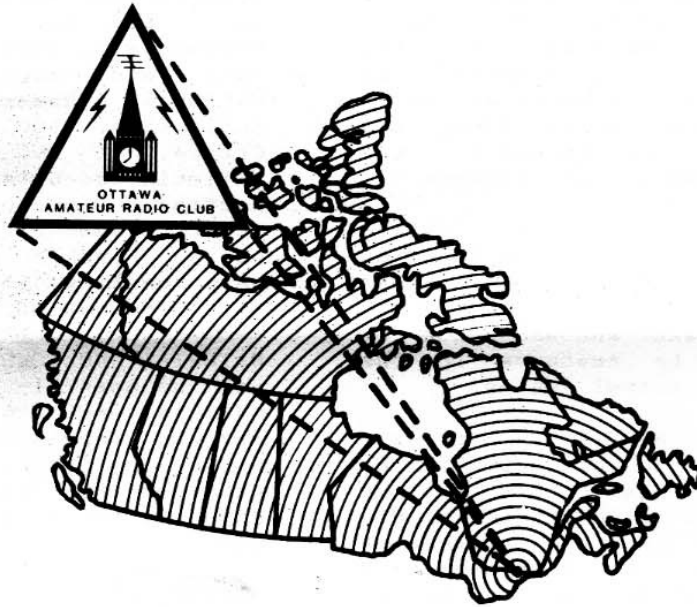
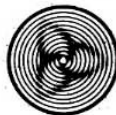


THE GROUNDWAVE



Club Call VE3RC

Repeater VE2CRA



Official Bulletin of the Ottawa Amateur Radio Club, Inc.

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

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

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

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

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

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

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

SAFETY BELTS, 2-METER RIG AND AN ENGRAVING PENCIL are available for loan to club members. The 2-meter rig may be borrowed by members who are hospitalized. The engraving pencil (to mark valuables for identification in case of loss or theft) and the safety belts with pole straps are available to any member. A \$100 refundable deposit is required for the belts. Contact the President for the 2-meter rig or the engraving pencil; and Paul, VE3ICV, at 820-6643 (West End) or Brian, VE3JKZ, at 523-1535 (East End) for the belts.

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

MINUTES OF THE OARC GENERAL
MEETING OF JUNE 4, 1986

The president called the meeting to order at 2005 hrs. The minutes of the May meeting were amended. On page 3 of the June Groundwave, second column, last paragraph, it should read: "Ralph asked the members" instead of "Jack asked the members". The minutes were adopted as amended.

The following visitors were welcomed: VE3CLW, VE3OWD, VE3WSN and PA0KKZ.

Dave, VE3KNV, took a quick survey of owners of 2 meter equipment who, in a mobile situation, would have ERP of the following categories: 5 watts, 10 watts, 25 watts and 50 watts. The majority of the respondents were in the 5 to 25 watts category.

Bruce gave an update of the JRSD fund - it stood at \$19,666.00. To date, over \$30,000 have been collected - a very good response.

The main topic of the evening was cellular telephone. Rachelle M.-P. Talbot of Bell Cellular and David Warkentin, President of Ottawa Communications Centre, expertly fielded questions from the audience. According to Talbot, cellular telephone is a success story opening new vistas for the business person on the go.

John, VE3NVF, was the door prize winner. Club members were reminded to pick up their copy of the directory. The first Kanata International Volksmarch was announced.

Volunteers were needed for communication.

Lloyd, VE3AYE, is leaving for Sudbury to become a professor at Laurentian U. We hope that he will stay in touch.

Dave, VE3JTZ, explained the modus operandi of field day activities. The theme for this year is participation. There will be slow CW. For 6 hours EMARC will be operated under the aegis of Rick Van Gastel.

VE3JTZ is looking at September for the time of an advanced ham radio course.

Elections for a new executive are in September.

The meeting was adjourned at 2220 hrs.

AGENDA FOR SEPT. 3rd MEETING

1. Election of Officers - see slate listed later in this issue. (Note: bring your membership card to be able to vote.)
2. Resolution Concerning Dues - the outgoing executive recommends passage of the following resolution: that the fees be set at \$12.00 for the 1986/87 year.
3. Talk on Packet Radio - by Dick, VE3JBO.
4. Membership Renewal - bring completed form from back of this issue.

PRESIDENT'S REPORT

OTTAWA AMATEUR RADIO CLUB

Sept. 1, 1985 - Aug. 31, 1986

This report covers the first full year on the new fiscal year format of the Club. Many of the officers had stayed on from the shortened term of the previous session from Jan. 1, 1985, to Aug. 31, 1985.

It has been a full year and I believe much was accomplished in this time. Probably the major reason for this was the particularly active executive with whom it was a pleasure to work. Numerous volunteers from the general membership responded also for the various club activities.

The start of the year was highlighted by the first presentation of the "Joe Norton Award" for amateur radio to Mark Farey, VE3OWL. Mark has gone from this high point to be a particularly active member of the club executive.

To comment on all the activities of the club would make this report too long so I will list some of the highlights. The fall flea market was organized by Brett, VE3JLG, and the Packet Radio Group. Chris, VE3PAE, organized a ham class and club at the Leo D. Cote Junior High School. Lloyd, VE3AYE, organized the double duckie D.F. project. Over the winter the D.O.C. proposals for restructuring the amateur radio service were studied and discussed. On being approached by the Packet Radio Group for support, the chairman (Dick,

VE3JBO) was appointed a member of the board of the OARC by a constitutional amendment.

The 1986 Ski Marathon and Gatineau 55 elicited the assistance of approximately fifty club members.

We could not forget our Groundwave editors and the publication committee since the Groundwave received the 73 Magazine July newsletter of the month award. Kudos to Mike James, Maria Townson and Brett Delmage and the committee.

Probably the biggest project of the year was the publication of the 1986 directory. The club made a motion of thanks to the directory committee: Mark, VE3OWL; Gord, VE3PPE; Joan, VE3FVO, and the rest for a job well done.

Home Brew night in April, once again a success, was an event enjoyed by all.

Ralph, VE3BBM, and Sandy, VE3AAC, conducted the annual tune-up clinic at CJOH.

The field day was a super success this year thanks to David, VE3JTZ, and to his able co-chairman, Mark, VE3OWL, and their committee. The emphasis was on participation and that is what we got. With the addition of lots of food at the B.B.Q. on Saturday night, it was a super social event as well as a contest. Great work guys! Let's do it again next year.

And finally, but not least, was our special events station at Major's Hill Park on Canada Day. A contact with VE7EXPO was broadcast live on C.B.C.

Radio. The O.A.R.C. and ham radio in general got maximum public exposure. Again thanks to the "Dynamic Duo", David, VE3JTZ, and Mark, VE3QWL.

The above are some of the more obvious events of the year. However, much time was and will be spent on the planning and implementation of voice and packet linking.

A special thank you to our various committee chairmen for the super jobs they have done.

I would like to have the time and space to thank everyone individually but this will go on forever. However, the executive and I personally, say to all of you who worked for the club, it was a great job Guys.

After 20 months as President of the club I feel it is time that I let some new blood take over. If I managed to promote the hobby of amateur radio during my stay in the office, then I think my time was well spent. I hope that you will all give the new president and executive as much support as you have to me.

Dan Holmes, VE3EBI
President, O.A.R.C.

HELP WANTED

A new manager for the Capital City FM Net is needed to replace David Goldsmith, VE3FM, who has quit due to the pressure of other work. If interested, call Dan Holmes, VE3EBI.

OARC DIRECTION FINDING PROJECT

On Saturday morning, May 24th, several of the participants in the DF project attended a construction session at Carleton University hosted by Mike, VE3FFK. Keith, VE3GFI, Dave, VE3JTZ, and Doug, VE3OSL, also attended and helped constructors by providing advice and assistance. Other participants have completed the project on their own. The remainder are looking for the parts and/or spare time to complete the project.

A recent development is that I have accepted an offer to become a university prof again (Physics Dept., Laurentian University, Sudbury) effective July 1st. Doug, VE3OSL, has kindly undertaken to organize some activities to use the DF equipment (transmitter hunt, and the lost persons application). I encourage everyone in the DF project to complete it. In case of difficulty, consult the volunteers who helped with the construction session. It's a pleasure to acknowledge the assistance, suggestions, and donations (antennas), and also the interest which was shown in the project. I certainly advise that other club projects be organized in the future. I've had several recent discussions about general aspects of club projects, with Bruce, VE3MJV, for example, and would be pleased to give details (via 80 m?) on the organization of the DF project to anyone else interested in coordinating other projects. Indeed, all news from Ottawa area hams will interest me - please keep in touch.

Very 73, Lloyd, VE3AYE

And CW still seems hard to
master?

This is English
(author unknown)

I take it you already know
Of tough and bough and cough
and dough?
Others may stumble, but not
you,
On hiccough, through, slough
and though?
Well done! And now you wish,
perhaps,
To learn of less familiar
traps?

Beware of heard, a dreadful
word,
That looks like beard and
sounds like bird,
And dead; it's said like bed,
not bead!
For goodness sake, don't call
it deed!
Watch out for meat and great
and threat;
(They rhyme with suite and
straight and debt).
A moth is not a moth in mother,
Nor both in bother, nor broth
in brother.

And here is not a match for
there,
Nor dear and fear for bear and
pear.
And then there's dose and rose
and lose -
Just look them up - and goose
and choose,
And cork and work and card and
ward,
And font and front and word and
sword,
And do and go, then thwart and
cart.
Come, come, I've hardly made a
start!

A dreadful language? Why, man
alive!
I'd learned to talk it when I
was five;
And yet to write it, the more I
tried,
I hadn't learned it at
sixty-five.

CW still sounds good to me!

73 de Les, VE2YP
de West Island ARC Bulletin

ISLANDS ON THE AIR

It is interesting to see how
the popular Islands On The Air
(IOTA) program has touched the
hidden romantic in so many
hams. Have you ever wondered
about some of the islands close
to home. One can visit an even
dozen islands in VE3 territory
and a couple more in VE2 call
country without leaving the
Hull-Ottawa area.

It might be an interesting
exercise to see how many of
these islands could be the QTH
for solid two way contacts in
one day without using relay
assistance. Be prepared to use
a portable boat in some cases.
Each contact should be to a
different home located station
and not to a friendly handheld
on the neighbouring shore.
This proposal needs some
structuring as to bands, times,
frequencies, etc., but it does
have potential somewhat
equivalent to a combined car
rally and greased hog catching
contest. Any takers? (Ed.)

ON A "POSSIBLE" RESTRUCTURING
OF THE AMATEUR SERVICE

Not everyone read the widely circulated DOC paper as a possible restructuring. More than one read the title as "proposed" and leapt into the fray with pencil flying. 'Possible' implies other structures will be considered and this one is offered to set the wheels in motion. 'Proposed' suggests that this is the way it will be unless you put up a darn good argument.

From the exchange papers received from other Canadian ham clubs, the DOC paper has had wide circulation. However, there seems to have been little in the way of an organized approach to a response. Here is a wonderful opportunity to try out group dynamics. Were each club to divide the club membership into a number of sub-groups on a local geographical basis for convenience in getting together and were these groups then to go through the points in which DOC has expressed interest, a meeting of the club as a whole would allow everyone to hear the pros and cons of the best of points.

This is not to suggest that each club make a single response but rather that each member be exposed to the advantages and disadvantages of the various 'possibilities'.

The general amateur structure is not vastly different from that of a half-century ago. The environment in which the amateur must operate has vastly changed and will continue to

change. DOC has drawn attention to limited spectrum, limited administrative resources, and unlimited change in technology. Their reasonable approach demands a reasoned response.

VE3FKK RESPONDS TO DOC

Mike Kelly, VE3FKK, took DOC's invitation seriously and has sent copies of his response to CARF, CRRL, and to the GROUNDWAVE. Space permits only a few of the points made by VE3FKK. He asks, for instance, if DOC might quantify their concerns about pressure on the spectrum and the limits of departmental resources available to the amateur service.

VE3FKK suggests that examinations at the first level should include material on safety relating to antenna installation and station operation. Similarly, he recommends that the 'C' level should be examined on safe practices when working on any kind of electronic equipment. He recommends a beginning level of power be limited to 75 watts input with exemptions on a case by case basis.

Where the Department has suggested that beginners be restricted to commercial transmitters, he suggests that the Department correlate interference reports against the type of transmitter in use.

VE3FKK suggests a fourth certificate limited to one year and not renewable that would

permit CW operation for one year with an entry speed of 5 wpm.

VE3FKK queries the certificate identification and recommends reversing the order of label so that A would be the highest qualification and C the lowest. He recommends that the entry class be kept off the 6 meter band because of its susceptibility to interference.

He goes on to recommend delegation of much of the examination chores to CARF and CRRL. Perhaps the most contentious of VE3FKK's recommendation is the one where he proposes random re-testing of a small percentage of certificate holders. But then, VE3FKK is not seeking election to office, he is seeking a better future for all amateur radio operators.

FROM CRRL NEWS

One reason for the unfavourable outcome of the Jack Ravenscroft case is that Canada has no standards for RF susceptibility of consumer electric and electronic equipment. Recently the Ottawa Valley Mobile Radio Club contacted the Minister of Communications and the Minister of Consumer and Corporate Affairs, stressing the need for standards. Specific recommendations were contained in a two-page resolution. CRRL has now written to both ministers, commending the Ottawa Valley Mobile Radio Club on its initiative, and endorsing the recommendations in the resolution, strongly and without reservation.

FAST SCAN AMATEUR TV

Two amateur fast scan television repeaters are operating full time not too far away. W1K00 in Burlington and KC2J0/R in Plattsburgh have been operating for some time. Output frequencies are 421.25 Mhz for W1K00 and 426.25 for KC2J0/R. Both repeaters have an input frequency of 439.25 Mhz (video keyed).

W1K00/R has been showing tapes of interest to the amateur community at 8.00 p.m. on Sundays. The simplest way to receive fast scan Amateur TV is to connect a converter to a standard TV set. The converter is used to translate the 420-450 Mhz ATV signal to a regular TV channel. Channel 2 at 57 Mhz is suggested.

Needless to say, the operators of the respective stations would be delighted to receive signal reports from anywhere in VE country.

de MARCOGRAM, the news bulletin of The Montreal Amateur Radio Club Inc.

JRSD Fund - as of the June meeting - \$19,666 on hand, \$16,000 expended.

NEWS BULLETIN - MAY 1986

JRSD FUND STATUS REPORT

Many copies of the "Reasons for Judgement" have been distributed across the country and many more versions have been aired verbally. Only believe the ones that appear in official format from the Court.

Donors to the Fund will know that the outcome of the trial was one which could affect any transmitter owner and not just a Radio Amateur. This belief is borne out by receipt of donations to the Fund by commercial broadcast stations including at least one paging company. This is encouraging news and every one of the 90 separate donations, last month, was a positive expression of support for Jack and the Fund.

To my knowledge, two rumours persist regarding Jack's integrity which I have followed to what I believe a reasonable explanation. The first rumour involves the impounding of an unlicensed transmitter at Jack's QTH. This somehow reflects on Jack's character and was being used as an excuse to deny him further support. As Jack explains, he and three other young lads studied a radio course together at an Ottawa High School. This began in 1933. Three years later, one of the course projects was to build a 6L6 crystal oscillator. Those of you who remember may know that possession of an unlicensed transmitter was illegal in those days.

One of Jack's 'colleagues' was good enough to inform the RCMP

that Jack had an unlicensed transmitter, whereupon his equipment was seized. He did recover it later when he obtained his license. I find it difficult to believe that individuals, in this day and age would harbour such animosity for over 50 years.

A second negative type response to an appeal for funds questions Jack's standing in the DX community. An individual claims that for Jack having held the call VE3SR for less than 2 years he must be an aggressive individual to have worked so many countries. What this individual doesn't know is that Jack has only worked one new country using his new call. All other countries were worked over a period of 47 years of activity as VE2NV. Jack was number one DX in Canada for TEN years.

Through efforts of CRRL we have been most fortunate in obtaining one of the top three communication lawyers, in Canada, to represent Jack at the Appeal. I would mention too that, whenever critical issues needed to be quickly spread across the country, both Ron Walsh from CARF and Tom Atkins of CRRL directly phoned their respective Directors. This is not inexpensive. Your National organizations do support this cause but it may not be too apparent. There's more going on than possible to convey in an update.

The JRSD Fund should be officially audited during the month of June and copies of the audit will be available for a self-addressed and stamped envelope. There have been 737

donations to date with total donations exceeding \$31,000. Expenses have been some \$15,500, not counting whatever obligation exists from the trial just past.

The estimate of the cost to Appeal is difficult to assess. We have learned from past experience that estimates have in reality doubled or trebled by the time the invoice reached us. We do need your support and especially the Amateurs who don't belong to a club, association or national organization. These represent the bulk of Amateurs. Talk to your buddies or lassies, as the case may be, and let them know your concerns. We need them.

I can say from having talked to at least six lawyers, directly or indirectly that they were unanimous in saying this case must be appealed. There are too many unanswered questions from a legal standpoint which can adversely affect every transmitter owner in Canada. I hope these owners will respond with us.

Many, many, thanks, on behalf of Jack and his wife Helen, for the support from coast to coast. Please keep it up.

73,
Ralph Cameron, VE3BBM
Chairman, JRSD Fund
Box 8873
Ottawa, Ontario
K1G 3J2

WILL SATELLITES BE OBSOLETE?

An article in Spectrum, August 1985, suggests that improvements in fibre-optic cable networks will limit the role of satellites and that users will benefit through lower prices for data, voice, and video transmissions and that there will be increasing use of electronic mail services.

Some shift to fibre optics is anticipated on heavy traffic point to point routes. Fibre optics are less susceptible to noise, interference, and interception.

The satellite industry, however, is quick to point out the advantages of satellites for point-to-multipoint communications and coverage of remote, sparsely populated regions. There are still problems with fibre optics, the most dominant being signal dispersion. In the end, it will be the marketplace that will decide which system will be selected to meet new requirements.

de SPLATTER,
York Region Amateur
Radio Club

Time flies like an arrow
Fruit flies like a banana

de SARC News

AMPLITUDE COMPANDORED
SIDE BAND I

Amplitude Compandored Sideband is the "new boy on the block" of communications modes, and as time goes by, we'll be hearing a lot more about it. Let's take a few pages of the next few Bulletins to give us background leading to what it is and something of what it does.

Background

Frequency modulation, or in most cases Phase Modulation, has been the industry standard for commercial two way communications on the VHF and UHF frequencies for the past 30 years. Not long after its advent, Amateurs began buying up used equipment from various commercial users and making it work on 50, 146 and 440 MHz band. It is very appealing as a voice medium, in that it is relatively noise free, very tolerant of tuning errors, and has good quality. Its biggest disadvantage is that it takes up a lot of spectrum. Even with deviations of 5 KHz, now more or less standard, it still requires a 15 KHz channel.

Amplitude Modulation or AM is much more efficient of bandwidth than is FM. It requires about 6 KHz, with the two sidebands and carrier. Unfortunately it is more susceptible to noise, because most "noise" such as Hydro "leaks" are spark transmissions, amplitude modulated at harmonics of 60 cycles. In addition, the carrier takes half of the power, and that's lost efficiency.

Single Sideband has all of the voice information in one sideband, and the carrier is suppressed, giving much greater efficiency, and much less bandwidth to convey the information than is required for FM or conventional AM. But SSB is still AM and the same noise problems haunt it, although to a lesser degree because of reduced bandwidth and some quieting provided by the reintroduced carrier. SSB systems have the characteristic that power is transmitted only when modulation takes place. When no voice is transmitted, the power output of the transmitter disappears. Thus the receiver has no way of knowing whether the transmission is ended, whether the signal has faded, or whether there is just a pause in speech. Imagine what happens to the receivers AGC under these conditions! The direct result is, of course, deteriorated audio. What about squelch circuits? Tone squelch can be very easily defeated with extremely small tuning errors, and DTMF becomes a nightmare, because the frequency translation errors completely destroy the possibility of signaling.

Aside from the above, the big problem with SSB, as you reach frequencies exceeding 50 KHz, is that the frequency stability becomes a major problem, both for the receiver and the transmitter. The sound of Donald Duck may be very entertaining in the movies or on TV, but it hardly lends itself to communications quality, and with a frequency shift of 100 Hz or less, this

can be the result. This problem was more or less alleviated in the early days of SSB, when a reduced carrier was used to "lock" the receiver to the transmit frequency. For various reasons, this is not a viable situation on VHF, UHF or higher.

de Hugh Clark, VE3WM
London Amateur Radio
Club Inc.

(This is the first of a four part series on ACSB - Ed.)

Next Month: PILOT TONE and CAPTURE EFFECT

SLOW SCAN TV

Bill Westbrook, VE3EKA, provided a Show and Tell of his newly constructed "Ribbit 1200" scan converter. Used along with his IBM PC clone and a program using 512K, he can store high resolution colour pictures on disk, perform image enhancement, add text from 100 different fonts, etc. It sure makes you wonder what God could do if he had money. . .

de PARC (OTTAWA) BULLETIN
Pioneer Amateur Radio Club
Telephone Pioneers of
America

HAMBAND BIRDWATCHING

Merrick, VE3BCZ, writing in the KILOWATTER, the publication of the Kitchener Waterloo ARC

Inc., describes a number of rare birds to be found on the ham bands. He goes so far as to suggest a 'Ham Bird-watchers Award' for particularly successful sleuthing in this field. Among the birds to look for are such as these:

1. Gravel-Throated Splatterer
2. Forty-Meter Grouch
3. Gimlet-Eyed Click Watchers (nest only in DOC offices)
4. Great American Regret
5. Woolly-headed DX Snatcher (found perched precariously on band edges)
6. Yellow-Bellied VFO Swisher
7. Early Morning Cuckoo
8. Loud Mouthed Warbler
9. Tail-Ending Grinch (found inhabiting 2 M repeaters)
10. Side-Band Garbler (call is: "Ah-h-h Um-m-m Err-r-r)
11. Midnight-Band Thrasher
12. Ruffled Spouse (very excitable, utters loud shrieks during field days and SS contests)
13. Whooping Chirper
14. Long-Winded Coot
15. Flea-Powered Pushover (found on DX pileup fringes, chirping plaintively "CQ DX" during contests)
16. Double Breasted Peewee
17. Drifting Clicker
18. Locked-Key Clobberer
19. Fuzzy-Minded Bandsnatcher (may be a sub-species of the Flea-Powered Pushover)

Merrick suggests that a little more information might be found in QST, sometime in the fifties, under the by-line of Paul Amis, W7RGL.

de THE KILOWATTER

PACKET RADIO

The May 28th meeting was attended by 28, an increase from previous meetings. The next meeting will be September 24th at 7:30 p.m. in the auditorium of the Museum of Science and Technology. Guests are welcome.

The main agenda items were AX.25 and NNC. Gilles Naud provided a detailed "walk through" of protocol. Many thanks to Gilles for being the speaker under difficult circumstances, as Gilles is not an amateur and adapted his X.25 knowledge on the spot - an excellent presentation. Several members presented views on the future packet radio configuration, and it was concluded that a Beta NNC (Network Node Controller) project should be undertaken. The Packet Chairman will coordinate the NNC project and approach the developing group in Tucson to obtain the Beta board. Remaining agenda items carried the meeting late, and some agenda will be carried over to the September meeting, with a re-visit to RS232 Level 1 interfacing.

There have been "question and discussion" sessions on VE2CRA following the Capital City Net on Monday evenings, approximately 8:30, and these will continue in September. You are invited to join us.

The main packet frequency is 145.01 and the local QSO frequency is 145.07. If you would like any information about how to get on packet radio, please contact Dick Atkinson at 825-5619, evenings. If you are

interested in JAMSAT gateway, high speed data link, bulletin board sysop activities, please let Dick know. There are several exciting projects under way.

Did you know that Australia is planning a law against RFI-prone consumer electronic items? It will be a crime "down under" to supply or possess equipment that does not meet minimum immunity standards.

de W5YI Report

OLD BUT STILL GOOD

Happy to see that old "sparks", R.F. Burns, is still around and writing a technical column in the S.A.R.C. NEWS, the bulletin of the Scarboro Amateur Radio Club. Back in WWII, and probably earlier in the days of Popov and Marconi, R.F. Burns was leaving his autograph on hotel registers the world over. His new column is appropriately named "Watts Up This Time?" (Ed.)

AMATEUR RADIO COURSES
(starting September)

Basic - through Algonquin College - Dan Holmes, VE3EBI instructing

Advanced - contact Dave Anderson, VE3JTZ, at 225-0886

MICROWAVE EXPERIMENTS
in Holland, Belgium, England
and Canada at 10 GHz and 24 GHz
by Kees Kaper C.E.T. PA0KKZ,
G5MBF, ON8QE

Microwaves are older than you think. In 1888, Henrich Hertz did experiments with wavelengths from 66 cm (450 MHz) and used Parabolic reflectors as antennas with a dipole in focus. He used spark-gaps as transmitters and coherers as detectors.

Oliver Lodge experimented with 7.5 cm wavelengths on 4 GHz in 1894. Augusto Righi, an Italian professor, did experiments on 10 GHz (3 cm) in 1897.

J.C. Bose, an English scientist, did experiments on 60 GHz (5 mm). He developed a receiver with a horn antenna - the first waveguide.

In 1897, Marconi transmitted over a 5-mile distance with a spark-gap transmitter on a frequency of 1.2 GHz (24 cm) wavelength. He used a Branley coherer as a receiver. In 1919, H. Barkhausen and K. Kurz invented the first microwave tube (triode). In 1921, Albert Hull invented the magnetron. In 1933, Georg C. Soutworth built a waveguide transmission line 875 feet long from 5-inch copper pipe and transmitted on 2 GHz using a Barkhausen tube. William Hansen and the Varian brothers invented the Klystron in 1937.

The Klystron is used in radar as a local oscillator (LO) in the receiver. To Ham operators in the United States, England and Holland, the Klystron was very popular as a transmitter and LO for the receiver. This was in the 1950's and 1960's. A popular Klystron is the 2K25

which is easy to tune to 10.2 GHz; while the power output drops off at this frequency, it is sufficient for the mixer.

In 1963, John Gunn discovered microwave oscillations in a sample of n-type gallium arsenide.

Thanks to the discovery from this effect, the Gunn diode was born, called the Gunn Oscillator and replaced the 2K25 Klystron in radar sets.

(This is the first installment on this topic - Ed.)

DID YOU KNOW THAT:

(From SK SCOOP, (RCA Semiconductors), via CAHRRO)

- In order to feel a static discharge such as after walking across a carpet and touching a metal object that the voltage developed is approximately 4000 VOLTS or more?
- An electrostatic charge sufficient to damage electronic devices can be generated by simply walking across a vinyl floor or simply picking up a box from the table?
- MOS elements, bipolar transistors, piezo crystals and even capacitor chips and film transistors can be damaged by static discharges?
- The electronic level of voltage generated by simply opening a plastic bag under conditions of medium or low humidity is in the order of 7000 volts.
- Most man-made materials are not suitable for a work surface where static sensitive devices are handled. Outside of special surfaces developed for this use, the best is unfinished wood.

The following is the list of candidates for election to the executive at the September meeting:

PRESIDENT

Don Drajewicz, VE3NVF

VICE-PRESIDENT

Paul D. Cooper, VE3JLP

I have been licenced for 9 years and from the beginning I've been a member of the OARC. For some years now I have felt I should be involving myself more in the running of the club but working full time for the Federal Government in addition to operating a beef cattle farm left precious little time for other activities.

Just a year ago I took early retirement and reorganized my life around the farm and a number of other interests. Not least amongst the latter is amateur radio and as a start to getting more involved I took over the DX column in TCA from Dough Griffiths, VE3KKB, and find I spend about two or three days a month producing the column and doing the necessary background research. I now feel I have enough spare time to do justice to one of the executive positions in the club and so I approached the nomination chairman and offered my services as club Vice President. Over a fairly long career in the Public Service I was involved in a great deal of committee work so I feel I can be a useful member of the executive team. I also have

quite a few contacts in the government which could be usefully tapped for speakers on technical subjects. Incidentally my basic qualification throughout my career was in electronic engineering and I still maintain my membership in the Professional Engineers of Ontario and the UK Institution of Electrical Engineering. At the very beginning I served in Royal Signals as a Radio Mechanic working at an HF monitoring station in Cyprus. Out of this experience has come membership in the Royal Signals Amateur Radio Association whose members can usually be found on 14.065 MHz calling "CQ RSARS".

As far as the hobby is concerned my main interest remains HF DXing, mostly on CW but with occasional shifts to phone to see how the other half lives! The shack is equipped with a TS 830S running barefoot and feeding a TH6 at 42 feet. The big project at the moment, when I can tear myself away from hay-making and plumbing my son's new house, is refurbishing and erecting the ex-VE3QA tower which will get that TH6 up to 70 feet plus. This project has proved quite time consuming but great fun and I hope to give the club a short slide show on the highlights some time this winter.

In closing let me say that I shall be very pleased to serve on the executive this coming season but should another candidate want the job(!) I'll be more than ready to stand down and run another year.

Paul D. Cooper,
VE3JLP, P.Eng. MIEE

Mark Farey, VE3OWL

TREASURER

Mark has been a member of the OARC for just two years. He got his licence shortly after joining the club in October 1984, and progressed to the Advanced licence twelve months later. He was the winner of the first Joe Norton Trust Award for Amateur Radio, which was awarded in 1985.

George Caskey, VE3NJJ

DIRECTORS

David Anderson - VE3JTZ

During the last club year he was a member of the club executive. He was responsible for compiling and producing the 1986 Directory, which is an invaluable aid to all area hams and which made a significant contribution to club revenues for the year. He helped with communications during the 1986 Ski Marathon. Most recently, he was one of the organisers for our very successful Field Day, as well as a display station which was set up by the club on Canada Day.

David has been a member of the OARC for four years. He received his amateur ticket in late 1977, and then his Advanced ticket in early 1979. David was licenced in Hamilton, Ont. and then moved to Ottawa to work for Mitel in 1981 after graduating from the Electronics program at Mohawk College.

His objectives for the club for next year are to place a continuing strong emphasis on recruitment and rejuvenating the membership. He would like to see a regular format for our monthly meetings to cover the complete spectrum of technical and social interests. His continuing presence on the new executive will help provide continuity with last year's executive.

During the past year, David has been the 'Technical Co-ordinator' for the club and was the instructor for the OARC's 'Advanced Amateur Radio Course' (which he will be repeating again in the fall). David has also assisted with many of the club activities such as Ski Marathon, DDDF club project and recently was our Field Day chairman, as well as being one of the organizers of the Canada Day activity at Major's Hill Park.

Back home in Kanata, he continues to be active on HF and enjoys working CW DX. He is married, with three teenage daughters, a cat and a dog who also enjoys being in the shack, but as yet is unlicensed.

David would like to see new blood injected into our membership as well as increasing the membership's interest on the many activities planned for the coming year.

Gord Dey, VE3PPE

Giddyay. My name is Gord Dey, VE3PPE, and I'm letting my name stand for a director position. Let me tell you a little bit about myself, my interests, and what I'd like to do.

I'm a valley boy -- born at the Civic. At age 2, I learned about electricity, first hand, with a fork. Undaunted, I came to graduate from U. of Waterloo, 1984, BaSC, Electrical Eng.

After graduation, I moved to Kanata, joined Bell-Northern Research, got a pilot's license and amateur ticket. Now my hobbies include airplanes, radios and 'The House'.

I've been an OARC member for only a year, but admit enthusiasm. Of the number of things I'd like to do, club projects are a high priority. I also like meeting people.

So, next fall, if you see me or hear me, don't be afraid to say 'Giddyay' to me too.

Chris Rochefort, VE3PAE

Since I have decided to run for Director of the Ottawa Amateur Radio Club, I was promptly requested to submit my profile for the Groundwave.

I wanted to put a picture of myself, profile, complete with serial number, but I found out that this is not what is required. Therefore, here is my "attempted" profile.

I was first introduced, so to speak, to ham radio, in 1973. I was a college student, and was working for the summer with the RCMP, N Div., Rockcliffe. My job was to demonstrate the new, at the time, CPIC computer to the public at their Centennial Exhibition Dome. Beside my post was VE3RCMP, directed by Ron Belleville, VE3AUM. It was quite interesting to say the least. Nothing at all was done after the summer was over as far as ham radio is concerned. Getting a diploma in Fire Protection was more important.

I came back to Ottawa after eight years of absence, one of which was spent in Toronto and the rest in Montreal. In the fall of 1984, I saw an Amateur Radio course being offered at Algonquin. I registered, struggled with morse code and got my ticket in April of '85.

Although I own an HF rig, my interest has been with VHF, even more so as I recently participated in my first VHF contest under the guidance of Keith, VE3IMT. I then bought a 2m multimode rig with a ten watt linear amp.

I am actively involved with the Packet Radio Group. At the time of writing, I am converting some old crystal-controlled transceiver from 150 MHz to 220 MHz with Jim, VE3JPC. These will be used for high-speed linking between digipeaters.

Other involvements include teaching Amateur Radio to Junior High School Students at Ecole Intermediaire Leo D. Cote, in Orleans. I also do a bit of photography and this may

be put to good use for the Club. Not being much of a sport enthusiast, I do like to snorkle - skin diving - (not skinny dipping!) and cross-country skiing, however.

I am interested in making the Club grow with new members. I would like to see the members more actively involved in VHF. I hope to be able to accomplish these and more as one of the Directors of the Club.

That is all I will put here. I could get a few more things in, however, the space is restricted. One last thing; the serial number below the profile, read here "picture", is: 45399BHN433.

73, Chris

Ralph Thomas, VE3GG

Ralph's introduction to radio was in the late 20's, with a crystal set followed by a peanut tube set. His first QSO was across town, keying the B+ on a home-brew regenerative receiver using a UX-199 tube. He got his amateur licence (VE3RT) in Toronto in 1932 at the age of 17. His first transmitter was a breadboard set with a 245 in a TNT circuit. At that time he was a member of the Wireless Association of Ontario and a founding member and Secretary-Treasurer of the North Toronto Amateur Radio Association.

After working for a production season at the Rogers-Majestic Radio Corporation, followed by

four years in a trust company, he got his Second Class Certificate of Proficiency; and joined Trans-Canada Air Lines in 1940. He served as radio operator at several locations before becoming a ground station technician based at Winnipeg and travelling throughout the system. He continued in a management capacity, moving to Montreal in 1949. He retired from Air Canada in 1976 and moved to Ottawa in 1977, where he was assigned the call VE3GG.

While in Montreal Ralph was a charter member of the West Island Amateur Radio Club. Since coming to Ottawa he has been a member of the Ottawa Amateur Radio Club; and was treasurer of the Ottawa Valley Mobile Radio Club for two terms. He holds memberships in CRRL, CARF, RSO and QCWA. Ralph prefers net operations to DX pile-ups, and enjoys keeping skeds with many of his old friends.

**NOTE: THERE IS NO
"BACK PAGE" TO THIS
ISSUE**

-mk VE3FFK