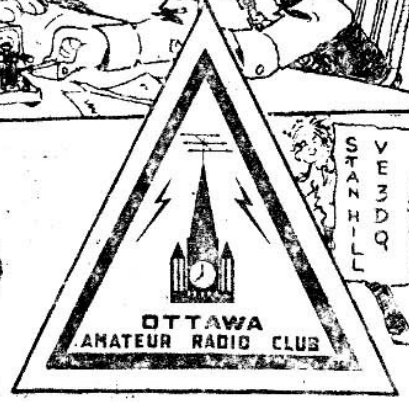


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The Official Bulletin of the  
**OTTAWA AMATEUR RADIO CLUB**  
Box 8873, Ottawa, Ont. K1G 3J2



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: THE GROUNDWAVE - OFFICIAL BULLETIN OF THE OTTAWA AMATEUR RADIO CLUB - - - MAY 1977 :  
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MATERIAL PUBLISHED HEREIN does not necessarily reflect the official OARC viewpoint. Items may be reprinted by Amateur Radio or similar publications provided that proper credit is given.

DEADLINE FOR COPY for the June issue will be May 14 for articles of length and May 21 for short items and announcements. Address all correspondence to:

Carl Everson, VE3BYX, Box #4, Osgoode, Ontario, KOA 2WO

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THE OTTAWA AMATEUR RADIO CLUB is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the Ottawa regional area, and to promote advancement of the technical competence and achievement of Club members.

THE CAPITAL CITY NET meets every Monday evening at 2000 hours on the Club repeater, VE2CRA (146.54/146.94), to pass traffic and make announcements of interest to Amateurs in the Ottawa regional area. THE SWAP NET, a service of the Ottawa Valley Mobile Radio Club Inc., and conducted by Ed, VE3GX, is also repeated at this time. To list items or make enquiries, call Ed at 733-1721.

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THE NEXT REGULAR MEETING of the Ottawa Amateur Radio Club will be held at the National Research Council, 100 Sussex Drive, Ottawa, on Wednesday May 4, 1977 at 2000 hours. The main item on the program will be a talk on Traffic Handling by Holland Shepherd, VE3DV. Other short items of interest will be presented as well and an attempt will be made to scale down the time required for regular Club business.

THE OARC EXECUTIVE meets regularly in the Board Room of CFRA, 150 Isabella St., Ottawa at 2000 hours on the second Monday following the regular Club meeting.

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THE TELEPHONE PIONEERS AMATEUR RADIO CLUB invite all Amateurs interested in Slow Scan Television to attend their meeting on May 16 at 8:00 PM in the Museum of Science and Technology Auditorium. Bill Westbrook, VE3EKA, will demonstrate his digital scan converter. This second-generation equipment has a 16 kilobit memory which provides 16 shades of grey on a standard TV monitor. Digital scan conversion is the latest development in this fast-changing facet of Amateur Radio. (VE3EKA)

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SELECTIVE CALLING DEVICES, as you have probably heard, are increasing in popularity. Rob, VE3ACY, has volunteered to act as area Tone Coordinator. His function would be to hold a listing of the numbers in use and to allot numbers to individuals requesting them, avoiding possible duplication. If you wish to list your number or reserve a number or block of numbers for possible future use, call Rob at 523-4246 or via repeater VE2CRA. Comments or suggestions are also welcome.

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MAUREEN NEILL, VE3FZY, has offered to visit any Amateur confined to the Civic Hospital. Call her at 725-4581 (after 5:30 at 233-9941) if you know of anyone who would appreciate a visit.

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RENEW YOUR ARRL MEMBERSHIP through the OARC and everyone benefits - you save the cheque or M.O. fee and postage and the Club gets to keep \$1.00 of the regular renewal fee. See Hank, VE3BR, at any of the meetings.

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LISTEN TO THE GROUNDWAVE NET on the Monday evening preceeding the regular OARC meeting. Bud, VE3UD, reads THE GROUNDWAVE for the benefit of white-caners in the area and everyone is welcome to tune in at 2100 hours on, or near, 3770 kHz.

MINUTES OF THE PREVIOUS MEETING

A regular meeting of the Ottawa Amateur Radio Club was held in the N.R.C. Auditorium, Sussex Dr., on Wednesday 6th April, 1977. The meeting was called to order at 2010 by the President, Penny, VE3ERO, who welcomed the visitors present.

The minutes of the previous meeting were accepted as printed in THE GROUNDWAVE on a motion by Dave, VE3BTY, seconded by Adrian, VE3GOJ.

Fred, VE2DNW - Synthesizer project members were asked to call after 7 PM Monday 11th April to arrange collection of remaining parts, or a refund.

Repeater - George, VE3BNO, reported that in one month's time, volunteers will be needed to lower the antenna at VE2CRA.

Groundwave - Carl, VE3BYX, is still looking for articles and bulletins for THE GROUNDWAVE.

Larry, VE3CRX - Volunteers are needed for Marathon Rowing being held 21 May 1977, to provide communications. The marathon runs from Ottawa to Montebello, about 15-20 volunteers needed to operate outboard rigs, hand-held rigs are needed - contact Larry, at 824-3753 for more information.

Membership to date as reported by Bert, VE3GCK - 271 members, 21 associates. Ottawa Valley Mobile Club will be using VE2CRA for Metres for Millions.

Advanced Exams - volunteers needed for coaching.

Name Tags - contact Vic, VE3DEP, or Gord, VE3DY.

Sean, VE3HXP, still looking for operators for Saturday and Sunday to operate VE3JW station at Science and Technology Museum.

Visit to the Monitoring Station - 12 visitors for May 13, 19 and 27.

May meeting - Traffic nets and handling.

Field Day slides were shown by Zyg, VE3GZS. Field Day will be held on June 25 and 26, 1977.

The showing of Home-Brew projects proved very interesting. All were thanked by the President.

It was announced that a cheque had been sent to the QSL Bureau named by the TOTs.

The Club now has QSL cards for official events.

Motion by Hank, VE3BR, seconded by VE3JCK, that the meeting adjourn at 2155.  
Maureen Neill, VE3FZY, Secretary

OCCASIONAL ERRORS are being reported both in THE GROUNDWAVE addressing and/or directory listing. All corrections should be reported to the Membership Chairman, Bert Bray, VE3GCK, 2130 Innes Road, Orleans, Ontario, K1C 1T1, phone 824-7844.

OPERATORS ARE NEEDED for VE3JW at the Museum of Science and Technology. If you can spare a couple of hours on a Saturday or Sunday afternoon for this, call Sean, VE3HXP, at 224-8636 (work) or 722-9467 (home).

THE ANNUAL SPRING AUCTION sponsored by the OVMRC will be held on Saturday April 30 at EMO Hq, 495 Richmond Road, Ottawa. Bring your 'goodies' and your pocket-book. (My KYL says 'thanks' to Sean for assigning me to operate VE3JW that day - Ed.)

DOREEN, VE3CGO, is taking names of volunteers to help with communications for the annual 'Kilometres for Millions' to be held this year on Saturday May 7. If you can help, call Doreen at 733-1721. Repeater users are reminded that VE2CRA will be used for this event and that other activity should be kept to a minimum during this period. Please check with Net Control Station, VE3RAM, before making any calls while the operation is in progress.

CLARA COOKBOOKS are available by advance order for \$2.75 from Ann Nutter, VE3HAI, 135 Weston Place, Waterloo, Ont., N2J 3W2. She must have the money by May 1 for advance orders. The balance will then be available on a first-come, first-served basis at the ARRL Convention in Toronto (June 3-4-5).

WHY NOT GET OUT ON A LIMB? - - - - - that's where the fruit is!

LIGHTNING PROTECTION FOR RADIO AMATEURS by Bill Wilson, VE3NR

Most amateurs probably never think about lightning when they first put up their antennas; only when the sky darkens and the thunder rumbles do they begin to worry about Nature's strike force. The purpose of this article is to help amateurs improve the lightning protection of their stations and to give them some idea of what is involved and where they can get more and better information if they really want to do a good job of it. While the average amateur's radio handbooks say very little about how to protect his home and radio installation, there is a good source of basic information in the Underwriters Laboratories Inc., "Installation Requirements, Master Labelled Lightning Protection Systems" UL 96A Eighth Edition, 1963.

When one reads this it is clear that there is not much to protecting a small cottage which is located on a good depth of earth and in which the only metal is in the plumbing, heating and electrical wiring. On the other hand, if the building is on rock, is very large and irregular in shape, has a very irregular roof with metal trusses and vents and is filled with equipment and machinery, then a good protection system is clearly a work of art. In designing a system for this latter kind of structure the knowledge and experience of a protection expert is essential. Unfortunately, there are not too many of them about.

There are four major features in any lightning protection system that would be noticed by a radio man as differing from a radio antenna system. They are the grounds, the main and secondary conductors, the lightning rods or "air terminals" as they are called and the connection to the protection system of metallic bodies of conductance and inductance in, on and about the building.

All lightning rods except those on top of slender structures like radio masts or flag poles have at least two circuits to ground. The interesting thing for radio amateurs to note is that the main or "down" conductor that interconnects lightning rods and that provides these circuits to ground is braided out of #17 wire and has a total cross-section of about 59,000 circular mils (cm) ie: the equivalent to a cable in between a #3 and #2 AWG. Copper tape is also used, as is aluminum braided cable or tape. Wire gradual bends of at least an 8-inch radius are made and "U" and "V" pockets are not permitted. Thus one can see that the down conductors are designed to carry some pretty husky currents.

Properly made grounds are essential and, unlike radio, every effort must be made to provide ample contact with the earth if lightning currents are to be properly dissipated. This does not mean one has to have a low resistance ground connection but rather that there must be a good distribution of metal in the earth, or on its surface in extreme cases such as rock.

If the earth under the building and mast is deep, moist and of good conductivity, then a simple extension of the down conductor to one or two ground rods and driven to a depth of about 10 feet and about 2 and 8 feet respectively from the corner of the building would be adequate.

In shallow top soil each down conductor should lead into a tree-like ground system. If it is in shallow clay, the trunk should extend at least 12 feet with several branches at least 10 feet long all buried 1 to 2 feet deep. In shallow sandy or gravelly soil soils, the trunk should extend at least 24 feet with 4 or more branches all buried 1 to 2 feet deep. Ground rods should be used where possible though it is recognized that in generally shallow soils this may not always be feasible.

Where the building is on rock or on soil less than a foot in depth, it is recommended that the building be encircled with a main size conductor laid in a shallow trench or in crevices and that the down conductors be connected to this counterpoise ring. Radial conductors should run out at least 12 feet and be connected to copper plates of 9 square feet in size or to corrosion-resistant metal such as car radiators, old copper wash boilers, rolls of galvanized wire fencing or wash tubs, etc., buried in pits or hollows.

Metallic water supply pipes and well casings make very good ground terminals and therefore there must always be a cross-connection using main size conductor to a supply pipe close to where it enters the house and to a well casing.

Soldered connections are out. Good tight, clamped connections extending at least 1½ inches axially along the conductors, pipes, lightning rods, ground rods, etc., are mandatory.

(Continued on page 5)

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LIGHTNING PROTECTION (Continued from page 4)

All ground systems must be well and carefully buried, the earth being carefully tamped in place around the conductors and ground rods. Where the installation is on rock, it is particularly important to have the crevices, hollows and pits, where the conductors, ground plates and scrap metal are, carefully buried both to protect them and to maximize contact with the rock.

Having looked at the main protection system, let us now look at the other metallic objects that might be found in and around the building. These could be divided into two categories: bodies of inductance, and bodies of conductance. There is no fixed rule for determining which is which; that is where some of the 'art' comes in. If a metallic object is likely to be charged at times with a potential opposite to that of the grounded system, it is considered a body of inductance if it is within 6 feet of the lightning conductor because it may induce a flash across that gap. Bodies of inductance can be found both inside and outside the building and are generally in the first story above ground. Bodies of conductance are also found both inside and outside the building but generally higher up. They may be involved in conducting some of the current during a lightning strike.

Bodies of inductance both inside and outside should be connected to the main conductors by a secondary conductor, i.e. smaller than a main conductor but not less than 20,000 cm in size. About the only large body of metal that would not apparently need to be tied in would be one that is fairly low in the building and well under the "umbrella" of the protection system and 6 feet or more from any grounded body of inductance or conductance. Bodies of conductance both inside and out must be grounded but in this case, main size conductors must be used for obvious reasons.

In the light of the above information extracted from the UL publication, a radio amateur can develop some very useful ideas for protecting his station and his home. While an antenna mast for a 40-20-10 metre beam will probably have an adequate cross-section to carry the current in a lightning strike, if there is any doubt, the copper ground conductor should be started at the top of the tower. However, the mast must be grounded either through the main system ground with a main size conductor or with its own ground system and main size conductor cross-connections to the rest of the lightning protection system. Metal objects around the tower should be considered as objects of conductance or inductance and grounded to the tower system. It is also very important to interconnect to power, radio, telephone and CATV grounds to the lightning protection grounds.

Antennas and transmission lines either in the attic or outside have to be considered as bodies of conductance and connected to the lightning protection ground system through a good husky switch when a storm is likely. Similarly, transmitting and receiving equipment must be carefully grounded to the protection system.

This short article could not cover all aspects of lightning protection systems. If it has sharpened your interest, then it has served its purpose, and you should get the booklet mentioned above from Underwriters Laboratories of Canada, 7 Grouse Road, Toronto, M1R 8A9. It's free!  
Bill Wilson, VE3NR

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RADIO-CONTROLLED model boat races will be an added attraction at the Ontario Sailing Association's on-the-water boatshow Saturday and Sunday, May 14-15 at Dow's Lake.

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SPACES ARE STILL AVAILABLE for the trips to the Almonte Monitoring Station on the evenings of May 19 (Thursday) and 27 (Friday). Call Penny, VE3ERO, at 225-1276 to get your name on the list while there is still time.

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THE QARC EXECUTIVE are considering asking Club members to save Dominion Store cash register tapes to participate in that store's promotion plan. Maureen Neill, VE3FZY has offered to look after the details so hang onto any Dominion Store cash register receipts and 'await further notice'.

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WE DON'T HAVE THE RIGHT to complain about the mistakes-----  
-----made by people doing the work we should have been doing in the first place!

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ESPERANTO - WHO HAS SUPPORTED IT? by Bruce Spanton, VE3BRS

Esperanto was the official language of the International Radio Association which was the forerunner of the International Amateur Radio Union (IARU). The IARU at its congress in 1925 strongly recommended the use of Esperanto in Amateur Radio. The ARRL also encouraged or supported the use of Esperanto a few years ago.

Why have we not heard more about Esperanto in Amateur Radio during recent years in Canada and the United States? Well, often when an idea or enterprise does not "catch on" in the minds and hearts of many people, and does not achieve success in a short space of time, the support that has been earlier given to it by an organization or by a few influential individuals, falls away, is abandoned or forgotten. Sometimes there are enough devotees or pioneers with a firm belief in the cause or enterprise, to continue working away at it. They are able to gain ground, though perhaps slowly, bringing the enterprise much closer to wide public acceptance. Eventually there comes a time when the substantial support which fell away, is now restored, and other support is obtained. Many people like to join a winning team or support a cause which is already succeeding. I rather think the Esperanto movement has just about reached that stage of success today. There is certainly a great need for the International Language in this modern age of great travel, and many people want to see such a language recognized and put into use. Unfortunately, not enough of them have been promoters, propagandists, pioneers or inspired workers for a good cause. But a considerable number of people have continued to use Esperanto for various practical purposes over the years.

The International Language has been used in the Boy Scout movement for an Interpreter's Badge and it has been useful at World Scout Jamborees. The language was exhibited and demonstrated at the Boy Scout encampment at EXPO in 1967 in Montreal. Lord Baden-Powell was a keen supporter of Esperanto, and it is regrettable that more Scout leaders, especially in our own country, have not shown support in this manner for better international understanding. I know of one radio amateur in this area who has been an Esperantist and who first learned the language in the Boy Scouts in Toronto.

Several companies that carry on a large international trade have used Esperanto to advantage in their advertising. Two of these companies which you are, no doubt, familiar with are FIAT (automobiles) and PHILIPS (electronics).

UNESCO has recognized the value of Esperanto for co-operation and understanding between nations and peoples, and in recent years there has been a close consultative relationship between UNESCO and UEA (the Universal Esperanto Association) which has its offices in Rotterdam, Netherlands.

A number of stamp-collectors and international chess players have used Esperanto in their enterprises. Esperanto has been taught in the schools of 22 countries. Thirty universities throughout the world have courses in Esperanto. A very substantial literature has been established in the language. This includes translations from the works of many wellknown authors in various countries, as well as a good number of original writings in Esperanto. Many people who have known this International language for several years and have spoken with people from all over the world now consider Esperanto to be a "living language".

A group of Esperantist Radio Amateurs have used Esperanto for international contacts and round table discussions and found it to be of very practical use. They look forward to more amateurs joining them -- especially from Canada and the United States. An Esperanto Net meets every Monday at 1800 hours GMT on 14266 kHz. If you wish to join them, I'll be glad to help you learn the language. ¡Gis Revido! Bruce, VE3BRS

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EMI COMMITTEE REPORT The third EMI Clinic at CJOH was held on 26 March 77. About a dozen Ottawa hams qualified for the "Mr. Clean" award. Of particular interest was the performance of the new Kenwood TS820 on the spectrum analyser. Most transceivers check out at 35 to 40 dB suppression of harmonics. The TS820 measured 55 dB down.

Some of you may have seen the QST editorial for Feb., "RFI/TVI - How Large a Problem?". We wrote to ARRL and sent them the results of our EMI Survey held at the March meeting of OARC, as published in the April 77 GROUNDWAVE. We received a note from Hal Steinman, KLFHN at ARRL HQ thanking us for our input on the subject.

73, Bill, VE3EKA, Chairman,  
 EMI Committee

THE AMATEUR'S BEST FRIEND

by Bill Westbrook, VE3EKA

EMI Committee Chairman

When it comes to interference problems, there is a simple device that most North American hams have overlooked. Thanks to our friends in the U.K., we have recently become aware of the use of ferrite rings which do a lot of neat things to reduce interference.

There is no doubt that the ferrite ring core is the most useful device available to amateurs in the never-ending battle against breakthrough (interference here is breakthrough over there). You might even call it a 'breakthrough on breakthrough'.

A big advantage in using these ferrite doughnuts is that in the majority of cases the leads to be filtered do not even have to be cut and the filters are used external to the equipment affected. They are easily removable, and the resale value of the equipment is unchanged.

This device is a wideband unit and is equally suitable for use on UHF, VHF, TV or radio, Hi-Fi, AC line filters, etc.

Most cases of interference to stereo systems can be traced to long unshielded speaker leads. Up to now, we have recommended shielded wire as a cure. A few turns of the unshielded leads around a ferrite ring (Amidon, Phillips or Mullard FX1588) will do the job. Usually about 8 to 10 turns is enough, but neither the number of turns nor the grade of ferrite used is critical. They may be used for both receiving or transmitting purposes.

If rings are not available, transistor radio ferrite rods are a good second best in many cases.

Bill, VE3EKA

(Editor's Note: Try also the ferrite cores from scrapped TV Flyback transformers)

SELECTIVE CALLING (or, Silence is Golden)

Two-metre FM - what is it about this mode that makes it so appealing? The main thing seems to be the concept of having an "intercom" in the shack with the fraternity in the local area. One can then instantly inquire from the group if a certain part is available, technical advice, the announcement of band openings, road information and, of course, just keeping in touch with what the guys are up to not to mention the public service aspect. These reasons give two-metre FM a unique edge in versatility over any other single amateur band and mode.

Ideal you say! For a while it was - then we started getting bigger until our "intercom" was so clustered with these activities that people got tired of monitoring the constant chatter and either left for quieter places or turned the "intercom" off completely. The system had now lost its effectiveness, and continues to do so.

If one takes the time to contemplate what the ideal system would be, it becomes apparent that all we need to hear is the call for assistance or CQ and the identification of the calling station. "Enter the hero", the 537 tone decoder chip (PC boards and a design will be available at a later date). This 'select call' unit fits between a rig and its external speaker (no internal connections). Each unit would be set up to respond to two different number sequences, one of which would be "2580" and the other would be your own personal number - hopefully received from the area 'Tone Coordinator'. When someone now punches up either 2580 or your number on their Touch-Tone pad, your speaker comes to life and you hear his call. When he is finished, a number-sign (#) will turn your speaker off again or it could be designed to reset to 'silent' after a given time. If you wish to reply, you just throw the manual switch on the encoder and call him. You no longer have to monitor all the chit-chat in order to catch any calls which may be for you (the XYL will love it!).

I would be happy to receive any comments or suggestions and will try to answer any questions if I can.

Rob Bareham, VE3ACY

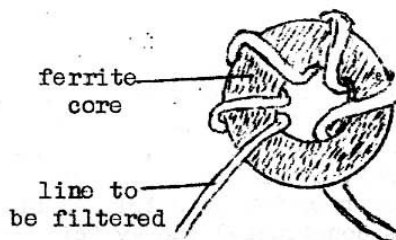


Figure I

Ferrite Core Filter

VE3OCR - WHAT IS IT? One Ottawa area repeater was missing from Penny's capsule of local repeaters (see Groundwave issues for April, May and June, 1976), it was the CARLETON UNIVERSITY AMATEUR RADIO CLUB'S repeater, VE3OCR, on 146.25/146.85 MHz. The reason for such little comment is - there hasn't been much public information given out about it. Well, here's some!

In the fall of 1973, the Carleton U ARC and Algonquin ARC conceived the idea of a 2-metre repeater for the YOUNGER SET (defined at the time as High School, College and University hams). At that time, the dark ages of 2M FM, there were only two repeaters, VE2CRA and VE3STP, available in the Ottawa area. One member of the Carleton club loaned an ex-commercial repeater on a trial basis for such a system. A TTL control circuit from 73 magazine was constructed and by October 74, VE3OCR was majestically announcing its presence in Ottawa.

From the outset, there were problems (design incompetence and oversights). Activity was scarce, those that had originally been so fired up about setting a machine on the air had either lost interest or left Amateur Radio. As no equipment had been dedicated to the repeater, an announcement was made on the VE2CRA net that the repeater was a 'closed' machine. This was for the protection of Ottawa hams (who were rockbound) as the repeater operation could not be guaranteed.

Four months later, VE3ORA appeared on the air. With the primitive system VE3OCR was at the time, it suffered having a neighbour so close in both spectrum and distance. A week before final exams (naturally) the beast was turned off and a summer redesign planned. The following fall, it was back on the air with a dedicated collection of equipment. A design bug (surplus capacitors) led to an embarrassing smoke-fire incident resulting in the project being planned. It's amazing how unpopular one can become with internal departments after such an incident.

After things cooled (6 months), the original transmitter went back into service, but by that time, CKOU had appeared on the air with their 8 kW transmitter some 20 feet away from the repeater receiver antenna. Old and new bugs appeared, eventually forcing a shut-down after 2 months of operation - one week before final exams - of course!

Last fall it reappeared (the phoenix repeater?) again but in an east end location where its operation could be observed and refinements made. The first week of March marked its move back to the Arts Tower as a low-power on-site machine. All previous versions had been split-site and high-power.

It is now a completely solid-state system, open for public use and running a full 4000 mW ERP. There are a few minor ailments (audio quality) which will be rectified during the first week of May - one week AFTER final exams! Off the ground at last!

Craig Howey, VE3HUN, President

ROCHESTER HAMFEST, May 20-21-22, 1977, offers a flea-market, funfest with Alvino Rey, WGUK, Hidden Transmitter hunt, various forums, banquet, Royal Order of the Wouf Hong, and many other Amateur activities. Further information from Box 1388, Rochester, 14600.

AROUND THE CLUBS (Gleaned from recent exchange bulletins)

Skywide ARC (Toronto) - are setting up a telephone tree for rapid dissemination of info.  
 Halifax ARC - have changed their place of meeting to the Nova Scotia Institute of Technology.  
 Ottawa Valley Mobile RC - are considering the installation of a club 2-metre repeater.  
 Stratford ARC/ Palmerston & Dist ARC - two distinct radio clubs share one bulletin.  
 Montreal ARC - for both mobile and base (map & compass) station hunters. (Held a Foxhunt)  
 Guelph ARC - are setting up an Amateur station for paraplegics at St. Joseph's Hospital.  
 Burlington ARC - are considering the possibility of meeting once a month instead of twice.  
 St. Paul (Minn.) ARC - published a list of 26 new members.  
 AR League of Manitoba - published a Letter to the Editor signed by 'Dave, VE3CDC'. (Come on Doug, you don't have to hide your identity like that!)

London ARC - are considering collecting used eyeglasses to be reground and sent overseas.  
 Scarborough ARC - are up to their ears in Convention.  
 Nortown ARC (Toronto) - are considering running their Sunday Morning Net on Upper Sideband (3770) to be more compatible with most transceivers when using CW.  
 International Repeater Group (N.B.-Main) - mail 50 complimentary copies each month. (where's Walter Dolphin, VE2TD, (Montreal) - is publishing a 'Newsletter' to 'Radio Amateurs Every-

PENNY'S TWO CENTS WORTH Looking back to the April meeting, don't ever tell me that Home-Brewing is dead. What a pleasure to see such a large variety of high-quality projects, well-made and presented. Will you have a project to show next year, be it a simple gadget or a chime to warn the President not to over-talk? (Actually, Stan, I'm most impressed by Little Ben.) We have lots of expertise in the Club to call on if we need assistance.

Having received a complaint about the usual too-much-business and not enough rag-chewing time at Club meetings, we are trying out a new policy to reduce this and, hopefully, to increase technical content of the meetings, but you will have to read your GROUNDWAVE more closely in order to know what is going on. For example, committee reports will not be given at meetings, on a trial basis, but will be printed in THE GROUNDWAVE instead. This does not mean there will be no business, but rather, less business. You are still encouraged to bring forth matters of concern to the Club and topical matters must be discussed when they are current, not weeks later. If you wish to bring forth a subject for discussion, decide whether or not it should be presented to the executive before a meeting, written up in THE GROUNDWAVE, and/or both, or brought up directly at a meeting. Please let us know what you think of this system.

There are still openings on the Monitoring Station visits. Contact me directly or sign on at the May meeting.

Several people suggested we look into a 24-hour digital clock as the next Club project. This has the advantage of being reasonably low-cost, less than \$25.00, and is easy enough for a beginner - if I can do it, anyone can do it. If you are interested, let us know and perhaps I will take orders in June to have kits ready for September. The ham radio circuit I used has snooze-alarm, buzzer and turn-on circuit for radio or rig, etc., or it can be built without.

Maureen, our Secretary, will be collecting Dominion Store cash register slips over the next few months for the Club. If we collect enough, they will go toward the purchase of something like a wheel-chair or other worth-while item. If we do not get enough, they will go to another organization which is already collecting. Please encourage the grocery shopper in your family to save these tapes and give them to Maureen at a Club meeting. It doesn't cost a cent but it could help someone less fortunate.

Happy spring! 73, See you at the meeting. Penny, VE3ERO, President

#### REMINDERS FROM PENNY

May 7 : Metres for Millions	May 13,19,27: Monitoring Station visits
May 21: Row-a-thon (volunteers needed)	(must sign up in advance)
May 21: Rochester Hamfest	June 3,4,5 : ARRL Convention (registration
June 1: Club meeting (topic: Wallpaper by VE3EVK)	form at meeting)
July 8-10: Ontario Hamfest, Milton	June 25 : Field Day (watch for organizat-
	ional meetings)

Also: See VE3DEP or VE3DY for name-tags, see VE3HXP to man VE3JW, remember to fill in DX sheets for VE3HRC, Executive meeting on May 16,

THE DX CORNER will not appear this month. Hap is in hospital recovering from surgery. We wish him a speedy recovery, keep your reports going in to him and we should have a real super column for next month.

Maureen also reports that she has been visiting Charlie Brown, an Amateur from North Bay, who is also confined to the Civic Hospital.

1977 ARRL NATIONAL CONVENTION registration forms are now available. Contact Penny, VE3ERO, Carl, VE3BYX, or any member of the executive for your needs. Basic registration is \$7.00 after May 1, other charges are listed on the form. Activities include: CN Tower tours, hospitality suites, film presentations, many forums on a variety of subjects, luncheons and banquets, CW bingo, Amateur exhibits, prizes, and many, many other interesting activities. This, undoubtedly, will be our best chance for some time to take in a really big Amateur Convention. Remember those dates, June 3,4,5, 1977.

WHAT WE FIND depends largely upon - - - - - what we are looking for!

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CARF NATIONAL QSL BUREAU SERVICES by Jean Evans, VE3DGG, Manager

VOLUNTEER STAFF consists of QSL Manager, Assistant Manager, Acting Treasurer, 3 assistants, Manager for Box 66 clearing and 3 assistants.

INQUIRIES - Many inquiries are being received asking how the QSL Bureau works. This is condensed herewith with as much information as possible.

OUTGOING CARDS - Gather up your DX cards and sort them alphabetically, sort your VE, ~~VEP~~ and VO cards by district number, and mail them in bulk to: CARF QSL Bureau, Box 66, Islington, Ont., M9A 4X1. Be sure to put your return address and CARF number on the outside of the packages or envelopes. To keep postage to a minimum for you, mail as 'Printed Matter', but be sure to write 'Printed Matter' on the outside of packages or envelopes as well as your return address and CARF number.

SASE's (SELF ADDRESSED STAMPED ENVELOPES) - If you wish to save postage costs, you can enclose SASE's with your outgoing cards. They will be relayed to the volunteer who looks after your cards.

BOX 66 CLEARING - Ken Rolison, VE3CRL, is in charge of this work, and Box 66 is cleared 3 to 5 times weekly. The cards are then delivered to me, at my QTH, weekly.

PROCESSING CARDS - Cards are sorted immediately and all letters checked. Mailing of cards is done as volume dictates, usually twice monthly, but if necessary, three times per month. EVERY card is cleared at the end of each month, even if only 1 or 2 cards for a rare prefix. NO card is left in files at the end of each month.

UNCLAIMED CARDS - We try every means to get every card delivered, before returning them to the originating countries as 'Unclaimed'. We believe it is better to return a card however, rather than for the sender to wonder why he has not received a QSL in return. Each unclaimed card carries a notation as to why it could not be delivered. Other countries do this for us so, in the interests of good public relations throughout the 'Ham' world, we reciprocate. These cards are enclosed in outgoing mail, so no extra postage is used for them.

CORRESPONDENCE - All letters are answered, and then filed for future reference. We welcome all letters of inquiries, ideas, suggestions and complaints. Included are letters from members, non-members, SWLs and others wishing to know how to get into 'Ham' radio.

RE-CYCLING - Wrappers, envelopes, string, etc. are all reused. It is wise to keep costs down wherever and whenever feasible. In the interests of conservation this may become a necessity - we are doing it NOW!

RECORDS - File cards are kept on all countries and entries made of date and number of cards mailed. Master record sheets are kept of totals per month and per year. All records are available at any time for those wishing to see them.

QUESTIONS - Most usual questions asked are: 'Is there any charge for this service?'; 'How do I go about sending out DX cards?'; 'Do I have to send SASEs to more than one bureau?'; 'What size envelopes do you prefer?'

ANSWERS - Members of CARF have free services of the QSL Bureau for outgoing cards. 5" X 7" envelopes are good, but if not available, then whatever size you have will suffice. All other information is covered above.

Good luck and good DXing, and we hope to hear from you soon. Good health to you and yours in the years to come. Sincerely 73, Jean Evans, VE3DGG, Manager for CARF National QSL Services.

(Remember the address: CARF NATIONAL QSL BUREAU SERVICES, BOX 66,  
 ISLINGTON, ONTARIO, CANADA, M9A 4X1 )

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CORRECTIONS TO THE CLUB DIRECTORY Please make the following corrections to the OARC Directory as underlined: Haney, Bill VE3BKW 744-8976;  
 Smith, Larry VE3JLS 741-8293;  
 Van Gastel, Rick VE3HVA 3160 Stockton Dr., Ottawa, Ont., K1T 1S1 737-0782  
 Watson, John VE3CPY/7 15430 Royal Ave., White Rock, British Columbia, V4R 1N1

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FIELD DAY, JUNE 25-26 1977, Contact Zyg, VE3GZS, for further information.

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THE BEST WAY TO TELL A WOMAN'S AGE / / / / / is in a low whisper.

ADDITIONS TO THE MEMBERSHIP LIST (Remove this page and keep it with your Club Directory)

ATKINSON, DICK 927 Connaught Ave. Ottawa, Ontario K2B 5M7	VE3JB0 820-3469	FERRINS, KEN 5 Roché Place Ottawa, Ontario K2H 5P8	VE3DWR 828-3672 596-4748
BARRON, T. PETER 26 Morton Drive Hazeldean, Ontario K2B 1X1	VE3BTJ 836-4736 231-4399	REED, BILL 78 Tripp Cresc. Ottawa, Ontario K2J 1C8	VE3JCO 825-4181 596-4729
BEAUDRY, RENE 983 Goren Ave. Ottawa, Ontario K1G 2T8	VE3JKR 731-8711 995-8469	REED, LYNDIA 78 Tripp Cresc. Ottawa, Ontario K2J 1C8	825-4181
BINCH, ARTHUR T. 11 Beddoe Lane Ottawa, Ontario K1B 5X9	VE3JGW 824-4810 993-2629	ROWE, EARL 999 Cavan Street Ottawa, Ontario K1Z 5T6	VE3BAV 728-5078
BRUNETTE, GILBERT 1720 Baseline Rd., Apt 102E Bel Air Estates, Ottawa Ontario, K2C 0B9	224-7863	SCHLELE, ALFRED 44 Foothills Dr., Kanata (Lynwood Village), Ont. K2H 6K5	DB10P 829-1642
BRUNTON, HENRY (WILF) 86 David Drive Ottawa, Ontario K2G 2N5	VE3IDO 224-8671 992-3344 -3279	SCHWEIZER, LARRY Box 610 Almonte, Ontario K0A 1A0	VE3IHZ 256-2578
CHISHOLM, S.T. 551 Bruce Ave. Winnipeg, Manitoba R3J 0W3	VE4AI	SOUCY, RUTH Box 215 Smith Falls, Ontario K7A 4T1	VE3DZH 283-6207
CHOWN, KEN RR #1 Arnprior, Ontario K7S 3G7	VE3JKC 623-3271	WILSON, KEN 948 Chapman Blvd. Ottawa, Ontario K1G 1V6	VE3HTL 731-5951 746-4611 Ext 216
HOLT, KEN 61 Millford Ave Ottawa, Ontario K2G 1C4	VE3VC 825-2892 593-5394	WILSON, PAT 948 Chapman Blvd. Ottawa, Ontario K1G 1V6	VE3CIR 731-5951 995-0881
LAFLEUR, MICHEL 524 Blair Street Ottawa, Ontario K1G 0J2	VE3JCR 521-9911 237-3050	WILSON, RAY 1711 Ainsley Drive Ottawa, Ontario K2C 0S8	VE3WI 225-8584 992-1487

AS OF APRIL 7, 1977, according to membership forms submitted;  
 Voting Members - 298; Associate Members - 22; Total Membership - 320  
 Members affiliated with: ARRL - 171 full, 3 assoc.; CARF - 128 full, 3 assoc.  
 RSO - 78 full, 2 assoc.; RAQI - 4 full; RSGB - 3 full; Other - 91  
 (Bert Bray, VE3GCK, Membership Chairman)

THE OTTAWA AMATEUR RADIO CLUB  
 BOX 8873, OTTAWA, ONTARIO,  
 CANADA, K1G 3J2

FIRST CLASS MAIL



THE OTTAWA AMATEUR RADIO CLUB		P.O. BOX 8873	OTTAWA	ONT.	CAN. K1G 3J2
President	Penny Robinson	1228 Agincourt Road,	Ottawa,	Ont.	225-1276
	VE3ERO	K2C 2J2			
V/President	Rick Van Gastel	1735 Riverside Dr., Apt 103,	Ottawa,		737-0782
	VE3HVA	K1G 3P7			993-3800 Ext. 126
Secretary	Maureen Neill	148 Fentiman Avenue,	Ottawa,	Ont.	233-9941
	VE3FZY	K1S 0T8			
Treasurer	Cy Chapman	2244 Kipling Street,	Ottawa,	Ont.	731-6172
	VE3CVK	K1H 6T5			
Directors	Bud Punchard	3193 Riverside Drive,	Ottawa,	Ont.	733-3990
	VE3UD	K1V 8N8			
	Jim Dean	1752 Laxton Cresc.,	Ottawa,	Ont.	225-6288
	VE3CMV	K2C 2N3			992-9701
	Zyg Skrobanski	114A Wurtemberg St., Apt 1,	Ottawa,		233-5841
	VE3GZS	K1N 8M3			238-2030 Ext 234
Membership	Bert Bray	2130 Innes Road,	Orleans,	Ontario	824-7844
	VE3GCK	K1C 1T1			
Net Manager &	Larry Bradley	9 Chartrand Ave.,	Orleans,	Ontario	824-3753
Emerg. Comm.	VE3CRX	K0A 2V0			993-3838
Custodian &	Gerry Martin	1771 Hutton Ave.,	Ottawa,	Ontario	731-3220
Archivist	VE3CNI	K1G 1M1			
Electro-Mag.	Bill Westbrook	1494 Ridgebrook Dr.,	Ottawa,	Ont.	749-3373
Interference	VE3EKA	K1B 4K7			239-5953
Coffee	Sean Huntley	109 Clearview Ave.,	Ottawa,	Ont.	722-9467
	VE3FXP	K1Y 2L1			