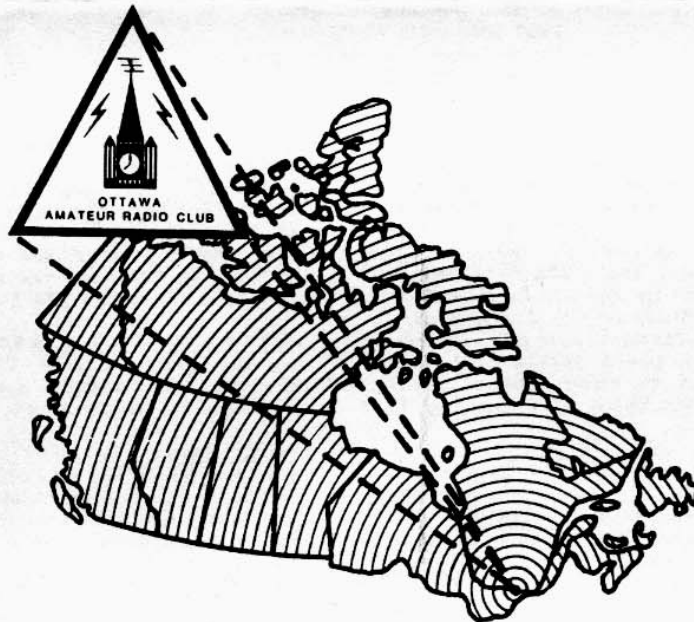


APRIL 1992

THE GROUNDWAVE



NEXT MEETING WILL BE HELD
WEDNESDAY, APRIL 1, 1992

Club Call VE3RC

Repeater VE2CRA



The Ottawa Amateur Radio Club, Inc., Box 8873, Ottawa, Ont., K1G 3J2

President	Peter Jago, VE3PWJ	836-1013	
Vice-President	Paul Goverdale, VE3ICV	820-6643	763-4277
Secretary	Brian Summers, VE3JKZ	523-1535	836-6860
Assistant Secretary	Barry Hall, VE3BXH		
Treasurer	Mike Kelly, VE3FFK	722-5918	788-5782
Past-President	Dave Goodwin, VE2ZP	684-1432	
Directors	Clare Fowler, VE3NPC	232-1081	
	Dave Parks, VE3GSA	225-1206	
	Rob Morrison, VE3ZZR	236-6880	992-4334
Packet Group Chairman	Doug Yuill, VE3OCU	567-2700	230-1741
Repeater Chairman	Harrie Jones, VE3HYS	739-9365	738-2372
Net Manager	Wayne Greenough, VE3JSQ		
EMI Committee Chairman	Ralph Cameron, VE3BBM	825-1634	225-2850
Membership Chairman	Mike Babineau, VE3WMB	829-1677	765-4417
Nat. Cap. Award Manager	Brian Summers, VE3JKZ	523-1535	836-6860
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	Ted May, VE3ADZ	741-0862	790-3576

THE OTTAWA AMATEUR RADIO CLUB, INC. is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications in the National Capital Area; and to the advancement and achievement of club members.

REGULAR MEETINGS of the OARC, Inc., are held on the first Wednesday of each month (except July and August) in the Champlain Room (2nd floor of the Old Teacher's College) of the RMOCC HQ complex on Lisgar St., Ottawa, at 1930 hours. A bulletin board is available for posting notices of interest to other members about 1915 hours. Further details about each meeting is elsewhere in this publication.

PACKET RADIO MEETINGS will be held at 7:30 p.m. on Oct. 3, Nov. 28, 1991, Jan. 30, March 26, May 28, 1992, at the Group Lobby Room, Museum of Science and Technology. This is an OARC technical meeting open to all who have an interest in packet radio.

THE OARC EXECUTIVE normally meets on the second Wednesday of each month at 1930 hours. Contact the President to confirm the date of the next meeting.

DEADLINE FOR COPY is the second Wednesday of each month. Make yourself better known to fellow members and other amateurs, too, by giving us an article, technical or otherwise, relative to our hobby.

MATERIAL PUBLISHED herein does not necessarily represent the official OARC viewpoint. Items may be reprinted by Amateur Radio or other publications provided that proper credit is given to the author and to the OARC, Inc.

JUNIOR MEMBERSHIPS - To encourage young people to join the club and to participate in amateur radio, the club is opening a junior class of membership. Dues will be at a 50% discount but the junior member must pick up his/her copy of the Groundwave (preferably at the meeting).

RADIO AMATEUR CALL BOOKS are available at many local libraries. Ask at the information desk.

SAFETY BELTS, 2-METER RIG AND AN ENGRAVING PENCIL are available for loan to club members. The 2-meter rig may be borrowed by members who are hospitalized. The engraving pencil (to mark valuables for

identification in case of loss or theft) and the safety belts with pole straps are available to any members. For the belts, a refundable deposit consisting of a cheque equal to the replacement value of the belts is required. Contact the President for the 2-meter rig or the engraving pencil; and Paul, VE3ICV, at 820-6643 (West End) or Brian, VE3JKZ, at 523-1535 (East End) for the belts.

THE CAPITAL CITY NET meets every Monday at 2000 hours on the Club Repeater VE2CRA (146.34/.94) to pass traffic and to make announcements of interest to amateurs in the National Capital Region.

PACKET RADIO VOICE NET meets following the Capital City Net on VE2CRA at 2040 hours. This is an informal net to answer questions about packet radio, pass along operating hints and provide information for future packet operators.

THE SWAP NET is a service provided and conducted by Ed Morgan, VE3GX. This feature appears on the Capital City Net, noted in the foregoing paragraph. To list items and make inquiries, call Ed Morgan at 733-1721.

POT-HOLE NET is a SSB/HF net sponsored by the Ottawa Valley Mobile Radio Club, and conducted every Sunday at 1000 hours on 3.760 Mhz. All amateurs are welcome to check in. The Swap-Net is a regular feature.

POT-LID CW NET is an informal slow-speed CW net sponsored and conducted by Ed, VE3GX, and meeting every Sunday, except during July and August, at 1100 hours on 3.620 Mhz, to promote interest in CW and CW procedures.

REPEATERS

VE2CRA	Voice	146.94/34	443.300/448.300
VE3OCR		223.34/224.94	
VE3OCR	Packet	145.01(sx)	Inter city links
VE3OCR	Packet	145.07(sx)	Local Area net for QSO and Packet BBS.
56 kbps	Packet	220.55/433.55	
VE3DXD	DX Info	146.25/146.85;	packet 145.11(SX)

For further information, please contact repeater chairman.

MINUTES OF THE OARC GENERAL MEETING
OF MARCH 4, 1992

The meeting was called to order at 7:30 p.m. by the President, Peter Jago, VE3PWJ.

The CARF Bulletin was presented by Dan Holmes, VE3EBI.

Mike Pilon, VE3BUP, reported on the idea for a ham radio exhibit at the Tulip Festival. The idea has been dropped!

George Roach, VE3BNO, talked about the new ATV repeater project and presented a video on amateur TV in the Ottawa area.

Peter Jago, VE3PWJ, explained that the coffee will dry up at future meetings unless some volunteers come forward to make it.

It was announced (reminder) that the April meeting is Homebrew Night!

The meeting broke for coffee at 8:45 p.m.

Mike Kelly, VE3FFK, presented some antenna designs:

- a commercial discone antenna
- an MFJ 3-element Yagi for 2 M
- a miniature photocopier.

Dave Goodwin, VE2ZP, presented a video on a DX-pedition to Curacao.

IN CASE YOU MISSED IT

THE GEOLOGICAL SURVEY OF CANADA, is celebrating its 150th Anniversary in 1992. VE3GSC, the Ottawa GSC Amateur Radio Club, is offering a special anniversary QSL card to hams who make contact with the Club. The club station will be operating on Fridays, from 1700 to 1830 GMT. The station will also be active during international contests. For further information please contact either the custodian of the Club, Alan Goodacre, at (613) 995-5366 (FAX 613 952-8987) or the 150th Anniversary Office at (613) 996-5763. (Item 1, CARF News Bulletin 03-92.)

THE SECOND ANNUAL WORKED ALL WINNIPEG QSO PARTY will be held on Saturday, 11 April 1992, between 1500Z and 2200Z. Winnipeg Amateurs will be on the following frequencies:

- 20 metres 14.150-14.165 MHz
- 15 metres 21.330- MHz
- 10 metres 28.300-28.400 MHz

We intend to have lots of Hams on that day, to give out contacts toward the Worked All Winnipeg Award. Dick Maguire VE4HK, Award Custodian. (Item 2, CARF News Bulletin 03-92.)

THE NEW JERSEY, U.S.A., SCANNER LAW making it a crime to have in an automobile most 2 metre radios that were capable of receiving police, fire and other emergency services has been repealed. However use of any information intercepted must not be used to interfere with any emergency services or in criminal activities. Kentucky is now the only state with a scanner law that restricts Ham operation. Credit W5YI. (Item 8, CARF News Bulletin 03-92.)

WANTED - CARF is planning a list of Canadian Nets, coast to coast. This information will be used as a CARF aid and will be printed in The Canadian Amateur magazine and also will be

APRIL MEETING

The April meeting will be
HOMEBREW NIGHT
There will be some prizes

available as hand-outs. Information is needed on the frequencies and times of all nets, swap shops, voice, CW, packet, RTTY, QRP, in fact Nets of every sort. Please send this information to: Roy Kerr, VE3ALK, R.R. #1, Parry Sound, Ontario, P2A 2W7, who has kindly volunteered to do this for CARF. (Item 10, CARF News Bulletin 03-92.)

IT WILL BE LATE SUMMER before we know what DOC has to say about the future of the 220-225 MHz Band. We are told that it will be included in their forthcoming policy proposals paper on the 30-890 MHz part of the spectrum. This paper will be concentrating on possible solutions to commercial land mobile congestion in the VHF and UHF bands. DOC will probably mention what has been going on in the States regarding the 220 - 225 MHz band. Amateurs should certainly expect that this will result in proposals being made by commercial interests that the 220 - 225 MHz band be reallocated to the land mobile service in Canada. (Item 11, CARF News Bulletin 03-92.)

THE FREQUENCY ALLOCATION COMMITTEE AT WARC 92, according to our delegation's first report, has agreed that the incompatibility of the Amateur HF broadcasting services should be considered in order to avoid difficult sharing conditions. At last WARC 92 has recognized the interference broadcasting creates in our 40m band and may do something to resolve it. (Item 12, CARF News Bulletin 03-92.)

DARF FUND NEWS - CARF has been informed by the DARF Fund trustees that donors may have their money returned if requested before July 1, 1992 by writing to:

Defence of Amateur Radio Fund Trust
c/o Tim Ellam VE6SH
107 Strathern Rise S.W.
Calgary, Alberta T3H 1R5

The request must be in writing and contain the date and the amount of the donation. Those monies not refunded to donors or paid out as Canada's share of overall IARU WARC-92 expenses will be held in-trust to meet the anticipated cost of Canada's obligations for a future WARC.

CARF has learned that WARC-95 will concentrate on the HF frequency allocations (below 30 MHz). This WARC will be a crucial event for the defence of world-wide amateur radio HF bands. (Item 1, CARF News Bulletin 04-92.)

PROGRESS REPORT FROM WARC-92. As of the end of the second week of WARC-92, discussions regarding any reallocations of the spectrum around 40 metres has been put off for a week. There has been considerable discussion about the use of SSB by the HF broadcasters. It looks as though any new bands made available for HF broadcasting around 40 metres will be reserved for SSB. A transition period will have to be allowed for transmitters and receivers to be changed over to SSB. (Item 2, CARF News Bulletin 04-92.)

BULLETIN BOARD OPERATOR FACES FINE - The RCMP is continuing to hunt down violators under the Copyright Act. The latest involves the seizure of 10 PCs, 7 modems and at least 3000 software programs from a Montreal bulletin board system run by a firm calling itself "90 North". The software programs were available through the system to its users for an annual fee of \$49. The operators could face a fine of \$1,000,000 and/or up to 5 years in prison. (Item 3, CARF News Bulletin 04-92.)

ERROR IN LICENCE RENEWAL NOTICES - As far as Amateurs are concerned, the DOC's license renewal notices have not caught up to the Regulations. The licence code section on page 2 should have included a code for amateur station licences as provided for in section 4 of the Part II Regulations. Amateurs planning to

contact municipalities and DOC regarding towers should pay particular attention to this since amateur stations do not have to comply with the same DOC requirements as land stations. (Item 4, CARF News Bulletin 04-92.)

THE INTERNATIONAL TELECOMMUNICATION UNION (ITU)

- The United Nations organization responsible for regulating worldwide telecommunications and allocation of the radio spectrum - is currently holding a World Administrative Radio Conference. The conference began on Monday, February 3 and will run through early March in the Mediterranean resort city of Torremolins, Spain.

WARC-92 was opened by Her Majesty Queen Sophia of Spain, wife of King Juan Carlos who holds the amateur call sign of EA0JC. The 164 member delegations in attendance from all over the world will be making important spectrum decisions that are certain to impact us all for decades to come! They will decide which new radio technologies crossing international borders get radio frequency slots. Credit W5YI report. (Item 5, CARF News Bulletin 04-92.)

SATURDAY, 4 APRIL 1992 - THE VE2RWC REPEATER GROUP AUCTION AND FLEAMARKET - Grenville, P.Q., across the Ottawa River from Hawkesbury, Ontario. Vendors 0700, public 0800-1800, admission \$2.00. Centre de ville, corner of Tri-jean and Main streets. Information: John Crooks, VE2JIC, (514) 533-4515. Talk-in VE2RWC 146.805 down 600. (Item 7, CARF News Bulletin 04-92.)

SATURDAY, APRIL 11, 1992 - OTTAWA VALLEY MOBILE RADIO CLUB ANNUAL FLEAMARKET from 0900 to 1600 EST at the Canterbury High School, Ottawa, Ontario. Talk-in 147.30/90. Contact Ken Barry, VE3KJB at (613) 746-4823. (Item 9, CARF News Bulletin 04-92.)

DOC PROPOSES NEW ENVIRONMENTAL POLICY FOR LICENSEES - DOC has just issued a new proposed policy entitled

"Environmental Assessment Process Associated with Spectrum Management Procedures". It is numbered CPC-2-0-03, dated February 1, 1992, and designated "provisional". Comments are due by April 15, 1992. It is an extension of the policy which started municipal consultation on antennas and supporting structures in September 1990. Copies of the proposed policy are available from any Regional or District Offices of DOC.

The proposed policy now implies that Amateurs must "endeavour to comply with appropriate by-laws and regulations and obtain the necessary approvals." DOC maintains that there is no real change as far as amateurs are concerned since DOC can be called on for help if there is a disagreement.

The major new requirement is that licensees will now have to ensure that the public is protected from non-ionizing radiation harm. Most amateur operations today will probably meet the minimum safe, distance requirements. However, amateurs radiating over 200 watts equivalent* radiated power will be interested. If their antenna, not their tower, is within 6 metres of locations where the general public may be located they would be wise to check their station for conformance with this proposed new requirement. To help, minimum safe distance charts and formulas are a part of the DOC proposal. These are based on Health and Welfare Canada's standard entitled "Limits of Exposure to RF Fields at Frequencies from 10 KHz to 300 GHz" published in 1991. (*effective? Ed.) (Item 15, CARF News Bulletin 04-92.)

NEW NET MANAGER FOR ONTARS NET on 3755 is VE3GRM, Ross Miller of Amherstview, Ontario, replacing the long time service manager Bill Birchall VE3FQV. (Item 17, CARF News Bulletin 04-92.)

BAND PIRACY - It's disturbing to note that, while the 'ownership' of frequencies was being decided at WARC-92

in Spain, right around the corner in France - in areas surrounding the Winter Olympics - the two metre amateur band was jammed with non-amateur transmissions ... by official order!

The frequencies 144.000 to 144.050 MHz and 145.950 to 146.000 MHz were completely occupied by team members and service teams of some of the nations participating in the Winter Olympic Games. (Ed. note: there is a rumour (Mike Pilon) that the choice was at the request of other countries including Canada!!)

It seems likely that the frequency ranges were chosen very deliberately by French officials. The first frequency range is the internationally-recognised EME segment, while the second is an exclusive allocation for the amateur satellite service.

According to AMSAT news service information very kindly handed to News Desk by the WIA VK2 Division Broadcast team, during the entire month of February, any activity from amateurs in French Departments Ain, Haute-Savoie, Isere and Savoie on those band segments was banned. The DRG (Direction de la Reglementation Generale) which announced the bans also noted that any violation of the regulation would have negative consequences between the DRG and the REF (France's amateur body) in future discussions...(from Amateur Radio Action Australia). (Item 19, CARF News Bulletin 04-92.)

A DELEGATE ISSUE - A special CARF News Bulletin

The question of the lack of an Amateur to serve on the Canadian delegation to WARC-92 threatens to scuttle the negotiations for the proposed single national amateur radio organization. Hopefully, saner heads in CARF and CRRL will prevail and will continue to meet to map out the final stages of the merger program. However, Canada's

amateurs have a right to know CARF's position on this issue.

To put it all in a nutshell, DOC asked CARF and CRRL to jointly nominate one Amateur to the delegation. The key word is "jointly". The idea is to work together in a mature and responsible manner. In discussions with key CRRL executives over the past year CARF suggested three respected WARC experienced candidates.

Each is an active Amateur! Each is a prominent and experienced career professional in spectrum management matters. Two of these candidates had already served as joint CRRL/CARF CCIR Study Group representatives. As was the case with the late Bud Punched VE3UD, who represented Canada's Amateurs at WARC-79, each could be trusted to act in a non-partisan manner.

CRRL refused to accept any of these ITU/WARC experienced professionals and acted unilaterally insisting to CARF and the DOC that their candidate VE3CDM was the only suitable person to represent Canada's Amateurs because of his IARU affiliation. It was "Agree with us or else!"

Without telling CARF, CRRL unilaterally nominated Mr. Atkins VE3CDM in a letter to the DOC. This was ratified by the CRRL Board the day before the historic joint merger meeting at Cobourg, Ontario. CARF was never notified. CRRL sat with us, talked with us, fashioned a merger agreement with us, lunched with us and never once mentioned their action to by-pass our right to share in a "joint" nomination to the DOC.

Next, CARF was informed by CRRL that the DAF Fund was created to send Mr. Atkins to WARC-92 as a resource person for the DOC. This was news to us! What happened to the idea that it was to fund the Amateur selected to serve? CARF was also informed by CRRL that if DOC chose a CARF supported person, then monies

from the DARF Fund may be denied to that person. Not nice at all! CARF was a faithful supporter of the Fund but had no say in it's creation or in its management. CRRL did!

The head of the Canadian government delegation to WARC-92 assured CARF that there were experienced and knowledgeable Amateurs on the delegation who would look after amateur radio interests at the WARC. While we appreciate the DOC's help and assurances, it left little comfort. Our need and our pride demanded a "jointly" selected Amateur for Canada's delegation.

CARF did try very hard for a reasonable compromise! In the end, VE3CDM went to WARC-92 with the IARU headquarters delegation anyway, and Canada's Amateurs were denied a WARC experienced career professional on their national delegation at the big event in Spain.

We must not end on a negative note! WARC-92 will soon be history. The creation of a single national organization is long overdue. We must devote all our energies to the problems of the real world and most certainly not spin our wheels over issues which could divide us for years to come. (A special News Bulletin from CARF dated 20 Feb. 1992.)

(Groundwave Ed. note: We would like to publish anything that CRRL personnel could tell us on this subject.)

TORNADO WATCH....IT DOESN'T JUST HAPPEN IN KANSAS

by Bob Havens, VE3IYO (VE3MPS)

Sky Warn...A Little History

One advantage of living in the cold, white north is the fact that we are fairly devoid of carnage caused by natural disasters. Our most frequent

challenge is that posed by winter blizzards. Even with their potential for danger, there is an element of excitement and tranquillity that comes with being snowbound. Not so with severe thunderstorm activities accompanied by the possibility of tornadoes! Terrifying is the best way to describe this combination.

Countries where earthquakes, volcanic activity or typhoons happen regularly there is a plan of action. Our neighbours to the south have faced the horror of tornados long before OZ. They use amateur radio operators as official tornado spotters. You may find it surprising to learn that in spite of ALL our modern technology we have NO absolute method of verifying tornado activity except via actual sightings. This army of volunteer personnel has been in operation below the border for over 30 years. They provide warning of imminent danger which has saved many lives.

Canwarn...Why Now...Why Not Sooner...

Although many would believe we are experiencing more tornado activity there is not proof to support this claim. Damage and injury is on the rise. How is this possible if the frequency of severe weather is not increasing?

Drive around any large city you have not visited in the last few years. What was urban is now city and what was country is now urban. We are a country undergoing growth and development. Even more to our disadvantage is that we like to build in the areas which are path lines for tornado development. A tornado which cuts a path through a 50 hectare field will not likely draw much attention. Ask Woodstock or Edmonton residents what happens when that same tornado crosses paths with man made structures.

It is both good fortune and good timing that we now have more hams than at any

other time in history. Tornado watch programs in themselves would have been good reason to restructure our amateur radio system. In areas where we would benefit from tornado spotters there are still not enough bodies present to yet make it work. If we had wanted to begin the program sooner it is doubtful we would have had the resources to make it work!

Two Options...

You do not need to be an amateur radio operator to assist the weather offices as per severe weather problems. One program involves being a SEVERE WEATHER WATCHER and the other directly involves amateurs as TORNADO SPOTTERS. As you can well imagine, we are not encouraged to roam the countryside just hoping to encounter a tornado! Many, many amateurs are equipped with radios in their vehicles and CANWARN offers them an outlet to report any severe weather pattern or tornado sighting as they go about their daily tasks. In the past, you could report such phenomena but your message would have to be relayed and during a tornado touchdown every second is precious. With the CANWARN system in place, the weather office is monitoring these calls and is in direct link with a NET controller to establish the path and severity of the weather as it happens! The SEVERE WEATHER WATCH program is still in effect but you must stop and get to a phone. From there your message needs to be relayed to local authorities. You can see how this can consume valuable time which is needed to save lives. If you are not a ham operator but do travel or have time to weather watch over the summer contact your local weather office and ask about this program. Some warning is better than no warning!

Canwarn...How It Works...

The CANWARN system links an army of amateur radio operators directly with the weather office through a net

controller on an agreed frequency. The information is current and immediate. Even if you are not a licensed ham it would seem that now would be a good time to shop for a radio scanner. This device will allow you to intercept and listen to all emergency traffic from tornado watches to ambulance calls. Visit your local Radio Shack store and ask for a demonstration. Even when there is no severe weather in the area scanners can provide some very entertaining listening!

All amateurs are encouraged to receive proper training as tornado spotters. One evening of your time is all it will take. Even if you lack the proper training check the weather office in your area for a grid map. This map will help track storm or tornado paths.

Let's assume that you are driving along and severe weather is developing in the direction you are travelling. You have a 2 metre radio in your car and the grid map for your area in the glove compartment. You notice the formation of a wall cloud and call this in to the net controller on the radio. You identify your position according to the map as N27 etc. This is a fairly serious development in storm patterns and you would be advised to turn at right angles to the approaching front if possible. If the storm continued to approach and you spotted rotation within the clouds it may be time to leave your car. Too many remain in their vehicles. This can be a tragic mistake. Walk towards the storm so you are between the approaching weather and your car. You do not want it to be blown towards you! Find the lowest spot possible along a ditch area and lay flat until the front passes. The information you have broadcast will already be passed along to radio and TV stations for transmission to the public airways.

Kincardine Presentation

John Hoekstra and Doug Mackinnon came to

the Kincardine airport on Thursday, June 27th to educate any and all interested in severe weather phenomena. Both are now licensed ham operators and monitor the VE3LON repeater during weather emergencies. This direct link is a big part of the Frome success story. During late August of last year a tornado struck the small village southwest of London. With the hams hard at work and sightings in the area the population of this small community had a 20 minute warning before the tornado hit! We know 3 families living in the centre of the small village. Although they found the tornado to be a frightening experience they were all extremely thankful that ample warnings came their way!

During the evening we learned of anvil heads, wall clouds and debris columns. What came home most of all to me is the importance of human spotters as tornados are not detectable on radar! Winter storms or heavy rains give sustenance that can be tracked but tornados often spring from areas where there is no rainfall at all! I urge you to attend one of these free presentations if you have the opportunity.

What Comes Next..

Hopefully we will develop a complete network system all linked together with one grid map in the years to come. Small dedicated receivers which can be activated by tone control from the weather offices can be placed in heavily populated schools and work areas. These can provide immediate information which will save lives. Amateur radio is definitely a hobby which continues to serve.

Thanks to Chuck Adler, Editor of Electronics & Technology Today for permission to reprint this article.

SARC ANTENNA SYSTEMS FOR APARTMENT DWELLERS

The second meeting (of the Scarborough Amateur Radio Club) in September featured a presentation by Bill Whitelock VE3CBW on his apartment antenna system. These notes are meant to complement that talk.

Operating in an apartment presents several unique problems compared with operating from a house. Most apartments have a no outside antenna requirement. How can you provide a good RF ground?

As with any antenna location the same basic rules apply. In any antenna the main radiation is from the current carrying portion of the element. Therefore it is important to have this part of the antenna as high and in the clear as possible. The high voltage part of the antenna does little radiating but should be well insulated. This portion may be folded and does not have to be in the clear.

The next problem is providing a good ground. A large reinforced concrete building can be considered as a mass of ground at amateur frequencies. Connection to this mass can be via the heating pipes, water pipes or other large metallic objects such as large window frames and balcony railings. These, having a large capacity to the mass of the building, provide a fair RF ground but may not be a very good DC ground.

If the antenna is unbalanced or quarter wave type then a good low loss ground is vital to the operation of the antenna. With a balanced antenna such as a half-wave dipole the ground is not part of the antenna system and is not so important.

Now we will consider the types of antennae that are most suited to the confines of an apartment. Most apartments are constructed of reinforced

concrete. This forms an RF shield which is an advantage in that interference to neighbouring apartments is less of a problem. The disadvantage is that any totally inside antenna will be so shielded from the outside world that its effectiveness will be severely reduced. Many buildings have brick outside walls which are less of a shield to HF signals. If a balcony is available it makes things a little easier.

The simplest antenna to consider for the HF bands would be the dipole. This may be suspended above a balcony rail and should include a balun. A big improvement can be obtained if the antenna can be supported at a short distance outside the balcony. An antenna cut to length from the formula will usually resonate lower in frequency because the proximity of the building adds capacity to the antenna. It will be necessary to adjust the length and check the resonant frequency with a dip meter or RX noise bridge. Due to the close proximity of surrounding objects the impedance will be considerably lower than normal. Such an antenna trimmed for minimum SWR with an SWR bridge may be resonant a long way from the operating frequency and thus be an inefficient radiator. An SWR bridge should only be used for resonating an antenna when the impedance at resonance is known to be close to that of the bridge.

If the space available is not sufficient to fit a full size dipole then the antenna may be folded at the end or loading coils may be used.

A popular antenna for apartments is the mobile whip or other variations of the loaded quarter wave. Here the balcony rail or a window frame may be used as the ground. The ground plane may be improved by adding one or two wires of one quarter wavelength to the grounding point at the antenna and laying them on the floor as straight as space allows.

Another antenna system to consider is the random length of wire tuned with an antenna tuner in conjunction with a good ground.

Finally there is the small loop antenna such as the AEA IsoLoop which covers all bands between 10 and 30 metres. This is one of the antennae demonstrated by Bill VE3CBW at the last meeting. Bill's IsoLoop was an older model which does not cover 30 metres. This antenna consists of tubing bent into a square with less than 3 feet sides. This short radiator is tuned to resonance by a capacitor which is motor tuned by a control at the operating position. The loop is fed by coaxial cable into a matching unit at the centre of the loop. Low loss components are the secret to this antenna as the circulating current with such a high Q is very large. As this is a balance antenna the grounding will have little effect on the efficiency of it. I would be very interested to hear from anyone who has compared the antenna with a full sized dipole.

de Tony Feban, VE3QF/G3TTF
Scarboro Amateur Radio Club

HELP WANTED

Volunteers are need for the:

- Flea market
- Nominating Committee
- coffee urn
- Membership Chairman

These are all important positions that need to be filled as soon as possible. The Membership Chairman will be needed in the fall. In that respect, we would like to thank Mike, VE3WMB, the current Membership Chairman, who will be out of the country for a while.

Anyone interested in filling these positions should call a member of the OARC Executive.