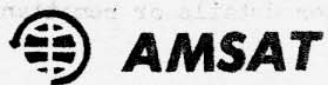
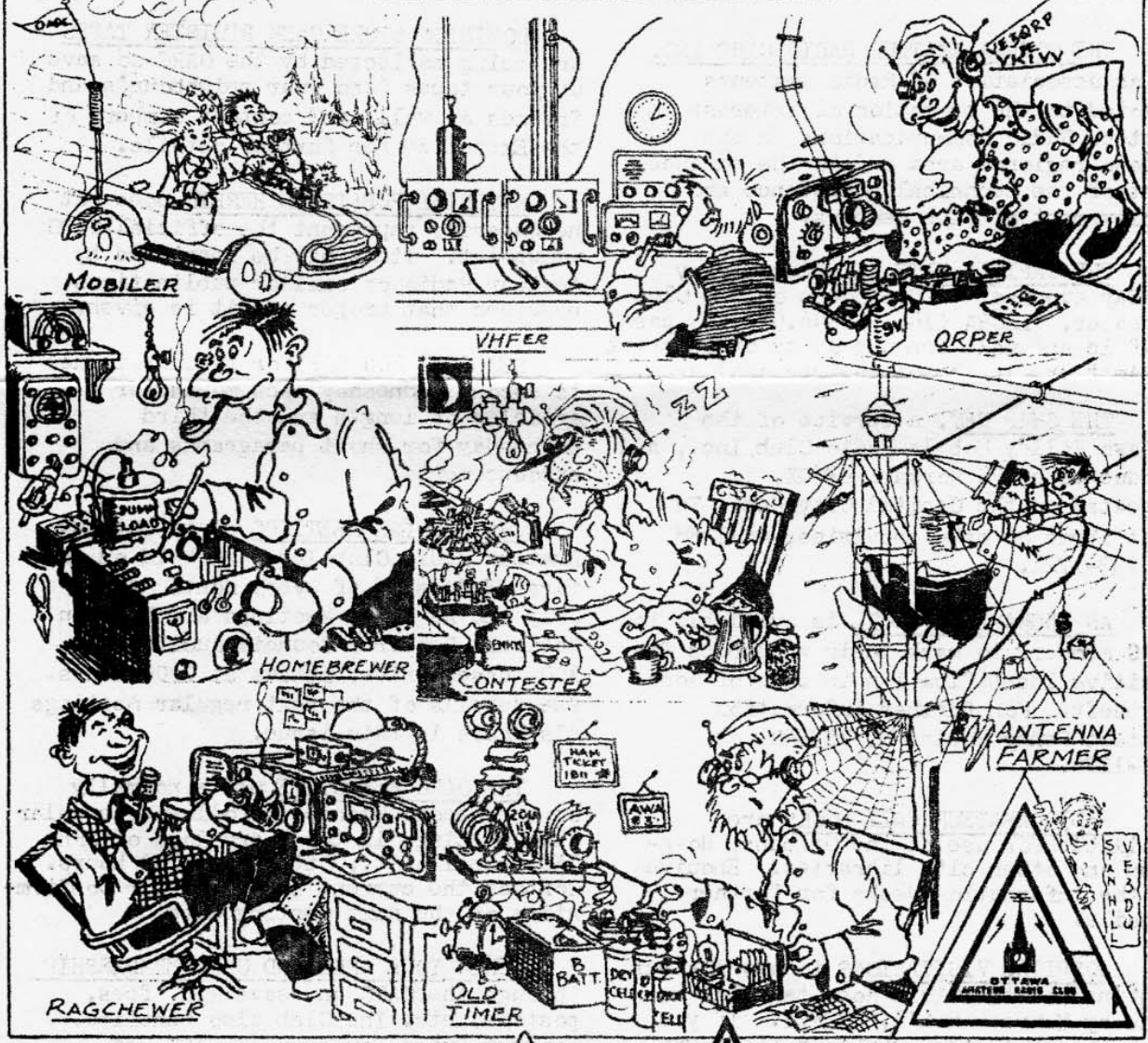




# THE GROUNDWAVE

THE OFFICIAL BULLETIN OF THE OTTAWA AMATEUR RADIO CLUB INC.  
P. O. BOX 8873, OTTAWA, ONT. K1G3J2



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 Ottawa regional area and to the 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 (146.34/146.94), 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 Morgan, VE3GX, is repeated on the Capital City Net. To list items or make enquiries, call Ed at 733-1721.

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

RADIO AMATEUR CALL BOOKS are available for use at the Orleans, downtown and other city libraries. Enquire at the information desks for further details.

HOSPITAL VISITATIONS to any Amateur confined to the Civic Hospital will be made by Maureen Neill, VE3FZY. If you know of any Amateur confined there who would appreciate a visit, call Maureen at 725-4748 (233-9941 after 5:30)

SEE YOUR NAME IN PRINT!!! -- in National and Interantional publications. Write an article to be published in THE GROUNDWAVE and then watch it travel! Many local articles have been reprinted in Club bulletins. all across North America.

DOMINION STORE CASH REGISTER TAPES

are being collected by the OARC so save up your tapes (and your neighbour's and friends as well) and contact members of the Executive for further details.

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

DEADLINE FOR COPY for regular issues is second Wednesday each month for articles of length and the third Wednesday for short paragraphs and announcements.

THE REGULAR MEETINGS of the Ottawa Amateur Radio Club Inc. are held on the first Wednesday of every month except July and August. Meetings are held in National Research Council Auditorium, 100 Sussex Drive, Ottawa at 2000 hours. See details of the next regular meetings elsewhere in this issue.

THE OARC EXECUTIVE meets normally on the second Wednesday following regular Club meetings in the Board Room of CFRA 150 Isabella St., Ottawa at 2000 hours. Contact the current Executive for Confirmation of the next meeting date.

RENEW YOUR ARRL AND CARF MEMBERSHIP through the OARC and save M.O. fees, postage, etc. The Club also benefits. Contact Brian Barsalou, VE3IBX, at 829-7340, for further details or remittance forms.

MINUTES OF THE OTTAWA AMATEUR  
RADIO CLUB, INC. September 3 1980

The meeting was called to order at 2000 hours by Paul VE3ICV, President. Visitors included Jerry Boone, VE3MJH Jim VE3MPB, VE3LAX, Ray Thorton VE3RJ (first licenced in 1922), VE3EZI, Ed Wiggles, Ying Hum VE3FUB, Gilbert VE3JRY and Rich Swan. VE3BDO moved that the minutes of the June meeting be adopted as they appear in the September Groundwave. The motion was seconded by VE3DZT and carried.

It was announced that Shinerama would be held on September 12th 1430-2100 and September 13th 0730-1800. Those interested in assisting with communications were asked to contact John McGrath or Ken Kendal VE3IHX.

Paul VE3ICV announced that he was holding QSL cards for the following: VE3JCZ, VE3JSF, VE3JRV, VE3JCN, VE3JCO, VE3JMN, VE3JKS, VE3JLM, VE3JCW, VE3JLN, VE3JMO, VE3JCG, VE3HRC, VE3HZT, VE3HWN and VE3HUB.

Fred VE3IO reported that there had been very little EMI Committee activity over the summer.

Murray VE3JSO asked the members to submit articles for the Groundwave. The deadline for lengthy articles is the night of the club meeting, while shorter articles and letters can be accepted up to two weeks later.

John VE3DYJ reported on the last Field Day activities (see also page 5 - Ed.). The weather was perfect for a change. The only "injuries" were a few cases of sunburn! The scores were down slightly this year to 5462 points compared to 5644 in 1979. The reduction resulted from extremely poor conditions on 80 m (high static levels), the fact that the event fell on a long weekend in Canada and a shortage of operators, especially for phone. Next year, the committee may change the club class to three transmitters

from the four which have been used in the past unless more operators are willing to come out. Field is a lot of fun, and we want to be certain that we enter the appropriate class. Perhaps more operators will be available next year when Field Day does not occur on the long weekend. John expressed the thanks of the Committee to all those who loaned equipment and trailers and especially the 49ers.

It was reported that a FT10IE had been stolen from VE3ATJ. The serial number is 210 199 and his SIN is engraved on the top rear.

Paul reminded the members that he has the club's two meter rig which is available for loan to any hospitalized member. Also, any member wishing to borrow the Club's linesman's belts for tower work should contact Brian VE3JKZ.

The Club Directory was mailed to members over the summer, and additional copies are available for \$1.00 each from VE3JLP. The directory includes members of most of the other local clubs in addition to those of the OARC. The members gave a round of applause to Paul VE3JLP in appreciation for his efforts in producing such an excellent directory.

Paul VE3JLP informed the members of the Seaway Valley Hamfest to be held later in September at the Louisville Municipal Arena, Louisville, N.Y.

As no one has yet volunteered to look after coffee for the club meetings, Paul VE3ICV announced that none would be available. He suggested that perhaps a group of two or three might consider forming a team to share the load. However, to date there has been no response.

Sydney VE3GVI reported that he will be trying to organize a Club Auction in mid- to late October. A location had not yet been found, and assistance will be needed. (The auction will be held on October 25

at Canterbury High School; see details on page 5 - Ed.)

It was announced that Algonquin College (Woodroffe Campus) will be offering courses in Amateur Radio (both English and French), Advanced Amateur Radio (English) and Amateur Radio for Young Adults. For more information, call 725-7511 or Dennis VE3HWG at 725-7529. Gloucester High School is looking for teachers to run an Amateur Radio Class. Anyone interested should contact Wally Samman, Night School Coordinator, Gloucester High School, 745-7176. VE3SHQ will be offering a course, and the Boy Scouts may do so also.

Dick VE3JBO announced that the Pioneer Amateur Radio Club is taking over the sponsorship of the digital repeater operating on 222.34 MHz simplex. He reported that this was the *only* clear frequency with a 60 KHz bandwidth in the 220 MHz band as determined in tests conducted recently. Help in getting onto the system is being offered by the Pioneer Club as well as the developers of the system.

Dick VE3JBO also reported that since VE3TEL is not heavily used, consideration is being given to converting it into a RTTY repeater. The Pioneer Club is also investigating the installation of a repeater in the South end of the city which could be connected by a wire line to VE3TEL. The Pioneer Club is open to membership for any one in the Bell "family", and is now actively recruiting new members from Bell Northern Research.

Brian VE3JKZ welcomed Tim Benner to the meeting. Tim had written to the Club expressing an interest in Amateur Radio. He was provided with literature and invited to the meeting.

Paul announced that the October meeting would be Home Brew Night. He invited the members to bring along any ham equipment they had built or were in the process of constructing. The Club Trophy will be awarded for the "best" project, and there will be additional prizes.

Paul VE3ICV reported that following the instructions of the membership, a letter was sent to the ARRL and CRRL opposing the proposed expansion of the U.S. 20 m phone band. It was noted, however, that at the July meeting of the ARRL Directors, it was decided to petition the FCC to extend the U.S. 20 m phone band to 14.150 MHz and the 40 m phone band to 7.075 MHz.

The monthly door prize was a multimeter worth over \$40.00.

Joe VE2DZT reported the successful completion of the Club Power Supply project. Of the 13 who signed up, five decided to go ahead. Five and ten ampere versions of the unit were constructed. Thanks to a special price on the transformers from Fred Hammond, the total cost for all five fully protected units was only \$54.00.

The featured speaker for the evening was Gerry VE3GK who gave a most informative and interesting talk, illustrated with slides, on DX antennas and his experience with them.

On a motion by Rick VE3HVA seconded by John VE3DYJ, the meeting was adjourned at 2200.

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#### CLUB PROJECT

The Club Executive have decided that if there is sufficient interest, the next Club Project will be the QRP transceiver mentioned in the September Groundwave and described in the August issue of QST.

Because the article in QST did not provide straightforward construction details, it has been decided that two or three units should be built by members who are experienced in electronic design and construction. To give these members an incentive, it was decided to reimburse these volunteers for the components after they have successfully completed the prototypes, which should work reliably and be relatively easily copied

by less experienced club members.

This 40 m CW transceiver is reported to have the following characteristics: full electronic break-in; clean keying and smooth, quiet transceiver operation; stable VFO operation over the range 7.00-7.15 MHz; receiver incremental tuning (RIT); single 12 volt supply operation; two watt power input, 1.5 watt output to a 50 ohm load; receive current drain less than 20 mA; high performance direct conversion receiver; and small size.

Anyone who is interested either in tackling the more challenging task of building one of the prototypes should contact either Murray VE3JSO or Paul VE3ICV before the October 1st Club meeting. Others interested in building a later version should contact any member of the executive or sign the sheet which will be available at the meeting. Sorry, we forgot to provide it at the September meeting.

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#### FIELD DAY - 1980

- John Mitchell VE3DYJ

Thanks to nearly perfect weather, a healthy turn-out of volunteers made this year's Field Day a big success for the Club station VE3RC. Due to the improved antenna technology which was described at the June meeting, it was possible to operate two 20 m stations simultaneously (CW and Phone) for the first time, resulting in a record number of contacts on that band.

As a result of QRN (static), the 80 m score for both CW and Phone was down. The overall point total (5862) was very close to that of last year.

Field Day this year provided an opportunity for many new hams to catch the "FD Spirit", complete with too much operating and too little sleep! As usual, many club a range of valuable equipment: trailers

-continued on page 8

#### NEXT MEETING

The next regular meeting of the Ottawa Amateur Radio Club, Inc. will be held on Wednesday October 1st 1980 in the Auditorium of the National Research Council, 100 Sussex Drive, Ottawa, at 2000 hours.

The featured event of the evening will be the annual "Home Brew Night". This is your chance to "show off" your favorite home construction project, be it big or small, simple or sophisticated, or even complete or half finished! Don't be bashful; bring along your home-brew ham projects. The Club Trophy will be awarded to the "best" project - only the judges will know the criteria! Other prizes will also be awarded.

In addition to the main event, the new ARRL film "The World of Amateur Radio" will be shown. A description of the making of this film is given in the August 1980 issue of QST. Such notables as actor/comedian Stu Gilliam WD6FBU, Senator Barry Goldwater K7UGA, actor/comedian Dick Van Dyke, and entertainer Arthur Godfrey K4LIB participated in the film either on screen or as narrative voices.

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#### CLUB AUCTION

The Club Auction will be held on Saturday October 25th at Canterbury High School. Registration will begin at 9:00 am and Flea Market Tables will also be available.

Registration for the auction will close at 12:00 noon, and the auction itself will start at 1:00 pm and continue until 6:00 pm. Sandwiches, coffee and cold drinks will be sold. The Rental Fee for Flea Market tables will be \$5.00 each and will be allocated on a first-come, first served basis. The Flea Market will operate all day.

This is a perfect opportunity to clean out your basement, sell that

-continued on page 8

MORSE TELEGRAPH CLUB

With the most famous ham operators in the world, as well as the great grandson of the inventor of the telegraph, in attendance, the Southern California Chapter of the Morse Telegraph Club held its annual meeting in April in Pasadena CA.

The meeting was opened with the sending of the Lord's Prayer in American Morsecode by Thomas E. Hines, champion telegrapher of the chapter in that code. It was also sent in International code by Ray Furlong, W6QIL, co-champion telegrapher in International code.

Celebrities at the head tables included world-famous Don C. Wallace W6AM whose call always heads the DXCC list as published in QST. Wallace has confirmations of having communicated with every one of the 365 recognized countries in the world.

He has raised a fine crop of rhombic antennas on his 27-acre radio ranch. Some of these antennas are supported on poles as high as 140 feet. Wallace states that antennas are like football players: a good big one is better than a good small one.

Several times a year, Don holds an open house at his ranch. Other Amateur Radio operators are invited to visit it and stand in awe of a really deluxe ham installation. The property located near the Pacific Ocean on Palos Verdes Peninsula, was purchased from Press Wireless, which once operated a commercial wireless station there.

Samuel F.B. Morse III, W6FZZ, great grandson of Professor Morse who invented the telegraph in 1844, was introduced.

The national telegraph circuit furnished gratis by Western Union extended to all the 32 Morse clubs chapters who were holding their celebrations of the birth of Morse on the same day.

All licensed hams are welcome to join the club and receive "Dots and Dashes", the club newspaper. Send three dollars and a short "history" of yourself (three or four lines will suffice, more if you wish) such as when and where you learned International or American morse, your occupation, etc., to Dr. W.C. Hess, W6CK, PO Box 19-M, Pasadena, CA 91102.

de Worldradio

FREE COMPUTER HOBBY NEWS

The W5YI Report is a twice monthly insider newsletter for the ham radio and personal computer hobbyist that exists totally on donations and SASE (self-addressed, stamped envelopes). For your free sample copy, send a SASE to: The W5YI Report, PO Box 10101, Dallas, Texas 75207.

Later, if you determine that you want to receive this publication, you prepare twelve number 10 envelopes with 15¢ postage attached and your address on the envelope. Mail them to the PO box and slip in a donation to cover paper and ink costs.

de St. Paul Groundwave

SILENT KEY

Jim Fisk, W1HR, editor-in-chief of "Ham Radio" and "Ham Radio Horizons" magazines, died of a heart attack at his home in April at the age of 45.

Jim was the founding editor of "Ham Radio" which began publication in March 1968. A native of Delhi NY, he attended the University of Richmond in Virginia and attended and taught at Whittier College in California.

He was a life member of the ARRL, member of the Antique Wire&Ass Association, honorary life member of the Sidney (NY) ARC and member of the Nashua (NH) ARC. Jim was an avid and active DXer; he was in the process of building an impressive "superstation" at the time of his death.

de Worldradio

MOBILE DATA LINKS

There are some strange noises on the VE3MHZ repeater lately. These short bursts of AFSK originate in some surplus equipment that has recently become available.

Built by Digital Systems Ltd., in England, the equipment was originally designed for use in taxis or a dial-a-bus system. Individual sets consist of a "MEU" (processor/AFSK/radio interface), a 12-volt power supply, a control unit and a display. A 32-character alphanumeric LED array is the focal point of the display module.

The sounds you hear are generated by the MEU. Each unit is capable of transmitting data which consists of the unit number, status and location code. The location code and status are set with switches on the control module. Units will transmit this data in response to a "poll" command from another unit or if the "transmit" button is pushed on the control module. This data is transmitted at 200 baud. At the present time, a system for decoding has yet to be developed.

These sets receive data at 400 baud. A system utilizing TRS-80 software (with a very simple interface) has been developed. The MEU (at the point of origin) is keyed at 400 baud by the TRS-80. The format is predetermined by the system design but basically consists of command functions (to poll units, turn buzzers on or lights off, etc.) or messages which can be 2, 30, 60, or 64 characters long.

Each unit will respond only to messages directed to that particular unit (unless the message is encoded an "all" call). This feature makes it an ideal SElective CALLing system.

Although the units originating data at this time are using TRS-80's a system for the PET is presently being developed. Larry Allen VE3FXQ is developing a system utilizing hsi TV typewriter. Twenty-six units are presently in use.

de Peel ARC News

DX QSL SERVICE

The Electrokit DX-QSL Service is a worldwide outgoing QSL service available to all Amateurs. It will forward your QSL cards to any DX station's respective QSL bureau or QSL manager. If neither is available directly to the DX station.

The Electrokit service maintains a monthly updated list of over 5,000 current DX QSL managers. By the use of this QSL service, you no longer need to send an SASE to every QSL manager you deal with. Electrokit will forward your card and an SASE for you. You will receive the manager's return cards on a regular basis by keeping at least a single SASE on file with Electrokit.

The service will not handle cards from USA stations going to USA. (USA QSL bureaus do not accept domestic cards.)

This service will save the active QSLer a bundle in postage and IRC coupons. Rates are: 1-25 cards, 7¢ each; 25-50 cards, 6¢ each; over 50 cards, 5¢ each. For more information write Electrokit DX-QSL Service, PO Box 568, Milford MA 01757.

de K1ETP, Worlradio

RESISTOR CODES

Most hams don't have any problem with the first three bands or even with the fourth band which is tolerance. What about the fifth band? These resistors conform to military specifications and the fifth band indicates reliability level per 1,000 hours as shown:

Brown	1 %
Red	.1 %
Orange	.01 %
Yellow	.001 %

As an example, suppose the fifth band of a military resistor is colour-coded orange. This means that for every 1,000 hours of operation, the chance of failure would not exceed .01 %

de VE2ESV, West I<sup>S</sup> land ARC



Well done, Bud! He was followed by Gary Hammond VE3GCO who was second on twenty meters but first on 40, 80, 15 and 10, and thus first to get the five band award. He wrote a very interesting article describing how he accomplished this feat for the April 1979 edition of The Canadian Amateur. The first 50 MHz award was recently issued to VE1AVX.

It is interesting to note that OSCAR modes A, B and J are considered separate bands--for which no awards have yet been issued. Maybe you could be number one!

The basic award is free to CARF members while a two dollar fee is charged to non-members. A twenty-five dollar charge is made for the plaque to all applicants. QSL cards are required for validation purposes and must be accompanied by sufficient funds for return postage.

CANADAWARD is administered by Dave Goodwin VE2DZE who can be found at most OARC meetings. You can write to him at P.O. Box 2172, Station D, OTTAWA, Ontario, K1P 5W4. Don't forget to enclose a SASE (Canadian stamp for this one)!

--/--/--/--/--/--/--/--/--/--/--/--/--/--/--

#### SPREAD SPECTRUM COMMUNICATIONS

..... - Paul Coverdale VE3ICV

As radio amateurs, we are all aware of the need to conserve bandwidth and to use our precious frequency allocations in the most efficient way. That, after all, is the main reason for the popularity of SSB. What then would we think of a communications method which deliberately spreads the transmitted bandwidth to some several hundreds of times the data bandwidth? Sheer stupidity--or not? In fact, so called "spread spectrum communications" is now being seriously considered for the next generation of commercial land-mobile services.

How does spread spectrum work? The answer, as might be expected, is locked up in some fairly complicated mathematics which goes back to the

early 1950's. It is only recently that digital technological advances have made spread spectrum techniques look attractive and practical. One of the basic laws of communications theory, Shannon's Law, states that the information carrying capacity of a communications channel in bits per second is proportional to the product of the logarithm of the bandwidth and the signal to noise ratio (S/N) of the channel. For example, a conventional channel transmitting at 30 kilobits/sec would require a S/N of 30db in a 3 kHz channel. If the bandwidth were spread to 2 MHz, the same data could be transmitted successfully with a S/N of -20 db. That is, the signal could be 20 db below the noise!

The trick, of course, is to be able to recover the signal from the noise. This is not so difficult as it might sound, provided that the receiver knows exactly how the original signal was spread. This may be accomplished using a pseudo-random (PN) signal as the spreading function. A PN signal is one which is digitally generated to appear random, but in fact is completely predetermined and repeats itself at regular intervals. A locally generated copy of the same PN signal in the receiver is synchronized with that from the transmitter, making it possible to recover the signal from the noise. This technique is particularly attractive for military use, since the signal sounds exactly like noise, and unless the exact PN sequence used is known, it is impossible to extract the signal.

There is much more to spread spectrum communications than that outlined above. There is no doubt, however, that recent advances in digital technology will enable many of today's theoretical concepts be realized tomorrow. It may not be long before we get reports like "You have a beautiful signal, Old Man, peaking at almost 20 db below the noise!" Experiments by amateurs on the HF bands have already been reported.

1980 RSO CONVENTION October 3,4,5

INFORMATION - Your registration badge gives you access to all sessions, forums, demonstrations, displays, flee market, etc., and a chance to win MAJOR PRIZES OF AMATEUR EQUIPMENT. To qualify for the RSO member fees, only one member of a family requires RSO membership. Saturday night banquet attendees must have one member of family registered. PLEASE indicate quantity of tickets required in the brackets ( ) below.

1. REGISTRATION

- ( ) RSO Member(s) rec'd by Sept. 26th @ 7.00 = \$
( ) Non-member(s) rec'd by Sept. 26th @ 9.00 = \$
( ) RSO Member(s) after Sept. 26th @ 8.00 = \$
( ) Non-member(s) after Sept. 26th @10.00 = \$
Registration total \$

2. LADIES PROGRAM

- ( ) Registration rec'd by September 26th @\$5.50=\$
( ) registration after September 26th @\$6.50=\$
( ) Toronto Eaton Centre @FREE
( ) Taste of the Orient @\$5.00=\$
( ) A day at the Prince @FREE
Ladies Program total \$

3. SOCIAL ACTIVITIES

- Friday Night Eyeball
( ) Light Snack & Dance (Snack @ 7:30) @\$10.00=\$
( ) Entertainment & Dance only @ \$6.00=\$

SATURDAY NIGHT

- ( ) Banquet & Dance @\$24.50=\$
Activities Total \$

4. DATA FORM

Name ..... Call.....
Address..... Phone.....
..... Postal Code.....
Box No. City Town Province

Please make cheque( ) or Money Order( ) enclosed payable and mail to:- RSO CONVENTION COMMITTEE P.O. Box 997 WILLOWDALE, Ont. M2K 2T6

TOTAL AMOUNT REMITTED.... for TOTAL NUMBER OF TICKETS..

OFFICE USE ONLY REC'D CHKD SENT

In the event of a mail strike in some Ontario centres, special arrangements have been made for those not already registered. Banquet tickets will accept by radio reservations for the Banquet an official RSO station on ONTARS 13755 kHz @1800 Hrs, CJ Net 3790 kHz 1930 Hrs and Quebec Radio Net 3775 2030 Hrs. Hotel Reservations at the Prince Hotel will be accepted by Telephone--be sure to advise that you are with RSO convention. Pre-registration will be accepted by the RSO Convention station to be eligible for the Special Draw- an FT-207R Synthesized Hand Held!

Looking forward to seeing you all at the Prince in DON MILLS, October 3, 4 & 5.

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

MEMBERSHIP APPLICATION 1981

IF PAID BY CHEQUE, MAKE PAYABLE TO ABOVE.

SURNAME \_\_\_\_\_ GIVEN NAMES(OR NICK NAME) \_\_\_\_\_ CALL \_\_\_\_\_

ADDITIONAL NAMES (IF FAMILY MEMBERSHIP) \_\_\_\_\_

ADDRESS (STREET, CITY, PROVINCE) \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

TEL: HOME \_\_\_\_\_ TEL: WORK \_\_\_\_\_ CLASS OF CERTIFICATE \_\_\_\_\_ ( ) AMATEUR ( ) ADVANCED ( ) ASSOCIATE AMATEUR

ACTIVITIES (PLEASE CHECK APPROPRIATE ITEMS) BANDS

- SSB \_\_\_\_\_
- AM \_\_\_\_\_
- VHF/FM \_\_\_\_\_
- CW \_\_\_\_\_
- RTTY \_\_\_\_\_
- SSTV \_\_\_\_\_
- VHF \_\_\_\_\_

PLEASE CHECK APPROPRIATE ITEMS:

I AM A:	MEMBER	APPOINTEE	OFFICIAL
ARRL	_____	_____	_____
RSO	_____	_____	_____
CARF	_____	_____	_____
RAQI	_____	_____	_____

I HAVE A GAS/DIESEL GENERATOR \_\_\_\_\_ I HAVE A 2-METRE HAND CARRIED \_\_\_\_\_  
yes/no yes/no

MY MAIN INTEREST IN AMATEUR RADIO IS: ( ) HF ( ) VHF OTHER \_\_\_\_\_

WHAT WOULD YOU LIKE TO SEE THE OARC DO/NOT DO NEXT YEAR?

(Applicant to complete at same time as above)

OARC MEMBERSHIP - 1981

RECEIVED FROM \_\_\_\_\_ AMOUNT OF \$ \_\_\_\_\_

.....  
SIGNATURE  
MEMBERSHIP CHAIRMAN

.....  
DATE

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