

THE OVMRC RAMBLER

Volume 34, Number 12 -- December, 1991

CFARS - ANOTHER FACET OF AMATEUR RADIO!

by Mike Beausoleil, VE3BGP

Are you looking for another useful application for your amateur radio equipment, time and talents? Think about CFARS! The *CFARS Manual of Operations* gives a good description and history of this important radio service.

The Canadian Forces Affiliate Radio System, commonly called CFARS, is a personal communications program sponsored by the Department of National Defence (DND) in which military installations, military units, and amateur radio clubs on military bases as well as volunteer licensed Canadian Amateur Radio station and operators, participate. They all contribute their time, exper-

tise and equipment to provide auxiliary communications for service people and their families on a local, national and international basis as an adjunct to existing amateur radio communications.

A military CFARS station is a facility installed, operated and maintained by DND personnel. A military unit or club amateur radio station is a licensed station that is manned, operated and maintained by volunteer licensed amateur radio operators.

"VE3AHU SET UP THE FIRST MIDDLE EAST HAM STATION TO OPERATE PHONE PATCHES FROM EGYPT"

An individual **affiliate radio station** is a privately-licensed amateur radio station operated by an amateur who is affiliated with the CFARS.

History

It may be of interest to know how all of this evolved. It started with the first close association of the amateur radio fraternity and the military in Canada during WWII. The "call to arms" saw many of the electronics and communicators positions in all three services (Navy, Army, and Air Force) filled by Ham operators. Many of these amateurs formed the nucleus of the Armed Forces communications training cadre and it is well-documented that the experience and expertise of the ham operators contributed im-

mensely to an effective communication system.

Shortly after the War, on 8 August 1946 to be exact, under the auspices of the Royal Canadian Air Force, the **Air Force Amateur Radio Systems (AFARS)** was implemented. This program operated successfully for six years, helping airmen and airwomen at isolated posts keep in touch with family and loved ones. On 31 August 1952, a portion of AFARS was integrated with the Civil Defence Communications Operations. AFARS was made up of approximately 500 licensed amateur radio operators from across Canada who carried out such roles as providing communication for search and rescue operations, assisting during national emergencies and operating weekly nets on a regional and national basis.

The first recorded and publicized accounts of **phone-patch traffic** occurred in the mid-1950s. This morale-boosting form of communications flourished in the 1956/57 period. This was during the time that Canada's first peacekeeping force was deployed in the Middle East (Egypt) with the United Nations Emergency. A young and enterprising Staff Sergeant whose call was VE3AHU set up the first Middle East ham station to operate phone patches from Egypt back to Canada. This same station operated successfully for about ten years until the UN was abruptly asked to leave. Of course, amateur stations are now back on the

ABOUT THE AUTHOR

Mike Beausoleil is not only the Club Membership Chairman, he is a member of the Armed Forces, who has just completed a tour of duty with the United Nations Disengagement Observer Force in Damascus, Syria. During his tour, he had occasion to visit the amateur radio operations at Camp Zouani at Golan Height and to use its services to send flowers to his XYL and to make a phone-patch to his family in Ottawa through Al, VE3ANO. During his quieter moments in Damascus, he had time to reflect on the subject of CFARS and prepared this article. The article arrived by mail on 2 December, coincidentally, on the very day of Mike's return from Damascus.

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THE OVMRC RAMBLER

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News & Views - Pat Brewer, VE3KJQ

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DXdeYOU - Keith Beardsley, VE3SVQ

Circulation

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Neil Herber, VE3PUE

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NEXT MEETING OF THE OVMRC

19 December, 1991
1930 hours

**National Museum of
Science and
Technology**

Auditorium

CLUB CALENDAR

December Programme

**BRICE, VE3EDR -
To Be Announced
MARINE MOBILE -
CHRISTMAS DAY NET**

There will be a special Christmas Net on VE3TWO at 0930 hrs on Wednesday, 25 December until closing. Sydney, VE3GVI will be the controller. The purpose of the net is to pass greetings and to discuss any new Christmas acquisitions to the shack.

FIELD DAY 92

Start planning now.
Call Vic, VE3BSV and get on the Committee

SOME AMATEUR RADIO NETS

POT HOLE NET - Sundays 1000 hrs. 3.760 MHz (includes Swap Net)

POT LID NET - Sundays 1100 hrs(except Jul & Aug) 3.620 MHz slow-speed CW.

CAPITAL CITY FM NET - Mondays 2000 hrs 146.94 MHz Swap Net

THE WISE OWL NET - Fridays 2000 hrs. 147.30 MHz

OVMRC CODE PHONE - ~~822-6736~~ 24-hr code practice..

746-2065

The support of Corel Systems Corporation through
their generous gift of

Corel Draw used in preparing this newsletter is gratefully acknowledged.

The printing support of Dy-4 Systems Inc.
is gratefully acknowledged.

Ramblings

Jerry Wells, VE3CDS



Once again we are into the Christmas season, how quickly the time goes by. It seems only yesterday that the Club was getting the fall program under way and now we are looking at 1992 just around the corner. This fall has seen the Club off to a good start with the various programs and activities well planned for the entire year. I have been impressed with the effort that the members of the Executive have put forth in the preparation of the planned activities. It is very gratifying to see the involvement of the new members of the Club, in particular those who are graduates of our Amateur Radio course. What better way to get new ideas for the Club. I, along with all of you was surprised to learn a few weeks ago that Jeff, VE3RCI had been lured away to western Canada to a new job in the "oil patch". Jeff is one of those unique individuals with the ability to motivate people through his good humour, enthusiasm and willingness to participate in all sorts of Club activities. The slingshot used to string

the antennas at last years Field Day was a classic example of Jeff at his best. We will miss him, but I am sure he will carry on with one of the Clubs in the Calgary area.

As a result of Jeff's departure the Executive was faced with a problem of a replacement. Many of the Executive are new amateurs with a desire to get a bit more experience under their belt before taking on the job vacated by Jeff. To make a long story short I received a call from Jeff to see if I would be interested in helping out for this year. What could I say, Jeff was a graduate of our Amateur Radio Course where, in addition to teaching the mysteries of electronics, the morse code and regulations, we also encourage our new amateurs to participate in the Club. For the rest of the year, Yours Truly will help the Executive guide the club through a number of activities which I am sure you will enjoy. Wasn't that talk by the West Island Club Members and their sojourn to St Paul Island good entertainment and informative of what

Amateur Radio is all about. From what I hear the members will have many other interesting talks as the Club year continues.

For those of you that are curious about VE3CDS, I have been a ham since 1951 always with the same call. Over the years much time was spent in building equipment and teaching new hams. I still occasionally run into hams that learned the code during the sixties in our basement shack. Currently much of my time is devoted to the new and prospective amateurs. The station at VE3CDS operates all HF bands with a preference for 20 and 15. I also operate on 2 meters. Not yet into packet or any of the hi-tech stuff.

I hope to be able to make a contribution to the operation of the Club this year and I will take this opportunity to wish you all a happy holiday season. I will see you at the December meeting...

Jerry VE3CDS

MOTION

Because the work of preparing schematics, illustrations and graphics for the manual *Amateur Radio for Beginners*, made it necessary to acquire a computer graphics and drawing package, the Executive, with the help of Craig, VE3KKU, approached Corel Systems Corporation. Corel made a gift to the Club of Version 2.0 of Corel Draw and it is planned to use this programme for the manual and to enhance future issues of the *Rambler*. The computer on which Corel will run needs to be upgraded to run MS-Windows and Corel Draw efficiently. The upgrade requires a new mother board and additional RAM. Funds for the upgrade are available from this year's training budget and from general revenues. The cost of the upgrade will be recovered from future revenues from training and from the sale of the manuals. The enhanced *Rambler* should be a bonus to the Club.

Moved by Doug, VE3ATY, seconded by Judy, VE3PAB, that the expenditure of eight hundred and five dollars (\$805.00) [\$700 plus tax] be approved for the purpose of upgrading a computer for the purpose of preparing the manual, *Amateur Radio for Beginners* and to enhance the production of the *Rambler*.

Secretary's Minutes

by Mike Spenuk, VE3JTQ



MINUTES OF THE OVMRC GENERAL MEETING

HELD 21 NOVEMBER, 1991

by Mike, VE3JTQ (voluntary Acting-Secretary)

The meeting was called to order at 7:40 p.m. by the Vice-President, Larry, VE3WLN.

Larry noted that Ted, VE3KEH, the Secretary, was not present and requested a volunteer to record the minutes of the meeting. Mike, VE3JTQ, volunteered.

There were twenty visitors to the meeting, including students from the Algonquin College Amateur Radio Course and visitors from West Island Amateur Radio Club.

The Chair asked if any members present required any assistance. Vic, VE3BSV, stated that he was working on a school research project on digital communications. He solicited assistance into aspects of this topic from the membership. Fred, VE3BAJ, reported that he has assembled a stealth (well almost) antenna.

The Chair called on Peter, VE3YYY, and Bill, VE3NPG, to speak about the Toronto FM Communications Society (TFMCS) Linking Network, more commonly referred to as the RPT link system. A network map was distributed to interested members. The speakers emphasized the fact that the TFMCS Network is an open system, but distribution of access codes over the air is discouraged. Additionally, access to individual features on each networked repeater are controlled by the repeater's sponsoring group, and as such are generally not available to non-members. An important fact, which Peter emphasized was that the Renfrew County ARC will not support autopatching in the Ottawa

Valley from outside areas. The reason being the philosophy governing the local link network contribution does not including competition with the commercial telephone networks.

Peter indicated that the VE3UCR Hub repeater is sponsored by the Renfrew County ARC for which he solicited supporting memberships at \$20.00.

The Chair next called for Committee reports.

Training. Doug, VE3ATY, reported that a student column will shortly appear in the Rambler. The lab assignment in January will be a receiver. The manual *Amateur Radio For Beginners* is about halfway completed. Chapter 18 is currently under way, while Chapter 13 is being reviewed by the Editor and Chapter 14 is currently with the Technical Editor.

Field Day. Vic, VE3BSV, reported that he is just getting his planning under way. He has a few sites in mind, but nothing is firm at this time. A sign-up sheet for interested members for this Committee was available at the coffee table.

Technical Committee. Ed, VE3RDZ, reported that major improvements to VE3TWO are in the works. New RF and controller hardware to be more specific! Complete details of the Committee's report will appear in an upcoming issue of the *Rambler*. In short, the existing site will become a remote receiver site. New sites are in the works. A 6-meter repeater co-located at one of the sites is also in the works, but details need to be reviewed. Additional ideas discussed in the report include the possibility of code practice transmission over VE3TWO. Ed solicited members support in identifying areas in the City which are dead spots, i.e. areas where

members cannot access the repeater or areas where the repeater can't be heard. Finally, Ed reported that the Club has a good technical library available to members.

Museum Committee. Cy, VE3SIY, indicated that the Committee was looking at the possibility of a New Horizons grant. Cy also indicated that two volunteers would be required on Saturday to assist with tower work at the Museum.

Flea Market. No report available.

Volunteers were solicited for the Santa Claus programme, December 15 at the Museum.

The CARF Bulletin for 15 November, 1991 was read by Dan, VE3EBI.

No CRRL representative was present.

The Chair then called for nominations from the floor to fill the position of President, recently vacated by Jeff, VE3RCI. Jerry Wells, VE3CDS was nominated and no further nominations were made.

Jerry Wells was acclaimed the new President. Larry indicated that he will submit a biographical sketch to the *Rambler*.

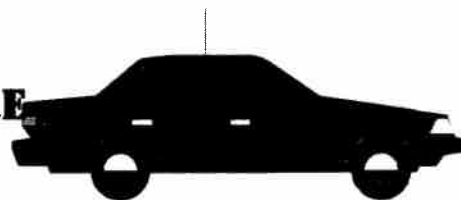
Keith, VE3SVQ, introduced members of the West Island ARC who spoke about the DXpedition to St. Paul Island.

The draw for the door prize, the *Electronics Engineers Master Catalogue*, a four-volume set of reference books, was held and Vic, VE3BSV was the winner.

The business section of the meeting being concluded, the Chair moved adjournment. Doug, VE3ATY, seconded. The meeting adjourned at 9:32 p.m.

IF YOU FIND MISTKES in this publication, please consider that they are there for a purpose. We publish something for everyone, and some people are always looking for mistakes. We would not wissh to disappoint them.

NEWS AND VIEWS FROM HERE AND THERE



by Pat Brewer, VE3KJQ

This column is your monthly source of information on between 11 and 13 clubs from across Canada. That is the number of clubs with whom we exchange bulletins. This month we will work our way from west to east.

The **Calgary Amateur Radio Association** has been busy the past year. The club president lists some of the major events in the November issue of *Key Klix*. Some highlights were: telephone access was added to the packet BBS, ham radio was demonstrated at a local hobby show, members passed traffic for a victim of Chernobyl, for the first time the club participated in a city emergency drill, there were 38 people in the amateur radio course, and club membership topped 360. In addition they installed the two highest repeaters in Canada, VE6HWY at 9700 ft and VE6RMT at 8400 ft. VE6HWY is the sixth highest in the world. The club is now proposing that it host the first convention of the soon-to-be single national amateur radio organization. Perhaps we should have been giving it some thought since the organization will be based here in Ottawa.

Members of the **Saskatoon Amateur Radio Club** provided communications again this year for the Santa Claus Parade. At least 14 members participated. Another article in *Feedline* lists some information on the early days of amateur radio in the Prairies as gleaned from a book called "Spark to Space" published by the club in 1968. The first ham was 9ZC, J.A. Gjelhaug, in 1914. The Saskatoon club had the call 4FB in 1922 and hosted a convention that year. By 1930 there were 21 amateur stations in Saskatoon.

Now we move to Windsor and the **Border City Radio Club** newsletter. Many of the new hams in the area went for their licence because of the no-code requirement. However, many of these people then went on to get both their five and twelve word per minute

test as well. This echoes our experience in the OVMRC amateur radio course last year. Recently in Windsor a judge ruled that an individual had been breaking the law by listening in to cellular telephone conversations. Something to bear in mind.

A little further east we come to the **Chatham-Kent ARC** bulletin, *Clear Signals*. The club has held several Fox Hunts and will now be awarding an engraved trophy to the winning team after each competition. A certain "Ki Lobaud" makes an interesting observation in a letter to the editor. He points out that digital operators are a gregarious bunch and "don't mind sharing the frequency with others". "You never hear 'get off my frequency!'" There is also an important item reprinted from the CRRL bulletin number 29. Apparently there was a class action civil rights complaint in the US against the FCC. It claimed that the Morse code requirement for a licence discriminated against the handicapped. The claim was lost when the FCC pointed out that the requirement stemmed from ITU regulation 2735 and that US law could not supersede the international agreement. This would apply as well to Canada and Canadian disabled prospective amateurs.

A bit further east we come to the **London ARC** and the *LARC Bulletin*. The November issue is devoted to only two topics. The first is a description of the process required to get the bulletin out. This is all in order to announce the departure of the current editor and call for a new one. The second topic is satellite communications. One article describes the complicated network required to communicate with the shuttle. It involves 14 tracking stations and 1,100 personnel. A second article has some details on the 13 amateur satellites now in orbit. Perhaps some night we could get a guest speaker to give us

a detailed description of how to make use of all these spacecraft.

In Toronto we trade bulletins with the **Scarborough ARC**. This club sponsors a number of awards: "The First 100 QSOs on CW Award" for new hams, "The North America Award" for working all provinces and continental states, "The Forefathers Award" for working 25 contacts in the country of your forefathers, and several "spelling" awards. A technical article on antennas for apartment dwellers has a number of ideas. One of the most popular antennas is the mobile whip. This is mounted on the railing or window frame and then quarter wave radials are attached to the ground point and run along the floor. Another suggestion is the AEA IsoLoop antenna. It operates on 10 through 30 metres and doesn't require a ground.

Closer to home we have the *Kingston Amateur News* of the **Kingston ARC**. Like our club, the Kingston club has found that too few people are doing all the work and, as our club did, they are planning to set up committees. The November meeting speaker was Steve Harrison who was the faculty advisor for the Queen's University entry in the 1990 World Solar Car Challenge across 3,000 kilometres of the Australian Outback. If you find yourself in Kingston on a weekend why not attend the Saturday 8am breakfasts at the Truck Stop near the corner of the 4th concession and highway 38, south of the 401.

Now we move into Ottawa and the **Pioneer ARC** bulletin *TelePARC*. Club members and local ATVs meet on club repeater VE3TEL on Wednesdays at 8pm. If you have an ATV receiver or can tune near channel 14 in the UHF band you can also SEE the net controller live from his shack. During the recent Jamboree On the

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air from the Middle East, operating daily from Nicosia on the troubled island of Cyprus, and the Golan Heights (that portion of Syria occupied by Israel and manned by a UN peace-keeping force). Further, for the past twenty years or more, phone patches have been operated for servicemen in the Far North and from HMC Ships on sea deployments.

CFARS Affiliates. Not enough can be said for the hundreds of amateur operators in Canada who have become CFARS Affiliates and who have devoted their valuable talents, time and equipment to operate informal traffic nets over the years. The communication service provided through ham radio has been and continues to be tremendously popular with service members and with their families and relatives. This can be seen from the impressive traffic volume. It is without a doubt a key morale booster for Service personnel serving at remote and isolated posts around the world.

Problems area. Up until about 1976, there did not appear to be any major problems with CFARS operations. Unfortunately, two particular problems arose, which delayed the traffic process for extended periods and, in some cases, made it necessary to temporarily close down some stations.

The first problem was the increasingly difficult task of finding military licensed amateur radio operators to volunteer to serve in isolated or remote locations for the purpose of operating the stations. The second problem was that of interference, some of which was intentional jamming, that delayed the traffic for extended periods.

Because of DND's desire to continue this most worthwhile communications service and as a result of the problems already described, National Defence Headquarters decided to launch a program to be known as the **Canadian Forces Affiliate Radio System or CFARS**. Basically, CFARS was organized to operate in a somewhat

similar fashion to the United States Military Affiliate Radio System MARS, that has operated successfully for over 50 years.

It was generally agreed that the long range outlook would be to operate a traffic and phone-patch service for Canadian Forces personnel wherever they were located where the number of personnel would warrant the service.

In April and May of 1978, trials were conducted by operating on a CFARS frequency just outside the 20-meter amateur band. Participants included military amateur stations at Ismailia in Egypt, the Golan Heights in Syria and thirteen stations in Canada. Temporary, international call signs were issued to each station. The trials were a huge success, with a dramatic traffic increase over that normally handled within the amateur bands.

On the 25 February, 1980 CFARS was formally instituted by a letter of agreement between DND and DOC. The letter of agreement stressed the importance of CFARS and outlined the terms under which CFARS would operate. It was made clear that all communications would be of personal or welfare nature; that CFARS would operate on assigned frequencies only; and affiliate members would only use those emissions associated with the nearest amateur band in accordance with their amateur station license and radio operator certificate.

Eight other conditions delineated the terms of the agreement.

Military CFARS Stations. With the initial phase of the CFARS program, military CFARS stations have been installed on Cyprus, in Israel, in the North West Territories, in Egypt, in Germany, and in Quebec, Ontario and Alberta.

General Membership. Limitations were imposed on membership, which was restricted to individuals 14 years of age or older. Military installation stations were to be operated and maintained by personnel under the control of a Canadian Forces command. Individual amateur stations and military unit or Base radio club stations

needed radio equipment capable of operating on CFARS frequencies and were to be operated by licensed amateur radio operators. Volunteer operators had to agree to operate in accordance with the regulations prescribe for participation in the CFARS program. The term of CFARS membership was made contingent upon the member's amateur radio license. Consequently, CFARS membership automatically expires when the amateur radio license expires or is revoked.

Awards. The CFARS Certificate of Appreciation is the official DND recognition of amateur radio operators who provide extended voluntary services extended to the Canadian Forces. The certificate is issued to amateurs who have provided one hundred phone patches to service members in the North, at sea or serving with the United Nations peacekeeping contingents. Phone patches may be either on amateur or CFARS frequencies. Colored seals are added to the certificate at 200, 500, 1000 and 2000 phone patches. The seals are gold with various colored roundels.

CFARS stations call sign assignments are made by National Defence Headquarters. Some of the Military Installation call sign:

Location	Call sign
Cyprus, Nicosia	VXN9
Egypt, El Gorah	VXE9
Golan Height (Israel)	VXV9
Alert, NWT	VDH9

For reference purposes each CFARS frequency is allocated a "nickname" from the phonetic alphabet, Alfa thru Mike. Frequencies are not divulged on the air and, as a general rule, are not published in open literature. They are made known by DND to accredited stations. Should the need arise to give frequency information on the air, such as a request to change frequency to get away from QRM, the order to change is given by simply quoting the appropriate al-

phabet to all stations on the net and then proceed to change frequency.

CFARS IN CAMP ZOUANI (GOLAN HEIGHT)

Now that everyone has a better understanding of CFARS let's talk about the Station in the Golan Height (VXV9). The station was opened in 1981. The present equipment consists of 2 Kenwood TS 430 S HF radios, 1 Alfa 374A linear amplifier, and 1 TL 922 Kenwood amplifier. All the equipment is house in a shack approximately 20 ft by 30 ft. The antenna system consist of 3 HF beams; Hygain monobander for 20 meters (205 BAS), Hygain dual band for 10-15 meters (DB 10-15A), and a Mosley tribander 10-15-20 meters (TA5-MK2) mounted on two 20-meter towers. There is also an all band dipole.

By December 91, the CFARS station will upgrade to new equipment, Harris type, 19" rack mounted. This will standardize the equipment with other military CFARS stations and make it easier for technicians on camp to carry out maintenance work. Some of the station near future projects include repairing and painting the shack; changing over to the new Harris equipment; and continuous training of other volunteer on camp that are gaining interest in Amateur Radio. By the way, two candidates recently tried the DOC examinations and attained their license.

Now on the people manning the station. A volunteer, licensed amateur is posted to the Golan Height for a period of six months. The amateur's main duty is to operate the CFARS station. During the writer's tour of duty, the amateur was Andy Ravary, VE1RAV, from Canadian Forces Base Greenwood, N.S. Andy is the Vice-President of the Greenwood Radio Club, VE1ARC. He also holds a CFARS license CIW837. Andy is also an Accredited DOC Examiner and conducted the recent tests that qualified two of four candidates. Prior to this tour of duty Andy has had three previous 6-months tours in our most northern station at Alert. This outpost was recently brought to public attention as the result of a C-130 Hercules resupply aircraft crash at that site.

A typical day at the shack starts around 0330 hrs Z (0530 hrs local). Let's not forget that the Golan Height is seven hrs ahead of Eastern Standard Time. After warming up the equipment the operator places a call to Vic VE7UZ (CIW202) in British Columbia. Vic looks after all the flower arrangement orders. This service enables the men to have flowers sent to loved ones at home. With a few days warning, Vic can have flowers delivered to your door steps. This writer personally used this service and it worked flawlessly.

From 0600 hrs Z until 1600 hrs Z, Andy gets involved in normal camp activities. He assists with the computers on camp, the camp Public Ad-

dress system and cable TV satellite dish system. From 2100 hrs Z until approximately 0100 hrs Z, band permitting, the station is on the air. Since the Golan Height is the most easterly station it always acts as the Net Control for the other stations to regulate traffic.

As you can imagine, military life can be very demanding, especially for the family remaining behind. Amateur radio helps to ease the stresses of separation by providing a reliable, inexpensive and effective way for service members to communicate with loved ones at home.

At the risk of offending those hundreds of CFARS Affiliates all across Canada who volunteer so much of their time, the names of those known to this writer from the Ottawa area will be mentioned.

- Al, VE3ANO (CIW610);
- Ralf, VE3BNH (CIW608); and
- Jack, VE3AHZ (CIW645).

To all the CFARS Affiliates, you must know how much your services mean to the service men and women who are away from home for extended periods. Without your time and talents, CFARS would simply not be possible. You provide that most important link from the Golan Height, Cyprus, Germany and the far North to home.



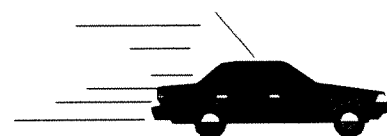
Air, Bruce VE3CLN entertained "six highly-active, enthusiastic, 11 year old Boy Scouts" in his shack. All of them participated in packet communications with Ray VE3WI and in a voice round table with 15 Scouts visiting VE3JVB in London. Bruce observed that six boys can down 20 cans of pop in 18 minutes. Bruce will be handing out QSL cards from the station in London to the 1st Blackburn Scout Troop. Future plans call for a

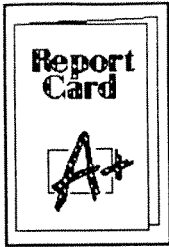
combined camping and operating weekend.

Finally we land in the Maritimes and the **Halifax ARC Reflector**. There is not a lot of news in this bulletin these days as most of the pages for the next few months are devoted to reproducing the Packet Primer. Chuck VE3PDK made this available to our club members in collected form at recent meetings. They do say that they have 32 students in their amateur radio course, several club members attended a ground search conference

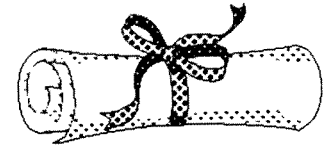
in Truro recently, and a new club meeting location has been found in an unused classroom at a local school.

That's it for this month. See you next time around.





I M I



by Ron Clement VE3 HOPEFUL & Roger Rose VE3 HOPEFUL

OK - so we paid our fee and joined 30 or so people in a classroom at Laurentian High School. Now what?

Are we taking a course on the legal system? You would think so with all the laws the instructor was throwing at us: Ohm's law, electrostatic and magnetic force laws; what were the charges and on what grounds were they applied? Are we ever going to grasp all this judicial jargon?

Speaking of jargon, we are also learning this new language. Maybe we are taking a second, or third for some, language. It's enough to make you huff and puff. The teachers assure us that practice, practice, practice is the key... Anyone care to sing it? "Dits and Dahs" is the name of that tune. It really isn't that hard. Sounds you hear are written down. Miss a sound, no problem, just do a spell check later. So far, we've seen John get his 5wpm and Lorraine, Bev, and Roger get their 12wpm.

Maybe it's an administration course? We learned about committees and meetings, departments, federations and leagues. That's enough to get you certified! We must check to see if they (instructors) are licensed to put us through all that.

Now what? A math teacher - and is he ever full of formulas. We're not talking baby formula here - ooooh no. This is equal to that plus that divided by two of those but only when you have a series. The only time we remember being so dizzy was when we did the parallels in gym class.

Needless to say, our mind started putting some resistance to this induced flow of information and our circuits' conductivity started testing our capacitance.

HERE IS A NO-BRAINER

Ohm's Law is:

- (1) Be in bed by nine.
- (2) What goes up must come down.
- (3) $R = E/I$.
- (4) None of the above.

Look, all we wanted was a licence to talk with friends all over the world. We're not seeking power. Is it that the instructors think that by giving us a few

meters, we would band together and break Ohm's law?

In all seriousness, we have gone through nine classes so far. During that time we have learned all about electrostatic, series and parallel circuits and their relations with resistors, capacitors and inductors. We've also covered the powers of ten metric calculation, relative voltages and grounds, factors affecting the resistance of a conductor, combined series/parallel circuits and bridge circuits, measuring the rate of conversion of electrical energy (power). Of course, we can't forget our weekly dose of CW and the accompanying grumbles.

Some of the students have already been exposed to the world of amateur radio to some degree and with the knowledge passed to us from the instructors, we will no doubt all be licensed to join this hobby in the near future.

All we're learning will eventually connect and we will be called "HAM". It's all clear to us now ... or is it

HOW TO GET AWAY WITH MURDER

It sounds as though these fellows should meet the railway passenger worker who got away with murder. He deliberately pushed a passenger from a speeding train, was tried for murder, found guilty and sent to the electric chair. They threw the switch and nothing happened. They had to let him go. They concluded he was just a bad conductor!