

# THE RAMBLER

APRIL 1989 ISSUE

The Ottawa Valley Mobile Radio  
Club Incorporated

P.O.Box 5530

Station F

Ottawa Ontario

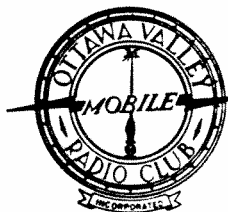
K2C 3M1



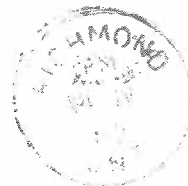
NEXT MEETING: THURSDAY, APRIL 20, 1989

PLACE: CANTERBURY COMMUNITY CENTER, 2185 ARCH STREET

TIME: 7:30 P.M.



The Ottawa Valley Mobile Radio Club Inc.  
P.O. Box 5530  
Station F  
Ottawa, Ontario  
K2C 3M1



LARRY WILCOX  
565 EASTVALE DR.  
GLOUCESTER ONT.  
K1J 6Z4

APRIL 1989 ISSUE

**OVMRC EXECUTIVE  
1988-1989**

**President**  
*Alan Boyce*  
VE3LNH  
737-4937

**Vice-President**  
*Doug Carswell*  
VE3ATY  
839-5854

**Past President**  
*Bill Seyler*  
VE3OAI  
836-5818

**Treasurer**  
*George Dew*  
VE2OWW  
777-3183

**Secretary**  
*Archie McKenzie*  
VE3NJY  
731-3698

**Editor**  
*Bob Baillargeon*  
VE3MPG  
235-0187

**Technical Advisor**  
*Ed Leblanc*  
VE3VLF  
829-6314

**Public Relations**  
*Leo Desjardins*  
VE3NVL  
225-0902

**Membership**  
*Pat Brewer*  
VE3KJQ  
820-9309

✠

**THE OTTAWA VALLEY MOBILE RADIO CLUB  
INCORPORATED**

**OVMRC SPONSORED ACTIVITIES**

**POT HOLE NET - OVMRC NET -**  
Every Sunday, 1000 local time on 3760 kHz, SSB. All Radio amateurs are welcome to participate.

**THE WISE OWL NET - OVMRC NET -**  
Rag chew net every Friday evening at 2000 local time on the club repeater VE3TWO - 147.30/90 mHz.

**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. For information or if you wish to operate the station, contact the Public Relations Coordinator.

**AMATEUR RADIO ACTIVITIES IN THE NATIONAL CAPITAL:**

**POT LID NET -** Sponsored by Ed Morgan VE3GX. An informal slow speed CW net meets each Sunday (except July and August) at 1100 hrs. on 3620 kHz to provide and stimulate interest and proficiency in CW procedures.

**CAPITAL CITY FM NET -** Sponsored by the Ottawa Amateur Radio Club Inc. every Monday evening at 2000 hrs. local time. Conducted on VE2CRA repeater 146.94/146.34.

**SWAP NET -** Sponsored by Ed Morgan VE3GX, each Sunday as part of the Pot Hole Net, and each Monday as part of the Capital 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, VE3MSC, Tuesdays at 2000 hrs. on VE3TWO 147.30/147.90 mHz.

**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 2000 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.

**The Rambler**

Volume 32, Number 4  
April 1989

CONTENTS	PAGE
RAMBLINGS	3
EDITORIAL	4
MICROS IN THE SHACK	5
C.A.R.F.	6,7
WHISPERS	8
FIRST ANTENNA	9
6m FLEA-POWER	10
FOLD-OVER TOWER+MINUTES	11

**ANNOUNCEMENTS**

The next meeting of the Ottawa Valley Mobile Radio Club will take place on Thursday April 20, 1989, at the Canterbury Community Center. Time is 7:30p.m. sharp.

The evening's speaker will be Ralph Cameron, VE3BBM. Ralph will be conducting an EMI clinic. Bring your rig if you want to check how clean your transmitted signal is.

**FLEA MARKET**

The annual OVMRC Flea Market will be on Saturday April 29, 1989 at Canterbury High School. The doors open at 8a.m. for sellers and at 9a.m. for buyers. Admission is **FREE**.

A snack bar with gourmet snacks and coffee will be provided. At 12 noon a raffle for an Icom handheld will take place. See Pat, VE3KJQ for raffle tickets.

Publishing Committee:  
Fred VE3NJF, Eric VE3OTT, Don VE3PUZ

The Rambler is published monthly in Canada by The Ottawa Valley Mobile Radio Club Incorporated, P.O. Box 5530, Station F, Ottawa, Ontario K2C 3M1. The entire contents are not copyrighted. Anything may be reproduced in whole or in part without permission from the publisher as long as credit is given to the Rambler. Any similarity between places or persons mentioned in the fiction or semi-fiction and real places or persons living or dead is coincidental.

---

# RAMBLINGS

*By Alan Boyce VE3LNH*

---

I recently reviewed the Radiocommunication Information Circular RIC-25 and found a surprise. Specifically, clause 12, paragraph (1) of the Radio Act is extracted as follows:

"Her Majesty may, at any time, assume, and for any length of time retain, possession of any radio station, and of all things necessary to the sufficient working thereof, and may, for the same time, require the exclusive service of the operators and other persons employed in working the same."

I didn't know that the Queen was a Ham! Just like King Hussein, and Barry Goldwater, and those other world leaders!

Well, suddenly I have a real incentive to clean up the shack. I mean, Her Majesty could drop in at any time and assume possession of my radio station!

Why Liz would want to use my humble radio station and "things necessary," I don't know, but it appears that I am duty-bound to let her if she asks.

I wonder what things could

be necessary to the sufficient working of this station. I have all the basic equipment: an HF station, packet, a two meter rig, the piles of Ramblers, TCA magazines, and half-finished projects, a good stock of 807 replacement finals, but nothing exotic like OSCAR or Amateur Television.

Now I wish that I had a linear amplifier and a beam. On the other hand she may not need it, since the sunspot conditions are improving. She should be able to check up on the grandchildren via fifteen metres each day.

And if she wants to assume possession of my CW key, I had better be able to find it under my piling system. I hope she likes to use a straight key; a lot of Elmers can't get by without a paddle. She would have her own if she was fussy.

This is serious. What if H.R.H. requires my exclusive service for field day, or, more important yet, one of those marathon contests? Can you imagine me and Liz working multi-single? I could probably get leave from work, given the circumstances. A daunting prospect: it would be

something to be on the other end of a royal pile-up. Then again, she would probably bring Phil to log for her. He could sack out on the hide-a-bed between shifts.

Now what else should we prepare for? H.R.H. never travels without a lorry-load of matching purses and hats, does she? That could cause a problem with space.

And the entourage! Joyce may not be crazy about all those guards in busbies strutting about the house changing on every hour. I will have to lay in a good supply of Spam and biscuits and Guinness.

The Elmvale Acres Neighbours Association would likely protest about all the horses grazing on their lawns, but they can hardly argue.

Now the Corgies could pose a problem. My cat would eat them. I'll suggest that she leave the dogs with Brian or Jeanne.

So it seems that we hams must be prepared even if we aren't part of emergency group. This is even more important than providing communications for the Ski Marathon or the April Fools day parade!

---

# EDITORIAL

By Bob Baillargeon  
VE3MPG

April signifies a turning point, a new beginning. This occurs in government as the beginning of the new fiscal year. It also means that spring is here. A renewal and greening. It is a time to see the changes that winter has left. Time for reflection and planning.

Let's look at the Rambler. I believe that this is the only Amateur club publication produced in its entirety, electronically. We are using the high tech tools at our disposal to disseminate timely information.

Many of the authors published in The Rambler use packet radio to deliver their manuscripts to me. A few of the authors supply their documents on disk. Any format except Macintosh can be read. Still a few supply hand written or typed documents. Paste up is done electronically.

Our mailing list is kept on computer and easily updated and edited. As amateurs we are making good use of existing current technology. We have an opportunity coming up that we should maximize.

With Museums Canada giving us the opportunity to design and implement a new VE3JW, we should make use of the latest technology at our disposal. A fully implemented packet infor-

mation system should be set up to run continuously from VE3JW. It should not be a mailbox BBS as one already exists in Ottawa. The packet information system at VE3JW should provide the Ottawa area with timely information about activities of the Ottawa Valley Mobile Radio Club. Second, Museum activities should be announced on the system. Third, I think the Rambler should be made available in electronic form via packet from VE3JW. I know this may raise the point of why should we pay dues if the Rambler is available on packet? The point is, how many of you are on packet? Probably less than 10% of the membership, right? You wouldn't be able to access it anyway. Another point to question, "If other hams (non members) have access to the Rambler in this manner why would they want to join the club for \$15.00?" To hear our enthralling speakers, join in the camaraderie and discussion, and participate in other activities to help the club grow in number and in expertise. That's why.

There is a growing membership within the club. We must be doing something right. If we examine our crystal ball, the future of amateur radio depends

on making this hobby interesting and informative for newcomers and those thinking of getting into the hobby. The future is in new modes that will depend heavily on computer control and processing. Packet and color Fast Scan TV are just the tip of the iceberg. The new generation of hams, whom we must attract, will bring with them new ideas and trends. We can't afford to bore them with outdated modes and technologies. This proposed packet system could make the ranks of packateers in Ottawa grow. A dedicated system operator could make the packet information board thrive with activity. Living in the information age makes us hungry for the latest tidbits of high tech developments. I'm looking for ideas on what we could make available on this board.

"We have in our power to shape change. We may choose one future over another", wrote Alvin Toffler in Future Shock. The packet information system would allow users to keep a steady finger on the pulse of technologies and trends sweeping the world of amateur radio.

The future is not going to be the same as the past. We have to get serious about looking ahead.

☞

Amateur radio operators have always recognized and made the most of the benefits provided by advanced technology. With the coming of microcomputers, it was only a matter of time before such equipment would be introduced in the ham shack. The microcomputers used by amateurs varies from the basic systems to the more complex systems that includes expanded memory and peripheral input/output devices.

A micro-computer is used to store information. This information is later formatted, retrieved and organized for specific requirements. For example, performing calculation can be such things as voltage or frequency measurement,

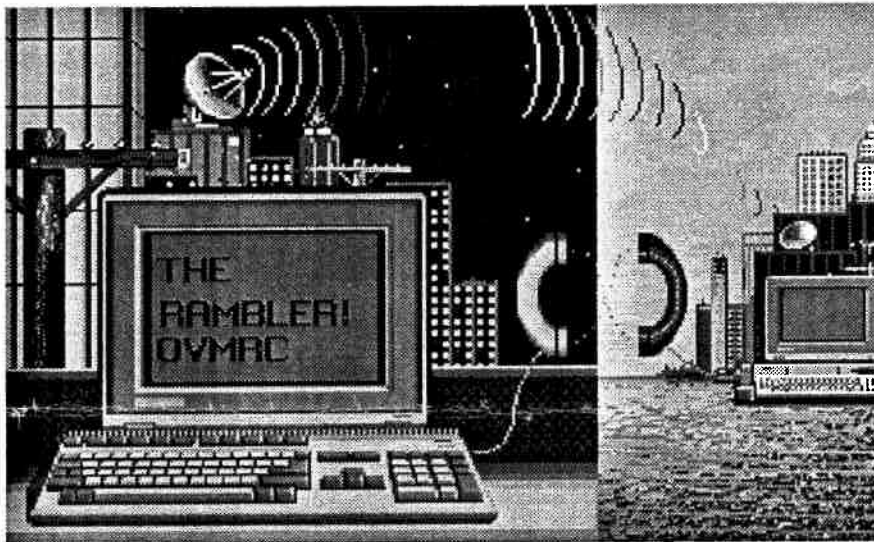
storage of field day data, or anything that can be expressed in terms of numeric or alphabetic characters.

Microcomputers consist of four parts, namely the central processing unit (CPU), memory subsystem, input/output circuitry, and peripheral units. The heart of the CPU is the microprocessor. This is the element that does all arithmetic calculations, makes all logical decisions, controls access to the computer by various devices, stores and retrieves information from the memory, and coordinates the execution of the program.

All microprocessors works using the binary numbers 0 or 1. The solid-state switches inside a

microprocessor only have two states of operation. When the switch is in the "ON" position current is conducted, while in the "OFF" position the current is terminated. This single on/off switching operation is the basis of all computer programming and design.

Microcomputers communicate in a very special and unique "language". The lowest form of language is MACHINE LAN-



GUAGE. This machine language uses binary numbers discussed earlier. Not only is this "language" subject to errors and time consuming, it is for some of us very difficult to learn and to understand.

Another language that was developed is ASSEMBLY LANGUAGE. In writing a program, mnemonics are used instead of binary, octal, or hex codes. Since the microcomputer only understands on/off binary code, the assembly language has to be translated into machine language. This translation is done with an assembler.

These languages are referred to as low-level languages because it is a language that is more intel-

ligent to microcomputers than it is to us.

Both these languages are difficult to learn for the average person. To bridge the gap, languages such as BASIC, FORTRAN, COBOL, and others were developed. Known as high-level language, it is much easier for us to understand and to learn since it uses human language in their statement structure and syntax. However, for the microcomputer

to understand the source statements, high-level language must be converted to machine language. Conversion is performed by a compiler or an interpreter.

The most common language used for personal microcomputers is BASIC (Beginners

All-purpose Symbolic Instruction Code). Programs written using BASIC-language can be exchanged with little or no modification for program compatibility.

Microcomputers have become such a useful tool in our society that no amateur radio operator can afford to be unfamiliar with its operation and use in the ham shack. There are many good technical and less technical books available, from a variety of sources, on microcomputer technology. Certainly, for the interested amateur radio operator, "The ARRL Handbook" is a good source of reference. Go ahead and let the microcomputer be a part of YOUR equipment in your shack.

## CARF TO DEVELOP CANADIAN AMATEUR BAND GUIDELINES TO REPLACE DOC SUB-BANDS

As a result of DOC's decision to deregulate the sub-bands, many think replacement band plans are desirable. Before making any suggestions or recommending the adoption of an international plan, CARF, in accordance with long-standing Canadian custom, would first like to ask individual Amateurs, clubs and associations for their up-to-date views regarding the frequencies and/or sub-bands and related modes and/or uses for each band which they feel should be adopted for the guidance of Canadian Amateurs.

In making their recommendations Amateurs should take into account present usage patterns, that is: the frequencies and sub-bands and related modes and uses which are now followed on a Canada-wide and world-wide basis and are essential for our local and long distance communications and experimentation.

Please send us your recommendations by the end of April so that we can consolidate your recommendations and publish them in June TCA for Canada-wide Amateur comment.

February 25, 1989.

## MORE ON THE PROPOSED DEREGULATION

Here are some additional details to supplement the highlights given in our last bulletin on this subject.

1. This, in detail, is how DOC proposes to provide for foreign Amateurs: Three new classes

of foreign Amateurs are to be created as follows:

A *general amateur* will be a foreign Amateur who is permitted to operate using telegraphy and telephony below 28 MHz in his own country. This class of foreign Amateur would get Advanced Amateur privileges while in Canada.

A *novice amateur* will be a foreign Amateur who is permitted to use indirect aural telegraphy below 28 MHz in the Amateur's own country. This group would get Amateur class privileges.

A *limited amateur* is a foreign Amateur who is neither a general or a novice amateur and this class would get Digital Amateur class privileges.

No definition is given in the Gazette for what lawyers call "indirect aural radiotelegraphy". DOC tells us that it means CW. Some say a less indirect definition and one more akin to ITU terminology, for example, would be "manually keyed radiotelegraphy".

Under this proposal, U.S. General, Advanced and Extra amateurs would get Advanced Amateur privileges in Canada. U.S. Novice Amateurs would get Amateur privileges and U.S. Advanced, Extra and Technician Amateurs would get Digital Amateur privileges.

Also not mentioned specifically in the summary, is the deletion of Regulation 50. It allowed foreign Amateurs to use frequencies and types of emission used in his own country if those frequencies and types of emissions were authorized for use by Canadian Amateurs. DOC tell us that this regulation is not considered now by crown lawyers to be en-

forceable. This deletion is worrying some Canadian Amateurs because, for example, foreign Amateurs would be able to come to Canada and take part in contests on frequencies which are outside their congested sub-bands and not allowed in their own country.

The Gazette notice summary told us that the conditions for Amateur station operation on aircraft were to be revoked but said nothing about Amateur stations on ships. A search has to be made to find that the ship Amateur station conditions are also to be revoked. We were told that the decision re ships was made at the last moment. DOC decided that the regulation of Amateur stations on aircraft and ships was more properly a responsibility of Transport Canada. Amateurs who want to operate their stations on aircraft or ships will have to have the permission of the pilot or captain as the case may be.

Ottawa, March 7, 1989.

## ITEM 35

CARF's request to extend the 30 day limit on receipt of comments from Amateurs on band deregulation was denied by Communications Canada despite the fact that copies of their proposals were not widely available until early March. Usually they allow 90 to 120 days for comment on regulatory proposals. However, Com Can's view is that, since the great majority of Amateurs approved in principle the restructuring including deregulation of the bands in the fall of 1986, 30 days is all that need be allowed.

With that in view, when the

regulations on the restructuring are proposed shortly, we should not expect more than 30 days. Com Can has told us they will try to ensure that Amateurs will be better informed on the next round.

March 30, 1989.

### VY9CC ON THE AIR!

Should you have heard the call VY9CC on the Amateur bands beginning April 3rd, do not be alarmed. It will really be an Amateur Station established at Communications Canada Headquarters to celebrate the twentieth anniversary of the founding of that Department. There are companion stations at each of the Regional Offices and, because they will be operated by certificated DOC employees on their own time as a hobby, do not expect them to interpret the regulations to you. The most they will do is tell you to whom in DOC you should write. If you want to see the Ottawa stations, drop into the lobby of 300 Slater Street, Ottawa.

April 3, 1989.

*"Space isn't remote at all. It's only an hour's drive away if your car could go straight upwards."*

-Sir Fred Hoyle

*"No race can prosper until it learns that there is as much dignity in tilling the field as in writing a poem."*

-Booker T. Washington

## NEWS AND VIEWS FROM HERE AND THERE

Each month our club exchanges bulletins with a number of clubs across the country. I thought that you might be interested in hearing some news and views from these bulletins. The clubs stretch out from Halifax to Calgary. We have yet to find a club in BC that will exchange with us.

Let's start out in Sudbury with the Sudbury Amateur Radio Club. Did you ever wonder where Lloyd Reed VE3AYE got to? He's alive and busy in Sudbury, coming up with club projects and club buys. Claude Dupuis VE3CPD is another busy member and the brother of our own Norm Dupuis VE3NDU.

If you were concerned that RTTY was gone from 2 meters in favour of packet you will be happy to learn that "Chatterbox" is now operating on 147.450 MHz. in London. The London Amateur Radio Club bulletin also included a photo of Bill VE3CSK kissing a pig. This led to comments like, "It looks like a reunion of long-lost relatives with all that kissing going on!" It was actually all in the interest of charity.

In Saskatchewan the Saskatoon Amateur Radio Club is gearing up to provide communications for the Canada Summer Games. From Alberta we receive Key Klix, the bulletin of the Calgary Amateur Radio Association. To an outsider like me it appears to act more or less as an umbrella group. Within the association there is a DX section, VHF section, Digital section, and CARA-

TELS. They all hold monthly meetings in addition to the general club meeting. This is the club which ran VX6OCO at the winter Olympics. They are also the western end of the packet satellite link.

Down east at the Halifax Amateur Radio Club, they helped out with a program called "A Day in the Life of a Sailor" aboard the CSS Acadia museum. The program was run during the March break for students seven to twelve years old and the amateurs ran the ham station in the ship's radio room to demonstrate radio activities on board a ship.

The Windsor Amateur Radio Club must have one of the longest names around for its two meter net, Essex County VHF Society Sunday Night Net or ECVHFSSNN for short. Even the call signs for the local repeaters are a bit odd: VE3s WIN, III, OOO, UUU, RRR, SOT, TOM, and a sleeper ZZZ. The Windsor club is also off and running on its second year of the CANWARN weather warning system. This is an official program of Environment Canada designed to use amateur radio to spot and report severe weather such as tornados.

Back in Ottawa, Bill VE3EKA of the Pioneer Amateur Radio Club is urging members to "go for it!" and establish a Fast Scan amateur television repeater.

That's it for this month. See you next month with more news and views from across the country.

-Pat Brewer, VE3KJQ

*"No person should be denied equal rights because of the shape of her skin."*

-Pat Paulsen

In the last while my radio has been out of commission and as a result I have been spending some time reading about propagation with particular interest in the "Greyline" propagation and its associated advantages. There are software programs around that provide an indication of the countries that are on your greyline for the day. However wanting to save a few dollars and at the same time attempt to understand the phenomenon known as "greyline" propagation, I took the cheap route and read as much as I could from the libraries. (As a side note, in the pursuit of knowledge I found out that the Nepean library facility at Centerpointe is light years ahead of any other place in town. You just go in and stand at a terminal and interrogate the system to find out what is available.)

With respect to greyline propagation, I found that it is precisely what the label suggests, that is; it deals with propagation along the terminator. And more particularly, propagation of radio signals in the 40-meter and 80-meter bands. Why along the terminator, is because as the sunsets or rises, the ionosphere behaves in two ways of special interest. On the daylight side of the terminator, the D layer makes its presence known while to the darkness side, the D layer has disappeared and the F layers merge together to create a single layer while at the same time increasing in height. This leads to the situation where propagation at the frequencies under consideration is most efficient along the terminator. One of the interesting aspects of this mode of propagation is that the angle of the terminator with respect to the ecliptic migrates daily to the east or west as the seasons change. The extreme tilt of the earth's rotational axis is about 23 degrees towards or away from the sun and with the passing of each day the tilt moves with the seasons Which means

that if you wait around for a year, the terminator passing through your location will cover many countries. Another aspect about the terminator is that it is not just a narrow line that segregates day and night as it crosses over your area, but it is quite wide. (For me it is comparable to the loaming.) The width seems to be a function of the sun's tilt; being very wide at the higher values of longitude and narrows as you approach the equator. Some writers of the software have arbitrarily indicated that the Greyline phenomenon is noticeable for about one hour and others would indicate that the line is in fact wider as you move away from the equator. If the value of one hour is chosen, then we are talking about a 15 degree rotation of the earth about its axis which at its widest point translates into 900 miles. That is quite a swath. I understand that it is related to the slope of the sun and therefore is wider in the winter, as we tilt away from the sun and narrower in the summer when we are tilted towards the sun. There is a school of thought that relates the width to the height of the sun but no one has popped out in the material that I have read to indicate how. One of the other things revealed in the literature is that the sunrise and sunset greylines tilt in the opposite direction. The above mechanism leaves one to conclude, that propagation parallels the greyline and does not result in propagation at angles pointing away from the terminator.

The reason that I have associated "whispering gallery" propagation with greyline is because there is a school of thought that would confuse Greyline propagation with "chordal hop" or whispering gallery modes of propagation. The term whispering gallery finds its root in domes such as St. Peter's wherein a person can be heard on the opposite side of the dome even though the person is

whispering. This is due to reflection of the sound waves off the surface of the dome following a path of short chordal hops resulting in a low loss propagation. Meaning anyone using QRP stands a very good chance of communicating to the other side of the world and situated close to the terminator. All you to do is to get your signal to reflect off the tilted surface of the ionosphere. This propagation mechanism was described by an Australian ham, who back in the 50s used it to explain the strength of signals received in Europe from Australia. The signals were significantly stronger than could be reasonably anticipated by alternate reflections off the earth's surface and the ionosphere. The way it is describe in the literature is that you rely on the distortion of the ionosphere at sunrise or sunset caused by the increase or decrease in height of the F layer due the presence or absence of the sun. This distortion is sufficient to allow the rf signal to be reflected from the ionosphere back to the ionosphere as in the manner of a chord with this being repeated a number of times until the radio signal again encounters a discontinuity in the ionosphere that reflects it back to earth. In this example, the propagation results from a distortion that is present near the greyline but is now perpendicular to it instead of along it.

As you move away from the greyline into darkness, the distortion of the ionosphere is less pronounced and the whispering gallery mechanism ceases to operate for you. Hence during that special situation created by the distortion of the F layer that moves with the migration of the greyline, very unusual conditions occur. These conditions result in anyone pursuing DX having a very good chance of reaching far distant hams situated close to the terminator on the other side of the world while operating QRP.



Well here it is, only licensed one month and already I'm writing an antenna article! I heard about this disease. Before I begin, let me express my sincere thanks to Doug, VE3ATY; Jerry, VE3CDS; Pat, VE3KJQ; and Brice, VE3EDR for running an excellent Amateur Radio course. To all my newly licensed classmates who have yet to get on the air, yes learning the code was worth it! My second ever QSO was with UZ3MWA in Russia on 10 meters. No problem when you can speak the international CW language of Morse and the Q-codes. My nerves settled down after about the fifth QSO, so now it's a breeze, except for the QRM on 20 meters and suffering those who tune up on frequency during my RST report. These latter misguided brothers of the brass give a new meaning to the term "dummy" load!

If you are interested in working HF DX, and are contemplating your first antenna, this article should interest you. I put my antenna up last April, in anticipation of getting my ticket, and found that it worked very well for receiving with my old Trio 9R-59D 9-tube receiver. I am currently using a Kenwood TS-140S transceiver and MFJ-949C antenna tuner. Having been a ham band SWL DXer since 1967 (220 countries confirmed), I had the advantage of already knowing the bands and when and where to look for various DX regions, so after one month on the air I'm well on my way to DXCC (33 worked so far) and just need the QSLs for WAC. All of the above personal hornblowing is to demonstrate that my antenna works well. It is based on an article I read in 73 Magazine, March 1985, p.44 by Philip Schmitt, WA8JXE.

My requirements when deciding to build this antenna were: low cost, readily available materials, and my 110 X 50 foot lot with no mature trees. The antenna is a basic half-wave dipole that is fed

with a balanced line instead of coax, in my case 300 ohm TV twinlead (the good stuff) that is good for running up to 300 watts. A balanced transmission line is less lossy than coax. The antenna is stranded 14 gauge copper wire and the insulators are white 1-inch diameter PVC plumbing fittings. A T-fitting was used at the feed point. I cut two slots in the centre shaft of the T to thread the twinlead out and back in before connecting it to the antenna. This provided good strain relief. After stripping the end 8 inches of twinlead and wrapping it around each antenna wire where they pass through 2 holes drilled in each end of the T, the connections were soldered and the whole T-fitting was filled with silicon sealant to provide a good waterproof connection. The length of the twinlead was sprayed with acrylic lacquer to increase the water-resistance of the insulation, which can become lossy when wet. Normal twinlead stand-off insulators were used for the run to the shack. A short nylon rope attached to the roof was used to the support the feedline at a right angle to the antenna and to keep it from flapping in the wind. My antenna is supported horizontally over the length of the roof using two 10 foot masts, one on a chimney mount and the other on a tripod mount. This gives the antenna about 33 feet total height (1/2 wavelength on 20 meters). Lightning rods and ground wires are attached to each mast, as are the halyards used to raise the antenna. The sharpened lightning rods were actually added later to the masts to keep the \*\$#@%&! birds from turning my brown roof white!

The whole premise of using a balanced feeder with a centre-fed dipole antenna like this for all HF bands requires the use of an antenna tuner or transmatch with a 4:1 toroidal balun to match the 50 ohm output impedance of today's transceivers (Oh, I can hear the

antenna purists groaning, sorry Merv). The antenna cut for 1/2 wavelength on the lowest operating frequency (i.e. 80 meters) will appear as 1 wavelength on 40m, 2 on 20m, 3 on 15m, and 4 on 10 meters. Where a full 1/2 wavelength antenna is too long for your available space, it can be shortened and still be effective as long as the total length of half the antenna plus one feeder wire add up to at least 1/4 wavelength at the lowest required frequency. I cut mine for 20 meters (33 feet total length) because of space limitations, but it has worked fairly well on 30 meters (got 549 from Russia with 90 watts). I can get out on 40 and 80, but that's stretching it as the gang on the Pot Lid Net will attest. It works great on 17 and 12 meters as well (80 watts got 559 from New Zealand on both 15 and 17 meters). The antenna works for QRP as well. My 5 watts on 10 meters earned 579 from GM3OXX/QRP in Scotland.

With the tuner, of course, the SWR is always 1:1. What I like most about this antenna is the freedom I have to roam all over the bands (currently CW portions only) without worrying about SWR, unlike the standard coax-fed dipole. This is especially true for 15 meters where I work below 21.030 MHz for DX in the morning and above 21.110 MHz for US novices in the evenings before the band closes. Come August and my six month endorsement, the vast expanse of 10 meters will be available with this antenna.

I hope some of the new hams get some ideas from this article and maybe a few of the old pros might reconsider the balanced centre-fed multiband dipole if they have recently moved and had to leave the tower and beam behind. It was a popular design from the '30s to the '50s, before coax and the yagi. If anyone wants to "borrow" the article from 73, just give me a call (837-9598) or drop around to Orleans for a look see.

### 6m Flea-Power Modification Project: Part 1

One longstanding amateur tradition is the adaptation of some existing low-cost product to amateur use. Fine examples are the Radio Shack low-power 49MHz FM handies. The objective is to move frequency up from the 49.83-49.89 MHz band into the FM portion of 6 metres (above 51 MHz). Their limited range would be suitable for tower work and local on-site links at fleamarkets and public events. Dropping one of these from the tower top would be much less of a setback than the average \$300-500 HT (assuming it didn't hit someone).

There is a 1-channel crystal version (TRC-501) costing \$40. The 5-channel version (TRC-503) costs \$60, and uses frequency synthesis.

This system has recently worked its way down into low-cost products, considering the alternative of many costly crystals.

These FM transceivers have come a long way from the AM superregen "squalkies"; they have preset squelch, 1/2 microvolt sensitivity, and decent audio quality. The advantages of modern integrated circuits are fully evident: IF discriminators (Motorola MC3357/59/61), op-amps, IC audio amps, and single-chip frequency synthesizers (such as the Sanyo LC7150).

I read in Ham Radio about successful modification of the 1-channel unit with new crystals and retuning. At \$20 per channel, total cost exceeds \$60, close to that of the unmodified 5-channel unit. If the latter could be converted cheaply, without too much expense and difficulty, extra channels available from the synthesizer would justify its higher overall cost.

A scheme to do this was cooked up by myself, Gord

VE3PPE, and Marcus VE3MDL, who obtained the service manual and gave me a copy.

In the next installment I will detail some of the inner workings of the TRC-503, the modification process, and how the results were not quite as anticipated.

-Dave Harris, VE3KMV

---

### The Origin of "73"

The origin of the expression "73" goes back to the days of the landline telegraph. The use of this traditional numerical code was an indication that the end of the signature of the message was coming up.

The National Telegraphic Review and Operator's Guide, published in April 1857, first used 73 to mean "my love to you". Succeeding issues of this publication continued to use this definition of the term.

In 1859 the Western Union Company set up the standard "92 code", - a compilation of a series of phrases, numbered from one to ninety-two, used by telegraphic operators. Here, 73 changed to mean "accept my compliments".

From 1859 to 1900, many variations appeared in telegraphy manuals. In Dodge's manual "The Telegraphy Instructor" it appeared simply as "compliments". A return to "accept my compliments" can be found in Theodore A. Edison's publication of "Telegraphy Self-Taught". In "The twentieth Century Manual of Railway and Commercial Telegraphy" it is defined as "my compliments to you". But in the glossary of abbreviations of the same edition, it is expressed simply as "compliments".

In a 1908 edition of Dodge's manual, the present version of "best regards" can be found and it is widely used today as a *friendly* greeting exchange between amateur radio operators in many parts of the world.

-73, Leo Desjardins

### THE WISE OWL NET

The Wise Owl Net had its debut on January 23, 1980. During an executive meeting of the Ottawa Valley Mobile Radio Club it was decided that a two-metre net would be a good medium to bring club news to the local ham fraternity, especially to those who were not able to check in to the Pot Hole Net.

The Wise Owl Net (TWON) was originally run on Wednesday night at 20:00 hours local time, but due to some re-scheduling of the former net manager's study program, the day was changed to Friday.

In the early days of TWON the interest by local radio amateurs was "underwhelming" with only three to six check-ins per week. Its popularity increased steadily, however, so that the average number of check-ins is now sixteen to eighteen per week. One contribution factor for poor check-ins may have been the location of the VE3TWO repeater. It was co-located with VE3JW at the National Museum of Science and Technology on St. Laurent Blvd. It is presently more centrally located on the tower of the Energy, Mines and Resources building at Booth St. and Carling Ave.

The Wise Owl Net may be considered to be a ragchew net, but its main purpose is to bring club news and items of interest to the radio amateur community. One interesting feature of this net is the awarding of "The Wise Owl Certificate" which is an annual event taking place on the anniversary date of TWON.

The Wise Owl Net can be heard currently every Friday night at 20:00 hours local time via repeater VE3TWO at 147.90/30 MHz. The net is active from the first week in September to the last week in June.

-Leo Desjardins, VE3NVL

# A FOLD-OVER TOWER

Not long after I got my licence, a friend moved away from Ottawa, and left me his tower, a 3-section, non-commercial job about 33 feet high. I decided to make it into a "fold-over", for many reasons, accessibility being the main one.

I got a city permit, which required a drawing of the lot, and location of the tower, and a plan for the concrete block which would anchor the tower. Couldn't build it within 25 feet of the back lot line or within 8 feet of the side lot line. My son dug the hole, and the cement truck delivered the goods, which we poured into the hole. Expensive stuff, concrete. Son-in-law Tom welded a hinge on the base plate, using a steel pipe and a steel rod. Long anchor bolts, threaded, poke up from the concrete, through the plates, and are tightened down with heavy nuts.

I wanted to use my two-story house to partially support the upper part of the tower, but how to do it, as there is a fairly large roof overhang at the second story. I ended up by building a truss-like structure out of 2 x 4's, which would stick out from the house, and to which I would fasten the tower in such a way that I could go up a ladder and fasten or unfasten the bolts holding tower to truss. Attaching this truss structure wasn't easy. I looked all over for very long lag bolts, with their square heads and tapered pointed threads, but no luck. Fortunately, I could call on Tom, who cut some lag bolts in half, and welded in a section. Voila ! Long lag bolts!

I drilled some holes into the house, estimating where the wooden frame was, and lag-bolted the truss to the house. I must have been lucky, as nothing

happened, and the truss is still there years later.

I attached a boat winch to the tower, and used 1/4 inch steel cable. Attached one end of the cable to wooden supports in the attic, removed one of the aluminum soffet sections, and ran the cable outside. Cable attachments as per the illustration. I cannot claim it was all my own idea, as I saw this method used by a ham in Florida.

Now when I need to do some work on the tri-bander, I climb the ladder, loosen a few nuts, climb down, hang on to the crank handle, get behind the tower, and push--that's right--push the tower. Once the cable takes the strain, I crank it down. I can crank it up using one one hand, if I want. It's quite a feeling, pushing over a tower, first time you try it!

A commercial machine shop did the necessary work of cutting a few steel plates and drilling holes in them, and for providing the cables and pulleys. They were very helpful with their advice.

I can't go into all the details of construction, but if any ham wants to know more, give me a call. Oh yes. Don't forget to cover up any holes in the soffet (under the roof overhang). I forgot, and starlings nested there the first year. Made an awful mess on my tower! And be aware that a tri-bander takes up a lot of room when it's coming down.

Right now, I've got a problem with a maple tree in the back yard...!!

-Archie McKenzie, VE3NJY

*"Man is the animal that intends to shoot himself out into interplanetary space, after having given up on the problem of an efficient way to gett himself five miles to work each day.."*

-Bill Vaughn

## MINUTES

CHRIS ANDERSON  
VE3OWE

The March 16th meeting of the OVMRC opened on the set of "Homegrown Cafe" at CJOH Television. This is one of the largest indoor studios in Ontario. Attendance was near the 60 mark, with many of the members' wives present. Visitors that evening were Gary VE3GAB, Don VE3AAW, Steve ZL4GH and a very new ham Dan, VE3RDG.

A guided tour of the station was the highlight of the evening. The behind the scene aspect of television production was a real eye opener for most of us.

Chuck, VE3PAP, gave a report on behalf of CARF on the DOC deregulation of the amateur bands. Chuck reported that Dan Holmes, VE3EBI, is recovering well and should be at the next meeting.

Pat Brewer, VE3KJQ, is selling raffle tickets for an ICOM u2AT mini handheld, provided by Atlantic Ham Radio, to be raffled at the flea market. The date for the flea market will be April 29, and will be held at Canterbury High School. There will be no admission charge.

The Editor, Bob Baillargeon, VE3MPG, is in need of new articles on a continuous basis. The Rambler now has a lead time of a month. The Editor needs more articles from the membership. Two copies of the Rambler are mailed to Moscow, USSR, each month.

Bob, VE3MPG, Chairman of the planning committee for the new VE3JW at the Museum of Science and Technology, gave a progress report on the status of the proposed changes for VE3JW. He requests comments from the membership with regards to future equipment needs of VE3JW.

The meeting closed at 22:00 hours.



# CANADA'S BEST STOCKED

AMATEUR RADIO AND S.W.L. STORE.....

Call or write for best Canadian pricing, immediate delivery and reliable service.....

# ICOM

# KENWOOD

...pacesetter in Amateur Radio

# YAESU



WE STOCK: Icom Yaesu Kenwood JRC AEA Alinco Alpha-Delta Ameritron Amp-Supply Astron ARRL-Books Avanti Barker-Williamson Bearcat Bencher Callbooks CARF-Books CRRL-Books Cushcraft Daiwa Eavesdropper Emerson Grove Grundig Haruteq Heil Hi-Q Hustler Kantronics Kenpro Larsen Magnavox-Philips MFJ Mirage Nye-Viking Palomar Panasonic Periphex Ranger RF-Concepts Sangean Sony Telex-HyGain Ten-Tec Texpro Unadilla Uniden Vibroplex WORTH and more.....

ATLANTIC HAM RADIO LTD. ships over 90% of it's orders from stock. Our inventory is usually in excess of \$700,000. In 1989 we celebrate our 10th anniversary. Our tremendous growth as been achieved through customer satisfaction. If you haven't ordered from us, give us a try. I'm sure you will be pleased with our courteous, speedy service and at prices that are extremely competitive.

We do take trades. Call or write for our latest price list on new and reconditioned equipment. All our used equipment carries a 100% 30 day warranty.

NEW FAX PHONE NUMBER 1-416-631-0747

## ATLANTIC HAM RADIO LTD.

Tues.-Fri. 10 a.m.-6 p.m.

Saturdays 10 a.m.-2 p.m.

After 7 p.m. Call (416) 222-2506

For Orders.

378 WILSON AVE.

DOWNSVIEW, ONT.

CANADA M3H 1S9

(416) 636-3636

