

JUNE 85

THE GROUNDWAVE



Club Call VE3RC

Repeater VE2CRA



THE GROUNDWAVE

Official Bulletin of the Ottawa Amateur Radio Club, Inc.

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THE OTTAWA AMATEUR RADIO CLUB, INC. is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the National Capital Area; and to the advancement and achievement of club members.

THE CAPITAL CITY NET meets every Monday at 2000 hours on the club repeater VE2CRA (146.34/.94) to pass traffic and to make announcements of interest to Amateurs in the National Capital Region.

THE SWAP NET, is a service provided and conducted by Ed Morgan, VE3GX. This feature appears on the Capital City Net as noted in the foregoing paragraph. To list items and make inquiries, call Ed Morgan at 733-1721.

THE OARC EXECUTIVE normally meets on the second Wednesday of each month in the Board Room of CFRA, 150 Isabella St., Ottawa, at 1930 hours. Contact the President to confirm the date of the next meeting.

DEADLINE FOR COPY is 4 weeks before the next meeting. Make yourself better known to fellow members and other amateurs, too, by giving us an article, technical or otherwise, relative to our hobby. They may get reprinted in far away places; and the family will be proud of you.

REGULAR MEETINGS of the OARC, Inc., are held on the first Wednesday of each month (except July and August) at the National Research Council Auditorium, 100 Sussex Drive, Ottawa, at 2000 hours. A bulletin board is available for posting notices of interest to other members about 1915 hours. Further details about each meeting is elsewhere in this publication.

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SAFETY BELTS, 2-METER RIG AND AN ENGRAVING PENCIL are available for loan to club members. The 2-meter rig may be borrowed by members who are hospitalized. The engraving pencil (to mark valuables for identification in case of loss or theft) and the safety belts with pole straps are available to any member.

A \$100 refundable deposit is required for the belts. Contact the President for the 2-meter rig or the engraving pencil; and Paul, VE3ICV, at 820-6643 (West End) or Brian, VE3JKZ, at 523-1535 (East End) for the belts.

RADIO AMATEUR CALL BOOKS are available at many local libraries. Ask at the information desk.

Minutes of the OARC meeting, May 1 1985

The meeting was declared open by the president Dan Holmes. The minutes of the April meeting were approved with a minor change. The correct name of the third place winner at homebrew night is Ying Hum.

Several visitors were welcomed : VE3JDQ, BDE, PDO and friend, VE3CTA, AMN and PAP

The speaker for the evening was Dave Goodwin Hill VE2ZP..His topic: Contesting. Dave spoke authoritatively and gave clues on how to do contesting successfully: Designing of the station, positioning of the transceiver, diversity in antenna, tactics and strategies, propagation etc. Dave promised a lot of satisfaction to those who undertake this activity in earnest.

Ray Perrin reported that the Americans have access now to the 24Mhz band and hope that our DOC will make a move in that direction soon.

Marcel, VE3CPA gave a moving account of an accident that took place at Fort Nelson B.C. He reminded everybody to be careful and think safety while erecting antennas, towers, etc.

Ralph Cameron gave a progress report on various interventions made in order to solve some EMI problems. One particular case is the subject of a special report tabled at the meeting and whose title was: Appliance Susceptibility and the Radio Amateur. In view of the severity of the situation facing Jack Ravenscroft of the city of Kanata, a motion was put forward by Ralph Cameron seconded by Lloyd Reed:

"That a trust Committee of three licensed members of the Ottawa Amateur Radio Club take the necessary steps to open a trust account for the Jack Ravenscroft Susceptibility Defence Fund, to be known as J.R.S.D. Fund." Carried.

The members of the trust committee are: Bruce Lauer, Ralph Cameron and Rick van Gastell.

It is suggested that members with an engineering degree step forward to give expert opinions and serve as expert witnesses, if called upon. Those interested should get in contact with Ralph.

The President will be in communication with other clubs to find out about level of participation.

The meeting was adjourned at 2235hrs

Next DARC Meeting: Wednesday June 5, 8:00 PM in NRC auditorium,
100 Sussex Drive

There's lots for everyone at the June meeting! Wayne Getchell VE3CZD, "Mr. ATV" in the Ottawa area will explain how you can "get into pictures". Ken Asmus VE3MVV will present slides on "The VE3ULR Link Repeater System". And of course, June is Field Day month so there will be a discussion of this year's planned extravaganza.

Don't forget to sign-in as you come into the meeting. A door prize is awarded at each meeting to one of people who signed in. You've got to play to win!

The President comments on becoming involved

My XYL is a good kid. We are compatible - I talk and she works. Unfortunately this can be uncomfortable at times. She thinks I should talk *and* work.

This tendency on her part and a coincidence of events led me to the exalted position of president of the club. The phone rang one evening in the course of a pleasant discussion on amateur radio. I was being asked to run for president. As soon as the topic of the call became clear, my wife's ears zero beated immediately and with a large fat finger (actually it is quite a dainty digit) firmly planted in my back she said "advance".

Leaving whimsy aside for now, the recent legal action to suppress the ham activities of one of our members evoked an intense response at our last club meeting. It is of course a serious threat and merits close attention.

However if we can harness this same intensity of interest to alleviating a less obvious threat to our well being we will have done something very positive for our hobby. Facts seem to indicate that amateur radio is in a decline. This may not seem as threatening as a law suit but it can be, in the long run, more deadly.

Talk and no work, ideas without implementation; these are the signs of a moribund club. The last few issues of TCA have been full of ideas on the subject of the well being of amateur radio. This is a good start. Hopefully they will encourage lots of people to attempt to implement them.

Perhaps my response to my wife was correct when I said "Remove the finger dear, I'll do it".

The following motion was approved at the OARC executive meeting on May 8. It will be presented again at the June general meeting for approval by the membership. As we have a full agenda for the meeting already, please be prepared for the vote. Background information will be available at the door for those interested.

Motion:

That the OARC support packet radio networking in the Ottawa area. The OARC will purchase one TAPR TNC 2 terminal node controller (TNC), cost not to exceed US \$200, to be used in a digipeater in the Ottawa-Barrie packet radio link currently under development. The custodian of the TNC shall be Brett Delmage VE3PAK. The digipeater will be available for use by all licensed radio amateurs.

Congratulations to Chris Rochefort, our Public Relations Officer who is now VE3PAE, and Mike James who acquired VE3PDE recently.

OARC Field Day

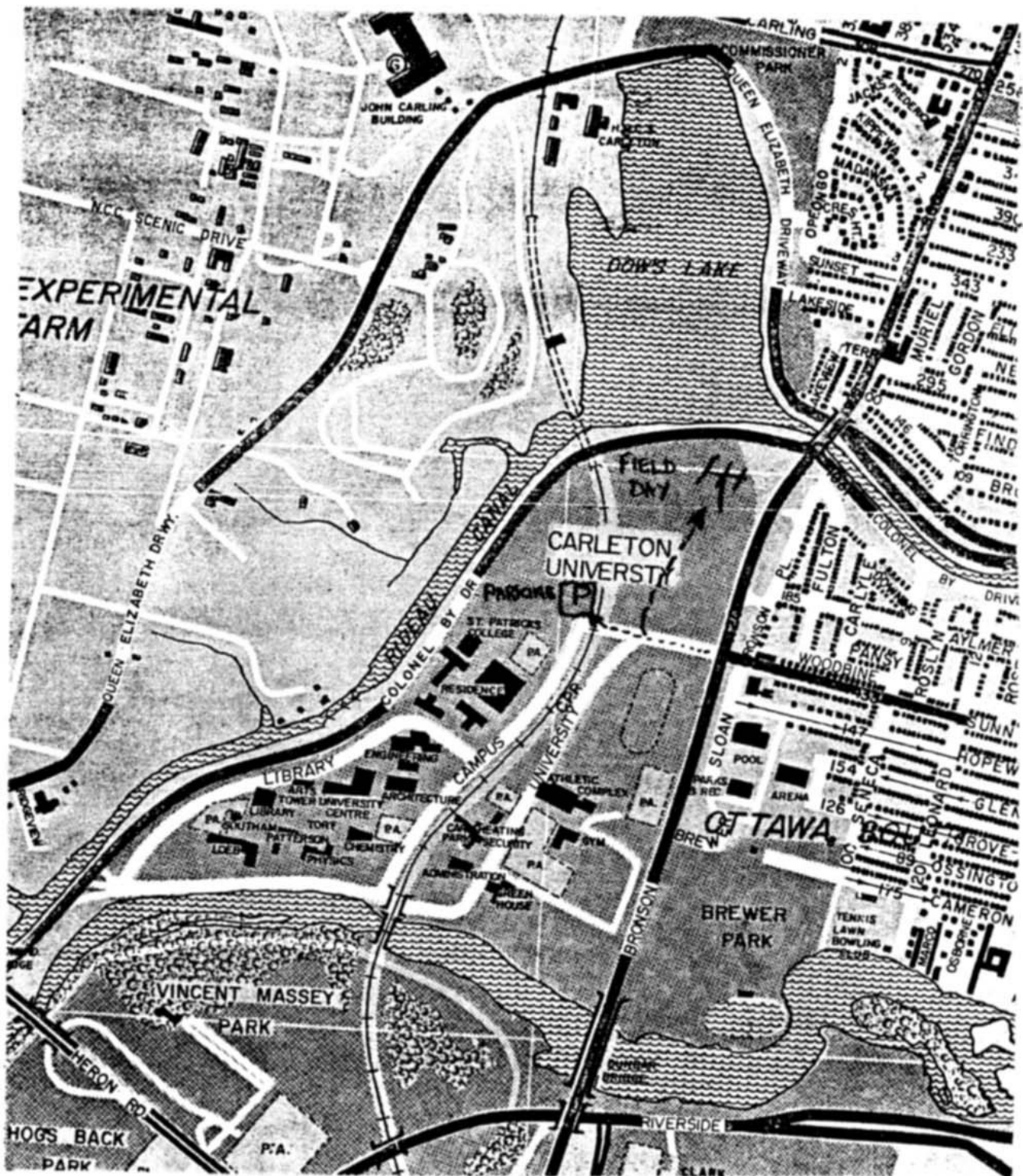
Again, The OARC will be taking part in Field Day, that exercise where we set up HF stations in a field and work others in North America doing the same thing. The purpose is to show ourselves and the public how well prepared we are to set up in an emergency and provide communications.

This year we will have 4 HF stations, 2 on CW and 2 on SSB, one station on OSCAR 10 and one operating packet. Setting up will begin early on Saturday 22 June. The contest begins at 2 PM and carries on for 24 hours. We need operators, helpers, strong backs and strong minds. So come and help do what you can. A breakfast will be served Sunday morning, but for all other refreshments you are on your own.

The site is a new one, on the grounds of Carleton University, bounded by Bronson Avenue on the East and Colonel By Drive on the North. Drive down Bronson to the entrance to the University. If you have equipment to deliver, turn right on to the field. If not, go straight to the end of the street, turn right and park in the free, surfaced lot (SEE MAP).

If you wish to show up, show up. Call if you have questions.

OARC has been first in its class in Canada longer than anyone can remember. Help out and keep VE3RC at the top of the heap!



OARC 1985 FIELD DAY SITE
TALK-IN ON VE2CRA 146.34/94 MHz

Appliance Susceptability and the Radio Amateur A Case Study of VE3SR

Jack Ravenscroft ex VE2NV and more recently VE3SR moved to the city of Kanata, West of Ottawa.

Jack served for 4 years on the ARRL Contest Advisory Committee and for 2 years on the ARRL DX Advisory Committee prior to Hal Parsons, VE3QA. He was a very active committee member during the first ARRL Convention at the Bonaventure in Montreal in 1967. For 15 years Jack remained at the top of the heap as DX chaser, "Ne Plus Ultra". He found time to fulfill the duties of QSL manager for VE2 for ten years. His present DX pursuits have become, by far the most expensive. Read on ...

In the fall of 1984, VE3SR sought and obtained approval to install a fifty foot self-supporting tower with 204BA, 4 element monoband 20m beam.

City of Kanata bylaws require such approval.

Concern for EMI

Jack, who had been on the DX Honour Roll for many years chose his new location as a retirement home. His home is in a suburban area and he approached his neighbours with utmost caution to determine whether TVI or other nefarious forms of EMI occurred during his transmissions. A poll of all neighbours failed to uncover a single objection, except one.

Susceptability Uncovered

The one persistent case of EMI was located about 150 feet south of Jack's antenna. The DOC was called in to investigate a case of interference to a solid state furnace control at this neighbour's house. Interference level was sufficient to key the furnace control relay. Considering the relay controlled some 15kW of power there must have been a few veiled remarks of disbelief by the investigators. At least four DOC personnel were present.

Furnace Controller

The furnace controller was a Lennox "Landmark" series and the owner claimed it was the first such installation in Kanata. This was also the first known instance of furnace control susceptibility known to DOC.

A ferrite toroid installed on the AC line connecting the furnace controller and the sensor interface, by DOC., prevented any recurrence of the problem - at any transmitted power level. (Power could be varied up to 1 kW to the antenna)

A request was made to the installer/owner of Centenaire Ltd., for technical details of the controller installed and this was promised, with genuine concern. The owner was aware of the susceptibility and in fact was related to the complainant. He had been present during the DOC tests.

Three weeks passed before I again called Centenaire Ltd. only to learn that they had filed for bankruptcy. Communication with the Trustee revealed no technical details.

I wrote to Lennox Heating Systems of Etobicoke, Ontario, manufacturer of the controller. I explained who I was, what was requested and the reason for the request. I mentioned that this was a first occurrence and they could benefit by supplying a schematic. No reply has ever been received or even an acknowledgement. (The information recently arrived - Ed.)

Electronic Organ

The next susceptible device tackled was a Yamaha electronic organ. This case of EMI has been detailed previously and it should be noted the organ required considerable shielding, bypassing and filtering. After five separate trips the Yamaha serviceman was prevented by the complainant from further work at reducing the interference level.

A complete report from Yamaha is available and I can attest to their responsible, conscientious attitude and concern. It should be borne in mind that interference of this severity seldom occurs. Yamaha performed all work at no charge to the complainant.

One meaningful aspect of the interference was the coincidental timing of a Caribbean schedule around 8:30 a.m. at VE3SR and organ practice at the complainant's. During this schedule the antenna points directly over the neighbour's house. The complainant noted the simultaneous operation of the furnace control with very audible interference to the electronic organ. This confirmed an external source was causing problems. Present interference to the organ which is caused by audio rectification, remains at about 25% of its original volume. With further work it can be eliminated, although one cannot expect a kit of parts to perform this work on a very complex circuit.

During the course of one hour's testing, with DOC present, no other appliances appeared affected, according to DOC's official report. It was noted that the complainant was more concerned with the direction of the antenna than any other direct interference.

Microwave oven

In an attempt to help resolve the problems which were occurring at the complainant's I offered assistance to both parties. I was called one Sunday afternoon, by the complainant to say they had been for a drive and upon returning found their microwave oven "on". Sporadic "turnon" seemed to happen, on several occasions, quite at random.

The oven was examined by a Sears serviceman and run for a 30 day period, in the shop, with no apparent problem. A suggestion was made to the complainant that the only possible solution was

replacement of the controller board, cost - \$200. This was not done.

The Sears service group installed a ferrite toroid external to the oven (AC line) on instructions from DOC. Four turns of the power cord were made. Upon return, the oven once again commenced its cycle, sporadically and unattended. Obviously, an association was made with the other appliance interference. In some cases the oven operated while the amateur was not on the air! Was the power of suggestion at play?

Although the oven has CSA approval, there was then and still is a concern that the oven may catch fire during a sporadic cycle. Operation of most ovens without a recommended "glass of water" load could cause self-destruction of the magnetron (used universally in a microwave oven) but will occur in any amplifier device operated without a load. Anyone who has operated a transmitter without an antenna for even a short period of time can attest to that. Try it some time! Even an audio amplifier without speakers connected will exhibit instant mortality at full output.

The oven chamber temperature is sensed by a high temperature sensor which cuts out at 300 F and removes oven power, should this limit be exceeded. In the event no load (glass of water) was present to absorb the microwave energy in the chamber, it is entirely possible internal heating within the magnetron would cause an internal short circuit. Since power circuits are fused, there is a high probability the fuse would blow open and remove power. There's nothing to burn, the door must be closed for the oven to operate and when closed it is relatively airtight except for fan vents. What can burn?

There are possibilities that the oven could operate due to power line transients. Indeed, there have been major mains fluctuations in this area of Kanata. A strip-chart recorder will mask any such transients because of the meter inertia.

Triac control devices used extensively to control power require a pulse of one polarity to conduct or permit power flow and a pulse of opposite polarity to reverse the procedure. Should sporadic microprocessor operation occur the triac could turn on. In the case of this Sear's oven the triac is connected directly to the line through the door interlocks.

On one occasion the complainant mentioned to me that none of the oven controls stopped the oven operation after it had mysteriously triggered. Simply opening the door would have precluded this possibility. It had previously been suggested by DOC that the complainant remove the wall plug to eliminate any concern of fire hazard, until a solution was found. Obviously, this was not adopted for any period of time.

Evidence disappeared

We may never know what caused this strange oven operation because the controller has just been replaced (at no charge) by Sears Service. This was performed on April 24, 1985. Certainly the Amateur was not notified. No further tests or modifications to the organ have been permitted by the complainants - nor have DOC been permitted to run more definitive tests. The complainants have since insisted that the antenna of VE3SR not be pointed at their residence.

On January 4, 1985 the joint owners at the amateur's residence were served with a legal instrument that stated the use of the transmitter in a particular manner was causing certain electric appliances to turn on and off at the complainants. The complainants were legally advised that the problem they were encountering and the solution of it was the joint responsibility of the Amateur. It also stated (Jan. 4/85) that all of the appliances so affected to that date "had been examined and found to be in perfect working order and to meet or exceed accepted standards". It is also further stated, "that notice is served, that should any damages or injuries occur which may be (by reasonable assumption) caused by the operation of the Amateur equipment, they will be held responsible and liable for all damages so incurred".

There is concern about the stress caused by unpredictable behavior of the appliances affected, as well as by the danger which exists should an appliance such as a microwave oven be turned on and left in operation for a period of time while the complainants are not at home.

"I would respectfully suggest that you cease the operation of your transmitter entirely or take whatever precautions are necessary in order that this problem cease entirely and immediately. In the event the disturbances continue, I am advising my clients to apply for a permanent injunction in order to protect themselves".

On April 22, 1985 VE3SR was served with a summons to appear at a hearing May 3, 1985. The outcome of this hearing could result in a court trial permanently barring Amateur operations at this location.

CRRL Intervention

Ray Perrin, VE3FN and a Director of the CRRL has assisted Jack greatly by presenting an affidavit to Jack's attorney. The technical information in the affidavit supports the absence of the oven being a fire hazard. He has also provided statistics on the incidence of EMI in North America.

Legal costs

Litigation has proven to be an expensive process and at present these expenses exceed \$1000 and should a trial ensue, a minimum of \$5000 cost is anticipated. To my knowledge, both CARF and CRRL

are cognizant of the implications of this case but have yet to come forward to defray costs. The legal ramifications of this case will be extremely far reaching because it is being tried as a Civil case. It could permit civil injunctions to be placed against pagers or any type of transmitting equipment - without exception. Susceptability is not covered by the Radio Act.

The public is only protected from susceptability by a gentleman's agreement which works if meaningful pressure is brought to bear or there is mutual agreement. It is frustrating, time consuming and humiliating for all concerned, especially the non-technical consumer.

In the Ottawa area I understand the percentage of interference cases caused by transmitters of all classes is about 22%. Canada-wide statistics would be useful to know.

Susceptability Fund

It is proposed to financially solicit support from concerned clubs, groups and individual Radio Amateurs to help absorb VE3SR's legal fees. It has been proven that VE3SR is operating under the terms and conditions of his license and yet action could be instituted against any licensed transmitter owner. It should be the obligation of the amateurs to defend such actions collectively where there is just cause. I believe this is such a case. In this instance VE3SR voluntarily reduced power output on November 15, 1984. Power has remained at the 100 Watt output level since that time, when his antenna faces the affected home.

Your views and support are needed now - if you ever needed an issue, this is it. Don't think it can't happen to you.

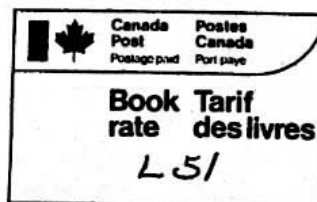
Ralph Cameron, VE3BBM
Chairman, EMI Committee
Ottawa Amateur Radio Club

The following motion was passed at the OARC executive meeting on May 8:

"That the OARC continue support of the Jack Ravenscroft Susceptibility Defence Fund through the EMI committee and urge the membership to contribute professionally and financially if they so desire."

Donations to the JRSD Fund may be directed to the club post box (see back cover) or to one of the Trust committee members (see minutes of May meeting, page 3).

The Ottawa Amateur Radio Club, Inc.
P.O. Box 8873
Ottawa, Ontario
K1G 3J2



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