MAR 76

THE CROWBAR

The Official Bulletin of the

OTTAWA AMATEUR RADIO CLUB

Box 8873, Ottawa, Ont. K1G 3J2

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THE GROUNDWAVE - OFFICIAL BULLETIN OF THE OTTAWA AMATEUR RADIO CLUB - MARCH 1976

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MATERIAL PUBLISHED HEREIN does not necessarily represent the official OARC viewpoint. Items may be reprinted by Amateur Radio publications with proper credit.

DEADLINE FOR COPY for the April issue will be March 20 for articles of length and March 27 for short paragraphs and announcements. Address all correspondence to: Carl Everson, VE3BYX, Box #4, Osgoode Ontario, K0A 2W0.

THE OTTAWA AMATEUR RADIO CLUB is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communication in the Ottawa regional area, and to the advancement of the technical competence and achievement of Club members.

THE CAPITAL CITY NET meets every Monday evening at 2000 hours on the Club repeater, VE2CRA, (146.340 MHz in/146.940 MHz out) to pass traffic and make announcements of interest to Amateurs in the Ottawa regional area. THE SWAP NET, a service of the Ottawa Valley Mobile Radio Club Inc. and conducted by Ed, VE3GX, is also repeated at this time. To list items or make enquiries, call Ed at 733-1721.

THE NEXT REGULAR MEETING of the Ottawa Amateur Radio Club will be held at the National Research Council, 100 Sussex Drive, Ottawa, on Wednesday, March 3, 1976, at 2000 hours. The speaker for the evening will be Dr. Alan Winter of the Communications Research Center. Dr. Winter will give a presentation on the use of the Amateur Satellite, OSCAR VI, for radio-positioning, that is, the location of downed aircraft by measuring the Doppler shift of the emergency beacon as the satellite passes over it. Another item on the agenda will be the approval of the budget for the coming year. The budget proposed by the Club Executive for 1976 is as follows:-

Membership	$ 60.00
Repeater	$1200.00
Admin. and Misc	$ 400.00
Groundwave and Directory	$ 650.00
AMSAT	$ 200.00
Children's Hospital	$1200.00
Purchases for Resale	$ 500.00
Field Day	$ 65.00
Picnic	$ 50.00
	$4325.00

YL GET-TOGETHER All members of the fair sex who are presently Amateur Radio Operators, or who are interested in Amateur Radio, are invited to a Social Evening on Wednesday, March 24, at 8:00 PM, at the home of Penny, VE3ERO, 1228 Agincourt Road (at the intersection with Navaho). Here is a chance to view the 'competition', find out what other YL's are doing, and perhaps learn about CLARA and TOT.

ANYONE WISHING TO PURCHASE NAME-TAGS, (those neat little badges with your name and call sign on them), can order them from either Gord, VE3DY, or Vic, VE3DEP. It is preferred to have a number (at least 4 or 5) to be prepared at once - so get your name on the list now to have yours prepared with the first group. The cost is $1.30 each.

THE MEMBERSHIP CHAIRMAN, Vic, VE3DEP, is looking for some assistance. The main rush of memberships is over now but there is the continuing task of preparing the address page of THE GROUNDWAVE, that is, running the sheets through the machine to print all the various addresses on them. This would be a nice easy job at which some new member could learn about the administration involved in running a club as well as sharing the work load a little more. Many hands make light work but it is also through involvement that we come to know and appreciate our Club all the more.

SOMEONE WILL ALWAYS SMILE WHEN THINGS GO WRONG --- The Repairmen!

MINUTES OF THE PREVIOUS MEETING The Ottawa Amateur Radio Club held its regular meeting on Wednesday, February 4, 1976. The meeting was called to order at 2013 hours and the President, Larry, VE3CRX, welcomed visitors: VE3CZO, VE2BNR, and Ken Kendall.

Moved by Jim, VE3AHN, seconded by Carey, VE3ARS, that the minutes of the previous meeting be adopted as published in THE GROUNDWAVE. Carried.

Moved by Gerry, VE3GK, seconded by Fred, VE2DNW;- Be it resolved that the Ottawa Amateur Radio Club donate a sum of money not to exceed $1200.00 to the Eastern Ontario Children's Hospital for the purpose of furnishing and equipping a small waiting room and laboratory for blood testing. Further, a committee be set up to work with the Hospital on projects which will help children through Amateur Radio. Carried.

George, VE3BNO, reported that the repeater needs new cavities to eliminate the interference presently experienced from VE2CRO.

Gerry, VE3GK, reported 25 persons on the waiting list for the next beginners class.

Emergency Communications: Larry, VE3CRX reported there will be a Simulated Emergency Test on Saturday, February 14, and the Ski Marathon operation on the weekend of February 27,28,29. Volunteers, extra coax, etc., are still needed.

Membership Chairman, Vic, VE3DEP, reported 194 full members and 11 associate members to date.

An Electro-Magnetic Interference Committee (EMI Committee) has been established headed by Bill, VE3EKA, as chairman, assisted by Sandy, VE3AAC, Ralph, VE3BBM, Mike, VE3TP; and Ray, VE3CUA.

It was reported that a Silent Key, George Brown, VE3AHA, had been remembered by a donation to the Heart Foundation from the Club.

Rick, VE3HVA, gave an enlightening talk on bulk buying. For further information call Rick at 737-0782.

Moved by Penny, VE3ERO, seconded by Edi, VE3HRH, that a sum of money be put aside for the purpose of bulk buying. Carried.

The matter of Club projects was discussed and it was felt that a "How-to-build-it" Course would be valuable to a lot of the members but would be very hard to run. It was felt that smaller groups or a one-to-one 'buddy' system would be better. A call was put out for volunteers to open their workshops to a small group and give guidance on basic construction practices.

John, VE2DNM, reported on his efforts to order crystals in bulk for the auto-patch repeater being planned to operate on 147.96 in/147.36 out with the tentative call-sign VE2KPG to be located at Kingsmere.

George, VE3DIH, on behalf of the Ottawa Valley Mobile Radio Club Inc., called for volunteers to operate the Museum station, VE3JW.

A good turn-out of 'home-brew' items resulted and each 'exhibiter' gave a brief description of the item displayed.

The President declared the meeting adjourned at 2240 hours.

Maureen Neill, VE3FZY, Secretary

ENQUIRIES FOR OARC CRESTS have been received from some members. Vic, VE3DEP, is willing to look into this if sufficient members express an interest. The cost is estimated to be in the order of $2.00. If you are interested in obtaining an OARC crest, get in touch with Vic and further enquiries will be made.

RENEW YOUR ARRL MEMBERSHIP THROUGH THE OARC - you save time, postage, MO fees, etc., and the Club also benefits. See Hank, VE3BR, at any of the OARC meetings.

MAUREEN NEILL, VE3FZY, spends her working day around the Civic Hospital and has offered to visit any Amateur confined there. If you know of anyone who would appreciate a visit, call Maureen at 725-4581, or after 5:30 PM, at 233-9941.

CORRECTION! To the OARC 1976 Directory - VE3FGP is better known as Dick Farley. In fact he doesn't answer to the name Bob at all! Sorry about that Dick. If anyone else notices an error in the Directory, please get in touch with Vic, VE3DEP, at 824-1204, at once and a full list of additions and corrections will be printed in the April GROUNDWAVE.

THE DOPPLER EFFECT is a well known phenomenon observed in the fields of acoustics and electro-magnetic radiation. It is the shift in frequency observed when a source moves with respect to a detector, or vice versa, and is named after Christian Johann Doppler, an Austrian physicist, who first discussed the effect in 1842. The phenomenon is evidenced in many everyday observances, such as, the change in pitch of a train whistle as it goes by, the change in pitch of the tire whine of a truck as you meet it on the highway, as well as in more exotic cases such as the change in frequency of a 'radar' speed trap which is read out in miles-per-hour, the change in the received frequency of your signal into OSCAR VI or VII as they come up over the horizon, pass overhead, and disappear over the opposite horizon, and the 'red shift' (shift to the red, or low-frequency, end of the light spectrum) observed in light received from distant star galaxies. It is also believed that bats make use of the Doppler shift noted on echos of their ultra-sonic squeaks to navigate in the dark.

The effect can be demonstrated quite easily with a toy whistle and a length of flexible hose. Fix the whistle securely to one end of the hose and have a friend blow through the other end while whirling the whistle-end in a vertical plane in front of him. If you are a few feet away and in line with the whirling whistle, you will hear the pitch rise and fall as the whistle moves toward, and away from, your ear. What is the reason for this? The physical explanation is really very simple. Frequency is just what its measurement unit suggests, cycles per second, that is, the number of recurring waveforms leaving, or passing, a given point in a given length of time. A crude analogy would be to visualize a rough lake with waves breaking on the shore at a given rate, say, one per minute. A boat heading away from shore will encounter more than one wave per minute, and the faster it goes, the more waves per minute it will encounter. The frequency of the wave-encounters has increased. Similarly, a radio receiver in the presence of an electromagnetic wave will indicate a certain characteristic frequency depending upon the number of sine-wave, or other, peaks arriving in a given length of time. If the receiver moves toward the source of the E-M wave, it will observe a greater number of peaks in the same length of time, just as the boat encountered a greater number of water waves. It does not matter if the receiver moves, or the source moves, or if they move toward each other, or away from each other, the analogy holds, and the result is the same.

A receiver moving with a velocity (v) toward a source of frequency (Fs) will, at the end of a given time (t) have moved a distance (vt). If (l) is the distance from peak-to-peak of waves of frequency (Fs), ie the wavelength, then in time (t), the number of waves observed by the receiver willlhave increased by the number (vt)/(l), that is, the distance travelled divided by the length per wave. But in time (t), (Fs)x(t) waves have been emitted, thus the number of waves received in time (t) is (Fr)x(t) where (Fr) is the frequency which will be observed by the moving receiver, and (Fr)x(t) will equal (Fs)x(t) plus (vt)/(l). The (t)'s cancel and (Fr) equals (Fs) plus (v)/(l). Remember that E-M waves travel at the speed of light (c), thus wavelength (l) times frequency (Fs) equals (c), or (l) equals (c)/(Fs). Substitute this in the above equation and we get the relstionship: (Fr) equals (Fs) times [one plus (v)/(c)] if (v) is kept much less than (c), which is usually the case. In other words, the frequency is increased by a factor of the ratio of the velocity of the moving receiver to the speed of light.

Now let us consider OSCAR VI. The average radius of the earth is 6371 kilometers and the average height of OSCAR VI is 1430 km giving an average orbit radius of 7800 km approximately. Thus by public school geometry we calculate an orbit path of approximately 49,000 km. Orbit time is approx. 115 minutes and this gives an average approx. speed for OSCAR VI of 7100 meters per second. This is (v) in our equation above. Now (c) equals 300,000,000 meters per second so (v)/(c) is approx. 0.00002. Thus the freq. transmitted b by OSCAR VI will appear to us increased by 29.5 x 0.00002, or 0.59 kHz. But our signal also appears increased to OSCAR VI by 146 x 0.00002, or 2.92 kHz for a total increase of 3.51 kHz. This same difference will also be noted when OSCAR VI is moving away from us. Thus for a given signal into OSCAR VI, we would expect the return signal to appear to us to drop approx 7 kHz in frequency from the time we first observe it until it disappears over the opposite horizon. This is an ideal situation, however, assuming a head-on approach when in reality it is always angled and off to the side, resulting in lower

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GOING PORTABLE IN THE 'THIRTIES' by George Schuthe, VE3DMC

Having gained his "ticket" at the age of thirteen under the guidance of one of the fine elder gentlemen of amateur radio, T.J. Corley, VE5BC, the writer became the junior member of a pair known as "the oldest and the youngest", who collaborated in a number of interesting projects. One of these was the planning and operation of a portable ham station at a summer camp for young people.

The church-sponsored camp, beautifully situated in a rock-bound bay on the west shore of Howe Sound, north of Vancouver, was accessible only from the sea. Arbutus and fir trees afforded shelter while a back-drop of mountains, dominated by the majestic Lions, closed off any easy route inland. Once a week, the camp was visited by a trim yacht, reputed to have been at one time a rum-runner but now committed to the legitimate pursuit of transporting groups of young campers, eager for a change from city life, and the provisions to sustain their healthy appetites.

"T.J.", whose participation in chutch affairs inspired the notion of establishing a ham station at the isolated summer camp, found in his protégé an enthusiastic volunteer to operate it. A small battery-powered rig was constructed for 80-metre operation, a minimum of accessories assembled, and the writer packed into his duffel bag enough camp clothing to see him through the summer vacation from school.

At the camp, a survey of suitable trees from which to hang an antenna pointed to situating the ham shack on a flat stump remaining from the felling of a massive tree some years before. A tent was raised atop the stump, to which access was afforded by means of a ladder from the ground. With a wooden box for a table, a cot, and a lantern, the tent and its unusual site proved entirely satisfactory, close enough to "facilities" yet far enough from the noise of campers at play. The station was soon on the air, daytime skeds were established with VE5BC and other hams over the mountains in Vancouver, and traffic began to flow.

When darkness descended and shooting stars flashed across the Milky Way in a lustrous shy, signals crowded in from the south and south-east and rag-chewing replaced traffic handling.

The critical trial of the project came during the girls' camp session, when the operator was the sole male youth among a horde of exuberant 'teen-age females. Convinced that success or failure depended as much on his exemplary conduct as on the state of the batteries to power the rig, the op endeavoured to maintain an attitude of aloofness. Innocent that he was, he little dreamed that the girls would view the situation as a challange to be met by harassment, enticement and cunning. They crowded about to file inconsequential messages to parents and friends; they invaded the tent in the op's absence and stitched articles of his clothing together; they intercepted him on the way for a swim with the warning that "some of the kids are bathing with 'nothing on'"; and in a thousand ways tested his self-restraint. The only haven of escape, and an uncertain one at best, was the tent on the tree stump where the access ladder could be drawn up.

Despite his well-meaning efforts to resist feminine snares, lures and designs, the op found his resolve eroding before the shyly inviting glances of one of the less-aggressive but most attractive of the creatures. The looming possibility of an indiscretion was removed, however, when the young lady's complexion developed blotches and the camp director, fearing an outbreak of measles or chicken-pox, confined her to the camp infirmary. A message for transmission to Vancouver seeking medical advice, the nearest thing to an emergency involving the station, brought a reassuring reply and removed from the op's mind the appalling thought that a quarantine might be imposed to extend the girls' camp beyond its scheduled two weeks.

Concentrating dutifully on dots and dashes, oblivious to further plots and advances, the op strove onward towards the shining gate of the Brass Pounder's League, where, with mixed feelings, he turned to wave farewell to homeward-bound girl campers lining the rails of the departing yacht.

ERRATUM In the discussion of meter shunts last month, the meter polarity in Figure 2b became reversed. This is NOT some new law of Physics but is simply Murphy's Law in action. Sorry about that! Ed.

MY HOW PEOPLE DIFFER! Some object to fan dancers----others object to the fan!

AN OPEN LETTER TO YE OLDE MALE CHAUVINIST EDITOR - Dear Carl:-

I don't intend to comment on the XYL/YL/MS./Miss/Mrs. bit. I find the whole subject a bit of a yawn, although I must admit my own "XYL" has occasionally expressed the odd objection to the latter term on grounds it's a mite derogatory. She suggests simply "YL" and "L". Another possible substitution, "female operator", was immediately discarded for obvious reasons.

My purpose in writing is firstly to assure you that, yes, there really is such a thing as a "Groundwave Reader" (Ed's comment, Feb. GW, Page 5).

As a former GW editor myself, I know how frustrating it can be, putting in hours and hours each month transcribing and editing copy, chasing minutes, keeping on top of the sorts of things members expect to be informed of via the GW and pleading for some sort of member-input. Unfortunately, the majority of members -- whether it be at a club meeting, at nomination time or when it comes to helping make their OARC bulletin more fully representative of the views and concerns of its membership -- seem content to just sit on their backsides and let a dedicated cadre of "doers" do all the work. They come; they sit; they are entertained; they go home.

But, rest assured, OM, there are indeed Groundwave Readers! In my view, the Ottawa Amateur Radio Club has never had a better-written, spicier and more topical bulletin than the present Groundwave. I have a lot of reading to do in my occupation, but the Groundwave is one monthly that always gets read --- cover-to-cover --- as soon as it's in. I hope your own modesty won't prevent you from printing this letter, but, really OM, you're doing a Helluva' job!

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Since you've granted me this space, allow me to make another point before I 'sign'. I have just returned from two weeks at Cape Canaveral, Florida, in connection with the launch of the Communications Technology Satellite. It was my first extended stay in the U.S.

Although I found an active ham club at NASA headquarters at the Kennedy Space Centre, there were many more CB whips in evidence in the parking lot there. Imagine, at that centre, if ever there was one, of advanced technology in engineering, physics and communications --- so many more CBers in evidence than hams!

Parking lots in shopping centres were equally striking reminders of the "bigness" of CB in the States. At times, it seemed as if every 8th or 9th car you saw --- believe me, many, many more vehicles per capita than one would observe at home --- was CB-equipped. The ARRL has taken to placing commercials on Florida AM stations, explaining the differences between ham radio and CB.

It's absolutely phenomenal! Radio Shack and Lafayette stores can hardly keep up with the demand. The middle-aged babysitter who sat for us the night umbilical power problems had "scrubbed" our launch had learned of the details via CB!

Lest anyone need any further reminding: Here's a testament from one who has seen the light, fellas: CB is growing phenomenally and organized ham radio had better have some darn innovative and liberal thinkers at the helm when "the hordes" reach our back door.

It is my intention, before embarking on a motor trip back to Florida next year, to equip the family car with simple CB capability. Travelling the freeways in the U.S., it's as basic and useful a tool as a VHF set on the tower frequency is to the light aircraft pilot. You know what's going on around you -- not what the repeater informs you is happening 50 miles back!

I may even join a CB club, --- although I've warned my GRS friends I reserve the right to laugh uproariously at the first flashing lights, "emergency communications vehicle" sign or even lapel flash I see. But they're bloody good communicators!

Come to think of it, that's what the GRS really has on us -- numbers and some damn fine radio operators. When it comes to observing the rules of good operating, disciplined members of a well-run GRS club are equal to the best our VHF or 75m nets can field. They've got the numbers and operating capabilities as good as ours'. We've got the technical competence and greater RF reach.

Working together, ham radio and CB complement one-another beautifully ---

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AN OPEN LETTER TO ..... (Continued from page 4)

whether it be in a ham/CBer's car on a freeway trip, or on a joint communications exercise.

As one who has had his eyes fully-opened to the sheer size of the thing, I'll never consider my advanced ham ticket is an excuse to sneer in smug superiority at CBers --- though I'll still laugh at the flashing light lunatic fringe in CB. But then, don't we have some pretty juvenile button-pusher, appliance-op types on VE2CRA?

-73 de Mike, VE3CGT, Box 256, Munster, Ontario, K0A 3P0.

(Tnx for the kind words Mike, they are much appreciated. Hopefully, some day we will have sufficient input to THE GROUNDWAVE that we will really have some 'editing' to do rather than just the task of collection and assembly. Amen also to your words on the GRS Service. I have always seen it as a viable complement to Amateur Radio ever since I was involved in a missing child search using GRS only months after it came into being. Also, GRS equipment in my car this past summer gave me additional localized communication on a trip to Vancouver and Victoria. Used legally for the purpose for which it was intended, that of short-distance private communication, it has no equal due to the sheer numbers of units in operation. Ed.)

SECRECY PROVISIONS of the Communications Act of 1934, Section 605, deserve a lot more attention by Amateurs than they've been getting. A strict interpretation of Section 605 forbids the disclosure of anything heard on the air except broadcast and Amateur transmissions -- and that includes mention of frequencies or any other information regarding the overheard signals! Since This Ban applies to CB as well as other services, it could put a severe crimp in some of the recently publicized CB clean-up efforts cond ucted by Amateur groups. It also puts the conviction of the Wisconsin CBer who was fined $100 for warning a trucker of a "Smokey" (HR Report, May 9) on somewhat shakey ground, since the trooper's use of an "intercepted" transmission becomes somewhat gray. The Intent Of Section 605 is quite clear -- how likely an Amateur is to be cited for violating it is not. (Credit: HR Report October 3, 1975)

(Canadian regulations are quite similar to those of the USA on this subject. The CARF Radio Regulations Handbook lists four types of communications which may be discussed with others, and their contents used: Amateur, broadcasting, distress, and transmissions addressed to "all stations". NOTE that GRS transmissions are not on this list! So the next time you hear a group on Channel 10 after another car which sideswiped one of them - DON'T come on VE2CRA to let the rest of us know, however exciting and entertaining it may be - this has happened! Does this also preclude a joint communications exercise involving the two groups? Can a message be passed part way by GRS, go through a message center, then be forwarded by Amateur Radio? If so, then why not through one operator using both services? If so, then is this not a violation of the Secrecy Provisions? Or is the consent of the other operator sufficient to waive these provisions? This area seems very "gray" to me - but then perhaps it's this dull winter weather! Any comments? -(Ed.))-

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LETTER TO THE EDITOR Dear Editor:- I am writing you concerning the letter to the editor I read in last month's Groundwave. It was by VE3EYW/3. I'm appalled by his lack of common courtesy and his ignorance in the matter of the repeater, VE2CRA. I hope he realizes that no radio club or repeater organization can solicit members by mail, nor can they inform users that they must move to another repeater. Perhaps a quick look at the article on page one of the same Groundwave, referring to VE2CRA being financed by the OARC with assistance from the Mobile Club might help. Does this suggest to us that we should join the Ottawa Mobile Club too?

Please note that other repeaters in the area (including VE3ORA and VE3STP) do not solicit funds to use the repeaters. Everyone around town knows who to donate funds to and we find no lack of users on these repeaters. If there were a separate repeater association, I would understand this attitude, but since the OARC is a large club with sufficient funds and people with technical expertise to maintain an open repeater, (such as VE2CRA) I feel that guests on the repeater should be made welcome and not referred to as "spongers". People who monopolize the repeater could be tactfully informed (perhaps by a concerned party) that they do talk too much and most of them probably know themselves whether or not they are guilty. I simply feel that these comments were unfair to the

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A GUIDE TO QSL'ING by Chris Turner, VE3EQF, reprinted from TOT-TOPICS, Jan/76

WHAT IS A QSL? A QSL by definition is a confirmation of a QSO or reception of radio signals. It usually takes the form of a letter or postcard sent from the station receiving the radio signals to the station which originated the signals. A great many amateurs regard QSL'ing as an integral part of the hobby, so much so that some are of the opinion that no QSO is complete without a QSL. The whole concept of QSL'ing started many years ago when radio signals were first being transmitted. Presumably the excitememt of actually hearing a signal was so great that the listener could not keep it to himself and just had to notify the station that he was "being heard".

In the early days most of the QSL'ing was done between SWL's and the large broadcast stations on the air. Many of the SWL's were very precise and to the point regarding the information they would put on their QSLs and this information was of a great advantage to the station engineers. The benefits derived from these listeners' reports were so great that they were even solicited by the stations from its audience. With the demise of a great many short wave broadcast stations and the upsurge of long wave, local, stations this practice has dropped off and is reserved almost exclusively for Amateur Radio operators.

HOW DO I GET QSL CARDS OF MY OWN? Simple! Get them printed up. The size should be standard post card size, ie 5½" long by 3½" high. A standard size makes it much easier for those people who handle the cards in bulk and also they will fit into standard envelopes without being folded etc. The design of the card is up to the individual but should contain space for basic information. Callsign, name and address - don't forget to include Canada in your address, mailmen don't know where VE-land is, station worked or heard, signal report, band, mode used, date and time - make sure you designate what time you are using, the normal practice is to use GMT. Information pertaining to your station is optional.

There are a few points to keep in mind when ordering your cards. Multi-colour cards are expensive. Cards that contain printed information on both sides are more costly than those printed on one side only. The majority of DX people prefer to have all the information on one side only. This way if you mount your cards or display them you do not have to keep removing them to get the needed information or to show to admiring friends. The more cards you buy at one time then the cheaper, per thousand, they will be. Make sure though, that your address is fairly permanent before you order 20,000 just to get them at fifty cents a hundred!

Almost any printer will handle the cards and will advise you re the artwork, design, colour, etc. A three colour job, printed one side will cost you in the region of $45 per thousand in lots of 1,000. Another expensive route is to buy a quantity of picture post cards with a scene of your choice and have the printer "overprint" them with your name and QTH. Make certain that the cards have a large sky area so that the overprinting will be effective.

The cheapest and certainly the best way for a beginner is to join an organization such as RSO or CARF or similar group who will supply standard QSL cards at less than $20 per thousand.

If you do happen to go to a printer, take a good look at the proofs before accepting the design and colour scheme. Do not fall into the trap of selecting a glossy surface because it looks great only to find out when you get home that you cannot write upon them with a felt pen or ink pen. Many of the Amateur magazines carry advertisements from printers who specialize in QSL cards and 25¢ will get you a sample choice of their designs. (NEXT MONTH: How do I QSL? and How do I receive QSLs? de TOT-TOPICS Ed.)

LETTER TO THE EDITOR (Continued from page 5) population as a whole and that they should have been directed to the particular culprits. After all, we are supposed to be a self-policing group of intelligent people. Thanks millions,

73, 88, 33, Edith A. MacKay February 6, 1976

THE MORRISBURG REPEATER, VE3SVR, is back on the air again on 16/76 and giving good coverage into the southern Ottawa-Carleton area. This is not, as has been remarked, the repeater which was struck with lightening, but is the repeater which was reported in THE GROUNDWAVE to have been struck with lightening. (We need a new correction service-Ed)

DID YOU KNOW THAT:- AMSAT-OSCAR 6 was :-

-The first spacecraft to utilize COS/MOS integrated circuits for all digital functions. These circuits are now the oldest working COS/MOS devices in space.

-The first practical demonstrations of two-way communications using satellites with truly low-cost ground terminals.

-The first communications satellite to involve ground stations in over 100 countries.

-The first satellite communications involving all 50 US states.

-The first direct involvement in space communications in a number of developing countries.

-The least expensive, long-lived spacecraft ever flown.

-The first satellite to utilize a digital store-and-forward message system to provide non-realtime communications between two distant points on earth.

-The first spacecraft to be controlled by unattended, automated telecommand stations.

-The first spacecraft to be internationally controlled by telecommand stations in both East European and Western countries.

-The first spacecraft used to study inverted Doppler phenomenon.

(Credit: AMSAT: A Justification of the Amateur Satellite Program)

Current OSCAR orbit information is:-

OSCAR VI : March 1, 1976; Orbit #15432; Equator crossing (S-N) 67 deg.; Time 0105 GMT.
OSCAR VII : March 1, 1976; Orbit # 5905; Equator crossing (S-N) 62 deg.; Time 0050 GMT.

and may be updated as per the September issue of THE GROUNDWAVE.

AREC NOTES - On Saturday, February 14, fifteen Amateurs participated in "Operation Good Samaritan", an exercise organized by the Ottawa-Carleton Emergency Measures Organization. The theme was a severe snowstorm with high winds that had left most of the region with impossible roads and no power or phones. Amateur Radio was the only means of communication, and Amateurs in municipalities in all four corners of the region, reported incidents to EMO headquarters, which was in the EMO communications van at Constance Bay. Each of the ten units in the field had fifteen incidents to report in two hours, a message rate of more than one per minute coming into Headquarters. What with replies to these messages, responce to the replies, etc., the Headquarters people were quickly overloaded with traffic! However, the exercise was a success, and both the EMO people, and the Amateurs learned a few things. Many thanks to all those who participated: Rick, VE3HVA; Ken, VE3LJ; Grant, VE3CYM; Jim, VE3CIJ; Dave, VE3HLU; Mike, VE3CGT; Hugh, VE3DWL; Gord, VE3CSH; Bill, VE3GPR; Ian, VE3FKC; Ralph, VE3BBM; Jim, VE3AHN; Don, VE3GST; Edi, VE3HRH;

Larry Bradley, VE3CRX, Emergency Coordinator, Ottawa.

CANADIAN SKI MARATHON COMMUNICATIONS are once again being provided by the OARC this year. This 100-mile cross-country race and tour is being held on February 28 and 29. It begins at Lachute, Quebec, on Saturday morning and ends at Montebello for that day. On Sunday it resumes and finally ends near Hull, Quebec. There are six checkpoints on each of the two legs of the tour which require communications, there will be data gathering stations at Hawkesbury on Saturday, and at Hull on Sunday, stations at Papineauville and Montebello, a Net Control Station at Thurso, Quebec, plus two or three safety mobiles for Marathon safety officials. The network will handle three types of traffic - safety, data (skier times), and administration. Data will be handled mainly on 146.52 and other direct channels while other traffic will be handled on VE2RM and VE2CRA repeaters. Most points will be operating two stations at once, with the resulting interference and desensing problems. An innovation this year is an attempt to send data by RTTY from some points rather than by voice. It is hoped that by prepunching the information and then sending it at a higher speed that a time advantage can be gained, as well as relieving some of the tedium of the operation. Another innovation this year is a compact portable repeater to circumvent the mass of rock between Checkpoint 5 and Hawkesbury. This is the name of the Amateur game, innovation and experimentation, operating under field conditions, and gaining expertise in what our equipment can, and what it can't, do. The Marathon certainly provides us with ample opportunity to do our thing.

A 60-CENT BEAM ON 146.520 MHZ By VE3AHN Well, almost! It will depend on the state of your junk box and whether you really need those nice wooden stakes for your tomato plants next summer. Being a neophyte in this Ham business, and remembering VE3GK's warning to stay away from two meters, I went out and bought an old Prog two-meter desk unit; "No, it doesn't sit on the desk Martha, it just barely sits on the floor!", so that I would have something to play with whenever 15 meters is dead. In my apartment, this is about fifty percent of the time!

Anyhow, while pouring over the class notes, it occured to me that 300-ohm twin lead could be combined to give a 50 to 75 ohm match. Also, since twin lead is about 4¢ a foot, this could be a very inexpensive beam. Through mostly error, but with some trial, it eventually worked, and I came up with the following configuration:

The dimensions are calculated from the following table:

TABLE I
A: 5160/ Freq in MHz
B: 5360/ Freq in MHz
C: 1212/ Freq in MHz
D; 0.1 wavelength
E: 10% less than A
F: 5% less than E
(A,B, and C come out in inches, D needs to be converted)

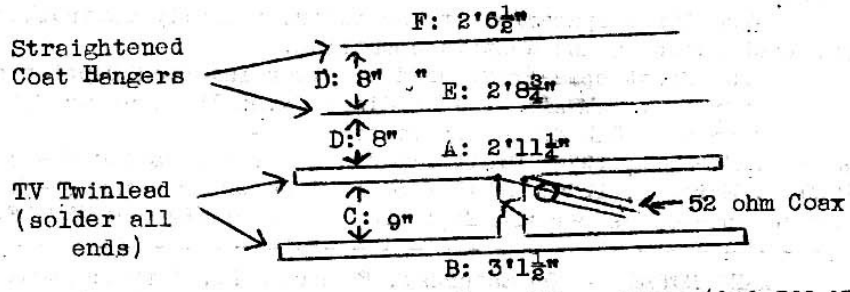

Figure I: Beam Dimensions (146.520 MHz)

The boom is a piece of 1"X2" about 3' long (I may add another element), the twin-lead is taped to ½"X½" pieces of wood used to tie up house plants - another piece of 1"X2" material was nailed on at the center point so that the whole antenna could be twist tied to the upright balcony railing support and aimed at VE3STP up the Valley. It was found that, after a half-wave ground plane antenna that could barely trip or receive this repeater, there is now not only full quieting on the received signal, but I am also now working this repeater on low, rather than high, power. The SWR when first set up was 1.2:1 and I thought it best not to play around. Anyhow, it definitely does work, and it definitely is cheap. How cheap? Well, VE3HVA asked for the dimensions so that's a good indicator!

Next on the drawing board is a three element 15 meter beam - Yes, Gerry, I am getting back on CW as soon as I move in May. For those of you who would like to try this out on another frequency, the dimensions (in feet this time) for any three element beam is given as follows (refer to the diagram above):

A: 430/ Freq in MHz	D: 0.1 wavelength	300 X 3.2808 / Freq in MHz	TABLE II
B: 447/ Freq in MHz			
C: 101/ Freq in MHz	E: 10% less than A		

73's from the workbench of VE3AHN, Jim Fathers,(Plagerization rights reserved!)

DOPPLER EFFECT (Continued from page 2) shifts. In actual practice, shifts of 5 and 6 kHz are common and much higher shifts are noted on Mode B of OSCAR VII because of the higher frequencies involved.

The foregoing calculations are very crude and are meant only to show the principles involved. Precise measurements can result in very accurate position-fixing of stable transmitting stations. This will be the subject of the speaker at the next OARC meeting and promises to be a very interesting subject. I hope the foregoing will be a help in understanding the principles involved. (VE3BYY)

THE BEST WAY TO PREVENT A NERVOUS BREAKDOWN is to work hard-----
-----What's the next best way?????

THE QCWA - WHAT IS IT? What is the QCWA? Who belongs to it? What does the QCWA do? These are questions which arise in a person's mind whenever he hears that mnemonic cluster of letters. And they are being heard more and more in the Ottawa area.

The QCWA (Quarter Century Wireless Association) is an organization formed in 1947 to bring together the "old timers" who have been licensed Radio Amateurs for at least twenty-five years. It is international in scope, having around 90 Chapters scattered all over the United States, Canada, and Australia. There are, additionally, many more members in those countries and in at least 20 other countries in areas where it is impracticable to form a Chapter. In Ottawa, we have what we are proud to call "The National Capital Chapter". This Chapter is comprised of members from Ontario, Western Quebec, and New York.

The aims of the association are: to foster and develope interest toward the advancement of radio and its allied branches, to promote co-operation and friendship among radio operators of more than 25 years standing, to foster a general interest in all matters affecting and involving Amateur Radio.

Membership in the QCWA is open to anyone who submits satisfactory proof that he or she is a licensed Radio Amateur, and that he or she was licensed for 25 years or more. Membership in Chapters such as the National Capital Chapter is open to all members of the QCWA who make formal application for such membership. QCWA members having 50 or more years of Amateur Service are recognized by the award of the "Golden Anniversary Award" by the QCWA. (There are four such awards held in the Ottawa area.)

There are many operators having the necessary qualifications living in the Ottawa area. These Amateurs are invited to attend one of the National Capital Chapter's quarterly dinner meetings. They may also obtain further information from any QCWA member, Hal Parsons, VE3QA, Hank Harley, VE3BR, or Ed Morgan, VE3GX. (VE3BR)

THE RECENT TRAGEDY IN GUATEMALA has again placed Amateurs in the news in a favourable light, and for one, our Past-President, Ron, VE3AUM, made the headlines with pictures and all. It is unfortunate that it takes a tragedy such as this to emphasize the value of Amateur Radio and the untiring efforts of those such as Ron help give Amateur Radio the meaning and prestige present in no other radio service. Recognition was paid to Amateurs in the House of Commons on Feb. 17 when Mr. Donald Munro, member for Esquimalt-Saanich, included in his question concerning means of preparing for future disasters, the following: "...has any effort been made to enlist the support of Canadian ham radio operators so as to improve communications between Canada and stricken countries? I know ham radio operators are ready, willing and able to co-operate." The reply, in part, from the Hon. Allan MacEachen, Secretary of State for Erternal Affairs was: "...I believe that the suggestions he has made with respect to emergency preparedness in future situations are constructive and I will certainly have them examined and, if feasible, acted upon in the department and in CIDA." The group of tireless and devoted Amateurs who step in and fill the gap in situations of this kind deserve the respect and commendations of all of us. We are all too prone to make an effort only when it suits us. But as Ron says, "When you get involved with these things, you just can't help it, it's a great feeling when you tell a family their kid is okay." (Tnx to VE3DMC for House of Commons info - Ed.)

COFFEE-TIME IS GOING TO SURVIVE along with the rag-chew after the meetings! I understand some kind soul has volunteered for this most necessary of jobs in the OARC. However, I don't have a name as yet and our President is basking in the California sun. So just ignore the plea for coffee-maker on the back page of this issue and keep your fingers crossed.

USING THE LONDON (ENGLAND) REPEATER To assist Amateurs using the new London 145 MHz (145.175 to 145.775 MHz) repeater, the UK FM Group (London) has published a detailed information sheet;"GB3LO Without Tears - A Guide To The Proper Use Of The Repeater". This gives the essential details of the operation of the 55 second "time-out" arrangement and the "break" facility between overs, both designed to prevent stations from monopolising the repeater. The excessive deviation inhibitor chops signals which deviate more than plus-or-minus 6 kHz and full details of the 1750 Hz tone-bursts needed to gain access are included. The sheet is available from: Richard Street, G3TJA, 3 White Ledges, Ealing, London, WI3 8JB (7p in stamps please). (Credit: Wireless World via VE2DRH and Marcogram)

THE OTTAWA AMATEUR RADIO CLUB
BOX 8873, OTTAWA, ONTARIO,
CANADA, K1G 3J2

FIRST CLASS MAIL

THE OTTAWA AMATEUR RADIO CLUB		P.O. BOX 8873 OTTAWA, ONT., CAN., K1G 3J2	
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Custodian &	Gerry Martin	1771 Hutton Avenue, Ottawa, Ontario.	731-3220
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Coffee	----- Please, Somebody, Please!-----		