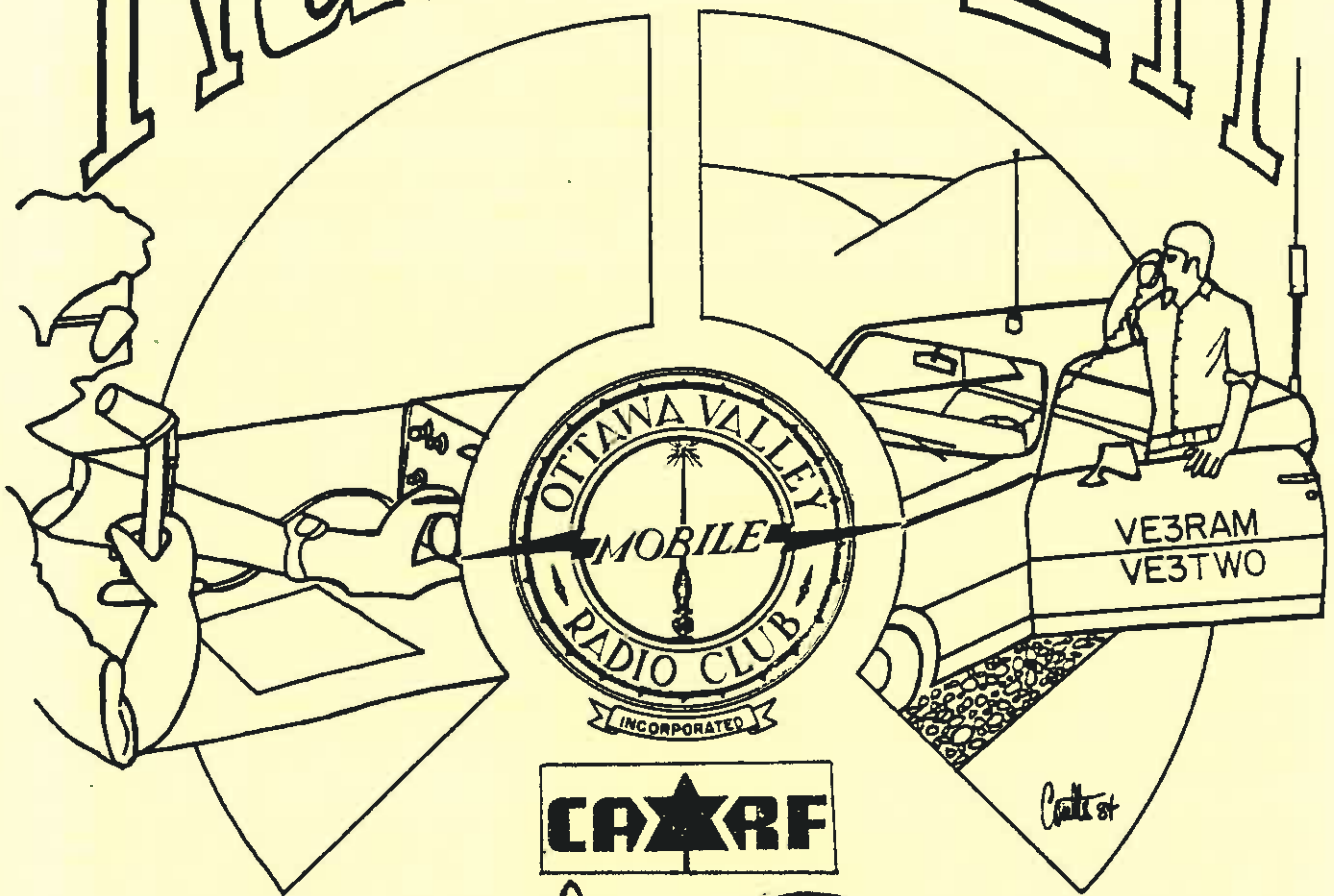
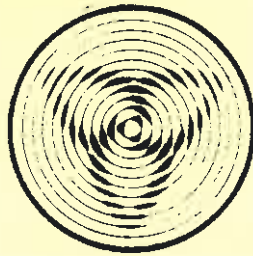


RAMBLER



CA★RF



NEXT MEETING:

FEB
FEV 20 1986

THE OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED

1985-1986 EXECUTIVE

PRESIDENT	Bob Campbell	VE3 KLK	729-7536
VICE PRESIDENT	Mike Hughson	VE3 DVH	835-3093
SECRETARY	Kathy Rodd	VE3 OWY	722-0255
TECHNICAL ADVISOR	Bob Ballargeon	VE3 MPG	235-0187
PUBLIC RELATIONS	George Dew	VE3 OWW	237-1290
PAST PRESIDENT	Pat Brewer	VE3 KJQ	820-9309
PAST VICE PRES	Vance Johnson	VE3 OAO	824-9555
EDITOR	Jerry Wells	VE3 CDS	225-7374

CLUB SPONSORED ACTIVITIES

POT HOLE NET - OVMRC Net - Every Sunday, 10:00 local time on 3.76 MHz SSB. All radio amateurs are welcome to participate.

THE WISE OWL NET - OVMRC Net - Ragchew net each Friday evening at 20:00 local time on the club repeater VE3 TWO - 147.30/147.90 MHz.

VE3 JW - Amateur radio station of the National Museum of Science and Technology. The OVMRC helps maintain the station and schedules operators for the station as part of an Amateur Radio public relations display. VE3 JW operates on all HF Bands, both CW and phone. Slow scan TV is also demonstrated.

LOCAL AMATEUR RADIO ACTIVITIES

POT LID NET - Sponsored by Ed, VE3 GX. An informal slow speed CW net meeting each Sunday (except July and August) at 11:00 Hrs on 3.62 MHz, to provide and stimulate interest and proficiency in CW procedures.

CAPITOL CITY FM NET - Sponsored by the Ottawa Amateur Radio Club Inc. every Monday night at 20:00 Hrs. Conducted on VE2 CRA repeater 146.94/146.34.

SWAP NET - Sponsored and conducted by Ed, VE3 GX each Sunday as a part of the Pot Hole Net and each Monday as a part of the Capitol City FM Net (except July and August). Ed may be reached at 733-1721 for listings and queries.

THE MILITARY NET - Sponsored and conducted by Frank, VE3 MSC, Tuesday at 20:00 hrs on VE3 TWO 147.30/147.90 MHz.

ALL CONTRIBUTIONS TO THIS BULLETIN GLADLY ACCEPTED

Membership in the OVMRC is open to all those interested in Amateur Radio. Regular meetings are held on the third Thursday of each month (except July and August) at 20:00 hrs unless otherwise posted. Meetings normally take place in the auditorium of the Museum of Science and Technology on St. Laurent Blvd. (south of the Queensway).

The OVMRC provides code practice 24 hours a day. Dial 825-0786

Discussion Paper
on a possible restructuring of the
amateur radio service

in Canada

INTRODUCTION

Over the years, amateur radio operation has benefitted from continuous developments in technology. By periodically amending regulations and updating the content of examinations for operators, the Department of Communications (DOC) has kept pace with these gradual changes. However, the rate of technological change has recently accelerated, and public interest in electronics, specifically high technology, has increased. This necessitated a review of the current structure of amateur certificates with respect to today's environment and the associated knowledge requirements.

Officials at DOC recently completed a review of the development of the amateur radio service in Canada, from its inception to the present, along with a review of structures in other countries. This paper provides a summary of their findings.

1. HISTORY AND DEVELOPMENT OF AMATEUR RADIO OPERATOR CERTIFICATION IN CANADA

In Canada, amateur radio was formally regulated for the first time in 1914. At that time, the examination of amateur radio operators consisted of a simple inspection of the station and a Morse code sending-and-receiving test at a speed of five words per minute. In the early 1920s, examination procedures were formalized with a written test covering regulations and simple theory and a practical test evaluating the candidate's ability to properly adjust and operate the apparatus. In the mid-1930s, the on-site practical examination was replaced by a written test to verify the candidate's ability to draw, from memory, schematic diagrams of the various components or stages used in the design of that apparatus; and an increase to 10 words per minute in the speed of the Morse code test. Upon successful completion of the examination, the operator was issued an Amateur Radio Operator's Certificate, which permitted Morse code privileges on all the amateur bands. After a period of operation and the passing of another series of tests (Morse code at 15 words per minute, plus more-detailed regulations and theory), the amateur operator could have the certificate endorsed for radiotelephone operation.

In 1955, the procedure of granting this endorsement for full radiotelephone privileges was replaced by the issuing of an Amateur Radio Operator's Advanced Certificate.

In 1978, DOC introduced the Amateur Digital Radio Operator's Certificate, an innovation to encourage the certification of individuals whose primary interest was in computer-oriented communications. This was a departure from the traditional procedure where the only entrance examination available for a potential amateur was through acquiring the Amateur Radio Operator's Certificate. Potential amateurs, following the computer hobbyist route (obtaining this Digital Certificate), are now not required to take a Morse code examination because they conduct their experiments in the radio spectrum above 30 MHz. This is in accordance with International Telecommunication Union (ITU) Radio Regulation No. 2735.

During the consultation process leading to the Amateur Digital Radio Operator's Certificate, the possibility of introducing a Novice-type certificate (with requirements similar to those in other countries that have this certificate) was also discussed; however, in the absence of a favourable consensus, the matter was not pursued.

Since 1979, the department has been offering three certificates for amateur operation: (a) the Amateur Radio Operator's Certificate, (b) the Amateur Radio Operator's Advanced Certificate, and (c) the Amateur Digital Radio Operator's Certificate.

The examination for an Amateur Radio Operator's Certificate consists of:

- 1) a written multiple-choice test on radio regulations;
- 2) an essay-type examination on electronic theory; and
- 3) a sending-and-receiving Morse code test at 10 words per minute.

Holders of this certificate are permitted to use all types of emissions (radiotelephone, telegraphy, teleprinter, etc.) above 30 MHz but are restricted to Morse code (radiotelegraphy) operation below 30 MHz. After six months' experience, the holder of this certificate is eligible for an optional endorsement that allows radiotelephone operation in the bands 1.8 to 2.0 MHz (160 meters) and 28 to 29.7 MHz (10 meters), and frequency-shift keying emissions (teleprinter) in most of the high-frequency bands allocated to the amateur service. After one year's experience, another optional endorsement is available for fast-scan television in the band 430 to 450 MHz.

After one year of experience, the amateur is eligible to write an examination for the Amateur Radio Operator's Advanced Certificate. Although the examination for this certificate covers the same topics as the Amateur Certificate (that is; regulations, theory and Morse code), the depth of knowledge for the theory portion is greater and the Morse code test is conducted at a speed of 15 words per minute. This certificate permits the use of a full complement of emissions in the amateur bands below 30 MHz.

Eligible applicants, whose primary interests are computer communications, may write an examination for the Amateur Digital Radio Operator's Certificate, which is a "no-code" certificate (not requiring a knowledge of the Morse code). This examination consists of three parts:

- 1) a multiple-choice test on the regulations (at the Advanced Amateur level);
- 2) an essay-type test on electronic theory (at the Advanced Amateur level); and
- 3) an essay-type test on digital communications theory.

Holders of this certificate are permitted to operate using a full complement of emissions in the amateur bands above 30 MHz and, after one year's experience, are eligible to take a Morse code test, at a speed of 15 words per minute, to qualify for an Amateur Radio Operator's Advanced Certificate.

2. THE REGULATION OF AMATEUR RADIO IN CANADA

The amateur service is governed by two sets of regulations pursuant to the Radio Act:

- 1) the General Radio Regulations, Part II, (GRR II); and
- 2) the Radio Operator Certificate Regulations (ROCR).

The GRR II defines the Amateur Service as:

"... a radiocommunication service for purposes of self-training, inter-communication or technical investigation carried out by persons who are interested in radio technique solely with a personal aim and without pecuniary interest."

- 1) the use of frequencies and emissions;
- 2) necessary qualifications of operators;
- 3) interference protection to other users of the radio frequency spectrum;
- 4) apparatus and technical characteristics of amateur stations; and
- 5) general provisions such as identification procedures.

The ROCR specifies the examination requirements for obtaining radio operator certificates. The subject matter contained in these regulations is expanded upon in a syllabus for amateur certification entitled "Information on Amateur Radio Operator Examination" (TRC-24). As indicated in the TRC (Telecommunication Regulation Circular), the examination is primarily technical in content. The emphasis on the technical aspects of the hobby is not due so much to the current nature of this service, but to its past history when amateurs built their own stations.

Canadian amateurs pursue their hobby in one of the most deregulated environments in the world. As Canadian amateur licensees demonstrate that they can handle this deregulated environment with minimum day-to-day intervention from DOC, the department periodically revises the regulations to extend further privileges or delete restrictive provisions. In fact, the more than 23,000 radio amateurs in Canada cause relatively few interference complaints and demonstrate noteworthy public relations and self-policing capabilities.

One of the major reasons for this is undoubtedly the existence of local, regional and national associations and clubs. These organizations provide excellent training courses for aspiring amateurs, guidance for new operators, and remedial assistance to those operators who overstep the bounds of the regulations or good operating practices. Examples of these practices are the local television interference (TVI) committees that eliminate technical problems before they become complaints, and the "gentlemen's agreements" in current amateur operating procedures. Through such agreements, Canadian amateurs have developed their own frequency-band plans without the need for government regulation.

3. AMATEUR CERTIFICATION STRUCTURES IN OTHER COUNTRIES

The Department of Communications has collected information on amateur certification from 16 foreign countries, and has observed that there is wide variation in the various structures; one nation offers two amateur certificates, another offers five and the remainder range between those two figures. No other country issues an Amateur Digital Radio Operator's Certificate or its equivalent.

Most administrations offer a "no-code" certificate and, with one exception, permit operation under such a certificate only on Very High Frequency (VHF) and higher amateur bands. In most instances, the written portion of the no-code certificate is the same as that of the "code" certificate and an amateur may upgrade from a no-code to a code certificate simply by taking a Morse code test (in most cases at 12 words per minute). On successful completion, the amateur is issued a certificate allowing full privileges.

Many administrations offer a "novice" certificate. In most instances, the examination consists of a Morse code test at a speed of five words per minute and a simple theory and regulations test. The greatest differences appear to be in the privileges accorded to the novices. For the most part, novice operation

is restricted to radiotelegraphy in small portions of the high-frequency amateur bands and some operators are further restricted to using only crystal-controlled transmitters. On the other hand, some administrations grant VHF and even high-frequency radiotelephone privileges.

In general, most administrations have three levels in their certificate structure: novice, general and VHF-only. Flexibility for the individual is enhanced by the practice of permitting a candidate to select and write any level of examination. In most countries, it is not necessary for an individual to obtain prior operating experience at an introductory level in order to be eligible to write the examination for a certificate according to greater privileges. Moreover, there is no evidence to indicate that other administrations follow an endorsement procedure similar to that contained in the Canadian regulations.

Finally, there does not appear to be consistency in the maximum power levels permitted for amateur operations; levels range from 100 watts to 1000 watts d.c. input power to the final stage, with most being about 500 watts, and the majority of administrations increase the maximum power commensurate with the grade of certificate issued. Canada, therefore, appears to be one of the few nations that permits a maximum power of 1000 watts d.c. input regardless of the certificate held by the amateur.

4. CURRENT ISSUES

The primary interests of amateurs in Canada include:

- 1) public service, which includes volunteering for Emergency Planning Canada, community events, disaster preparation and message handling;
- 2) recreation, which includes participating in amateur radio contests, communicating with friends and acquaintances; and
- 3) technical experiments, which include designing and constructing equipment from magazine articles or kits, propagation studies and antenna experimentation.

There are many others, and amateurs are not restricted to any one area. Amateur radio attracts enthusiasts from various backgrounds, with a wide range in level of interest or expertise in the technical aspects of amateur radio. Because of this diversity, DOC has received suggestions for changes in a number of areas from both aspiring and existing amateurs. Morse code and technical standards are frequently mentioned, with both support for and objections to current certificate requirements.

It is suggested, for example, that a Morse code test, especially for high-frequency operation (below 30 MHz), is irrelevant now that there are devices capable of transmitting and receiving Morse code automatically, and that the Morse code requirements be waived for candidates who will equip their stations with such devices. However, it should be noted that Morse code testing is required by Canada's International obligations as a member of the ITU. We must therefore adhere to ITU Radio Regulation No. 2735, which states:

"Any person seeking a licence to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz."

Because technology is advancing so rapidly, DOC must update the examination content more frequently and, thus, require a broader knowledge by candidates. In this respect, it has been pointed out that some aspiring amateurs, particularly senior citizens, have not had any recent formal education and are at a disadvantage in attempting to absorb the amount of material necessary to pass the technical examination. Comments received state that the technical content of the examination is inappropriate for those whose primary aim is to communicate, and that the traditional role of the amateur as a designer and builder of stations is no longer the primary activity. At present, amateurs seem to be increasingly engaged in public service and recreational communication activities using commercially manufactured and serviced equipment.

The incorporation of computer technology into amateur activities has hastened this change in role. As a result, today's amateurs have the opportunity to operate stations that are smaller, more stable, reliable and versatile than those of 10 years ago. In addition, there is heightened interest in radioceleprinters, AMTOR (Amateur Teletype Over Radio), machine-generated Morse code and packet radio communications. The increasing use of digital technology by Canadian amateurs is attributed less to the availability of the Digital Certificate than to affordable personal computers. In fact, there is a similar increase in the use of computers in amateur radio in countries where there is no equivalent to Canada's Digital Certificate. To date, only 50 individuals have entered amateur radio via the computer hobbyist route; that is, they took the examination and obtained the Amateur Digital Certificate. DOC statistics show that approximately 75 per cent of the 198 Digital Certificates issued since 1978 were to individuals who already held another amateur certificate.

Amateurs and their associations have stated that newly certified amateur operators do not have sufficient knowledge of correct operating procedures and practices, and that the examination pass-rate is too low. This low pass-rate may be attributed partly to the practice of granting candidates one year's credit for any successfully completed portion of the Amateur examination (Advanced Amateur examination credits are valid for life). Although this practice may have some merit, it tends to encourage individuals who are not sufficiently prepared to repeatedly try the examination. Nevertheless, this does indicate that too much emphasis may have been placed on the technical aspects and not enough on the operating portion of the examination.

5. PROPOSALS FOR RESTRUCTURING THE AMATEUR SERVICE

Based on the foregoing, DOC wishes to respond to the comments of both existing and potential amateurs. In so doing, any proposal that the department might implement must:

- 1) conform with the provisions of the regulations made under the International Telecommunication Convention;
- 2) not increase demands on departmental resources and, if possible, reduce these from the present level;
- 3) provide maximum benefit to an optimum number of qualified applicants, thereby encouraging radiocommunication skills; and
- 4) wherever possible, institute a general policy of deregulation that retains or enhances the role of amateur organizations.

With a view to meeting present and future requirements and in light of the foregoing, the department offers for comment a proposal to restructure its examination requirements by eliminating endorsements and the current certificates. In lieu thereof, a structure consisting of three certificates is proposed:

- 1) Certificate "A" - certifying an individual to operate a basic, commercially built, modern amateur station designed to operate on the amateur radio frequencies (privileges accorded above 30 MHz only);
- 2) Certificate "B" - certifying an individual (who also holds Certificate(s) "A," or "A" and "C") to operate below 30 MHz (Morse code test);
- 3) Certificate "C" - certifying an individual (who also holds Certificate(s) "A," or "A" and "B") to construct and operate any station or to be the licensee of a repeater or other non-standard station.

Detailed proposals

The examination to certify a candidate for the operation of a basic, commercially built, modern amateur station (Certificate "A") would consist of:

- 1) Installation and operation of modern amateur stations, including proper interpretation of meter readings such as Automatic Limiter Circuit (ALC) and Standing Wave Ratio (SWR) and the adjustments necessary to prevent interference; proper grounding techniques; and correct installation practices from transceiver to antenna, including auxiliary devices such as low-pass filters and antenna tuners.
- 2) Basic electronic theory; safety practices when working with simple circuits; tracing and correcting interference problems such as audio rectification and receiver front-end and overload.
- 3) Antenna and propagation theory, including types of antennas, feedlines and characteristics of propagation phenomena.
- 4) International and domestic regulations applicable to the amateur service.

It is estimated that approximately 40 hours of instruction would be required to obtain the basic knowledge necessary to pass this examination. Successful candidates would be issued Amateur Certificate "A" and would have the following privileges and restrictions:

- 1) The transmitter portion of the station, from the microphone or keying input of the transmitter to the final output, would have to be commercially built and marketed specifically for use on the amateur frequencies. All other components of the station, such as the receiver, filters, antennas, computer interfaces, etc., could be home-built.
- 2) No emissions would be permitted below 30 MHz, but all would be permitted above 30 MHz.

3) Stations would be limited to a maximum power input of 250 watts d.c.

4) licensees would be limited to operating stations under their physical control, but not repeaters or remote base stations.

The examination to certify a candidate for operation in the spectrum below 30 MHz (Certificate "B") would consist of a Morse code examination at a speed of 12 words per minute.

Successful candidates would receive Amateur Certificate "B" and, providing they held Certificate "A," would operate under the same conditions as those granted by that certificate, except that they would be allowed all types of emission on any amateur band.

The examination to certify a candidate to construct and operate any station or to be the licensee of a repeater or other non-standard station (Certificate "C") would consist of:

- 1) advanced electronic theory, to suggest that required for Amateur Certificate "A," with a degree of difficulty somewhere between the present Amateur and Advanced Amateur Certificates.

This would accommodate the many amateurs who are more technically oriented and wish to construct their own stations. Successful candidates would be given Amateur Certificate "C" and, provided they held Certificate(s) "A," or "A" and "B," would be permitted to:

- 1) construct their entire stations;
- 2) sponsor and operate repeaters and remote base stations; and
- 3) operate their stations with a maximum of 1000 watts d.c. input.

Implementation

Candidates writing examinations under the above-proposed structure would be allowed to write any or all of them at one sitting. However, the minimum qualification for a station license would be Amateur Certificate "A."

Entering amateurs holding either an Amateur Radio Operator's Certificate or Amateur Radio Operator's Advanced Certificate would be deemed by regulation to have all the privileges of the three proposed certificates, and those holding the Amateur Digital Radio Operator's Certificate would be deemed to have all the privileges for Amateur Certificates "A" and "C."

5. PUBLIC COMMENTS

Given the nature of these proposed changes, DOC wishes to obtain input from all interested parties. In framing comments on this discussion paper, the following list of questions may be helpful. However, comments need not be restricted to these points.

- 1) Are there other significant factors that may affect this proposed structure? If so,
 - (a) how could the proposed structure be improved? or
 - (b) what are your suggestions for a new structure? Please give a detailed description.
- 2) If you are an aspiring amateur, would this new structure encourage you to become an amateur? Why or why not?
- 3) If you are currently an amateur radio operator, would the proposed structure better reflect your normal operations and the equipment used in your station?
- 4) What would be the effects upon amateur radio in the future if this structure were implemented?
- 5) Would this proposed structure accommodate special-interest groups or should the department consider the retention and extension of certificates like the Amateur Digital Radio Operator's Certificate?
- 6) Would amateur radio in Canada benefit from the introduction of a novice certificate?
- 7) If you feel positive about question 6, how could a novice certificate be accommodated within the proposed structure?

The department invites comments from all those interested in amateur radio. Persons wishing to comment may do so in writing before May 16, 1986, to:

The Director General
Radio Regulatory Branch
Department of Communications
300 Slater Street
Ottawa, Ontario
K1A 0C8

Attention: DOS-PR

RUMBLES FROM OLYMPUS

Of necessity, we are trying to control the size of this issue of the RAMBLER, in order to accommodate the DOC proposal for the Restructuring of the Amateur Service. This will ensure that those members who have not obtained a copy of the DOC paper from the district office will have had an opportunity to read it before the February meeting to which we have invited members of the Rideau, West Carleton, Pioneer, R.C.M.P., and Manotick Clubs to join us for a general discussion of the paper, from which we can make a response to the Department.

You will also note that, in RAMBLER, there is a draft Resolution on the subject of Susceptibility of Consumer Electronic Equipment to Radio Frequency influences. Anyone with specific additional thoughts on this paper may wish to contact, either, myself or, VE3NR Bill Wilson. Following consideration of this document, and any comments received, the paper will be forwarded to the Minister of Communications, appropriate Members of Parliament, the two national Amateur organizations and to the Consumer's Association of Canada.

The Annual Club Dinner was held Saturday, January 25th at the Peppermill on the Merivale Road. The eighteen attendees enjoyed a very pleasant evening and the winners of the door prizes were Joyce Wells and George Caskey, VE3NJJN.

A letter has been received from "Horse People Inc." concerning the horse trials to be held June 14 and 15. Embodied in the letter is an invitation for any of the radio operators that wish, to bring their families and camp over night and join in the Saturday evening Bar-B-Que.

Finally, it is with sincere regret that I have to report that one of our club members, VE3OAW, Ed Wiggs, has become a Silent Key. The Club has sent a letter of condolence to the family.

Bob VE3KLLK
President

HISTORIC NOTE

The Ottawa Valley Mobile Club was first formed in 1956 by five or six local amateurs at a local shopping center. Details are sketchy but the founding members appear to have been, VE3VVY (Jerry ?), a chap called Larsen, VE3GK Gerry King, and a man named Frank Leigh (?). Since the club now appears to be 30 years old, it would be interesting if people having further and mor specific information and details of the founding group and the early days, would come forward with whatever information they can provide.

VE3KLLK Bob

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PUBLISHED AND DISTRIBUTED BY
THE OTTAWA VALLEY MOBILE RADIO CLUB INC.
P.O. BOX 5530 STN F
OTTAWA, ONTARIO
K2C 3M1

MINUTES OVMRC MEETING 16 JAN. 1986

The president opened the meeting at 2005 and introduced two guests who had signed the guest book - VE3PAP, Chuck, & VE3PDS, Joe.

The minutes of the December meeting were approved as presented in RAMBLER on a motion by VE3NVL, Leo, seconded by VE3OSN Bob.

Business arising from past meetings:

- Banquet: January 25/86 at the Peppermill - with 24 club members participating.

- Financial Statement - No comments received.

- Repeater council is looking into the repeater problem between VE2CSO & VE3TWO.

- Bar-b-Que: It seems as though we will need to find a new site for this event. Any member who has ideas on this matter should present them to a member of the executive.

New Business:

The club has written to the Horse People at Wendover and accepted their invitation to provide operators for the cross-country event, to be held June 14 & 15. At the moment we have 9 operators but would welcome a few more.

- A draft resolution on "Susceptibility of Consumer Electronic Equipment" was tabled for comment. It will be printed in the February Rambler and comments from the club membership will be welcomed.

- The February meeting will be devoted to the DOC proposal to restructure the Amateur Service. The club will be inviting guests from the Rideau ARC (Kemptonville), The Manotick Club, The West Carleton ARC, The Canadian Police College ARC.

-Members wishing to have an original copy of the DOC proposal should telephone the DOC District Office. A copy will be mailed to them on request.

-VE3JPC, Jim, as Field Day Coordinator asked that members start now to think about this activity. Specifically work is needed on the computer logging programs and on the generators. This year Jim will need an assistant coordinator.

-Vice President: VE3DVH, Mike reported the club membership is now at an all-time high of 147.

-Tech Advisor: VE3MPG, Bob reported on some plans for club projects. He also displayed a sample of new coaxial cable that the executive will review and make a proposal as to purchase as replacement for some of the old cable that has now deteriorated.

-VE3FN, Ray, reported on the Jack Ravenscroft court trial that ended Jan. 16. The Legal council for both sides are now preparing written summaries of evidence for the judge. It is unlikely that a decision will be handed down before mid-February. Ray made specific reference to the efforts of Ralph Cameron, VE3BBM, two officers of the DOC, and other witnesses who testified on behalf of the defendant.

-VE3JPC, Jim, suggested that a computer table be set up at the next flea market at which interested people could purchase for a small fee, radio related programs. For the moment programs for the C-64 and perhaps the Apple would be made available.

-VE3CV, Merv spoke about the "Pothole Net" which has been on the air for 26 years. This net provides a service each Sunday morning at ten AM on 3.76 Mhz throughout eastern Ontario. A feature of the net each Sunday is the Swap Net which is presented by VE3GX, Ed. Merv is looking for controllers to help keep the net on the air.

-Merv also informed the membership about a Commodore 64 computer net on 2 meter repeater VE3STP each Thursday at 8 PM.

The meeting then was closed on a motion by VE3ATJ seconded by VE3NR.

The President then introduced the guest speaker Mr. Art Cauty, Acting Chief of Transport Canada's Audio Services. Mr. Cauty gave an extremely interesting talk on Canada's "Air Traffic Services" despite difficulties imposed by the museum's failure to provide video facilities.

Acting Secretary VE3???

RESOLUTION

RELATING TO INTERFERENCE WITH THE USE OF RADIO ARISING FROM THE SUSCEPTIBILITY OF CONSUMER ELECTRONIC EQUIPMENT

The Ottawa Valley Mobile Radio Club

mindful of,

- 1) the continually increasing number of problems of interference arising from the susceptibility of consumer electronic equipment to licensed radio transmissions.
- 2) the increasing number of licensed radio stations and the rapidly increasing amount of consumer electronic equipment being used in Canada.
- 3) the fact that most retailers and practically all users are, as yet, unaware of the fact that much of the consumer electronic equipment that they purchase may experience interference at some time and are unaware of how to deal with it,

recalling that,

- 4) in 1977 the Department of Communications told manufacturers by means of Electromagnetic Compatibility Advisory Bulletin No. 1 (which was very widely circulated throughout industry) about radio field strengths in which consumer electronic equipment could be expected to operate,
- 5) engineering committees of the Radio Advisory Board of Canada and the Canadian Standards Association have been studying this matter for at least seven years now,
- 6) the means for reducing the susceptibility of consumer electronics equipment to radio fields have been well known since the early days of radio and that these means are not expensive when taken at the time of manufacture,

recognizing that,

- 7) Canadians have an absolute right to benefit from the responsible use of radio and, having complied with the requirements of the Radio Act and Regulations and having received a license, should not be held hostage by the manufacturers and users of consumer electronic equipment that reacts improperly and undesirably to licensed radio transmissions.

is gravely concerned because,

- 8) a court in Ontario has already ordered that a licensed amateur radio station may now not be operated because some consumer's electronic equipment malfunctioned,
- 9) failure to take positive action on the matter of consumer electronic equipment susceptibility will now result in a widely used precedent being set and in further court decisions similar to this one which will prevent the use of all kinds of radio in Canada and thus limit the benefits of radio to Canadians in general,

therefore unanimously resolves,

- 10) that the Minister of Communications be asked to take steps immediately in conjunction with the Minister for Consumer and Corporate affairs to have the law amended to place responsibility for resolving problems due to the susceptibility of consumer electronic equipment to licensed radio transmissions, squarely on the manufacturers and users of affected equipment,
- 11) to ask all amateurs, especially those who have suffered as a result of the susceptibility of consumer electronic equipment, amateur radio clubs, and the two national associations of radio amateurs to write their Members of Parliament, the Minister of Communications and the Minister of Consumer and Corporate Affairs, supporting this resolution and asking that steps be taken immediately to correct this problem of consumer electronic equipment susceptibility to authorized radio transmissions.

YYB REPORT

So anyway, I said to myself - Dave, it's time for another award winning article from the Foreign Correspondent. Let's face it, writing articles is certainly better than bursting into flames by spontaneous human combustion.

It's unfortunate that I will miss the talk by the individual from ATC as I have a lot of personal experience with these curious beings and I think that the portrayal of the controllers from the movie "Airplane" yields a fairly accurate picture in my mind. However, there are some very top-notch controllers who are actually cordial with those of us who maintain their equipment without which they would have to control aircraft by thought transfer. To look at them it seems that they are controlling aircraft by thought transfer but really they're just humoring us.

How 'bout that new D.O.C. proposal.....

I have finally achieved a milestone (kilometrestone? sounds like kidney stone) which was to endow my car with call letter licence plates! The blue bomb is now complete! Actually it almost became a contemporary sculpture for the DND Headquarters as it misbehaved itself on my journey from Ottawa to North Bay. It is most disconcerting to do without acceleration and be unable to maintain 70 km/hr with the pedal to the metal. You may have guessed it, carburetor icing! This, of course, isn't supposed to happen. It turns out that there was a faulty valve which would normally have prevented this. This is definitely award winning stuff!

My next launch window for Ottawa will be in March as I have a course to attend at TCTI which means I will be in YOW on weekends. I will be unable to attend the club meeting then but at least I kept my promise of attending a meeting before the end of the fiscal year.

How 'bout that new D.O.C. proposal.....

73, Dave, VE3KLX
Foreign Correspondent
North Bay Bureau

THE LEADING EDGE

Two scientists at Arizona State University claim to have fabricated the world's smallest transistor. The transistor has gates which are only 1 micron wide (less than 150 atoms).

Motorola has developed a new transistor, the MRF154 Mosfet. Using two of these devices, it is possible to build a 1 kilowatt HF amplifier.

Tube technology, as reported last month, is far from dead. A group at Varian have designed a gyrokystron amplifier that has a gain of 57 dB and an output of 400 kilowatts at 35 GHz. The tube is a small fellow, only 3 metres long.

From M/A COM PHI, comes word of a new FET for UHF. It will produce an output of 125 watts at 400 MHz.

The CRAY-2 computer is considered by most to be the most powerful in the world. It can do 64 floating point operations at a rate of more than 1 billion per second. It dissipates so much power as heat that it must be fluid cooled.

The superhet principle has finally come to the world of fibre optic communications. Up to now, systems simply detected the presence of light energy without regard for frequency or phase. This is much like detecting an RF signal with a power meter. Now with ultra-stable light sources, the optical energy can be heterodyned down to where it can be processed by standard receiver techniques.

During the last summer, a price war broke out in the memory chip area. Chips with 64k of memory were selling for as low as \$.25 and 256k chips for as little as \$4.00.

The MOS Memory division of Motorola has developed one of the smallest 1-Mbit memory chips and packed it into a package only 300 mils wide.

Russ
VE3FSN

AN EFFECTIVE GROUND SYSTEM (continued)

The importance of salt and soil moisture cannot be overemphasized. Chemical treatment of the soil around the ground rod will increase the effectiveness of the ground system. Rock salt, copper sulphate, magnesium sulphate (commonly known as Epsom Salts) will inject large quantities of ions into the soil, greatly improving the effectiveness, but they will wear away with time and need replacing every one to three years.

Copper pipe is the best ground rod but it is too soft and too expensive to be driven into the ground. The most commonly available is copper coated steel rods to increase or decrease resistance.

Remember the length is more important than the diameter. Doubling its length will reduce its resistance by 40%, while doubling its diameter will reduce it by 10%. Spaced rods provide large reduction in resistance of the earth ground systems. They should be spaced by a distance equal to their length. This reduction is not proportional to the number of rods in the system; three rods spaced at 15 to 25 feet apart will provide an optimum ground for an amateur station.

The proper construction of low resistance earth ground systems is a relatively simple task. It can eliminate the problem of R.F. in the shack as well as reduce your TVI potential and improve the performance of low band antennas. Indeed not a bad trade for several hours work.....(Article taken from "Long Skip".....from A24DM, Dennis Mosley and the Botswana Amateur Radio Society.

MEASURING THE IMPEDANCE OF COAX CABLE

So you have a piece of coax cable and you have forgotten its impedance. Its markings are so badly weathered that you can't read them. How do you determine its impedance?

It is not the easiest job. You can start and come reasonably close by getting a micrometer and measuring the size of the inner conductor, being sure the strands have not flared to give you a false reading. Then measure the outside diameter of the dielectric with some of the shield peeled back. This will give you, fairly closely, the inside diameter of the shield. Make several measurements of each and take the average.

If you know the kind of material in the dielectric you can consult a handbook and get its dielectric constant. You can then crank your measurements and the constant into the formula for the impedance which is equal to 138 divided by the square root of the dielectric constant and multiplied by the log (base 10) of the ratio of the inside diameter of the shield divided by the outside diameter of the inner conductor.

Here is an alternative method you can use. Make the same measurements on a bit of coax of known impedance which has the same type of dielectric, solid or foamed as the case may be. Don't worry about the chemical composition of the dielectric as the dielectric constants of the two most popular materials, teflon (2.1) and polyethylene (2.26), are not too far apart for amateur purposes. Now compare the ratios of the shield inside diameter to the outside diameter of the center conductor. If they are about the same then you can assume that the unknown has the same impedance. If the ratios are widely different, take the logs of the two ratios and compare them. Characteristic impedance varies directly as the logs of the ratios, given that the dielectrics are approximately the same.

You cannot use this comparison method if one cable has a solid dielectric and the other has an air-space dielectric.

If you want to take it further in the interests of precision here is a method you can use. Terminate your cable with a variable non-inductive resistance and connect the other end to a good R.F. Bridge. It has been my experience that a noise bridge is not really good enough for this job. Measure the coax input impedance on at least four frequencies spread over a 3 to 1 frequency range avoiding the frequency for which the test cable is 1/2 wavelength long

or multiple thereof. (To find the fundamental of the frequency to be avoided divide 492 by the length of the cable in feet and multiply the result by 0.66). Adjust the terminating resistor until the impedance measured at the bridge is the same as that of the terminating resistor on all frequencies. Then the characteristic impedance of the cable is equal to the value of the terminating resistor.

A much faster and equally accurate way, especially for longer pieces of coax, is to use a Time Domain Reflectometer. This test equipment is like a radar, transmitting pulses down the cable and measuring the time taken for a pulse reflected by any discontinuity in the cable to return to the test instrument. It is used primarily by cable TV companies to locate faults on their coax cable distribution systems. For coax impedance measuring work you would adjust a non-inductive variable terminating resistor until there were no reflected pulses. At that time the value of the terminating resistance will equal the impedance of the coax cable. You might also find that your cable was not as "flat" or free from discontinuities as you thought and that the splice you made some years ago was not that good!

It would have been a heck of a lot easier to scratch the impedance on a little piece of aluminum and bolt it to your cable. Or you could have punched some dots to represent the impedance on a thin piece of aluminum and wrapped it around your coax.

Bill Wilson
VE3NR

"HF BEACONS"/1

Happy February to those who survived January 1986. I'm attempting to get in shape for the National Capital Marathon. Two years ago I did 18kms. on skis and hopefully I'll be in good enough physical condition to attempt that again this year!

To those stuck indoors whether voluntarily or otherwise, it is a good time of the year to do some DX'ing on the higher bands regardless of what the sunspots say at this time of low solar activity. Ten meters still opens up to some parts of the world at some time during the day. I have included a list of current beacons that may be heard on the 10 meter band when it opens to that particular area. From 10am to 3 or 4pm is a good listening time during the months of late October to late May on ten meters, during this sluggish solar cycle. Also be aware of auroral flutter; this indicates short openings on the band.

28.175	VE3TEN	OTTAWA, CANADA
28.202	ZS5VHF	DURBAN, RSA
28.205	DLQIGI	SALZBURG, W. GERMANY
28.207	W4ESY	FLORIDA
28.210	3B8MS	MAURITIUS
28.212	ZD9GI	GOUGH ISLAND
28.215	GB3SX	CROWBOROUGH, U.K.
28.217	VE3TEN	CHICOUTIMI, QUEBEC
28.220	5B4CY	CYPRUS
28.222	HG2BHA	TAPOLCA, HUNGARY
28.225	VE8AA	CANADA
28.228	EA6AU	SPAIN
28.230	ZL2MHF	WELLINGTON, N. ZEALAND
28.235	VP9BA	BERMUDA

28.237	LA5TEN	OSLO, NORWAY
28.237	ZS3HL	TSUMEB, S.W. AFRICA
28.240	OA4CK	LIMA, PERU
28.242	ZS1CTB	CAPE TOWN, RSA
28.245	A92C	BAHRAIN
28.250	Z21ANB	BULAWAYO
28.252	VE7TEN	VANCOUVER, BRITISH COLUMBIA
28.255	LUIUG	ARGENTINA
28.257	DK0TE	KONSTANZ, W. GERMANY
28.260	VK5WI	ADELAIDE, AUSTRALIA
28.262	VK2RSY	DURAL, AUSTRALIA
28.264	VK6RWA	PERTH, AUSTRALIA
28.266	VK6RTW	WESTERN AUSTRALIA
28.270	ZS6PW	R.S. AFRICA
28.272	9L1FTN	FREETOWN, SIERRA LEONE
28.277	DFOAAB	KIEL, W. GERMANY
28.280	YV5AYV	CARACAS, VENEZUELA
28.284	KALYE/B	HENRIETTA, NEW YORK
28.285	VP8ADE	ADELAIDE ISLANDS
28.287	H44SI	SOLOMON ISLANDS
28.287	W80MV	TUCKASEGEE, N. CAROLINA
28.290	VS6TEN	MOUNT MATILDA
28.295	VU2BCN	NEW DELHI, INDIA
28.296	W3VD	LAUREL, MARYLAND
28.300	PY2AMI	SAO PAULO, BRAZIL
28.302	ZS1STB	STILL BAY, RSA
28.312	ZS6DN	R.S. AFRICA
28.888	W6IRT	HOLLYWOOD, USA
28.894	WD9GOE	USA
28.992	DLONF	NUREMBURG, W. GERMANY

Keep this list near your receiver. It is most helpful in indicating openings to different parts of the world. Those of you having 30 meter capabilities should monitor 10.144MHz for those openings to Europe. This beacon is located in West Germany.

In the coming months I'll be listing beacons on 20 meters and 2 meters. Good listening and 73!

Bob VE3MPG

NOTICE OF MEETING

The next regular meeting of the Ottawa Valley Mobile Radio Club will be held on Feb.20 at the museum of Science and Technology at 8 pm. The topic for the meeting will be the proposed restructuring of the Canadian Amateur service....be there.

STRAYS

Congrats to the first graduate of the OVMRC radio course. Robert Papillon is now VE2PAP... Good Show... Received a short note from the editor of TCA Quote"Bob VE3KIK wrote an excellent article on susceptibility in your latest edition. One minor point-DOC does put out an excellent brochure on TVI, Their catalogue number Co 22-18/1978; (specify English or French) I always enjoy reading the Rambler - keep em coming 73 Frank....

Don't forget the 19th April. Our annual spring flea market at Canterbury High School. The week before the Dayton Hamvention...

FROM CRRL NEWS

DOC HAS INFORMED CRRL THAT EFFECTIVE WITH THE February 22 examinations, there will no longer be a regulations test for the Advanced Amateur certificate. CRRL is checking how this will affect those planning to write tests for the Digital Amateur certificate.

The trial of Jack Ravenscroft, VE3SR, is over. Testimony was presented on January 14, 15 and 16. Observers felt the trial went well. Jack is the Ottawa-area amateur who was sued for \$35,000 for allegedly interfering with a neighbour's microwave oven, furnace control and home entertainment equipment. At the trial, CRRL Director Ray Perrin, VE3FN, testified that Jack could not be held responsible for the interference. He compared the problem to rain entering a hole in the roof. There will always be rain. You have to fix the roof. The analogy was appropriate. DOC personnel, who indicated that Jack's station was essentially clean and that Jack had been operating within the law, testified that even their own handheld transceivers created problems for the plaintiffs' equipment. Then the plaintiffs produced a tape recording of a CW transmission copied on their home entertainment equipment. To their embarrassment, it was not a transmission by Jack Ravenscroft, but a transmission by another amateur operating a block and one-half away! At press time, the case had moved into written argument. Given what appeared to be a successful trial, Jack should be cleared. However, there could be angles that neither Jack nor any of us have considered -- and there could be a surprise decision. We'll all know the outcome of this precedent-setting case by the end of February, when the decision will be handed down.

CRRL has received many letters from individuals and clubs, commenting on DOC's proposed Restructuring of the Amateur Service. All such letters are welcomed. Please send them to CRRL, Box 7009, Station E, London, Ontario N5Y 4J9.

Happy 50th Anniversaries: 1986 will mark 50 years of 1) the provincial society, RAQI, Radio Amateur du Quebec, 2) the CQ Worked All Zones Award, and 3) the 6L6 beam-power vacuum tube. To mark the last event, Dean Manly, KH6B, is suggesting that this year, amateurs build simple one-and two-tube 6L6 rigs and put them on the air. What say? How long has it been since you've built a real piece of amateur gear? If there's an interest out there, CRRL will be pleased to assemble a package of plans of 6L6 rigs, taken from the pages of early QST. - Just send a note to CRRL, Box 7009, Station E London, Ontario N5Y 4J9.

There have been several interesting developments south of the border. ARRL has said "no" to an FCC proposal that would turn the 52-54 MHz portion of the 6-metre band over to non-amateur computer enthusiasts who would use it for data exchange. Bills before the U.S. Congress, designed to ensure the privacy of conversations over land-mobile radio, are threatening to create difficulties for radio amateurs. Finally, a U.S. Court of Appeals has ruled that a lower court must reconsider a case between the City of Lakeside and an amateur who wanted to erect a 70-foot tower. Reason? FCC's newly-stated limited pre-emption policy, while allowing municipalities to make regulations about the height and placement of antenna structures, is emphatic that all such regulations must reasonably accommodate Amateur Radio.

EDITORIAL COMMENT

From what I hear there will be members from two or three other clubs at our February meeting to discuss the proposed restructuring of the Amateur Service. I hope that no one comes forth with the often heard comment that if there is no code test, we as amateurs are not much better than CBers. Give it some real thought - look to the present and the future. Where do you see amateur radio in 10 or 20 years? Do we really care about the future of amateur radio or are we only concerned about the hordes of non code reading CB amateurs just waiting to turn the 2 metre band into "Got your ears on Buddy" type of operation.

Surily we can be more constructive than that. How do we get the bright young people involved? Maybe we should talk to them.....

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