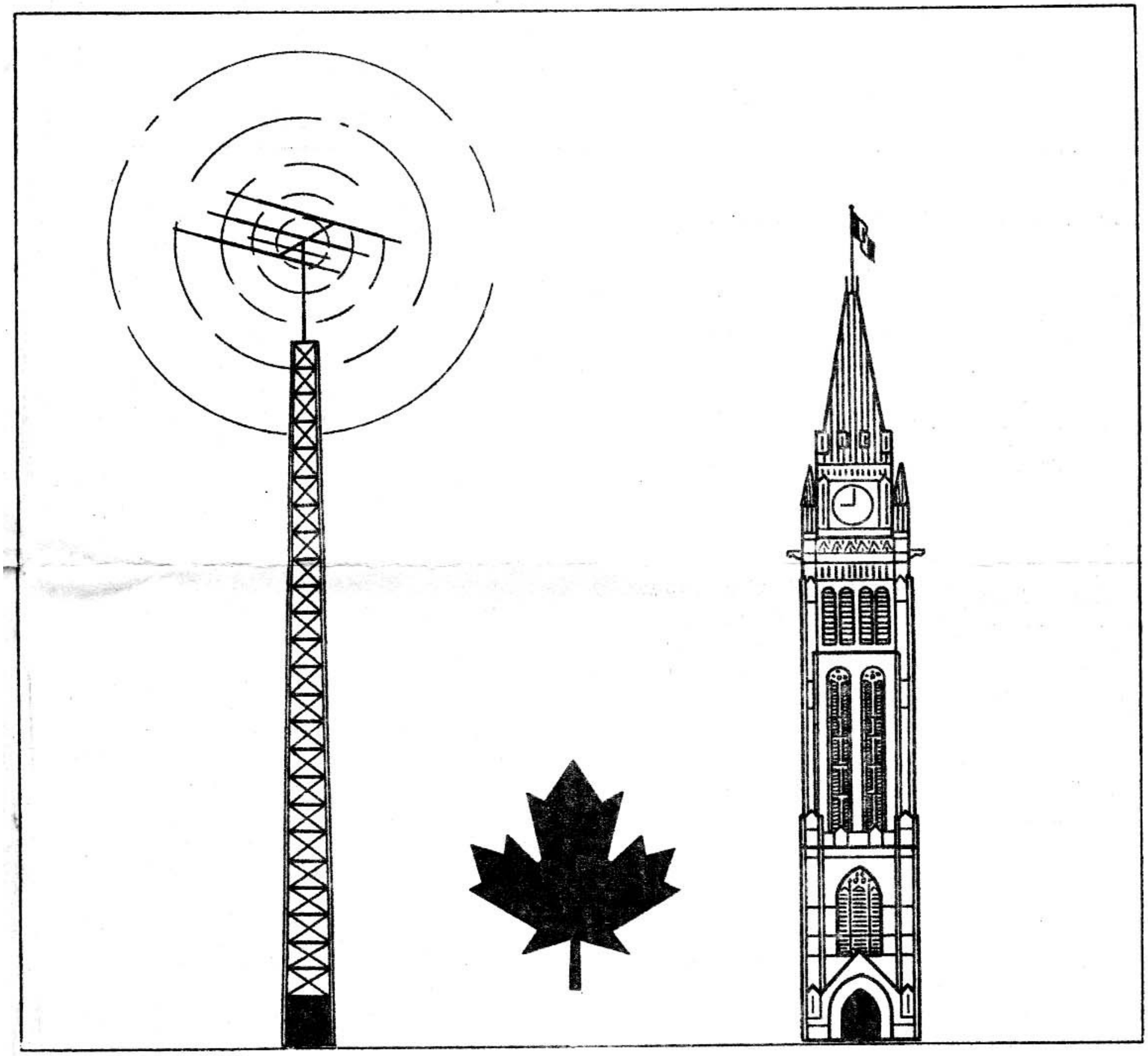
Nov 87

# GROUNDWAVE



Club Call VE3RC Repeater VE2CRA

| | | | |
|---|---|---|---|
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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 Ottawa regional area and to the advancement of the technical competence and achievement of Club Mambers.

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 Ottawa regional area.

THE SWAP NET, a service of the Ottawa Valley Mobile Radio Club, Inc., is repeated on the Capital City Net and is conducted by Ed Morgan VE3GX. To list items and make enquiries, call Ed at 733-1721.

An ENGRAVING PENCIL is available to Club Members to mark their valuables for positive identification in case of loss or theft. For further information, contact Penny Robinson VE3ERO at 225-1276.

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.

RENEW YOUR CARF AND CRRL MEMBERSHIPS directly with these organizations, as the club no longer provides this service to members.

DEADLINE FOR COPY is the first Wednesday of each month.

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, loo Sussex Drive, Ottawa at 2000 hours. A bulletin board is available for posting notices of interest to other members at about 1915 hours. For further details about the next, see Page 5.

SEE YOUR NAME IN PRINT! -- In National and International publications. Write an article for the GROUNDWAVE and watch it travel! Many local articles have been reprinted in Club Bulletins across North America.

MATERIAL PUBLISHED herein does not necessarily represent the official OARC viewpoint. Items may be reprinted by Amateur Radio or similar publications, provided that the proper credit is given to the OARC, Inc.

SAFETY BELTS and TWO METRE RIG are available for loan to Club Members. The two metre rig may be borrowed by members who are hospitalized and the safety belts and pole straps by any member ($100 refundable deposit is required for the latter). For the belts, contact Paul VE3ICV 820-6643 (west end) or Brian VE3JKZ 523-1535 (east end). Contact the President for the two metre rig.

RADIO AMATEUR CALL BOOKS are available for use of area Amateurs at many of the libraries throughout the region, including downtown and other city libraries, Orleans and Nepean. Enquire at the information desk of your local library for details.

## MINUTES OF THE OTTAWA AMATEUR RADIO CLUB, Inc.

October 5th, 1983.

The meeting was called to order by Bob VE3MPG, President, at 2000 hours. Guests welcomed to the meeting included Ray MacNamara, Joan Yanofsky, Dan Powell VE3LYT, Earl Casy and Raguel Ruiz CP5)H from Bolivia.

Gerry King VE3GK gave a very interesting and well illustrated talk on his new telescoping 100 ft. antenna tower. Gerry was his usual entertaining self, mixing showmanship with instruction.

The winners of the raffle were Wally VE3CBE, Doug VE3LBX and Ray VE3JRX. Prizes were 1983 Amateur Radio Handbooks donated by Dick at Bytown Marine at cost.

Mailes Dier VE3BCO talked about the upcoming satellite flight by an Amateur radio operator, Dr. Owen Garlott W5LFL, aboard the STS 9 Shuttle mission scheduled to be launched at the end of October. He plans to make as many contacts as possible with earth-bound amateurs on the two metre band.

Brian Summers VE3JKZ reviewed the National Capital Award.

RSO Convention (1984) Chairman Ken VE3GIR was introduced. He asked for the assistance of the membership in the upcoming RSO convention to be held next fall in Ottawa.

Doug Burril VE3CDC briefed the membership on the latest CARF news and pointed out an error in the minutes of the last meeting in that the FCC is considering proposals only for the expansion of the Amateur Bands.

John Henry VE2VQ spoke about the latest satellite developments and promised a live demonstration of the satellite terminal at the next meeting if the weather is suitable. He will also be present at the Auction on October 29th at Canterbury High School.

Ray VE3JRX asked for assistance at the Auction. (Since the meeting, it has been decided to hold a Flea Market ONLY.)

Mike VE3LAR stated that the Dayton Hamfest trip will be scheduled if there are a sufficient number of members interested. The cost will be $150 with a $50 deposit required.

The minutes of the September meeting were adopted as read on a motion by Lloyd VE3AYE seconded by Brian VE3JKZ.

The meeting adjourned at 2230 hours on a motion by VE3JKZ seconded by Ray VE3JRX.

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## TOROIDS AND TVI

BY Paul Coverdale VE3ICV

Most of us have heard about the use of toroids for curing TVI and interference to stereo systems. The idea is to use the toroid to provide a high impedance RF path to prevent the amateur HF signal from being conducted into the TV set, stereo, etc. via the antenna, speaker or power leads. The beauty of a toroid is that it can provide a high *series* impedance without breaking the lead, simply by wrapping several turns of the lead around the toroid.

What has not been pointed out though is that the *type* of toroid is crucial to the effectiveness of this trick. Specifically, the type of toroid used in antenna baluns is *not* the right one to cure TVI, since what is really needed is a high impedance, *lossy* rf path--the last thing you need in an antenna balun is loss!

The point was brought home to me recently while trying to cure a long-standing TVI problem (with some success I hope) when I discovered a relevant article in QST*. After some experimentation, I have found that an Amidon *ferrite* toroid type FT-240-43 does an excellent job of eliminating

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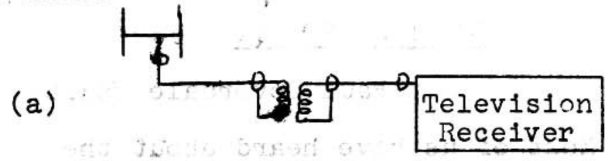
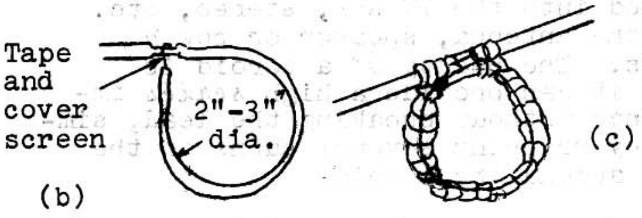
*"Doughnuts for the Tennessee Valley Indians", QST, March 1982

## Toroids -- Continued

TVI when the 75 ohm coax antenna lead of the set is wound around it about ten turns. This is not surprising, since the FT-240-43 toroid is a high permeability, *low-frequency* core, which will clearly be lossy in the HF range. As the QST article suggests, the ferrite core from the deflection yoke of a junked black and white TV set will also work, but I found it to be not quite as effective as the Amidon core (but a lot cheaper!). On a final note, I have also found that the technique shown below is also quite effective in blocking signals travelling down the outer sheath of a coaxial cable. This is a so-called Faraday Loop, and is very inexpensive to make.



Solder inner conductor to screen and cover with tape



Faraday double loop television receiver filter. (a) Basic arrangement of filter; (b) detail of one loop; (c) two identical loops are put together, taking care to insulate all wires/screens and taped or laced firmly.

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## RSO CONVENTION 1984

by Ken Robinson VE3GIR

By now, most of you have heard that our club will be hosting the 1984 RSO Convention. It will be held on October 5th to 7th at the new Westin Hotel at the Rideau Centre in Ottawa. We will need all the help we can get from the membership to make this convention a success, so please don't hesitate to come forth with an offer to help. It may seem a long way off, but it is surprising just how long it takes to get one of these things off the ground.

Please bear in mind that any criticism will be directed at the Club, not me or your executive, so it must have 100% support from the membership. Don't miss any opportunity to "talk it up" on the air or anywhere else; plan to attend. We will do our very best to make the Convention in Ottawa in 1984 the very best.

From time to time, I will keep you informed as to what is happening. If you want to help, call me at 489-2347 or 995-5068, or any member of the executive. We'll be happy to hear from YOU!

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## 1984 MEMBERSHIP

Renew your membership for 1984 now to ensure that you do not miss any issues of the GROUNDWAVE. New memberships are being taken now, however new members will not receive copies of the GROUNDWAVE by mail untill January, 1984. Extra copies will be available at the Club meetings, however. The new membership chairman, replacing Jack Garrett VE3HJI, is:

Peter Hafichuck, VE3LBW
118 Ivy Crescent
OTTAWA, Ontario
K1M 1X6
Telephone: 745-0608 (home)
993-1740 (bus.)

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## TREASURER

The Ottawa Amateur Radio Club, Inc. has a new treasurer-- Bruce Lauer, VE3MJV. His address is:

10 Winlock Crescent
NEPEAN, Ontario
K2G 3X4
Telephone: 829-9471; (bus.) 995-7214

## NEXT MEETING

The next regular meeting of the Ottawa Amateur Radio Club, Inc. will be held on Wednesday November 2nd, 1983 at 2000 hours in the National Research Council Auditorium 100 Sussex Drive, Ottawa.

The guest speaker and main items of business will be announced on the Capital City Net (see p. 2).

Before each meeting, the notice board is set up at 1915 hours to give members an opportunity to seek or give information, to buy or sell articles or to contact others with similar specialty interests. Why don't you use the bulletin board to arrange to exchange amateur radio publications on a loan basis with another ham who receives different magazines? Most of us have access to a photocopier, so we could reproduce interesting technical articles at a fraction of the cost of a magazine subscription. Use the Club Bulletin Board to meet someone who has a magazine which appeals to you. Come early anyway to enjoy an "eyeball" with someone with whom you have had a QSO and would like to meet in person!!

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## CLUB DIRECTORY

By Ed Kipp VE3KLP

While I would be willing to coordinate the production of the Directory again next year, I really do need an assistant who could take over from me in future years. Perhaps it would really only be necessary to publish the directory once every two years, however, since we are hosting the RSO Convention in 1984, we probably do need to produce a new one next spring.

It is especially important to have an assistant who is a well known local amateur who can go after new advertisers to defray some of the cost. It is also important to have the help of someone who can "shoot" the masters--although we can buy the materials. I have outlined the steps required and people needed to produce a directory.

First, it is necessary to have direction from the OARC Executive to produce a Directory by mid March. At that time, it is also important to clear up any problems concerning the title, format, content, etc. By the end of March, printers must be contacted to obtain cost estimates based upon the past years' booklets.

At the beginning of April, the Past President should contact all other local Clubs to notify them of our intention to publish a directory and to ask if they wish to be included. For those wishing to participate, they must provide a list of their club members in order by call sign, including name, address, postal code, telephone number and business number if available. A brief description of the club is also needed, including club call sign, repeaters, current executive, repeaters, etc. The deadline for copy should be April 30th.

Last year's advertisers should be contacted by the first of April to see if they will participate, and page charges should be quoted to them. In addition, new potential advertisers shold be contacted, and they should be given a copy of previous Directories. Advertisers should be requested to provide camera-ready copy for their advertisements.

Next, the text for the directory should be prepared, on a word processor if possible. The name lists (editted) should be given to the OARC member list keeper (L. Bradley) for data entry into the computer by April 30th. A one letter code should be assigned to each club, preferably the one used last year. The first compilation of names should be proof read and returned for correction.

Corrections should be checked, and if OK, the final lists should be requested a) by call, and b) by name. These should be provided, in two copies, on white paper typed with one-pass ribbon. This is required by May 7th.

The page layout must then be prepared including text, ads, name lists, cover, etc. by May 12th.

--Continued on p. 8

Directory--Continued

By may 15th, the completed layout must be taken to the photographer to produce the negatives for printing. Rick VE3HVA has done this work in the past. As soon after this as possible, the negatives must be sorted, checked and taken to the printer, who should have been notified in advance of the target date.

A deposit on the work may be required by the printer, and a cheque for this purpose should be obtained from the OARC Treasurer. The directory should be printed by May 31, when copies should be picked up from the printer so that copies may be distributed at the June Club Meeting.

Plans to distribute the directory at the June meeting should be announced on the Capital City Net for two weeks prior to the meeting date. In addition, a written notice should be given to the Editor of the Groundwave or the Secretary at the May meeting. One copy of the directory may be given to each member on the name list (do not use the call list, as some members do not have calls) at the meeting, checking off the names of those receiving their copy.

Arrange the club lists to avoid duplicate names and provide each club with its own list and the required number of copies together with an invoice. Prepare the information needed by the OARC Treasurer to prepare the invoices to the other clubs and to advertisers. Each advertiser receives four copies with the invoice.

Books not picked up by OARC Club members at the meeting are mailed using mailing labels supplied by Larry VE3CRX, removing those for members who picked up their copies at the meeting. Ask the Past-President to arrange a "mailing party", letting him know how many envelopes will be required and how much postage is required for each envelope.

A few statistics on the past three directories are given in the following table in order to help in the planning of future efforts. The directory is a most popular service provided by our club.

| | 1980 | 1981 | 1982 |
|---|---|---|---|
| Clubs included | 5 | 11 | 13 |
| No. of Directories | 800 | 768 | 800 |
| Pages | 48 | 52 | 60 |
| Advertisers | 7 | 6 | 5 |
| Ad. Revenue | $770 | $650 | $550 |
| Revenue (Loss) | ? | $191 | ($291) |
| Production Cost | $950 | $916 | $911 |
| Ad Rates 1 pg | 110 | 120 | 120 |
| 1/2 pg | 70 | 80 | 80 |
| 1/4 pg | 40 | 60 | 60 |
| 2 p. ctr | 200 | 220 | 220 |
| back cvr. | 130 | 140 | 140 |
| inside back | 120 | 130 | 130 |
| price-direct sale | | $1.25 | $1.25 |
| other Clubs & Commercial | | $0.75 | $0.75 |

## SPACE AGE SOS

by Patricia Montreuil

English adaptation: Robert Serre

By permission of Science Dimension
a publication of NRC

On September 9, 1982, a small aircraft carrying three people crashed in a forest in northeastern British Columbia. Although the pilot and his passengers had been injured, they were able to repair the antenna of their radio transmitter, damaged by the impact, and send out a distress signal. As a result of a Soviet satellite relaying the distress signal, they were found less than 28 hours after the accident!

The satellite, called COSPAS 1, is the first link in a new international network to locate distressed ships and aircraft. It has been tested since September 1982 by Canada, the United States, France and the Soviet Union, and is expected to save many lives in the years to come, as well as tens of millions of dollars in rescue costs. It could also open up new markets for a Canadian company which makes one of the key components, namely the ground station that receives the distress signals relayed by satellite.

When an aircraft crashes in a remote area of Canada, the High Arctic for example, the Department of National Defence must launch expensive search and rescue operations, requiring several aircraft and dozens of people. Locating a downed aircraft

MAY take several days, and yet the survival of injured people may hinge on being rescued only a few hours after the crash. The time lost because distress signals from ships or aircraft are not immediately picked up, as well as the delay in organizing a rescue operation, underscore the need to quickly pinpoint the origin of such signals.

Since the early 1970s, most commercial and non-commercial aircraft have been equipped with beacons (radio transmitters) which send out distress signals. The concept developed by Canada's Department of Communications, relies on the beacon surviving when a plane crashes. Unfortunately, the efficiency of these beacons is limited by their low signal power (less than 0.1 watt); normally their signals can be picked up only within a range of 50-70 km. Too, mountains may block the signal reducing its range even more. Finally, the batteries for these beacons only last 48 hours. The distress signal could, therefore, cease before a rescue team has a chance to locate the distressed ship or aircraft.

The idea of using satellites to monitor distress signals is not new, and goes back to the 1950s before the advent of the satellite era. Canada and the United States began working independantly at first, but got together in 1977 to develop the SARSAT (Search and Rescue Satellite). Shortly thereafter, they were joined by France. The USSR, which had developed a similar project called COSPAS, reached an agreement with the SARSAT group in 1977 on joint technical specifications which have increased the efficiency of this worldwide system for locating distressed ships and aircraft.

In the summer of 1982, the Russian satellite COSPAS was launched into a polar orbit, equipped to relay distress signals on an international frequency of 121.5 MHz. The satellite circles the earth in 100 minutes at an altitude of 1 000 km. During that time, the earth shifts 23 degrees in longitude (about 2 000 km in southern CANADA). The satellite's path is thus slightly different during each orbit. With the launch last March of the American TIROS-N satellite, all areas of the world are now monitored twice as often.

There is now a growing number of ground stations throughout the world capable of receiving the signals relayed by the SARSAT/COSPAS satellites. Canada's Department of National Defense, responsible for Canadian rescue operations, has a ground station at Shirley's Bay, near Ottawa. There are four stations in the United States and one in France. All six stations were designed and built by Canadian Astronautics Limited in Ottawa. Each station is equipped with a 3 m parabolic antenna which tracks the satellite as soon as it appears on the horizon until it is out of sight about 20 minutes later. During the passage, the satellite can receive distress signals from both sides of its path, covering a width of 4 000 km. Ten minutes after the satellite has crossed over C nada, the computers at the Ottawa ground station have finished processing the data received and can calculate the position of any distress signal within a few kilometres.

To process the data requires sophisticated computers, including high speed array processors as there are huge quantities of complex data. However, the method used to pinpoint distress signals within the SARSAT network is based upon a well known principle--the Doppler effect which shifts the frequency of the signal received by the satellite as it passes by. By measuring this change in frequency with great accuracy, and knowing the satellite position at any instant, the computer can pinpoint the signal origin within 8-30 km.

Once the coordinates of an accident site are received at Shirley's Bay, they are transmitted automatically to the Canadian Rescue Operations Coordinating Centre at Trenton, Ontario. The Centre then contacts the Canadian Forces base closest to the site and a rescue mission is dispatched.

Since the first rescue operation in British Columbia, the SARSAT/COSPAS satellite search and rescue system has been used successfully dozens of times and countries such as Brazil and Australia are now interested in participating. The future thus looks very bright for Canadian Astronautics Limited, as well as for other Canadian companies that manufacture special electronic equipment for the SARSAT program, such as SED Systems in Saskatoon and SPAR Aerospace in Montreal.

Almost 9 000 rescue missions are organized each year in Canada for distressed ships and aircraft at a cost approaching $100 000 000. With the SARSAT system, these costs should be greatly reduced, and rescue operations made much more efficient. Already, the system has been credited with saving at least 40 lives.

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## HAM OPERATOR IN SPACE

The planned two metre operation from the Space Shuttle mission STS-9 will NOT take place at the end of October as had been originally planned. The STS-9 mission has been postponed until the end of November at the earliest, and may be delayed until February 1984 or later. The delay was caused by the discovery of a problem in the reusable booster rocket recovered from an earlier flight. The lining in the rocket thruster is designed to burn away during the burn. However, only two-thirds of the lining should be destroyed during a launch. In the recovered booster, it was found that almost all of the lining had been destroyed. If the burn had lasted another 0.6 second, no lining would have been left, and this could have sent the shuttle out of control. Tests on other thrusters have led to concern that a series of these engines may be defective, including the one to be used for the launch of STS-9. More information will be available from CARF, CRRL and AMSAT as it becomes available. If detailed information on orbits, times of operation, etc. are available long enough before launch, these will be published in a future issue of the GROUNDWAVE.

## FLEAMARKETS

The annual Ottawa Amateur Radio Club, Inc. Fleamarket will take place at Canterbury High School on Saturday October 29th, beginning at 0900. It has been decided not to hold an auction this year, however, rent a table and sell that "junk" you bought last year yourself, or buy some of the new, super special goodies which other hams will have to offer!

If you don't get rid of the excess parts or equipment on the 29th and feel like a nice long drive, the Newmarket Fleamarket, sponsored by the York Region ARC will be held the following Saturday, November 5th. It will take place at the Newmarket Community Centre, Newmarket, Ont. which is just north of Toronto. This event will be from 0800-1400 and General Admission is $2.00, which includes a draw ticket for various door prizes. Talk in will be 146.52 simplex or on the repeater VE3YRC 147.825 in/147.225 out.

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## DX STAMP SERVICE

DE SPARC- South Pickering
Amateur Radio Club

All active DXers are aware of the neccesity to send a self-addressed envelope (S.A.E.) and IRCs to a DX station for its QSL. However, many are not aware that there is a less expensive alternative to the IRC when air mail return is preferred. This is particularly true for those countries which require 4 or 5 IRCs for air mail return of an S.A.E. This alternative is to send the DX station a Self Addressed Stamped Envelope (SASE) using the postage of his own country. Fortunately, this does not require writing to Post Offices all over the world. It can all be done by:

George Robertson
7661 Roder Parkway
ONTARIO, N.Y., U.S.A.
14519

Send an S.A.S.E for latest price list from almost any country on DXCC list.
— Sorry about printing - my typewriter just quit at this point!! -Ed.

## MEMBERSHIP APPLICATION

OTTAWA AMATEUR RADIO CLUB, Inc. P.O. Box 8873, OTTAWA, Ontario K1G 3J2

surname:____________________Common Name:________________Call:____________

Additional Names/
Calls (Family Membership)__________________________________________

Address (Street/City/Province

_______________________________________________________________

Telephone (home) ______________ Telephone (work) ___________ CLASS Associate ( ) Amateur ( ) Advanced Amateur ( ) Digital( )

ACTIVITIES (List bands worked)

CW............................ AM................................
SSB........................... RTTY..............................
SSTV.......................... (            )....................
VHF/FM........................ PACKET RADIO......................

| I am a: of: | MEMBER | APPOINTEE | OFFICIAL |
|---|---|---|---|
| ARRL | ( ) | ( ) | ( ) |
| CARF | ( ) | ( ) | ( ) |
| RSO | ( ) | ( ) | ( ) |
| RAQI | ( ) | ( ) | ( ) |

I have a gas/diesel generator
Yes ( ) No ( )

I have a two metre hand carried portable rig: Yes( )No( )

MY MAIN INTEREST IN AMATEUR RADIO IS: ( ) HF ( ) VHF ( )Other.........

Membership Fees: Individual -- $8.00 Family $10.00 (Except student and over 65--contact a member of executive)

I would like to see the OARC, Inc. do/not do the following next year:

I would be willing to help organize the following as a Club Activity:

(Applicant to complete at same time as above)

OTTAWA AMATEUR RADIO CLUB, Inc. Membership 198___

RECEIVED FROM.............................................The amount$.....

..........................................................Dollars

............................                    ..................

Signature of Membership Chairman                    Date

THE OTTAWA AMATEUR RADIO CLUB, Inc.
P.O. Box 8873
OTTAWA, Ontario, Canada
K1G 3J2

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CANADA
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G. MARTIN.OARC ARCHIVES
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K1G 1M1

ARCHIV

THE OTTAWA AMATEUR RADIO CLUB Inc. Box 8873, OTTAWA, Ont. Canada K1G 3J2

| | | | |
|---|---|---|---|
| President | Bob Baillargeon<br>[illegible] | 179 McGillivray St, OTTAWA<br>Ontario, K1S 1K7 | 235-0187<br>744-0963 |
| V/President | Jerry Wells<br>VE3CDS | 12 Sutton Place, NEPEAN<br>Ontario, K2E 5G2 | 225-7374<br>237-3022 |
| Secretary | Bill Nottingham<br>VE3ARZ | 17 Cedarbank Ave, NEPEAN<br>Ontario, K2H 6E9 | 828-8282 |
| Treasurer | Bruce Lauer<br>VE3MJV | 10 Winlock Crescent, NEPEAN<br>Ontario, K2G 3X4 | 829-9471<br>995-7214 |
| Directors | Merve Lemke<br>VE3CV | Box 312, CARP<br>Ontario, K0A 1L0 | 839-5577 |
| | Bill Cousins<br>VE3GPR | Box 760, 63 Hope Drive,<br>MANOTICK, Ont, K0A 2N0 | 692-4861<br>770-0055<br>ext. 230 |
| | Joan Powell<br>VE3FVO | Box 390, RR2, NEPEAN<br>Ontario, K2G 3H1 | 825-4104 |
| P/President | Sydney Moorcroft<br>VE3GVI | 22 Cymbeline Drive, OTTAWA<br>Ontario, K2G 3H1 | 820-0093 |
| Repeater Chairman | George Roach<br>VE3BNO | 104 Strathcona Ave, OTTAWA<br>Ontario, K1S 1X6 | 234-0885<br>233-6241 |
| Custodian & Archivist | Gerry Martin<br>VE3CNJ | 1771 Hutton Ave, OTTAWA<br>Ontario, K1G 1M1 | 731-3220 |
| Net Mgr. & Emrg. Coord. | Ken Kendall<br>VE3IHX | 777B Springland Dr, OTTAWA<br>Ontario, K1V 6L9 | 731-0892 |
| EMI Cmttee Chairman | Ralph Cameron<br>VE3BBM | 30 St. Remy Drive, OTTAWA<br>Ontario, K2J 1A3 | 825-1634<br>225-2850 |
| Membership Chairman | Peter Hafichuck<br>VE3LBW | 118 Ivy Crescent, OTTAWA<br>Ontario, K1M 1X6 | 745-0608<br>993-1740 |