

MAY 1992



NEXT MEETING WILL BE HELD  
WEDNESDAY, MAY 6, 1992

# GROUNDWAVE



Club Call VE3RC

Repeater VE2CRA

VE3LXJ

The Ottawa Amateur Radio Club, Inc., Box 8673, Ottawa, Ont., K1G 3J2

President	Peter Jago, VE3PWJ	836-1013	
Vice-President	Paul Coverdale, 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	Harris 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
Publicity	Mike Pilon, VE3BUP	731-1567	
Groundwave Editor	Mike James, VE3PDE	592-2962	995-2730
Graphic Designer	Maria Townson, VE3KIP	828-9573	
Contributing Editor	J. Gord MacKay, VE3JMT	831-1004	
Production Committee	Paul Campbell, VE3CEP	733-0148	
	Chuck Baker, VE3PAP	824-1941	
	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 RMOC 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 APRIL 1, 1992

The April meeting was called to order by the President, Peter Jago, VE3PWJ at 7:40 p.m.

The following visitors introduced themselves and were welcomed to the Club meeting: Brian, VE3IK; and Mitch, VE3IAY.

There was no representative from either CARF or CRRL to give a presentation.

It was stated that the Club had not donated \$100.00 to the Defence of Amateur Radio Fund.

Paul Cooper gave a short presentation on DX activities of current interest, particularly the DXpedition to South Sandwich Island.

This being home brew night, the meeting quickly moved on to the various items of equipment that had been brought along, and the originator asked to give a short presentation.

Marcus, VE3MDL, spoke on his Amateur Radio Astronomy activities. Shown were some modules designed as part of a 21 cm correlating receiver, as well as a 21 cm weak signal source to be used for antenna testing.

Peter, VE3LBW, showed and discussed his 2m double extended zepp antenna, made from 1/2" copper water pipe and associated plumbing fittings.

Eric, VE3SGG, showed his poor man's packet set-up, being an entry level TNC built around the TI3105 chip.

Barry, VE3BXH, showed his 'Neophyte Receiver' covering the 80m band, built from a 1988 QST article. Barry also explained the problems he'd experienced from a local radio station breaking through (yes, he lives in Barrhaven) and

the necessity to add a high pass filter on the front end of the receiver.

Brian, VE3JKZ, showed his audio filter (narrow, for CW, plus a variable frequency notch for removing carriers); a receiver for 40/80/160 built from junk box parts, and a pair of 80m traps built from coaxial cable.

Clare, VE3NPC, showed his 2m Gasfet pre-amp with helical coil selective filters, and a 13cm/2.4Ghz antenna array consisting of 4 reflectors each with a 42 turn helical element, complete with matching stub.

Ed, VE3XTU, showed a portable 2m receiver covering the range 144-148 Mhz, and built around a single MC3362 chip followed by an audio amplifier.

Mike, VE3FFK, showed a container he had built to hold three VHF/UHF multiband radios. Designed to provide ease of accessibility to all input and output connectors, as well as for portability. Mike had also brought along a 4 element delta loop antenna array for the 50 Mhz. It had been designed using a computer analysis program. Unfortunately, the antenna is not a success (yet) as it resonates at 60 Mhz as opposed to the design of 50 Mhz.

Whilst the three judges deliberated (being Penny, VE3ERO, Neil, VE3EXA, and Ken, VE3PU), Paul Coverdale gave a brief talk concerning the Club field day. This will be a competitive station, operating primarily on CW. Club members who wish to assist and participate should contact Paul, VE3ICV, at 820-6643, or Brian, VE3JKZ, at 523-1535.

Harrie Jones, VE3HYS, presented some 35mm slides describing one of the earlier ski marathons.

The judges for home brew night then announced their decision:

First prize, being the plaque for Technical Achievement and a gift certificate, went to Brian, VE3JKZ, for the design effort which went into building a three band receiver around junk box parts.

Second prize, of a gift certificate, went to Marcus, VE3MDL, for his astronomy project (described by the judges as being "out of this world").

Third prize, a gift certificate, went to Clare, VE3NPC, for his 2m pre-amp.

The President adjourned the meeting at 10 p.m.

Brian Summers, VEJKZ  
Secretary

#### MAY AND JUNE MEETINGS

At the May meeting, Bill Wilson, VE3NR, will give a talk on Lighting Protection for Amateurs.

At the June meeting, Doug Yuill, VE3OCU, will give a talk on Packet Radio.

#### CONGRATULATIONS

Congratulations to Clare Fowler, VE3NPC, for getting his DXCC by satellite.

#### ITEMS FOR SALE?

Do you have a used gizmo for sale? Advertise it in the Groundwave, at our super low price - no charge!! Ed.

#### THE CLUB REPEATER

We had a little on air meeting on 34/94 on March 31st to get feedback from the club members on where they wanted to see the club repeater system go. Six people checked in to the net run by Mike, VE3FFK. Three of us from the club executive and three users. As far as I know, none of the users who checked in were members of the club. I gather from this that you the members of the club are either not on 2m FM voice, do not care where forward planning and the spending of your club funds goes or feel that everything is okay.

The 2m repeater system is not in the best of shape and, as part of the process of getting things back to the best possible condition, I would like to know what sort of tasks you want the repeater system to perform. There are two ways to do this and so I have chosen to use the method that requires the least amount of modification to the finished product. FORWARD PLANNING! The system will improve during the summer but unless I hear from you it will head towards the goals set by the three non-members who showed up and provided their comments.

73 de Harrie, VE3HYS

#### VOLUNTEER FOR HF SCHEDULE WANTED

Steven Hallam is looking for someone to make an HF schedule while his father sails across the Atlantic from mid-May to the end of June 1992. Anyone interested, please call Steve at 723-1638.

de Harrie, VE3HYS

### R.F. CAVITY FILTER TESTING

Recently this writer had the occasion to check the performance of several military surplus F 5044 A/GR. Bandpass cavity filters. The 50 ohm devices made by Collins are mounted on a 7" x 19" panel and consist of two cylindrical  $\lambda/4$  resonators turnable over a dial range of 225 to 400 MHz. The tracking accuracy is specified to be  $\pm 20$  KHz and bandwidth about 300 KHz at 3dB and 14 MHz at 50 dB points respectively. In addition, the unit has a 200 watt power meter at the input which can be selected to indicate SWR. Unfortunately, the dial calibration does not extend below 225 MHz, but, in fact, the units tune to somewhat below 220 MHz. A separate logging scale provides accurate reset ability which was calibrated over the 220 to 225 MHz amateur band range.

Both units exhibited the same fault, an open PCB foil forming part of the bridge probably caused by excessive RF input without a properly terminated output or untuned to the correct frequency.

Test equipment consisted of a Bird 43 thru-line wattmeter, a 50 ohm power meter and an ICOM IC-3AT 220 MHz transceiver. Those who are familiar with this radio know that when the function switch is set to duplex, the carrier output is radiated 1.6 MHz below that selected on the thumbwheel, a factor that caused some consternation when the second filter was tested. (As usual, any curious amateur would regularly check the local 220 MHz repeater for activity, thereby disturbing the simplex switch.)

The insertion loss was specified at 1.75 dB max and 1.5 dB nominal. Results noted on the test equipment indicated that the loss appeared to be less than specified. Overall accuracy of measurements would depend on that of the instrumentation which was questionable because with the signal being fed directly through the #43 bridge to the 50 ohm load with short cables, power

readings were 1.95 and 1.65 watts respectively. Both filters tracked reasonably accurately according to the logging scale after the RF source was properly set up for simpler output.

The filters were repaired by feeding the signal directly to the cavity pick up loop bypassing the unrepairable bridge. These filters are used on 220 MHz high speed wide band packet links to eliminate harmonic radiation and protection against adjacent and intermod signals. A pair of these filters are also used on the 220 MHz VE3OCR voice repeaters. Certainly a good item to pick up for VHF/UHF amateur application if you should be so lucky.

de Peter Hafichuk, VE3LBW

### IN CASE YOU MISSED IT

THE GREENWOOD AMATEUR RADIO CLUB is operating the Special Event Station VE1RCAF 1 January to 31 December, 1992 to celebrate the 50th Anniversary of Canadian Forces Base Greenwood, Nova Scotia. For commemorative QSL (and possible certificate) send QSL and SASE (Cnd.) or SA envelope and IRCs to Greenwood ARC, PO Box 63, Greenwood, Nova Scotia, Canada, B0P 1N0. QSLs sent via Bureau will receive QSL card only via Bureau. Lance Peterson, VE2VCL, president Greenwood ARC. (Item 1, CARF News Bulletin 05-92.)

FINAL REPORT FROM WARC '92. WARC '92 concluded by not making any changes to amateur bands. The rationale for this decision, where 40 metres was involved, is a little convoluted but here goes. WARC '92 decided not to give any additional spectrum to HF broadcasting at 40 metres. As a result it could not make what are called consequential changes to the 40 metre amateur bands. So amateurs in the America (ITU Region 2) will hear broadcasting from

Regions 1 and 3 in the 40 metre band for some years yet.

Additionally, one recommendation of interest to Amateurs was adopted by WARC '92. It was proposed by Mexico and supported Canada and several other countries. It noted that the sharing of the bands around 7 MHz by the broadcasting and amateur services is undesirable and should be avoided. It recommended that a future competent WARC should consider the possibility of aligning the allocations to the amateur service around 7 MHz on a world-wide exclusive basis, paying due regard to other services. We may know after the Administrative Council meets later this spring as to what WARC will make the realignment and when.

Ten bands, not near any amateur bands and totalling 790 kHz, were reallocated to HF broadcasting for SSB use effective April 1, 2007. Another WARC will be given the task of planning the use of all the HF broadcasting bands including these new SSB bands.

The European countries and the United States wanted more spectrum for HF broadcasting but the smaller countries would not agree. Specifically, the United States did not think WARC '92 provided enough below 10 MHz. As a result, when signing the Final Acts the United States said that it will take the necessary steps to meet its broadcasting needs for spectrum. The result will undoubtedly be a continually increasing pressure on the amateur and other HF services from European and American HF broadcasting stations operating out of band. The Final Acts of WARC '92 will take effect on October 12, 1993. (From VE3NR Bill). (Item 1, CARF News Bulletin 06-92.)

The Department of Communications has issued the call sign "Victor Yankee 5 Oscar" as the Yukon prefix for the period of June 1st, 1992 to August 31, 1992 to commemorate the building of

the Alaska highway. DOC file 0200-33156.

The Yukon Amateur Radio Association will offer a special certificate to any Amateur that confirms contact with Hams along the Alaska Highway from Dawson Creek to the Yukon B.C. border, one Ham in the Yukon, and any Ham on the Alaska Highway from Alaska Yukon border to Fairbanks, Alaska. That's a total of three confirmations, B.C., Yukon, and Alaska. This may be done on any band, or combinations of bands, including 2 metres. The cost of the certificate will be \$3.00 U.S. or Canadian funds. Certificates may be obtained by writing: The Yukon Amateur Radio Association, P.O. Box 4884, Whitehorse, Yukon, Canada, Y1A 4N6. (Item 3, CARF News Bulletin 06-92.)

YOUR LOCAL LIBRARY probably has many books from the USA on amateur radio but few, if any, Canadian. Why not donate a CARF Basic Study Guide, a Question Bank or Callsign and Address Book? Be sure to include your club's name and a contact person(s). It pays to advertise. (Item 5, CARF News Bulletin 06-92.)

CALGARY - Is the Calgary Amateur Radio Association, C.A.R.A., the biggest club in Canada? Their March '92 membership stand at 406. Congratulations C.A.R.C. (Item 6, CARF News Bulletin 06-92.)

FROM THE DOC - To commemorate the City of Windsor's Centennial, the Department of Communications will be authorizing amateur radio stations in the City of Windsor, in the province of Ontario, to use the prefix CK replacing VE on a voluntary basis from May 17th until May 30th, 1992. (Item 9, CARF News Bulletin 06-92.)

THE YRARC NATIONAL "YOUNG AMATEUR OF THE YEAR AWARD" - The York Region Amateur Radio Club is sponsoring a national award to help publicize and promote the hobby of "Amateur Radio" among the youth

of Canada. The prize offered to the winner of this award is \$500, first and second runners up will receive \$200 and \$100 respectively.

The award, inspired by a similar award offered in the UK by their national organization, will be made on the recommendation of a panel of directors of the YRARC. Submissions for the award will be welcomed from any official of an affiliated CARF or CRRL Club throughout Canada.

Submissions, including details of the sponsor and sponsoring club should be forwarded to: Attention: Awards Committee, the York Region Amateur Radio Club, P.O. Box 352, Newmarket, Ontario, L3Y 4X7. For further information please contact the Awards Committee at the above address or call VE3ORE, Mr. Andrew Betterton at 416-895-8710. (Item 10, CARF News Bulletin 06-92.)

SMITHS FALLS ARC 8th ANNUAL FLEAMARKET SATURDAY MAY 2, 1992 will be held at the Agricultural Fairgrounds, Lombardy, Ontario, 6 km. south of Smiths Falls on Hwy. #15. Lots of parking, vendors 0730, doors open at 0900, refreshments. Talk-in VE3RLR 147.210 +600. Information: VE3BFX, J. Baxter 613-283-7852. Visit the CARF table. (Item 20, CARF News Bulletin 06-92.)

THINK FIELD DAY - No, it isn't too early to begin thinking Field Day. Although we've got a number of things to think of first, like upcoming fleamarkets, hamventions and the beginning of spring..for now,... Think Field Day! Help make your club #1 in Canada this year. Field Day needs the support of all. Mark your calendar for June 27/28 and help make this year's Field Day the most successful yet. It's not too soon to start planning your club's Field Day effort. (Item 21, CARF News Bulletin 06-92.)

SPECIAL EVENT STATION - Qualicum Beach, B.C., May 9-10 - The Mid Island Radio

Association (MIRA) will operate a special event station to celebrate the 50th birthday of Qualicum Beach on Vancouver Island. Look for us around 7.175 and 14.275 MHz from 1600Z May 9 thru to 0100Z May 10. Stations working VE7MIR can receive a commemorative QSL card by sending a QSL card with contact confirmation to: Al Nicol, 731 Garrett Rd., Qualicum Beach, B.C. V9K 1L4. (Item 22, CARF News Bulletin 06-92.)

NEW CARF CALLSIGN BOOK NOW AVAILABLE - write CARF BOOK STORE, P.O. Box 356, Kingston, Ontario, K7L 4W2. (\$25 includes shipping and GST.) (Item 24, CARF News Bulletin 06-92.)

REPEATER MAPS AND DIRECTORY is now available also from CARF BOOK STORE (Cost \$10 postage and GST included). The 1992 edition contains maps and listings of repeaters for border states and Canadian repeaters. (Item 25, CARF News Bulletin 06-92.)

#### THE OARC PACKET GROUP

I've been asked recently (and not so recently) to elucidate the activities of the OARC Packet Group. Here is a snap-shot of where we are now. The Packet Working Group of OARC has been busy for the past several years building a solid foundation on which to pursue further development.

The group meets on the last Thursday of every second month starting in September and ending in May. We do not meet in July or August. The meetings start at 7:30 p.m. in the group lobby of the National Museum of Science and Technology. Typical meetings include reports on various packet related activities, an exchange of the latest (public domain) networking software, a plea for warm bodies to assist in the working group's activities, a long coffee break for more person-to-person

discussion and sometimes there is even a guest speaker. Although the meetings are very informal, they do provide a sense of community.

The OARC Packet Group also provides a net controller for the Monday night packet voice net. In this way those who are unable to attend our meetings can get involved. The net usually takes the form of a question and answer session with the net controller soliciting both questions and answers. This format seems to work well.

Other developments of the working group have included grooming the Dunton tower repeater site for anticipated expansions. For example, currently the hydra packet switch is based on a 80286 PC running KA9Q's NOS software. The switch provides packet switching facilities via four ports. An ethernet interface provides access to the services of the campus LAN. An Ottawa PI board connects to the 56kbps repeater, and two 9600 baud NRS interfaces tie-in the OTTAWA and CAPTIL netrom nodes. Unfortunately due to software reliability problems we can not turn on access to the full suite of services available via the NOS "mail-box" facility. This is expected to improve after we acquire a Gracillis PackeTen board which has much more robust software. The PackeTen provides five interface ports, three of which can run at multi-mega baud data rates ie: 2 million bits per seconds plus. This extra performance will allow experimentation and testing of some high-speed X-band microwave transceivers that VE3MDL and I hope to have on the air this year. The extra speed afforded by this technology should provide the bandwidth necessary for real-time full duplex video tele-conferencing, distributed file system experimentation, X-windows, "virtual-desk-top" sharing and other speed intensive multi-media applications. (We're still dreaming about a matter transfer protocol!)

We plan to up-grade the 56kbps repeater's power output from its paltry 7 watts to about 50 watts. This extra power will be shared with a second higher speed channel which we hope will run at 128kbps. This will leave the first channel free for linking purposes. We are currently considering the possibility of providing a call-sign database server of some sort.

In terms of philosophy our efforts can be characterized by a move towards providing more than just a network. Networks are simply a means for a user to access services. Without a sufficiently fast network, the scope of services that can be provided remains low. This has required us to spend some time building a network that is fast enough to provide interesting applications.

Along the way, we needed a high speed synchronous host interface for the PC via which the WA4DSY radio modem could be interfaced. With VE3IFB's design for such a board, we had found our proverbial "cash-cow." The sale of over one hundred of these boards has provided the funds necessary for a transition to a more service oriented network.

If sufficient interest exists, in future issues of the Groundwave I will elaborate on some of the issues I've touched upon here.

de Doug Yuill, VE30CU

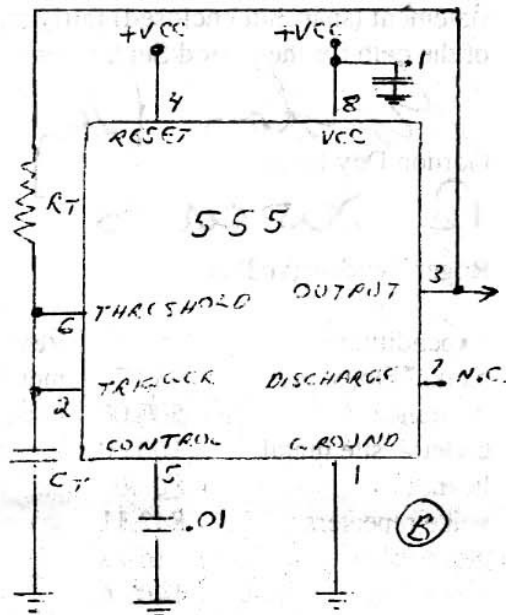
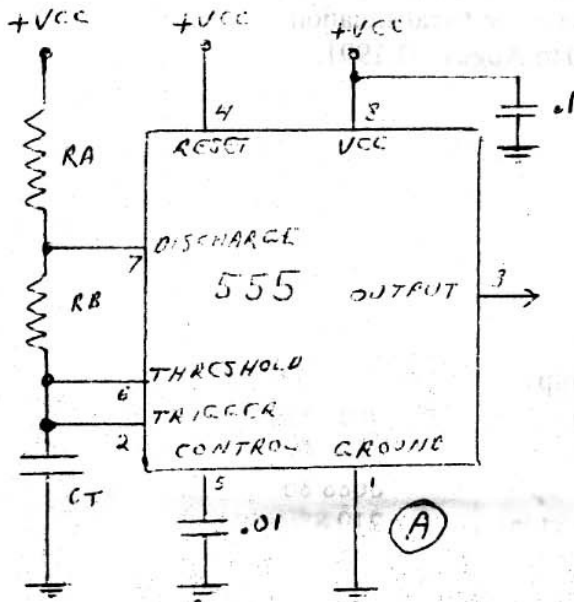
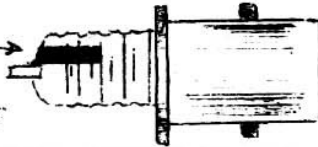
(Note: The March issue of the Groundwave was loaded on the Packet Bulletin Board System of VE3JF. The May and June issues of the Groundwave will also be made available there.

The files are named GWXXX92.TXT (where XXX represents the first three letters of the month). If there is sufficient interest, we will continue with this service in the fall. Ed.)

TIPS

Because homebrew night is either just coming up, or just past, depending on when your editor gets this, here are a few tips we use around the engineer factory.

CUTTING A NOTCH IN  
A BNC CONNECTOR  
ALLOWS IT TO BE  
SOLDERED TO THE EDGE  
OF A PRINTED CIRCUIT BOARD



Save a resistor, get square waves and easy frequency adjustment from the '555 timer by using circuit "B" rather than the usual circuit "A" version.

73...Mike VE3FFK

4227 Limestone Rd RR#2  
 KINBURN, Ont.  
 K0A 2H0

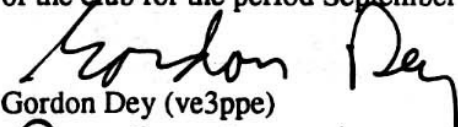
April 1, 1992

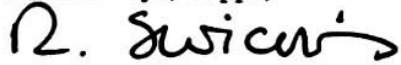
Members, Ottawa Amateur Radio Club, Inc.  
 P.O. Box 8873  
 Ottawa, Ont.  
 K1G 3J2

Members:

Myself and Roger Swickis have audited the statements provided to us by your treasurer, Mike Kelly.

After much work, and to Mike's credit, we are pleased to report the statement (snapshot enclosed) fairly represents the fiscal situation of the club for the period September 1 1990 to August 31 1991.

  
 Gordon Dey (ve3ppe)

  
 Roger Swickis (ve3bzz)

Expenditures:		Revenues:	
bank, PObox, etc	98.57	memberships	2394.00
insurance	500.00	flea market	1011.87
carleton site rental	100.00	directories	124.00
licenses	88.00	packet group	8688.86
voice repeaters	842.11	savings acct int.	219.88
flea market	314.18		
groundwave	1407.62		
packet	5774.92		
prizes	400.00		
	<u>9525.40</u>		<u>12438.61</u>
Joe Norton GIC int.		735.00	
Joe Norton acc int.		285.23	
Joe Norton award	690.00		
			<u>330.23</u>
			<u>12768.84</u>

Excess of revenues over expenditures for the year: 3243.44