THE RAMBLER

JAN, 1989

The Ottawa Valley Mobile Radio Club Incorporated

P.O.Box 5530

Station F

Ottawa Ontario

K2C 3M1

NEXT MEETING: **THURSDAY, JANUARY 19, 1989**
PLACE: **THE MUSEUM OF SCIENCE AND TECHNOLOGY**
TIME: **7:30 P.M.**

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

14 I 3
ON
POSTAL CODE

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

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.

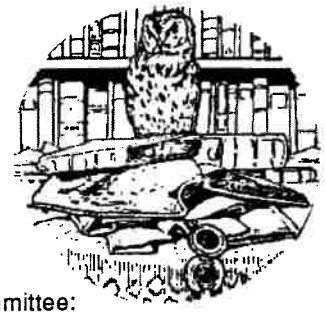
The Rambler

Volume 32, Number 1
January 1989

CONTENTS	PAGE

The next meeting of The Ottawa Valley Mobile Radio Club is scheduled for Thursday January 19, 1989 at 7:30 p.m.

The speaker will be John Kent, VE3ETW. John, a project manager at Canadian Astronautics Limited (CAL), will talk about the mobile data system being developed by CAL, Gandalf, and Hughes Network Systems for Telesat Mobile Inc.



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.

RAMBLINGS

By Alan Boyce VE3LNH

So what have you resolved for 1989?

I resolve to write 1989 instead of 1988 on my cheques. I'm not sure if I can keep that one.

I also resolve to not smoke. If I make it, that will be fifteen continuous years without a cigarette. That one should be safe.

This isn't so tough.

I resolve to always ask if a restaurant has a "No Smoking Section" before making a reservation. If we keep it up, Ottawa restaurateurs eventually will get the message and provide one. And I resolve to not resort to urban warfare if they don't.

I resolve to spend more time on the radio -- not just on two metres on the way to work, but real long distance, high frequency, ham radio sort of stuff. I will log some time every month, even if it is just slow speed morse code in the American Novice portion of the bands, or to check in to the Transprovincial net.

I resolve to talk with stations in at least five new countries.

I resolve to send out QSL cards to confirm all the contacts that I make, and to collect as many new cards as time will allow. There should be at least enough to change the selection on my bulletin board.

I resolve to try out Packet Radio on the HF bands.

I resolve to spend some time on RTTY and AMTOR.

When I am on two metres and I hear a new call sign, I resolve to chat them up and make them feel welcome.

I resolve to help with the communications for at least one public service event.

I resolve to work at VE3JW at least four times this year.

I resolve to stay up until at least 1:00 AM on field day.

I resolve to bring home from the flea market only things that I really, honestly think that I will probably use someday.

I resolve to attend more of the other club's meetings.

I'd like to resolve to try all of the games that I have collected for my computer, but I know that would never come to pass.

I resolve to read all of the books that I got for Christmas.

I resolve to clean up my ham shack. I resolve to clean up my workbench. I resolve to clean up the storage room. I resolve to fix the kettle that is sitting on my workbench. And the pot lid. And the digital clock. And the battery charger.

I resolve not to get defeated by the long list of things that I have to repair.

If I get all of that done, I resolve to install the weather stripping that I bought three years ago.

This is an ambitious list. I might have to take a two-month leave of absence to complete them all. Well, I resolve to make an honest attempt at achieving them.

And I resolve to try to get my articles in to the Rambler Editor before the last minute.

❑

EDITORIAL

By Bob Baillargeon
VE3MPG

Resolutions are meant to be broken. I don't like breaking things. No resolutions will be made then, in the Editor's office. There, that feels a lot better. I do have a few things planned, that if accomplished this year, would be nice though.

First, all of those people who helped get the Rambler out on time in 1988, thank you. Joyce Wells kept her fingers in the pot(read: keyboard), by inputting all of those manuscripts sent in by the budding ham literary community. Those authors deserve a round of applause too. I believe articles published in the Rambler should be written by the members.

There are a couple of fallacies about writing that I would like to quash. The most heard fallacy is "I don't have the talent to write." If you still think you don't have the talent, do a general three-point outline for your story. Then include sub-outline points, which you fill in with details pertaining to each. The main three-point headings should be **Introduction, Main Body of Text** and **Conclusion.** Under Introduction tell the reader your idea, why it came about, and its advantages. Under Main Body of Text mark down five or six points you wish to elaborate on. Under Conclusion summarize your idea or project and highlight its advantages. Fill in the details under each outline point.

The second most heard fallacy is "No editor will wade through my awful grammar and spelling." Really it's not that bad. You're in good company though if it is. Ernest Hemingway was a terrible speller. Most noted writers have editors, like you do-me! There are many checks, both on the author's and editor's side.

More and more authors have access to microcomputers that run spelling checker programs. On particularly confusing points, be sure to include a phone number for on-the-spot clarification.

You see, most writing problems are imagined. Get those articles to me by the 25th of each month. Send them directly to my home. IBM, Atari, C64, and Amiga are the only formats on disk that I can read at the moment. In IBM format 360k 5 1/4" or 720k 3.5" are acceptable.

The publishing committee deserves some credit for the success of 1988 too. Eric Still, VE3OTT, and his son Kevin have done some outstanding reproduction work from our laser printed masters. Fred Haire, VE3NJF, did a lot of the leg work in getting those masters to Eric, and scheduling the mailing end of it with Don Kernohan, VE3PUZ. Inevitably some issues hit a few snags in production, but these problems were easily handled by this crew. Pat Brewer, VE3KJQ, and his database tirelessly updated and provided all those neatly printed labels for the front of the Rambler. Thanks one and all!

At the upcoming February meeting, I will give a live demonstration of the methods used in producing the Rambler. It takes approximately 25-30 hours of work to put an issue together. It seems like a lot of time, but writing one or two columns, editing, selection of material from countless sources, and designing takes a few hours.

In the next issue a "Shack of the Month" picture will be published. I hope we can keep this up for a few months to see if some of those shacks are really as messy as some of the operators say they are. But on a serious note, with the test picture included in the December issue, and the fine tuning of our picture repro-process, it should work out well. Show off that shack - send those pictures in, black and white or color.

A new column appears this month. The ANARC BBS is accessed through the Carleton University BBS node. This BBS has a shortwave listening and ham radio area, chock full of obscure and interesting articles. If you are interested see me at the next meeting for details for access.

VE3JW will be shutting down on January 27 for a few months. The museum has plans for renovation work in several areas of the museum. The operating schedule, co-ordinated by Leo, VE3NVL, will therefore be put on hold for the time being.

A Club banquet is in the planning stages. The time and place have yet to be announced but the end of February is a possibility.

I'd like to wish you all a great 1989. Oh yes, don't break anything.

Letters To The Editor

The Editor, OVMRC Rambler

I have noticed, while listening to the club repeater, that the use of tone squelch circuits seems to be on the increase. For those who may not know, these circuits are used to inhibit receiver operation unless a specific DTMF tone combination is received. In use, this saves an operator from having to listen to all the idle chit-chat on the repeater, while still allowing his friends to call him (if they know his code).

I would like to make a comment to the users of this system: You may be missing more than just idle chit-chat.

You may be missing a ham who is visiting town and needs help finding his way through traffic; you may be missing a new ham who just got his first rig and would really like to talk to someone; you may be missing the ham down the street who you've never met but who would be happy to help you raise that new antenna.

You may be missing an emergency caller who is desperately hoping that someone still listens on this repeater.

I like to think of amateur radio as a sociable hobby. I like the feeling that there is someone listening, that I have the chance to meet new people, that I may help or be helped by a stranger.

If you are looking for selective, private mobile communication, I recommend cellular telephone. I don't believe that this mode of operation is consistent with the goals or the spirit of amateur radio.

Yours truly,

George Dew, VE2OWW

Good point to bring up, especially at the time of the year when driving conditions are treacherous. A call for help would be greeted by silence. Some of our members do walk with their HT's and falling or slipping is a threat for them. You're correct. How would they call for help if required? They would probably go to another repeater where human activity still persists. Or could they whistle the correct pitch to waken a rig somewhere into activity? I doubt it. I have been greeted by stony silence on VE3TWO more than once. Come on gang start yacking it up. Listen to VE3MPC to see how it's done!

-Editor

Minutes of December 15 Meeting

The President, Alan Boyce, VE3LNH welcomed about 36 amateurs and guests. Minutes of last month's meeeting were approved.

Leo, VE3NVL, said that the arrangements for " Santa Claus " had been made for Sat. Dec.17 from 12-3 p.m. at the Museum, and on Dec.26 Sydney Moorcroft, VE3GVI, would be the controller on the special Wise Owl Net on VE3TWO at 9:30 a.m.

Membership officer Pat Brewer, VE3KLQ, reported a total of 149 members, a new high. He asked for an indication of interest in a Name Badge, and would try to get a sample for the next meeting. A badge for new members was also brought up as a possibility. President Alan stated that he had 12 T-Shirts at $10 and a Cap at $8 still available for sale.

Technical Advisor Ed Leblanc, VE3VLF, explained the preparations for the next "Introduction to Amateur Radio", tentatively planned for March 18, 1989, 10 A.M.-4 P.M. at the Museum radio station VE3JW. Present plans call for "cycling through" the different modes one at a time instead of trying to show everything at once.

Field Day '88 results in QST Magazine mentioned VE3JW in the 3rd spot in its class. Congratulations, fellows! And the activities at the Childrens Hospital of Eastern Ontario, with hams as Santa Claus and his helpers, went very well as reported by Russ Lowe, VE3LOW.

The main speaker, Bob Campbell, VE3KLK, gave a very interesting account of the history and present function of the "COMSONT"--Communications Ontario--net which meets daily on 7.074 Mhz at 10 A.M. local time. It's purpose is to have operators available in case of emergencies anywhere in the province. Towns and cities are called in alphabetical order by the controller, and hams are invited to check in. At different times, 256 hams in 143 municipalities have done so. Total check-ins for a year are about 16,000 with a daily average of about 45. Bob, who has been Net Manager for nine years, said it is a very interesting position, but he is now looking for a successor.

Communications Canada (ex-DOC) was asked about third party traffic to the earhquake zone in Armenia, this on behalf of C.A.R.F., but a definitive answer has not yet been received, according to Bill Wilson, VE3NR.

A question was also asked if there was an "Intruder Watch" in operation. Discussion followed, with examples given of possible infractions.

After a motion to adjourn, members and guests enjoyed coffee and refreshments provided by Evelyn MacKinnon, VE3OAM.

Secretary Archie McKenzie, VE3NJY

Does power only rest with those who control the definitions?

Have you heard about the new high powered multiple-beamed radar systems to be installed at sites across this great land of ours? Do you know that the government and the AES (Atmospheric Environmental Service) plan to operate them at a frequency of 441 MHz?

Just imagine what this will do to cellular phone base stations, AMSAT satellites, and commercial repeaters operating above 450 MHz! At 441 MHz, these radar systems could even force HAM repeaters and link systems of the 440 to 450 MHz range completely out of the band. It doesn't take a clairvoyant to forsee the effects on Amateur satellite uplinks, ATV, weak signal, and EMEs!

The AES dubs its first radar installation at Egbert, Ontario a wind profiler. This profiler is the first in a series of CADRs (Clear Air Doppler Radar) planned for major centres across Canada-possibly, Halifax, Windsor, Edmonton, and Vancouver. Equidistant to Allliston, Barrie, Base Borden, and Cookstown, the Egbert facility represents money-to the multimillion dollar tune of R & D.

Take out the map and watch the plot thicken. Egbert lies less than 70 km north of Toronto's busy international Pearson Airport, not to mention Base Borden with its heavy load of military air traffic. Many make CADRs, and at least one manufacturer warns against installing them near heavy air traffic. Has the AES considered potential interference to sensitive onboard avionics? Radar reflection from aircraft? Flight paths within beam patterns?

So what went wrong? It's a simple case of mistaken identity. The radar replaces radiosondes (weather balloons) for studying high altitude wind patterns. Such meteorological aids work in the 401 MHz to 406 MHz band because of the International Telecommunications Union Treaty (Canada signed). In this band they do not threaten cellulars, satellites, or repeaters. But assigning a frequency in the 70 cm band to a meteorological aid violates the Treaty, so the DOC (Department of Communications) changed the rules of the game.

This is where the sleight of hand comes in. The DOC conveniently reclassified the CADR to a radiolocation device. This quick trick permits the much greater frequency allocation. To give you some idea-CADRs being considered by AES offer effective radiated power levels between 1.2 MW to well over 2 MW.

But the wind profiler is not a radiolocation device; it is a meteorological aid ("a radiocommunication service used for meteorological, including hydrological, observation and exploration"). The names may change, but the facts remain the same. The profiler is a triple beam, broadband, one Mw radar designed exclusively for gathering high-altitude wind profiles. How can it be defined one way when its function is otherwise?

Bell and Cantel cellular base stations dot the Egbert site with receivers tuned to the second harmonic of the CADR signal. Bell appears particularly vulnerable at 882 MHz, the exact second harmonic of AES Egbert radar. Imagine the effect of a second harmonic component of a 2 MW pulsed radar signal on cellular phones in densely populated Southern Ontario!

And there's a lot of voting HAMs out there, struggling for years now with the throbbing of Soviet Woodpecker long-range radars.

If interference closes down AES Egbert soon after its debut, conversion equipment and antenna modification would be required to make it viable. We can prevent these catastrophies. GEE, will we stand still just playing our OBOE?

-By Mar Jean Olson, Assistant Editor, Canadian Electronics Engineering, May 1988.

Integrated Circuits Celebrate Thirty!

T'was 30 years ago that Texas Instruments' engineer Jack Kilby demonstrated the first working IC. Since his early invention, ICs have become smaller in size, greater in capability, and lower in cost, allowing you systems once confined to science fiction.

Due in part to the IC, the electronics industry has grown from $25 billion in 1960 to nearly $500 billion. This growth is projected to reach $900 billion by the mid 1990s. To accommodate the market's needs, the latest ICs have reached densities in the megabit range and require geometries of 1-micron and below.

After transistors replaced vacuum tubes, the world searched for a method to connect configurations of components inexpensively. Kilby's IC offered a solution to this problem.

Kilby wrote in an article for IEEE Transactions " On Electron Devices" in 1976, "The first electronic equipments were composed of a few dozen components and could be readily assembled by hand-soldering techniques. Each component was manufactured separately by a process optimized for the purpose. As electronic equipment became more complex, short-comings in this procedure began to appear. The cost of the equipment increased more rapidly than component count, and equipment reliability suffered a corresponding decrease."

In 1958, Kilby moved to Dallas to work for Texas Instruments Semiconductor Components Division. At that time, TI was exploring microminiaturization and had a contract from RCA to develop the Micro-Module concept.

That approach entailed creating discrete components of uniform size and shape with built-in wiring.

The modules could then be snapped together to form circuits, eliminating the need for wiring the connections.

Kilby disliked the module approach because it didn't address the problem of large quantities of individual components in elaborating circuits. So he looked for alternatives.

Rather than reworking conventional design, Kilby reexamined the problem. He later said, "I began to feel that the only thing that a semiconductor house could make in a cost effective manner was a semiconductor.

"Further thought led me to the conclusion that semiconductors were all that was really required- that resistors and capacitors [passive devices], in particular, could be made from the same material as the active devices [transistors].

"I also realized that, since all of the components could be made of a single material, they could also be made in situ, interconnected to form a complete circuit. I then quickly sketched a proposed design for a flip-flop using these components. Resistors were provided by bulk effect in the silicon, and capacitors by p-n junctions."

BREAKING THROUGH

Encouraged by the results of a preliminary test, Kilby set out to build an integrated circuit. Using a sliver of germanium mounted on a glass slide, he built a phase-shift oscillator. On September 12, 1958, he connected a power source to his device and applied 10 volts.

A sine wave flickered across the screen of a nearby oscilloscope. The age of the IC had begun.

Kilby's breakthrough was followed by IC computers in 1961. The team headed by Kilby created this computer for the US Air Force.

The computer, which was 6.3 cubic inches in volume, weighed 10 ounces and had fewer than 600 parts.. It proved that ICs were practical and that they had a potential for making a broader impact. Built conventionally, the same device weighed 480 ounces, had a volume of 1,000 cubic inches, and consisted of 8,500 individual components!

Despite the promise that this new device held for making lighter and less expensive electronic products, it met with lukewarm interest. Designers did not feel "comfortable" with the idea that their "components" were too small to see or work with.

Long accustomed to hands-on design work in which components could be plugged in and pulled out freely, engineers were unsure how to work with this new invention too small to take apart.

Persuading the industry would require the appropriate demonstration vehicle. With this thought in mind, TI's President Pat Haggerty challenged Kilby to create a calculator that would be powerful and yet small enough to fit in a shirt pocket.

In 1967, they demonstrated a hand-held calculator capable of the basic four functions. The ability to perform multiple calculations quickly was popular. More importantly, the possibilities of the IC were becoming more apparent.

The next 30 years bear witness to the acceptance of the IC. Not only have ICs been accepted, they have become specialized.. More functions are captured in silicon. Unique functions such as artificial intelligence, digital signal processing, Video Random Access Memory and voice synthesis are some applications of the newer ICs. They are precursors of things yet to come.

All thanks to Jack Kilby who just wouldn't rest until he solved the puzzle!

-By Gina de Miranda of Texas Instruments in Dallas Courtesy of Canadian Electronics Engineering-November, 1988.

AERONAUTICAL MOBILE

By Ed Leblanc, VE3VLF

High above the Atlantic, scores of commercial jetliners fly everyday between the North American and European continents making international travel a very common occurance. However, behind the appearance of a routine procedure lies an extensive and complex air transportation system which safely guides these aircraft to their destinations, all transparent to the passengers. A part of this system can be observed by anyone who has a shortwave general coverage receiver/transceiver and a modest antenna. With most hams today this should be no problem.

What goes on above the Atlantic can be heard between the aircraft and their ground controllers on various frequencies throughout the HF spectrum on bands reserved exclusively for commercial voice and aeronautical communications, usually on upper sideband. Some of the more commonly used frequency bands are 5451 - 5676 KHz, 6526 - 6682 KHz, 8816 - 8960 KHz and 11276 - 11396 KHz.

Once and aircraft leaves a continent, it switches its communications from the regional VHF to the long range HF system and keeps in contact with an international flight service station (IFSS). Each of these stations is responsible for a certain defined geographical area and any aircraft entering this zone must establish contact with the IFSS and be subject to its control. On the western side of the Atlantic, Gander and New York are the main IFSS terminals with Gander's zone extending eastward to 30 degrees west, about the middle of the Atlantic southward to 45 degrees north and as far north as Greenland. On the eastern side, the main IFSS terminals are Shanwick in the British Isles and Santa Maria in the Azores. There are six parallel tracks that cross the North Atlantic with westbound flights made in the day and eastbound flights at night.

It is not uncommon to hear two or three IFSS controllers using the same frequency as they handle aircraft in their zone and monitor aircraft approaching their zone. One evening, I heard Gander and Shanwick on the same frequency handling over twelve or so aircraft at the same time. With so much information being passed, the frequency got quite busy but the controllers handled it very professionally.

Once over the open water and settling in for their transoceanic journey, the aircrew doesn't have to monitor the frequency in order to receive a call from the IFSS. The pilots have enough to do in ensuring a safe flight than "reading the mail" of other aircraft on the frequency although most of us would love to work so DX with an antenna height of 30,000 feet plus.

A system known as selective call (SELCAL) is used which enables the IFSS to notify a specific aircraft that it wishes to contact it. Each radio on an aircraft has a unique four letter code which an IFSS transmits as a tone sequence to activate an audible and visual signal to the aircrew to "turn up the RF gain" and respond. Usually, when an aircraft establishes contact with an IFSS for the first time, it gives its SELCAL code for ground control's reference.

Just as hams exchange typical information on every QSO, such as RST, QTH, name, rig, etc., an aircraft to ground exchange have some basic elements. Mandatory information includes aircraft identification, current position, Flight level, next to expected positions and times, outside temperature and wind direction/velocity.

Commercial aircraft always identify themselves by their airline name and flight number such as Eastern 960 and Lufthansa 450. Some airlines use special callsigns for their aircraft such as Speedbird for British Airways and Clipper for Pan American Airways.

Position is typically given as latitude and longitude but there are position points located on dedicated air corridors that are given such names as Mike, Jesse, Bours and Konch. Such positions are commonly located near the coasts rather than in the open ocean.

Flight level refers to an aircraft's altitude when it is flying above 18,000 feet. For example, if an aircraft reports that its flight level is "270", this refers to the altimeter reading of 27,000 feet with the device always set at a reference level of 29.92 inches of mercury. In this way, all aircraft are using the same calibration standard to ensure proper flight separation, even if their altimeter readings do not indicate an accurate height above sea level.

The weather statistics are not just to act as filler for the "QSO" but help the weather men piece together an accurate picture of the ocean skies. A typical report from an aircraft might go like this:

"Gander, American 687, 41 north, 62 west, flight level 320, estimating 42 north, 60 west at 0056 zulu, 42 north, 56 west at 0132 zulu. Temperature minus 41, winds 280 diagonal 60.

In the weather report, the outside tempera-

ture is minus 41 degrees celsius (yes it can get that cold up there) with the winds blowing in a direction of 280 degrees at a speed of 60 knots.

The ground controller will repeat this report to ensure accuracy. When you first listen in, on is amazed that the ground controller can copy al the information down and repeat it perfectly immediately after it is given, especially at the speed some pilots talk. No doubt, all of this is second nature after hours of practice.

Other information Aircraft give are speed, fuel and requests, such as permission to change altitude in order to take advantage of favorable winds and conditions to increase fuel consumption of to avoid turbulence.

Some active frequencies to listen on for Atlantic traffic are 6557, 5616, 8825, 8864, 8879, 4675 and 8891 KHz USB. So if you want to take a peek to see how the "Top Guns" operate, have a listen and join the world of aero HF communications.

REPEATERS EN-ROUTE

On a long trip, each evening I plan the next day's journey including selecting repeater frequencies to load into my two-metre rig. This entails finding the frequencies in The ARRL Repeater Directory, a tedious task. The repeaters are organized by district or county in each state, the names of which usually don't appear on the road map. Usually, one has to look at every repeater in the state to find the close ones.

On a recent trip through the eastern states, I tried a different methos. Thanks to OVMRC, I have a copy of The ARRL Operating Manual (1987 edition), a door prize at the September meeting. This manual gives a list of the ten most popular repeater frequencies. I loaded these into my H/T which has only ten memories and scan continuously as I drive. In any given area I could raise from one to six of these repeaters with 3 watts and a 5/8 trunk mount. The frequencies are:

146.34/146.94	**146.22/146.82**
146.16/146.76	**146.07/146.67**
146.25/146.85	**146.37/146.97**
146.13/146.73	**146.31/146.91**
146.28/146.88	**146.40/147.00**

You may want to replace the last one with 46.52 simplex for working any mobiles you spot on the road.

Brice Wightman, VE3EDR

All About Communications Canada

In the early 60's, the agency responsible for Canadian radio amateurs was the Department of Transport (DOT).

For an examination fee of 50 cents, you could take the examination test. After successfully passing the three part test - morse code at 10 wpm, a written technical exam and an oral examination, you were issued an Amateur Radio Operator Certificate. Station license fee was $2.50 per year.

At this stage, amateurs were permitted to operate morse code (CW) on all authorized amateur bands, and phone on those bands above 50 MHz. After six months of c.w. operation, the amateur could have his certificate endorsed to operate phone on the 26.96 - 27.0 MHz. and 28.0 - 29.7 MHz bands.

For your Advanced Amateur Radio Operator Certificate, you were required to pass a 15 wpm test and a more difficult oral and written examination. This permitted the radio amateur to use phone operation on portions of all authorized amateur bands. The maximum input power to the final stage of an amateur transmitter was limited to 750 watts.

The federal department presently responsible for the licensing of the amateur radio community and other radio operating agencies is Communications Canada (CC) formerly Department of Communication (DOC).

Leo Desjardins VE3NVL

IN MEMORIAM

Dr. Maurice Haycock, VE3LC, age 88, died on December 23rd in Ottawa. A Maritimer and a graduate of Acadia and Princeton in geology, Dr. Haycock was an active Radio Amateur, painter, lecturer and researcher who spent much of his time on geological exploration in Canada's Artic.

Always resourceful, on occasion his skills as an Amateur enabled him to rehabilitate some aircraft radio equipment and call for emergency help to rescue a research team when an aircraft went to the Artic to bring them home was damaged and unable to take off.

Among other things, he was noted for his exploration and research regarding Beechey Island and Sir John Franklin's ill-fated expedition in search of the Northwest passage.

Dr. Haycock was a long-time member of the OVMRC and in recognition of this was given a life membership some years ago.

-Bill Wilson, VE3NR

IN DEFENCE OF QN

By Charles King, VE3PDK

"If you can't take a joke you shouldn't have joined" was never more applicable than to the amateur who resists or objects to theuse of Q signals and other codes in radio communications. What may be considered esoteric "jargon" by the reluctant amateur is really a highly developed means of making radio communications more efficient, increasing both speed and accuracy in transmitting information.

Amateurs were introduced to a few Q signals when they studied for the DOC examination on Radio Regulations and may have thought at that time, "Well, that's the end of those!" when they finished writing the examination. These consisted only of the QR, QS and QT codes and they should have suspected that there were more in the series covering the other letters of the alphabet. And indeed there are hundreds more that have particular application to aeronautical, marine and general radio communications.

Other codes were developed by telegraphers and radio operators over the years dating back to 1840 as telegraphy became a reliable means of communication. A few examples are the codes used for giving a signal report (the RST System); three digits give a concise and accurate description of signal readability, strength and tone. CQ, sometimes combined with DX, is the most frequently used code in both CW and voice. It is used to call any station on the frequency. Another example are the number codes "73" and its partner "88" used to convey warm regards on terminating a contact. These came from the Western Union series of numbered phrases used to save time and money on the telegraph system. In those days, one word on the transatlantic cable would cost as much as $5.00. A number of other codes and short-forms can be found in the front pages of most amateur radio call books.

The development of codes was not left entirely to the commercial and military operators. Amateurs got into the act with a series of QN signals for use exclusively on radio nets. Wasn't it clever of them to select N for their Net series. They were equally clever when they assigned the third letter to each QN group to make most of them a mnemonic for the intended message. There should be little difficulty in remembering such codes as QNI for "checking IN on the net" or QNA for "ANSWER in prearranged order". The twenty-six codes ranging from A to Z are easy to remember and recognize in International Code on CW. Unlike other Q signals that are sometimes used in voice communications, the QN series is reserved exclusively for amateur use on CW nets.

The following list of QN signals are published by the ARRL and can be found in call books. They are often distributed at fleamarkets in card form for ready reference. In case you have not yet acquired your own copy of the call book or a copy of the ARRL card, these are reprinted here so that you can keep them near your key in the shack and use them as required. Check in on the Potlid Slow Speed CW Net on Sunday mornings at 1100 hrs local on 3.620 MHz and get some practice in the use of these signals. They will soon be committed to memory and be another part of your radio vocabulary.

ARRL QN SIGNALS FOR CW NET USE

QNA* Answer in prearranged order.
QNB* Act as relay Between.....and .....
QNC All net stations Copy. I have a message for all net stations.
QND* Net is Directed (by net control station).
QNE* Entire net stand by.
QNF Net is Free (not controlled).
QNG Take over as net control station (i'm going).
QNH Your frequency is High.
QNI Net stations report In. I am reporting In to the net.(with a list of traffic or QRU)
QNJ Can you copy me? Can you copy .....?
QNK* Transmit message for .....to.....
QNL Your frequency is Low
QNM* You are QRMing the net. Stand by.
QNN Net control station is.....
QNO Station is leaving the net
QNP Unable to coPy you. Unable to coPy.....
QNQ Move frequency to....and wait for....to finish handling traffic. Then send traffic
QNR Answer.....and Receive traffic
QNS* Following Stations are in the net. (follow with list) Request list of Stations in net)
QNT I request permission to leave the net for.....minutes
QNU* The net has traffic for you. Stand by
QNV* Establish contact with.....on this frequency. If successful move to..and send traffic for...
QNW How do I route messages for.....?
QNX* You are eXcused from the net. Request to be eXcused from the net
QNY* Shift to another frequency (like QSY)(or to....kHz) to clear traffic with .....
QNZ Zero beat your frequency with mine.

For use by net control station only

☞

Notes on use of QN signals

The QN signals listed above are special ARRL signals for use in amateur radio cw nets only. They are not intended for use in casual conversation. Other meanings that may be used in other services do not apply. Do not use QN signals on phone nets. Say it with words. QN signals need not be followed by a question mark, even though the meaning may be interrogatory.

METEOR-BURST TRUCK-WATCH

The FCC recently decided to let Transtrack Inc. (13 Marconi Lane, Marion, Massachusetts) build a nationwide network for monitoring the location of commercial vehicles by bouncing two-way radio signals off the trails of meteorites. The Commission noted that such a system "could improve scheduling and routing in the motor carrier industry."

The proposed system consists of 5 base stations to be located in remote areas of the United States - Diana, West Virginia; Tipton, Missouri; Sawmill, Arizona; Haysville, North Carolina; and Park Valley, Utah. Subscribers would be connected to the system by phoneline through Transtrack's processing center in Marion, Mass. Each base station will broadcast a "probe" signal from a 2000 watt transmitter. Mobile units, mounted on the vehicles being tracked, respond with a brief (50-108 millisecond) data-burst. The response signal can carry text messages of up to 32 ASCII characters.

Billions of tiny meteorites enter the Earth's atmosphere everyday. Each leaves a small trail of ions as it decays. It has been known since the early 1950s that this shower of particles, and the resulting ionization, is dense and consistent enough to reflect low-VHF band radio signals with fair reliably. In practical terms, "fair" means the link is best suited to relatively brief, intermittent communications extending beyond the line-of-sight horizon.

Until recently this technique was only available to the federal government, for such applications as relaying radar telemetry for the US Air Force Alaskan Air Command. However, in 1983, the FCC allocated four frequencies in the 40-50 MHz band for common carrier and private land mobile meteor-burst communications in the state of Alaska. More recently, the Commission authorized a meteor-burst telemetry system for a natural gas pipeline in the midwest, and another for a Department of Agriculture water management system spanning 11 western states.

Transtrack's base stations will be licensed to transmit on 43.92 MHz, and the mobile units will respond on 44.42 MHz approximately every 15 minutes. Mobile units can be queried individually, and brief two-way messaging will be possible, in addition to location monitoring.

For additional information, see FCC Memorandum Opinion and Order, Private Radio Bureau File No. 75319.

Origin: ANARC BBS - Assoc. of North American Radio Clubs (309) 688-0604

"Unfortunately it has been our experience that there is a distinct affinity between fools and censorship. It seems to be one of those treading grounds where they rush in."

-Heywood Broun

DBS SATELLITES

If you read the November issue of the ANARC Newsletter, you probably saw that the ITU is moving toward the allotment of channels for audio satellite broadcasting direct to portable/mobile receivers. India was the first country to reserve a band for domestic audio DBS: 1517-1521MHz. A worldwide allocation seems likely within 5 years.

We now have more information about the demonstration in Geneva that convinced the WARC delegates that audio DBS is feasible. According to an article in THE AUSTRALIAN (23 Nov 88), "Delegates were ferried around in a specially adapted Renault Espace fitted with a prototype radio, receiving signals beamed from a nearby hill... [The system] exploits reflections from buildings and hills, so that listeners in cars will not experience that irritating loss of sound when passing high buildings or under bridges... The broadcasts will use a system called orthogonal frequency division multiplexing with convolutional coding, which chops up the signals of several radio channels and combines them in a single stream of binary bits. The sound itself will be coded into digital form using a system called Mascam, developed in Germany...

The Mascam system uses the fact that, paradoxically, more digital code is needed to transmit the quiet parts of a recording than the loud bits."

Origin: ANARC BBS - Assoc. of North American Radio Clubs (309) 688-0604

OTTAWA VALLEY MOBILE RADIO CLUB INCORPORATED
Interim Financial Statement: 1 July 1988 to 1 December 1988

REVENUE

Description	Budgeted	To Date
Memberships	$ 2040.00	$ 1902.00
Fleamarket (sales)	500.00	
(raffle)	550.00	
Bank Interest	90.00	27.00
Misc. Sales	120.00	42.00
Total Revenue	**3300.00**	**1971.00**

EXPENDITURES

Description	Budgeted	To Date
Rambler (supplies)	$ 200.00	
(postage)	660.00	$ 282.00
Printer Maintenance	690.00	285.00
Code Phone	140.00	52.00
Field Day	100.00	64.00
Club BBQ	100.00	60.00
Awards/Social	100.00	27.00
Insurance	370.00	580.00
Repeater Maintenance	50.00	
Post Office Box	30.00	
Station Licences	40.00	
Miscellaneous	100.00	62.00
New Members Introduction	100.00	75.00
Fleamarket Expenses	260.00	
Raffle Expense	360.00	
Total Expenditures	**3300.00**	**1487.00**

George Dew, Treasurer, December 21, 1988.

***Note that all figures are approximate.**