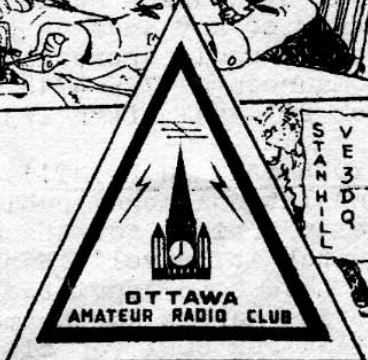


The Official Bulletin of the OTTAWA AMATEUR RADIO CLUB INC.

Box 8873, Ottawa, Ont. K1G 3J2

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THE OTTAWA AMATEUR RADIO CLUB, INC.
is an association of Radio Amateurs devoted to the promotion of interest in Amateur Radio communications 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 (146.34/146.94) to pass traffic and to make announcements of interest to Amateurs in the Ottawa regional area.

THE SWAP NET, a service to the Ottawa Valley Mobile Radio Club Inc., is repeated on the Capital City Net and is conducted by Ed Morgan VE3GX. To list items or make enquiries, call Ed at 733-1271.

An ENGRAVING PENCIL is available to Club members to mark their valuables for positive identification in case of loss or theft. For further information, contact Penny Robinson VE3ERO at 225-1276.

HOSPITAL VISITATIONS to any Amateur confined to the Civic Hospital will be made by Maureen Neill VE3FZY. If you know of any amateur confined there who would appreciate a visit, call Maureen at 725-4748 during the day or 233-9941 after 1730 hours.

SEE YOUR NAME IN PRINT!!-- in National and International publications. Write an article for the GROUNDWAVE and watch it travel! Many local articles have been reprinted in Club bulletins across North America. DEADLINE FOR COPY for all articles and announcements is the second Wednesday of each month.

REGULAR MEETINGS of the OARC, Inc. are held on the first Wednesday of each month (except July and August) at the National Research Council Auditorium, 100 Sussex Drive, Ottawa, at 2000 hours. A bulletin board is available for posting notices of interest to other members about 1915 h. For further details on the next meeting, see page 5.

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

THE OARC EXECUTIVE normally meets on the second Wednesday of each month in the Board Room of CFRA, 150 Isabella St., Ottawa at 2000 hours. Contact the president to confirm the date of the next meeting.

RENEW YOUR CARF AND ARRL MEMBERSHIP through the OARC to save money order and postal charges, and to help your Club. Contact the Treasurer for further details (see back cover).

SAFETY BELTS AND TWO METRE RIG are available for loan to club members. The two metre rig may be borrowed by members who must be hospitalized, and the safety belts and pole straps by any member (a \$100 refundable deposit is required for the latter). For the belts, contact Paul VE3ICV at 820-6643 if you live in the west end or Brian VE3JKZ at 523-1535 in the east end of town. Contact Brian for 2m rig. RADIO AMATEUR CALL BOOKS are available for use at the Orleans, Nepean, downtown and other city libraries. Enquire at the information desks of your local library for further information.

MINUTES OF THE OTTAWA
AMATEUR RADIO CLUB, Inc.

June 3rd, 1981

The meeting was called to order by Brian VE3JKZ, President at 2004 hours. Upon correction of one error, in the call VE3MPG, not VE3MPJ, the minutes were approved on a motion by Mailes VE3BCO seconded by Paul VE3JLP.

Winners of the Bunny Hunt were Bucky and Pat who will share a one year subscription to an amateur radio magazine of their choice.

With regard to the National Capital Award, it was reported that the Ottawa Valley Mobile Radio Club did have an award several years ago, and also that Penny VE3ERO had organized an award for contacts with stations operating under the call VE3NCR during and preceding the RSO Convention held in Ottawa.

No decision had been made regarding the booth at the Ottawa Ex. However, after the general meeting, the executive received a letter from the Exhibition Board offering free space.

With regard to the EMO, Ken VE3-IHX brought members up to date on recent happenings. A meeting between the EMO and local amateurs to lay the groundwork has been planned. A kit will be sent out to those who have agreed to help. Ken read a letter to the members which he had just received from the ARRL advising him that he will no longer be their local Emergency Coordinator. Ken advised the members that, nevertheless, he would continue to be the official EMO representative and that he was willing to continue to act as the OARC Emergency Coordinator. The President assured Ken that he does represent the Club and that the matter would be discussed at the next Executive Meeting. Brian also read a letter from EMO requesting the Club to sign an agreement permitting the EMO to use our repeater VE2CRA in the event of

an Emergency. This matter will also be discussed at the next meeting of the Executive. In the ensuing discussion, Bud VE3UD stated that only amateurs could be permitted to use the repeater. Ken VE3IHX stated that a band-plan of frequencies to be used was being developed. Rick assured the members that the people involved are competent. The OVMRC has also received a similar request for the use of their repeater and are generally agreeable, but have reservations about exclusive use (which has not been requested).

George VE3BNO spoke to the members about the 450 MHz repeater which is still listed in directories, but which is too old to put back on the air. He proposed the purchase of a solid state system at an estimated cost of \$1100 for use as a downtown link to VE2CRA. This was then treated as a formal motion which was seconded by Mailes VE3BCO and carried unanimously.

The new Club Directory was handed out to members present at the meeting. The rest will be mailed out to absent members. Additional copies will be available at a cost of \$1.00 each. The membership gave a round of applause to Ed VE3KLP and Paul VE3ICV for their efforts in producing the Directory which also includes members of other local clubs.

The President chided the members for their poor response for collection of Dominion Store tapes.

A show of hands indicated that ten members present were interested in a Club Picnic.

Two Club members reported to be ill and recovering at home were Bruce VE3AZM and Joe VE2DZT.

Bill VE3NR gave a brief talk on the Fifth Symposium held in Winnipeg on the 22nd of May at Red River College. The Symposium was attended by 35 amateurs, six DOC representatives and two Emergency Planning officials. Thirteen briefs were presented and

Minutes -- continued

four workshops were held covering a wide variety of topics.

Bob VE3MPG outlined the preparations which have been made for Field Day. The same site as has been used for the past several years has been arranged for; the NCC property off Highway 16 south of Hog's Back. Set-up will start Friday and Penny VE3ERO will provide the operators with food and drinks again this year, including breakfast on Sunday morning. John VE3CXL presented a very good slide show on previous Field Days both here and in Japan! Paul VE3ICV gave a live demonstration of the operating procedures to be used on CW and gave several operating hints. Wally VE3GBE described his phased vertical antennas which will be used.

The President reminded members present of the Homebrew night and the Auction and Flea Market to be held in October and also the RSO Convention.

VE3GEA has copies of the book "ZAPP" which he is selling. The talk on the Club QRP Rig Project has been deferred until the Fall.

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VACUUM TUBE STORAGE

- Chris Bisailion
VE3CBK

Fellow amateurs may be interested in knowing how I overcame my vacuum tube storage problem. I have over 400 tubes and before, when I wanted a particular type, it was like finding a needle in a haystack!

My solution was to take some old cardboard boxes and cut them to the dimensions of Figure 1. I then scored and folded them along the dotted lines and formed the cardboard as shown in Figure 2, gluing panels C and D together. Weights were used to hold it together until the glue dried.

On panels A and B, "X" shaped cuts were made with a sharp X-acto knife and the tubes held as shown in Figure 3. The pins of the tubes are protected, numbering or indexing the tubes is facilitated and about 40 tubes can be accommodated by one neat holder which is easily stored on a shelf.

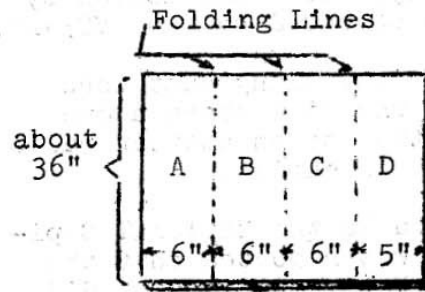


Figure 1.

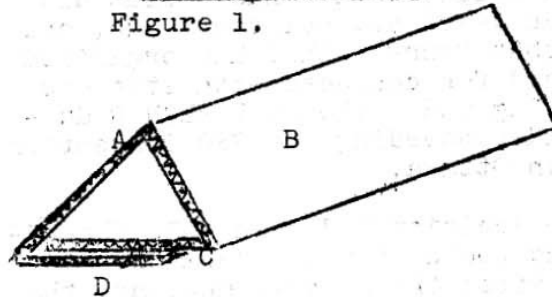


Figure 2.

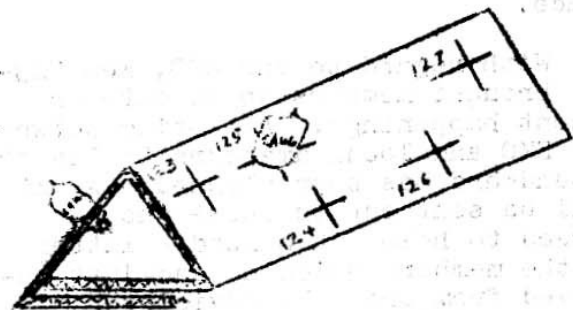


Figure 3.

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RADIO FREQUENCY INTERFERENCE

-- Television Interference

This is a continuation of a series of articles on Radio Frequency Interference which began in the January 1981 issue of the GROUNDWAVE. Thanks go to the Electronics Industries Association, Consumer Electronics

NEXT MEETING

The next regular meeting of the Ottawa Amateur Radio Club, Inc. will be held on Wednesday, September 2nd, 1981 in the Auditorium of the National Research Council, 100 Sussex Drive Ottawa, at 2000 hours.

The notice board will be set up at 1915 hours, so come early and have an "eyeball" QSO with some of your fellow members.

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Group and in particular to Sally Browne of that organization for granting us permission to extensively extract information from "Consumer Electronics Service Technician Interference Handbook" on Audio Rectification and Television Interference. Both of these booklets are available at a cost of \$1.00 U.S. each from:

Mrs. Sally Browne
Consumer Electronics Group
Electronic Industries Association
2001 Eye Street N.W.
WASHINGTON, D.C., U.S.A.
20006

Before addressing the problem of correcting TVI from your rig, a few words about Safety Guidelines are in order. The most important of these is that *no modification of any circuit should be made which would expose the user to a potential hazard. No modification of any circuit should be attempted unless specifically authorized by the manufacturer.* Service work should be performed only after you are thoroughly familiar with all of the following safety checks and servicing guidelines, plus any other specific ones contained in the Service Information for the specific product. To do otherwise may create potential hazards and increase the risk of injury to the user.

After the original problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just

the areas where you have worked as some previous service work may have left an unsafe condition which could be unknowingly be passed on to the user. Be sure to check all of the following:

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts.

2. Never release a repaired or modified receiver unless all protective devices such as insulators, barriers, covers, strain reliefs and other hardware have been installed per original design.

3. Soldering and wiring must be inspected to uncover possible cold solder joints, solder splashes or sharp solder points, frayed leads, pinched leads or damaged insulation (including A.C. cord). Be certain to remove loose solder balls and all other foreign particles.

4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layour, lead length and dress.

5. No lead or component should touch a receiving tube or other component rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.

6. All critical components (identified on the schematic diagram and parts lists by the manufacturer) such as fuses, flameproof resistors, capacitors, transformers, etc. must be replaced by exact parts. Do not use replacement components other than those specified or make unauthorized circuit modifications.

7. When servicing any transformerless receiver, always use an isolation transformer. Failure to do so will expose you to possible shock hazard and may cause damage to servicing instruments.

-- continued on Page 8.

THE YL HERITAGE

(by Louise Moreau WB6BBO)

Ever feel your hackles rise? Your tail swish dangerously back and forth? Your ears flatten when some well-meaning person says "You mean you are a Ham? That's a funny hobby for a woman." After the red mist clears, the fur settles, you've stopped spluttering and you're calm enough to answer, you will probably tell them all the usual things: The wonderful world of radio, our far-flung friendships, our public service record, contributions we've made to communications. Or, you might say casually that you are merely following a long tradition, for women have been a part of the communications story for almost 3,000 years.

To be exact, the first message that history records went to a woman telling of the fall of Troy and, no doubt, implying that the OM would be home as soon as he was mustered out. If we believe Aeschylus, it was a woman who planned the system of fire beacons to get the news through. Her name was Clytemnestra.

Signalling by fires gave way to a lot less messy system and then we gals really got into it when the "lung telegraph" became very popular about 100 BC. Now, I don't recommend that system. It would make us all into a bunch of "gravel Gerties" but those gals did it. In Europe, and what is now Scotland, there is documented evidence of women who were used to shout dispatches from point to point using, and here I quote, "short staccato phrases." One historian comments that the higher pitch of the women's voices was peculiarly suited to over-riding the noise of a storm or a waterfall.

Women were among the well-known whistlers of the Canary Islands who were able to communicate across amazing distances through this medium which is just as simple as saying a word and whistling at the same time. If you want a technical description, they used lips, tongue, teeth and

fingers. It not only was effective, it is still used by men and women on the Island of Gomers.

Those are a few of the ancient forms of YL participation. On the modern side, Charles Dickens devoted an entire essay to the English "needle telegraph". He tells of 60 women who were trained to operate it. Shaffner, telegraph historian of the 1850's, was excellent woodcuts of these offices showing the YL "needle clerks" and "reading clerks" as they were called. In that system, a gal could easily join the local chapter of the "Cross-Eyed League" by constant reading of the dial plate with the needle, in some cases two needles. In one case, five needles flipped back and forth at a rate of 15 to 20 wpm.

Building fires, shouting, whistling, flashing polished metal or turning the semaphore arms might have been the future of all YLs and OMs. Then came May 24, 1844. A delightful young lady, whose faith and belief in a brilliant inventor, was rewarded by being one who chose the text of the first message sent on the electric telegraph and Miss Annie Ellsworth joined the club.

Within seven years, there were not only YL operators in the rapidly growing industry but some of them had become so efficient that they were appointed office managers. Two years later, the familiar "73" was being used on the wires to the gals in the same way that "88" is used now, for in 1853 "73" meant "my love to you". It was also used in the telegraph journals of that time to welcome women operators newly come into the profession. There is further evidence in the many histories; James Reid in particular, that the presence of the ladies was a very good influence on the behaviour and language of the men operators.

(To be continued)

de TOT-TOPICS

CELLULAR RADIO

The US Federal Communications Commission (FCC) approved the long-awaited Dick-Tracy-like cellular radio service for portable telephones. Cellular radio takes its name from a process of dividing cities into small geographic pieces, or cells, each served by a low-power radio transmitter. Through computer switching equipment, a call made from a moving vehicle can be transferred automatically from cell to cell and frequency to frequency without interrupting the conversation. This differs from the present situation in which a single powerful radio transmitter blankets an entire city so that a conversation on a car phone can continue regardless of the vehicle's whereabouts. The old technology allows just 24 simultaneous conversations to take place in say, New York City, while hundreds of thousands could be made with a cellular system.

RUSSIAN JUSTICE

Officials from the 104th Militia Detachment of Moscow and the USSR Ministry of Communications inspected the illegal radio station of an individual calling himself on the air, "The Inspector". N.G. Gutorov had been broadcasting music on 1700 kHz and below and had "impolitely rebuffed an invitation to go to a radio club to learn Amateur Radio." (Russia's CB band is located near this frequency.)

He was sentenced by the Tushinsky Rayon Court (Moscow) to five years in prison. (Translated by Dex Anderson from USSR Radio Magazine.)
de Worldradio/W5YI Report

OVERHEARD ON A REPEATER...

"What's that you said OM, I didn't quite get that. I guess you have got your squelch set too high."
de LARC Bulletin

CONVERSATION GUIDE

"The Radio Amateur's Conversation Guide" - The authors of this useful book are Jukka, OH1BR, and Miika, OH2BAD, Heikinheimo. The book is 90 pages of useful QSO phrases in English, German, French, Italian, Spanish, Portuguese, Russian (phonetic) and Japanese (also phonetic). Chapters are each specific parts of a QSO: 1. Starting a QSO; 2. Tnx for the call; 3. Report; 4. Name, QTH; 5. Equipment, etc, etc. Also included are foreign phonetics and numbers (e.g. K7ZR is KANSTANTIN SIEM ZINAIDA RAMAN), which can make you sound very sophisticated on the low end of 20 metres.

Those who would dazzle their DX friends with linguistic loquaciousness can buy the book (published by Transelectro Oy, Helsinki, 1980) from Transelectro America, 2301 Canehill Ave, Long Beach, CA 90815 for 10 green stamps.

de Worldradio/Totem Tabloid

TVI

My first TVI experience started the day I erected my tri-bander on a free-standing 60-foot tower. (In fact, my first complaint came from a neighbour before I had connected the coax to the rig.)

Over a period of two years, I had nine visits by DOC inspectors. My station was declared clean after the second visit, having installed a low pass filter, extra grounding outside my shack in addition to the 12-foot ground rod to the tower, and a counter poise around my operating table. Still the complaints came -- from the same neighbor -- who has six TV antennas and two TV preamps on one tower.

After the eighth visit in two years it was determined that the main source of trouble was external rectification from another neighbor's rusty TV tower. This was ascertained by searching the neighborhood with an RF probe. de VE3KQR/Skyhook

8. Some receivers use a polarized line cord (one wide pin on the plug). Defeating this safety device may create a potential hazard to the servicer and to the user. Extension cords which do not incorporate the polarizing feature should never be used.

9. High voltage should always be kept at the manufacturer's rated value--no higher--for optimum performance. Refer to listing of high voltage values in service information. Operation at higher voltages may cause a failure of the picture tube or high voltage supply and, also, under certain circumstances, may produce radiation in excess of desirable levels.

10. After reassembly of the set, always perform an AC leakage test, or resistance test from the line cord, to all exposed metal parts of the cabinet. The channel selector shafts (knobs removed), antenna terminals, handle and screws should all be checked to be sure that the set is safe to operate without danger of electrical shock. Consult individual manufacturer's service information for specific resistance or leakage tests to be made.

AC LEAKAGE TESTS

11. This test may also be used to test for AC leakage from the tone arm or cartridge in audio equipment as specified in the article on audio rectification (April 1981). Do not use an isolation transformer during this test. Use an AC voltmeter having at least 5000 ohms/volt impedance. Connect a 1500 ohm 10 watt resistor paralleled by a 0.15 mfd AC-type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination 1500 ohm resistor and .15 mfd capacitor. Repeat the AC voltage measurement for each exposed metallic part with the line cord reversed. (Note: the equipment must be plugged in. Measurements should be made both with the equipment turned on and off.) For receivers manufactured prior to 1973, the voltage may be as high as 7.5V rms, cor-

responding to 5ma AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately. For sets manufactured after January 1, 1973 the voltage must not exceed 0.75V rms, corresponding to 0.5ma AC. Any value exceeding this limit must be corrected immediately as a defect is indicated which may lead to a potential shock hazard.

RESISTANCE SAFETY TEST

12. For those receivers for which the manufacturer's specifications include resistance tests, comply with the instructions. If these are not available, connect the antennas to their appropriate terminals. **DO NOT PLUG IN THE SET.** Connect both blades of the power plug together and turn the power switch to ON. Measure the resistance between the shorted power plug and all exposed metallic parts, including the antenna terminals, all screws, the cabinet back, handle (if there is one), shafts for channel selector and all others (knobs removed), metal escutcheons and metal overlays. The minimum acceptable resistance is 600K. If any reading is below this value, or outside the limit specified in the service information, the cause must be identified and corrected before operating the receiver.

NOTE: The above safety checks and guidelines were developed for Service Technicians. For an amateur radio operator trying to identify and correct a TVI problem, it may be wise to simply identify any safety problem which may exist and suggest that the owner take the set to a Certified Television Repair Technician for correction, pointing out the serious dangers (fire and/or shock hazards) of not having the problem corrected. If the set is not opened, at least the AC leakage and/or resistance safety checks should be performed.

INTERFERENCE FROM AMATEUR TRANSMITTER FUNDAMENTAL AND HARMONIC RADIATION

-- Continued on p. 9

The most common type of TVI problem is the result of harmonics generated by the transmitter which fall within the frequency range of the VHF television channels. The reader is referred to any ARRL Handbook for an excellent discussion of the harmonic relation between the amateur bands and the television channels. Usually, the interference takes the form of fine, near-vertical lines on the screen which are caused by the generation of a beat frequency between the picture carrier and the offending harmonic. The most useful solution is to suppress the harmonics at the transmitter, through the use of a good low pass filter. If this fails to solve the problem, a commercial high-pass filter may be installed at the TV terminals. Fixed tuned stubs or tunable traps may also be effective if the problem only occurs when operating at a specific frequency or set of harmonically related frequencies.

Fixed stubs may either be half wavelength shorted or quarter wave shorted. The stub should be made of the same type of transmission line as is connected to the set--either 75 ohm coax (RG59U) or 300 ohm twin-lead. The velocity factor, K, is usually 0.66 for coax and 0.83 for twin lead. The approximate length of the stub in inches is given by:

$$L = 5906 \times K / F \quad (\text{one half wave})$$

$$\text{or } L = 2953 \times K / F \quad (\text{quarter wave})$$

where F is a multiple of the transmitter frequency which depends upon the amateur band used and the channel being interfered with as given below:

band channel	20	15	10
2	4f		2f
3		3f	
4	5f		
6	6f	4f	3f
7			6f
9&10			9f
11&12		7f	
13			10f

To make the stub, a length a few inches longer than calculated should be cut and connected to the antenna terminals in parallel with the antenna leads. This is then pruned 1/4 inch at a time until the interference is minimized or eliminated.

A tunable trap for VHF channels may be made by cutting an 8" length of 300 ohm lead for channels 2-6 or a 3" length for channels 7-13, shorting one end and connecting a 1.5-28pf ceramic trimmer capacitor across the other end. This is then taped to the 300 ohm lead in near the antenna terminals and so that it lies flat against the lead-in. The trimmer is then tuned for minimum interference. Tuning is very sharp. If less rejection is required and broader band rejection desired, a 10K or even larger resistor may be used instead of the short.

If interference patterns occur on all channels, the problem is likely overloading of the TV rf tuner. The traps described above may be effective in this case also. In addition, the TV antenna installation should be checked to ensure that all connections are good and that the lead-in is not excessively long. Use of coax instead of open 300 ohm twin-lead may also be helpful. If the television signals are sufficiently strong, an attenuator pad at the input may be helpful.

Good luck--and if you need help, perhaps the EMI Committee can give you some assistance or advice.
--the Editor.

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CORRECTIONS

There are two errors on Page 2 of The GROUNDWAVE. The telephone number for Ed Morgan VE3GX who operates the Swap Net is 733-1721 (not 1271 as shown). Also, only ARRL memberships (not CARE) and renewals are handled by the OARC.

THE OTTAWA AMATEUR RADIO CLUB, Inc.
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