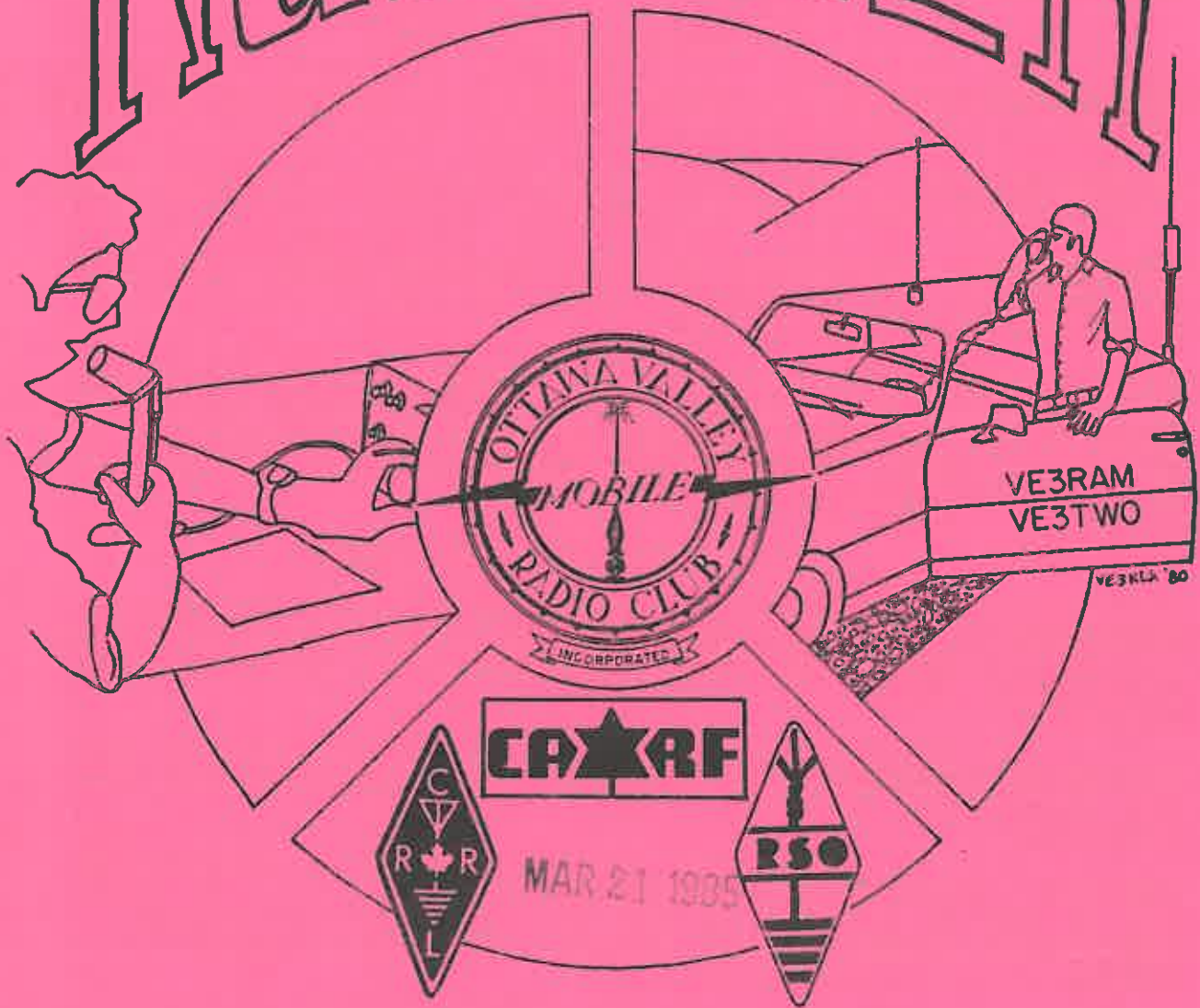


# RÄMBLÄR





THE OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED

1984-1985 EXECUTIVE

PRESIDENT	Fat Brewer	VE3KJQ	820-9309
VICE PRESIDENT	Vance Johnson	VE3OAO	824-9555
SECRETARY	Bob Campbell	VE3KLK	729-7536
TREASURER	Fred Haire	VE3NJP	737-4638
TECHNICAL ADVISOR	Mike Shacklock	VE3LAR	523-1571
PUBLIC RELATIONS	Alan Boyce	VE3LNH	737-4937
EDITOR	Jerry Wells	VE3CDS	225-7374
PAST PRESIDENT	Dave Goutts	VE3KLX	829-2537

CLUB SPONSORED ACTIVITIES

POT HOLE NET - OVMRC Net - Every Saturday and 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 VE3TWO - 147.30/147.90 MHz.

CODE PRACTICE - Transmitted on VE3TWO by Dave, VE3KLX Wed. at 1900 local, 18, 15, 13, 10 and 7 wpm. Friday at 1900 local 40, 30, 25, 20, 18, 15 and 13 wpm.

VE3JW - 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. VE3JW 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, VE3GX. 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.

CAPITAL CITY FM NET - Sponsored by the Ottawa Amateur Radio Club Inc. every Monday night at 20:00 Hrs. Conducted on VE2CRA repeater 146.94/146.34.

SWAP NET - Sponsored and conducted by Ed, VE3GX, each Sunday as a part of the Pot Hole Net and each Monday as a part of the Capital City FM Net (except July and August). Ed may be reached at 733-1721 for listings and queries.

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 VIEWS FROM THE TOP

As you will remember from last month, I was begging someone to help out by taking on the Rambler publisher job. Believe it or not I have two people interested. As of this writing it has not been settled as to which one will be publisher. Hopefully they will both become involved.

Problem number two is still a problem. That was a call for people interested in helping out with Operation Horsepeople in June. So far I have two volunteers. I hope to have more information re dates at the next club meeting. The event takes place in Wendover, Ontario and usually lasts for a whole weekend. It is a series of cross country horse races.

Problem number three has also been solved. The Flea Market will be held on April 20th at Canterbury High. There is now a core group of "volunteers" to coordinate the thing.

The students from the amateur radio course have all written the exam and have received their results. The SEVEN new amateurs are listed elsewhere in the Rambler. Of the four others, three passed at least some of the exam and one of those may well have his licence by the next club meeting. To all our students, congratulations. There is nothing warms the hearts of the "Gang of Four" more than seeing you get your ticket. It makes all the work worthwhile. I hope that you feel the same.

See you at the March 21st meeting where Gerry VE3GK will be the speaker.

Pat  
VE3KJQ

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NOTICE OF MEETING

The next regular meeting of the Ottawa Valley Mobile Radio Club will be held on Mar 21 at the usual time - 8:00 pm and the usual place - The Museum of Science and Technology on St. Laurent Blvd.

Our speaker for the evening will be a well known local amateur, Gerry King, VE3GK. He will talk to us on "Unconventional Antennas and Towers". Should be an entertaining and informative evening. See you all there.

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MATERIAL PUBLISHED IN THE RAMBLER DOES NOT NECESSARILY REFLECT CLUB POLICY OR VIEWPOINT. ANY ITEMS MAY BE REPRINTED BY AMATEUR RADIO OR SIMILIAR PUBLICATIONS WITH THE PROVISIO THAT CREDIT BE GIVEN TO AUTHOR AND SOURCE.

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

MINUTES OVMBC MEETING 21 FEBRUARY 1985

The President called the meeting to order at 2006 hours and introduced the following guests: VE3LBW-Peter, VE3KTN-Hugo and VE3AP-Mailes.

After correcting the reported output wattage of VE3TWO to read 35 Watts, the minutes of the last regular meeting were approved on a motion by VE3CDS-Jerry, seconded by VE3OMA-Carl.

BUSINESS

Tech Advisor, VE3LAR-Mike indicated he had the clock modules at the meeting. He also made a minor correction to the article in last month's RAMBLER about the use of the YH-1 boom Headset/Mic with an HF rig. In the note beside the diagram the final sentence should end, "they are wired differently".

EDITOR: VE3CDS, Jerry expressed his thanks to all the people who called to enquire after him during his recent illness.

CARF: VE3AP, Mailes spoke to reassure the membership about the recent problems encountered by the CARF management. A new staff has been engaged and is now setting things to rights. It is hoped that no similar problems will arise in the future. Mailes also reported that VE2CV, Jack Belrose has tentatively called a meeting of the Repeater Council for April.

PRESIDENT: VE3KJQ, Pat displayed the new power supply which will be shortly installed at the VE3TWO repeater site. This unit has a capacity of 28 amps and will be easily able to meet the demands of both 3TWO and 3YOW when the latter becomes operational. Pat also reported that the CODE PHONE will continue to operate and that the default speed will be 12 WPM. It is planned to install touch tone access to 18 WPM for those who wish to prepare for their Advanced License. The telephone number for the code phone is 825-0786.

Pat further commented that the club is seeking a new publisher for the RAMBLER. He raised the question of whether the club can continue to provide communications for the "Horse People" at Embrun in June. If we are to continue this activity a minimum of 10 operators must be available to ensure that this exercise is safely covered during the cross country portion.

The flea market will take place 20 April at Canterbury High School. VE3LNH will be looking after the food stand and would appreciate some assistance. Also some assistance will be required to set up the tables.

On a motion by VE3JLG, Brett seconded by VE3CDS, Jerry an amount of \$203.31 was approved for the purchase of a safety belt, four hard hats and a fall arrestor. A further amount of \$25.00 was authorized for the purchase of a canvas bucket on a motion by VE3MVL seconded by VE3NJJ.

Pat also commented that since half the year was now behind us the club membership now automatically drops to \$5.00 for the balance of the year. 10 Local Amateur directories remain to be sold.

Pat also reported that VE1RO became a silent key shortly after making his first and only visit to the club.

The Past President VE3KLX, Dave reported that of 11 students that wrote the recent DOC examination 7 had passed and obtained their licenses as follows: George Dow-VE3OWW; Kathy Rodd-VE3OWY; Fred Taetz-VE3PAA; Judy Taetz-VE3PAB; Sue MacLatchie-VE3PAM; Al Wrenshall-VE3PAW; Steve Fitch-VE3???. Also two members from the previous course have obtained their Advanced Certificates, Dan Senior-VE3OMM and Carl Devries-VE3OMA.

VE3HVA Rick spoke concerning the effect of the closing of the EMO office on the local Amateur Support Group.

Finally the President raised the question of looking into the possibility of purchasing an electronic duplicator from Wm. J. Ford in Smith Falls. This was referred for further study.

The meeting closed at 2015 Hours.

Bob VE3KLLK  
Secretary

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#### OF DINOSAURS, DODOS AND AMATEUR RADIO

I had a brief conversation with a friend last night and commented on the fact that I felt that amateur radio would cease to exist as a hobby by the year 2000. It seems particularly strange after seeing six of my students get their amateur certificates in February. Maybe it's just the post course depression or some such thing, or perhaps it's a thought that is floating around in a lot of amateurs' minds unvoiced.

One of the things that bothered me about the course was the average age of the students. After a period of three years, there have been only two students under the age of 20, and neither of them passed their exam. The average age of the amateur population seems, at least to me, to be approaching 50 years of age. With no replenishment of the ranks from the bottom, we seem to be becoming a group of dinosaurs that are gradually dying out.

Why is this happening. I really don't have a concrete answer. One thought that comes to mind is the difficulty of getting one's licence. In this day and age, everyone seems to want something for nothing, "I want my licence but don't want to learn code and theory to get it. After all, I can communicate the same distance using GRS, run the same kinds of power and only have to lay my money on the table to get a licence". Even a novice type of licence is not the answer, still requiring a basic knowledge of theory, the morse code and work. I fear that such a licence would only swell the ranks of those on two metre FM and do nothing to get people onto HF.

The same technology that gave us our wonderful transceivers also gave the average person his computer and VCR. How does the 10 or 12 year old convince pop to spend \$1000 for a new rig that only the son can use, when the whole family can use the computer for half the price. Besides, all his friends have computers, not radios. No sweat, I can hear someone say, the obvious solution is the same as twenty years ago, build your own equipment. And just how many of you have built anything lately, and I don't even mean something as complicated as a transceiver, but even a power supply or field strength meter. If you can find the parts you need, you can't afford them and if you do gather all you need, it looks like it was built by a carpenter and about the size of a house. Besides, would you be willing to trade your station for a one tube transmitter and a regen receiver you spent two months building.

Back in the olden days, the ability to communicate over the big water was the thrill that convinced many a person to strive for a licence. Now with satellite news from all over the world,



this feat just doesn't seem as great anymore. Any day you can watch sports events live from anywhere in the world and the other person is only a phone call away. After all, who wants to talk to someone in Australia, through all the QRM, when the guy on the other end sounds like a mix between an Air Canada pilot and Donald Duck. Or listen to some lid stringing together Ns, Ms and As into a vague parody of what he thinks is CQ.

So what do we have. We can't attract younger people with the glamour, the equipment is too expensive and you can't afford to build your own. All in all, it sounds like an extremely specialized hobby utilizing a valuable resource.

While all this is going on, the amateur service is under increasing attack from outside it's ranks. The developing countries are looking at the frequencies we are holding and asking why a bunch of hobbyists is using them when we need them for mobile communications, point-to-point communications, etc. One only has to look at the results of the last WARC conference to see the danger we are in. Even if we can increase our numbers, we may not have anyplace to operate.

Technological advancement, that's where amateur radio is and always will be!! So says the good book, I imagine. Unfortunately, that is no longer true either. The majority of amateur radio is still either morse code, a mode that few use in commercial service anymore, or voice. And so I ask, "What are we really contributing to technology, other than occupying bandwidth"? Such modes as AMTOR and Packet Radio may seem to be on the forefront but are they really, or are they simply application of ideas that have been around in commercial use for awhile? We were leaders at one time but are we anymore?

The funniest idea was voiced by a co-worker. "The reason for amateur radio is that we are protecting the frequencies in the National Interest". In the event of an emergency, the government can shut us all down, knowing that the frequencies have been protected from evil doers by the amateur fraternity. Somehow I have a hard time imagining myself defending the frequencies with trusty mobile whip in hand, striking at evil spectrum thieves.

I wonder, as I write this, if thinking along this vein is really that good an idea. You realise that maybe you are about to go the way of the buggy whip and the steam engine. Perhaps it's a hobby that has had it's "Golden Age" and is preordained to pass into history, having made it's contribution. Looking around me, I see a lot of my contemporaries, perhaps not voicing the same thoughts, but drifting away from the hobby nevertheless, thinning the ranks as they go.

So, where do we go from here? Does anyone really care? Maybe the picture is not as hopeless as I paint it and if so, let's hear your thoughts on the matter in the next issue of the Rambler. Deep down, however, I don't think I'm wrong, and there won't be any feedback next month. That's another problem and it's called "APATHY".

Russ  
VE3FSN

OF INTEREST TO NEW AMATEURSJOE NORTON TRUST AWARD FOR AMATEUR RADIO

The Ottawa Amateur Radio Club Inc. awards annually the Joe Norton Trust Award for the advancement of amateur radio. The amount of the award this year is \$800.00.

ELIGIBILITY

To be eligible a candidate must:

1. Be a resident of the National Capital Region as defined by the official government map;
2. Have received a Certificate of Proficiency in radio from the Department of Communication during the period June 1st 1984 to May 31st 1985;
3. Send a written submission of no less than 600 words and no more than 900 words to the Executive of the Ottawa Amateur Radio Club Inc., setting out his/her interests, achievements and plans to contribute to the advancement of amateur radio; and
4. Present him/herself for an interview if so requested by the judges.

RULES

1. Entries must be received on or before May 31, 1985. No entries received after that date will be considered.
2. The club will send acknowledgement in writing upon receipt of an application.
3. A panel of judges appointed by the Executive of the Ottawa Amateur Radio Club Inc. will evaluate all entries submitted before the deadline.
4. Finalists may be interviewed by members of the Executive of the Ottawa Amateur Radio Club Inc. or the panel of judges or both.
5. Submissions will not be returned unless accompanied by a self addressed stamped envelope.
6. If the judges do not select a candidate in any year, no award shall be made in that year and the monies shall return to the fund to be awarded in subsequent years.
7. The decision of the Executive of the Ottawa Amateur Radio Inc. in the selection of a recipient of this award is final.
8. The winner will be notified on or before August 1st.
9. The winner will notify the Ottawa Amateur Radio Club Inc. of his or her acceptance of the award no later than August 15.
10. The award will be made during the regular club meeting in the month of September.
11. The winner agrees to have his or her name, photographs and address published in club bulletins, trade papers and on the airwaves.

SEND YOUR ENTRY TO BE RECEIVED NO LATER THAN MAY 31, 1985 TO:

The Joe Norton Trust  
Award for Amateur Radio  
The Ottawa Amateur Radio Club  
PO Box 8873, Ottawa, Ontario, K1G 3J2

Thanks to the Ottawa Amateur Radio Club Inc. for the above information.

THOUGHTS ON LIFE, THE UNIVERSE AND EVERYTHING

First off, I would like to congratulate the students of our third annual OVMKC amateur radio course who successfully passed the DOC exam and obtained their amateur certificate. A total of six students, out of eleven who wrote, were able to get through the first time and I would say that there are at least another two or three that are virtually guaranteed to pass the second time through. It is certainly a great feeling to know that those blank looks the first few weeks of the course were translated into certificates. It shows that despite our best attempts to educate them, they ignored us and passed anyway. To those who didn't make the grade the first time round, don't give up. A recent candidate passed after trying to get his code for almost a year. Many thanks to the students for making the year so enjoyable and thanks to the other members of the gang of four - Dave VE3KLX, Mike VE3LAR and Pat VE3KJQ. Plans are already in the works for a course next year, location unknown after the demise of EMO, and we will soon begin to look for volunteers and mentors.

The power supply for VE3TWO has successfully passed all tests. It was run up to 21.5 amps for in excess of 18 hours with no smoke or fire. Those who were at the February meeting had a chance to look at this masterpiece. Thanks to VE3BXG and VE3OPM for the items donated to the project. A rough design for a battery charger for our emergency power system has been produced. I hope to have both the power supply and battery system installed early this summer.

Lastly, to those who have faith and even those who haven't, I have not given up on VE3YOW, the 70 cm. repeater. It's simply a case of too much to do and not enough time. It will be installed at the site this summer.....I hope.

Russ  
VE3FSN

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TECH TALK

Here we go again for another article of fun and frivolity? Before I go too much further, I note that recently two amateur publications have re-printed articles of mine that appeared in the Rambler! (This could happen to you too if you just put your mind to it. Just sit yourself in front of the old computer and type!) The Ontario Amateur (RSO) printed the little article on the power supply complete with the wiring error and in spite of Jerry, our Editor's request that appropriate credit be given to writer and source, the Rambler did not receive credit. The other article on the new class of amateur, which in itself created quite a stir, was picked up The Canadian Amateur (CARF) and appropriate credits were given. But that's enough of me!

In an effort to entice a speaker to come to talk to us about the effects of RF on the human bod, I was given a few facts by Douglas Hill who holds a Ph.d and is currently working at the National Defence Research Establishment here in Ottawa. He spoke to the OARC on Jan 6, 1982. (I was taking a French course at the time and couldn't attend.) In any event, he passed me some figures and notes which for lack of anything else will fill my quota for the March Rambler!



The Effects of RF Radiation (10 Mhz - 300 GHz) on People

NOTE:- for the following, the symbol cm\* should be taken to mean square centimetre.

below 1 mW/cm\* - there are no proven effects on people from either short-term or long term exposure.

1-10 mW/cm\* - Approx. range for threshold of perception of "hearing radar" for those persons having that ability.  
-For repeated exposures over months or years, some people report more headaches, insomnia, fatigue, irritability, forgetfulness and generally "feeling lousy"

5-30 mW/cm\* - The range for the threshold of a heating sensation, depending on the person, the radiation frequency and other factors.

10mW/cm\* and up - A half-hour exposure to the testis may cause a temporary reduction in sperm production  
- There are occasional reports of eye fatigue, eye irritation, a burning sensation in the eye or a feeling of pressure behind the eye.

50 mW/cm\* - For exposures longer than 6 min. and an unusual combination of conditions, heat damage to testis and some internal organs is possible.

100 mW/cm\* - There is a possibility of heat-induced fever problems for some people exposed for more than six minutes.

200 mW/cm\* - In addition to the above, 1 hour continuous exposure to the face will cause skin damage and may cause permanent eye damage to the cornea or lens.

I think I will leave it at that for now. In case your thinking "What does all that mean to me?" don't get too concerned. A hand-held two metre rig running at up to five watts from a rubber duckie next to your face is nothing to get concerned about. If you were running more power or at a higher frequency, say 1296 MHz or above, you perhaps should get concerned enough to do a little more independent investigating of your own. Next time I'll pass along a few more related gems. I hope you'll be able to sleep tonite! Just have a look at those 1-10 mW/cm\* effects again. I felt that way even before getting into amateur radio!

TTFN  
Mike VE3LAR

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MAR. 24 1985

Sunday Mar. 24 is the day that all radio amateurs are encouraged to invite a friend or neighbour into their shack for a demo of amateur radio..... Great Idea! Let's all do it!

TNX to 73 Magazine

"I HAD A DREAM" by Serge VE3JRG

Seventy years ago I watched, fascinated, army signallers in training sending messages to each other over the heather covered English countryside. They used blue and white flags, and I learned the semaphore system, and I could send it quite well with my own home made flags, but I had trouble reading it, for it was the reverse of sending. Then, we moved away from there, and I never did experience the excitement of talking to a friend a long way off, to a kid who also just wanted to talk this way to me or to other friends.

Now I can, and today's boys, and young men and women must, I feel, also dream of doing the same thing. Anyway some of them now spend hours on the land line just talking. The world of Amateur Radio is somewhat different. It is a huge group of people with similiar yet diverse interests, I believe as do many others that the young people want to know about it and when they do they will join us, the oldsters, and keep the flame of long distance friendship burning brightly.

They will talk to each other in French or in English, or in Spanish or by using that delightfully private language, the Morse Code.

We need these young people to join us now or our radio family will consist only of old and venerable uncles, without bright and eager nephews to follow them.

Therefore, when I was asked to speak to boys in their last year at a school nearby, about my interest, I consented gladly. I was aware that our major amateur radio organization had such lectures available, and color movies no less, with King Hussein and Senator Barry Goldwater starring, but I had to get my own personal message to them. I went, and I gave them a talk.

I set up a simulated c.w. QSO with an accomplice, a teacher at the back of the same room. It was fun and the time was all too short.

Was the spiel successful. I don't know. But I have heard that the school now has a station of its own on the air.

Serge, VE3JRG

A transcript of Serge's talk to the boys will be published in the next issue of the Rambler.

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EDITORIAL COMMENT

This issue of the Rambler has proven to be very interesting as our ever patient typist, Joyce works her way through the copy for the Rambler. By chance rather than planning we have two rather interesting articles, one by a young engineer, Russ VE3FSN and another by an older engineer, Serge VE3JRG. It is rather interesting to see the similiarities and differences in the two articles. The reference in Serges Article will recall many memories I am sure. I think we have a pair of those flags in the attic..... It sure was nice to see the letters to the Editor from our students. We should have no shortage of operators for field day this year.... See you all at the club meeting.....

The Editor,  
OVMRC RAMBLER;  
Greetings,

As one of the recently successful candidates for a shiny new amateur ticket and licence, I've been feeling pretty proud of myself lately. No need to tell any of you that. You've all been through it before me and experienced the "high" of learning that your efforts were successful.

No. The reason for a letter to the Editor at this time, (especially from one who almost never indulges in this particular form of articulation), is to express a sincere and heartfelt thank you to our patient and hard-working instructors. I know that the success of the students is, by itself, a considerable source of satisfaction for each of the instructors. But that is not adequate recognition, by itself, for the extent of their contribution. I feel sure that I speak for the entire class when I say that there is no way I would have been able to pass the DOC exams without the enthusiastic instruction, constant encouragement and wise advice received from Russ, Pat, Mike, Dave and the others who came in to help out from time to time, or just lend moral support. My sincere thanks to all of you!

While I'm at it, I'd like to leave a suggestion with the OVMRC Training Committee for your consideration: How about starting a Morse Code training/practice tape library? New ham, like me, who now have to get their speed up to 15 wpm, could use this kind of a facility to great advantage. The library could stock two or three 60 min. tapes each at 6, 8, 10, 12, 14 and 16 wpm. Users could be required to pay an initiation fee/deposit, and/or a small user-rental fee each time they borrowed a tape. How about it folks? I'll even donate a 10 wpm tape to get it started. (I'd volunteer to run it too, but logistic problems might result; I live in Almonte.)

Thanks, one and all, again for getting me started.

Sincerely,  
Al Wrenshall VE3PAW  
"The PAW"

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#### FOR WHAT IT'S WORTH

Well the "Exam" is over - results at this time unknown, but I think the Club Members should be aware of the super job on the 84-85 course by Merlin and his wizards....Russ Pastuch VE3FSN, Mike Shacklock VE3LAR, Pat Brewer VE3KJQ and Dave Coutts VE3KLX without whose combine efforts, assistance, pushing, prodding, nagging, and lets not forget doing the "leopard crawl" about the room during quizzes, I for one would not have even attempted to become "Half a ham". Thank You.

In addition I would like to thank Bob Campbell VE3KLLK, Rick Van Gastel VE3HVA, Ed Morgan VE3GX, Joe MacPherson VE3CAT, 4 specials who took the time to give me help and encouragement when it was badly needed.

A maybe Half-a-ham  
Kathy Rodd VE3OWY

#### Ed Note:

After this note was received we learned that Kathy was indeed successful so we took the liberty of adding her call after her name. Congratulations Kathy!

SCHEDULE FOR VE3JW

\*hours are flexible; the museum is open from  
10AM to 6PM

	Morning 10 AM-2PM	Afternoon 2PM-6PM
Mar 16 Sat	George VE3NJJN & Andy VE3KIZ	Leo VE3NVL & Camille VE3DNO
17 Sun	Bruce VE3MJV & Bob VE3MSK	Open
23 Sat	Open	Pete VE3LBW & Carl VE3BYX
24 Sun	Tom VE3OFM & Dave VE3OSY	Fred VE3BAJ & Jim VE3GJY
30 Sat	Dave VE3JTZ & Mark VE3OWL	Hugo VE3KTN
31 Sun	Open	Susan VE3OSP & Joan VE3OSE
Apr 6 Sat	Open	George VE3BN0 & Fran VE3HKG
7 Sun	Alan VE3LNH & George VE3OWW	Lloyd VE3AYE & Hugo VE3KTN
13 Sat	Merv VE3CV & Bill VE3YK	Jim VE3JPC & Herb VE3HMF
14 Sun	John VE3FXF & Dan VE3EBI	Open
20 Sat	Open	Open
21 Sun	Gord VE3OSM & Rick VE3NJM	Open
27 Sat	George VE3NJJN & Andy VE3KIZ	Leo VE3NVL & Camille VE3DNO
28 Sun	Bruce VE3MJV & Bob VE3MSK	Susan VE3OSP & Joan VE3OSE

Anyone else interested in operating VE3JW at the National Museum of Science & Technology at any time, is welcome to call Alan VE3LNH at 737-4937.

OVMRC  
P.O. Box 5530 Stn F  
Ottawa Ontario  
K2C 3M1



FIRST CLASS

FIRST CLASS

JIM HAMILTON VE3GJY \*  
2038 ARCH ST.  
OTTAWA ONT.  
K1G 2H1