide which in turn is layed down on a slab of silicon. Silicon dioxide is an excellent insulator and hence the gate is fully isolated from the main body of the MOSFET. For this reason the MOSFET has a typical input impedance of over a million megohms, and the gate may be allowed to go either positive or negative (unlike the JFET) without drawing gate current.

The oxide layer in the MOSFET is extremely thin (frequently less than 1000 molecules thick) and a voltage of the order of 50V may be sufficient to break down the gate insulator resulting in one more useless piece of junk around the shack. Also, due to the high input impedance of the device, static electricity will not leak away. To prevent the buildup of damaging static, the leads of a MOSFET are kept shorted together until the device is safely wired into the circuit and a grounded soldering iron should be used for making connections. The ease with which a MOSFET may be ruined (even before it gets into the circuit) together with its high cost, makes the MOSFET less than attractive for Amateur Radio experimentation.

It is interesting to note that the MOSFET embodies the simplest form of construction and the most easily understood principles of operation of any transistor. In fact, the device was patented in the U.K. in 1939, nearly ten years before the conventional transistor was conceived. However, though the theory may be simple, the device has not performed according to the theory. Mainly due to problems of technology, the MOSFET has not been very successful to date except for specialized applications; there mainly in integrated circuit form.

Comparison of FET with conventional (bipolar) transistors:

The FET is not the ideal device for all applications. The "All FET Radio Receiver" is largely a result of enthusiastic marketing men rather than good engineering. At the risk of over-generalizing, the following comparisons can be made with regard to the less expensive transistors likely to be used by Radio Amateurs:

1) Noise: The JFET will usually outperform the conventional transistor at the higher frequencies but not at the low audio frequencies (although the difference is slight here). So use the JFET for your 2 mtr front-end, but stick to bipolar transistors for very low noise audio systems.

2) Gain: A measure of the gain of a device at low signal levels is the transconductance or "gm". While gm for the JFET compares favourably to that of vacuum tubes (typically up to 10,000 micromho) a gm of over 40,000 is not too uncommon with bipolar transistors. While in an RF front-end noise figure is more important than gain, in speach amplifiers and many other applications the reverse is frequently true.

3) Stability: A unique property of the JFET is that at one particular bias level the characteristics of the device are not effected by temperature. This property is used to advantage in the FET voltmeters now appearing on the market. Note however that presently available MOSFET devices are most unstable-- their characteristics can drift noticeably in one hour even at a constant temperature, although there are indications that this problem is being solved slowly.

4) Circuit Simplicity: A most telling point in favour of the JFET is its circuit simplicity, even if many devices must be used to achieve a given gain.

AN EXTREMELY CLEAR DESCRIPTION OF HOW AN FET WORKS IS GIVEN IN AN ARTICLE BY W7AWH: QST October, 1966 (page 16).

-VE3DNJ-