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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. 4 March, 1981

The meeting was called to order at 2000 hours by Brian VE3JKZ, President who welcomed the following visitors to the meeting: Jean VE2DZY, George VE3GPP, Gladys Raymond, Guy Sabourin, Dave VE3JLV, Denis VE3HWG, G. Morrison VE1BCU, G. Richards VE1JJ, G. Hintermyer DOC, Dave VE3JQX, the XYL of VE3CCT and VE1BP. A show of hands indicated that several members did not receive their GROUNDWAVES, despite the fact that it was mailed several days early last month.

Following a minor correction (number of members reported was for 1980, not 1981 as stated), the minutes of the February meeting were adopted as printed in the GROUNDWAVE on a motion by Bill VE3NR which was seconded by Geoff VE3KID. There was no business arising from the minutes.

Brian informed the members that Bill VE3ARZ will be absent for three months. During his absence, Bill Laird will take over Bill's responsibilities for new and prospective hams.

Brian also announced that Jim VE3MJH has been transferred to Toronto. John Gilbert VE3CXL has agreed to complete Jim's term as Director and will take over the responsibility of finding speakers for future meetings. He would welcome your suggestions for speakers and/or topics of interest.

Joe VE2DZT displayed the posters which he designed to publicize the Club and Amateur Radio in general. He asked each Club Member to take one or two, and to arrange to have them placed in schools and local electronics stores. The posters were very well received by the membership. It is up to the members to see that they are widely distributed.

Fred VE3IO announced that the EMI kit assembled by his committee is available for loan to members from Ray VE3CUA. He has arranged for the

Club to receive the Journal of the Radio Society of Great Britain, which often publishes excellent articles on EMI. These will be published from time to time in the GROUNDWAVE. Fred has received the order of ferrite beads and torroids. He has a few extras available for sale to Club Members. There will be a Spring EMI Clinic again this year at CJOH. The date will be announced on the Capital City Net.

Brian VE3JKZ announced that plans were being made to hold a Club Auction on October 24th at Canterbury High School. Volunteers are needed to organize this event. He also reminded Members that the Ottawa Valley Mobile Radio Club will be holding their auction on April 25th at Canterbury High School.

Lloyd VE3AYE presented the 1981 OARC Budget (see details on page 5). It is summarized below:

	1980 (actual)	1981 (estimated)
Total Revenue	\$2213	\$2040
Expenditures	\$2693	\$3955
Deficit	\$ 480	\$1915
Cash on Hand	\$3747	

Because of the large amount of cash on hand, the Executive recommended an expenditure of \$1500 for purchase of equipment of benefit to all Club Members. Suggestions included bringing up the 430 MHz link on the Club Repeater, purchase of a portable generator, etc. Some members expressed concern over showing such a large expenditure without concrete proposals. Brian assured Members that any expenditure over \$50 would require prior approval of the membership at a Club Meeting. Other members indicated that if it was the intention of the Club to make major purchases, even if they were not yet well defined, they should be reflected in the budget. It was moved that: the OARC, Inc. adopt the proposed budget subject to the provision that further approval of the general membership be obtained for the purchase of any equipment item costing



NEXT MEETING

The next regular meeting of the Ottawa Amateur Radio Club, Inc. will be held on Wednesday April 1st 1981 at 2000 hours in the Auditorium of the National Research Council, 100 Sussex Drive. A bulletin board is set up each meeting at about 1915 hours, and all members are invited to make use of it. Arrive early to meet and talk with other members before the formal meeting.

Gary Morrison VE1BCU will talk about hidden transmitter hunts and the techniques used. It is also hoped that there will be a speaker to talk about HF direction finding techniques as used professionally.

Prior to the formal meeting, Jack Garrett will have the equipment necessary to retune the modified \$15 Radio Shack Weatherradio to the two metre band.

+++++

+ D I N N E R D A N C E

+ April 24, 1981

+ Bytown Room, RA Centre

+ A Spring Dinner Dance will

+ be held on April 24th at the

+ RA Centre on Riverside Drive

+ near Bronson Ave. The bar

+ will open at 1800 for those

+ wishing to meet their friends

+ before dinner. A three course

+ Prime Rib Roast Dinner, includ-

+ ing wine, will be served at

+ about 1900. There will be an

+ interesting guest speaker (who

+ will not be talking about ham

+ radio) followed by dancing to

+ a four piece orchestra until

+ midnight. Accommodation will

+ be limited to sixty, and tick-

+ ets may be obtained from any

+ member of the Executive until

+ the next meeting, April 1st,

+ unless they are all sold ear-

+ lier, for \$35.00 per couple

+ or \$17.50 each. Don't be dis-

+ appointed--BUY YOUR TICKET

+ N O W !!!

+++++

DOMINION STORE TAPES

If you read the inside front cover of the GROUNDWAVE, you may have noticed an item entitled DOMINION STORE CASH REGISTER TAPES which has appeared there for many, many issues. Many of you might have wondered what this item was for. Perhaps the following letter will help explain the purpose, and convince you to collect and bring in your tapes. -- Ed.

148 Fentiman Ave.  
OTTAWA K1S 0T8

To the Editor, OARC GROUNDWAVE:

As this is the year of the disabled, I would like to suggest that the Club consider the purchase of an aid for the disabled. Dominion Stores have in operation a plan where their Cash Register Tapes may be exchanged for merchandise or cash for charitable causes. We have collected tapes totaling #32,182.20 to date, and our goal is \$1,000,000, so we have a long way to go. I believe that with a concerted effort, perhaps with the help of our friends, we can reach our goal. I will be writing to Dominion's headquarters to find out more about their program, and I will keep your readers informed. In the meantime, save your tapes for a worthy cause! Thanks,

73,

Maureen VE3FZY

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QRP CLUB

Lou Vermond VE3BDV and Dave Woodhouse VE3HEA have formed a new QRP Club for those interested in building and/or operating QRP rigs. The club already has a club station--VE3QRP-- in operation. For more information, write to:

83 College Ave.,  
Guelph, Ontario  
N1G 1S2

--Courtesy March 16 CRRL Bulletin.

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HAMMOND ANTIQUE RADIO MUSEUM

The Hammond Antique Radio Museum was opened in January by the Mayor of Guelph. The museum is housed in the new electronic division building of the Hammond Manufacturing Company. Fred Hammond, the founder and owner of the Museum has been collecting and assembling one of the finest and largest private collections of antique radio exhibits to be found anywhere.

The museum building is a special one housed inside the main building and designed to be fire-proof, burglar-proof and tornado proof. Exhibits are housed in polished wooden stands. An immense amount of work has gone into refurbishing the exhibits which now appear to be in near mint condition. Items date back to the late nineties, such as an old galvanometer and coherer, through World War I and World War II enemy and allied radio and radar equipment right up to the modern such as models of the famous HRO and National receivers. A complete working AT3 twin-channel transmitter brought back memories to those who served in radio units of the armed forces during World War II.

Fred VE3HC is the proud possessor of a real antique fixed spark transmitter which he might switch on momentarily to see the spark and smell the lovely ocean-like odour of ozone. Other items of interest: an old receiver dated 1912; a small acorn tube and a 100 kW monster; an automatic morse sender dated 1917; a 204 transmitting tube and a 1907 DeForest triode.

In a separate room is the Museum ARC VE3BJ, mainly Collins equipped. The station tower is 120 feet high with a vertical atop and dipoles radiating from it.

If any amateur or group of amateurs would like to visit the Museum, call Fred in advance at (519) 822-8323, de Guelph ARC Bulletin

COURTESY ON THE BANDS

Tuned down to 28.480 MHz the other night and sat in on a pileup in reverse the other night. Instead of being involved in it on the shouting end, I was just listening, which is what the law requires since the American 10-metre phone band doesn't go below 28.500.

A station in Havana, Cuba, was QRZing calls from Japan, Cuba and the rest of the islands as well as Central America are considered good DX by Japanese amateurs.

At first it sounded like 11 metres so many were calling, but then the difference became apparent. When the Cuban operator picked out a call from the thousands talking at once, dead silence followed except for the Japanese station being recognized.

The other Japanese amateurs shut up and let the fellow who was lucky enough to make the contact exchange information without accompanying chants from the 2s and the 5s which is the American way of doing it.

The Japanese are courteous and good operators. Since they outnumber even Americans on the amateur bands, it's a good thing they have good manners. It was a pleasure to listen to the competent Cuban handling literally hundreds of calls in the course of one evening.

All the calls were in English, most of it spoken very well.

de Home News/Worldradio

GATHERING OF GROUNDHOGS

The Groundhogs held their 32nd annual reunion in Wisconsin recently. This is an organization of amateurs formed when they found themselves chewing the rag on the 10-metre groundwave after the band petered out. They have no meetings except for the reunion and no dues. But they do raise funds by auctioning off a good luck trophy each year consisting of a bottle of Indian ale (intact) mounted on polished Honduran mahogany. This year the trophy brought \$57.

de Worldradio

TWO-METRES TO THE RESCUE

Dave Lambert VE3K GK reports an adventure that befell him on his way back to London in a rented vehicle. The transmission packed up and after a call to the agency Dave was rescued. He then resumed his journey in a bus which was propane-powered. The engine died leaving them stranded on 401 around midnight. Dave remembered he had packed his IC22S, a 5/8 mag mount a short length of cable and two alligator clips. After setting up in -25C weather and trying two repeaters without success, he raised VE3HDH on the Brampton repeater. The OPP and Dave's sister were called to the rescue. Dave recommends always carrying a two-metre rig of some sort when you are travelling.

de LARC Bulletin

EMERGENCY SYSTEM

The Burlington ARC has a system whereby each member telephones two members who in turn telephone two more members in the event of an emergency. The entire list of members can be alerted in a matter of minutes. The system, in addition to being exercised in a couple of practice sessions, has served in two instances of lost children and one involving floods.

de The Printed Circuit

CLUB ACTIVITY ORGANIZATION

The West Island ARC (Montreal) has organized special interest activities into groups: RTTY, VHF/UHF, Repeater, Fast Scan TV, OSCAR, Homebrew, TVI. Each group has a coordinator and 6-8 members.

PACKET NETWORK

The Hamilton and area packet network held an organizational meeting in January. They will continue to use 146.46 (subject to prior occupancy) for minimal point-to-point operations and bringing up new systems as well as the voice net while the new oper-

ations and repeater installation would be conducted on 145.65 in order not to interfere with existing operators. The group felt that a low-cost entry point into packet operations should always be maintained via two metres even after the move to 220 or 420.

A survey indicated the most favoured interests as follows:

file transfer	12
message centre	10
packet video (digital TV)	9
interactive graphics	7
games and simulations	7
on-line bulletin composition	7
RTTY replacement (HF gateway)	6
on-line classified ads (swap)	6
packet voice	5
VE2, VE7 gateways (e.g. satellite)	5
CBBS	4

Incidentally, the text of the club bulletin is sent from the editor's computer to the University of Waterloo where it is stored and later formatted by the IBM 370 and printed on a quality printer. (Kitchener Waterloo ARC).

de The Hamilton Amateur

TRANSATLANTIC VHF

A page in the history of VHF communications was written on November 17 when Andy McLellan VE1ASJ, on 50.1 MHz, worked G4BPY on 70.1 MHz in the four metre band available to UK amateurs. They had previously contacted on 6 to 10 metre crossband and when it appeared that conditions might become favourable they tried it. On December 7th, Andy repeated it with G3COJ, G4EMB and G4EMA.

de Halifax ARC Bulletin

EARTH-MOON-EARTH

Members of the Canadian Amateur Radio Research Club, centred in Pinawa Manitoba, are constructing a portable microprocessor-controlled earth-moon-earth station. The station is expected to be operational in March.

de Halifax ARC Bulletin

THE PRESIDENT'S COLUMN

As I sit by the window writing this column, I can't help but feel that winter is behind us. After the viscious cold of December and January there is a definite touch of warmth to the early March sunshine. My 23 year old house and eight year old rusty Ford have survived yet another Ottawa winter. It is now time to look forward to the (hopefully) long hot days of summer and to move some of our amateur activities to the outdoors.

First on the list of outdoor activities is a hidden transmitter hunt scheduled for early summer; tentatively June 6th or 7th. This will be organized by Gary Morrison VE1BCU who recently arrived here from the maritimes. Gary will give us a talk on the subject at the April Club meeting, so there will be ample time to build and test your DF antenna and other accessories.

Also in June is Field Day, this year scheduled for June 27-28 and being organized by Bob Baillargeon VE3MPG. Bob is going to need a lot of help with this event, so give him a call at 235-0187 if you are willing to help out with organizing one of the stations, setting up or taking down the stations, or just operating.

In previous years we have had four HF stations operating continuously. We have also had an OSCAR setup and even a bicycle mounted generator for a QRP emergency power station. The event is always a lot of fun, so give Bob a call if you can participate.

There have been two changes in the Club Executive in recent weeks. Our Vice President, Bill Nottingham VE3ARZ, has gone to Italy on a course for three months (Wow! would my XYL get a little uptight if I did that!). The "buddy system" which Bill got going is now being handled by Laird Gordon. If you are taking an amateur radio course or a new ham who needs advice and guidance, give

Laird a call at 746-8409 and he will put you in touch with someone who will try to help you out.

We have also lost one of our Directors, Bill Hayward VE3MJH, who has been transferred to Toronto. Jim's place on the board will be taken by John Gilbert VE3CXL. Thanks for your contributions, Jim, and good luck!

The next major event is the Spring Banquet and Dance scheduled for Friday April 24th (see also p. 5). Those of us who went last year had a most enjoyable evening and are looking forward to it again this year. We need a minimum of forty people to make it a "go", and tickets will be limited to a maximum of sixty. Guests are welcome, so call George Schute VE3DMC or any member of the Executive to reserve your tickets.

73,

Brian VE3JKZ, Pres.

VK4NIC/3X/3X/AM

VK4NIC/3X will be in Ottawa about the first of May. Perhaps he can be persuaded to come out to the MAY OARC Meeting.--Thanks to Bud VE3ET.

LETTER TO THE EDITOR

The Editor, the GROUNDWAVE:

From time to time, interesting items of an electronics nature appear in the Wall Street Journal. Some of you may not know that this paper, printed five days per week, containing two sections and about 40 pages, is printed in half a dozen cities in the U.S.A. The Florida edition is printed in Orlando and delivered before breakfast each morning. The news is up-to-date as of about eight hours. This marvel is accomplished with the aid of electronics; not by wire as you might think, but via satellite!

-continued on page 9

LETTER -- Continued

An item appearing in the March 6 issue is about the use of CRT's in automobiles. The auto industry has already put small computers into the higher priced cars, so many people feel that a CRT is a natural next step. It could replace the instrument cluster and present much more information than is done at present. It would be in colour, of course, and in conjunction with a computer, it might be used to display things like fuel economy, elapsed time, map position, kilometres to an empty gas tank, etc.

A series of checks on the total vehicle operation could easily be accomplished, with words flashing on the screen to warn the driver of low tire pressure, time to add oil, tune the engine or even not to forget the wife's birthday! Time, date, tachometer displays etc. could be added without the problem of another gauge on an already crowded instrument panel.

The current cost of about \$85.00 doesn't seem too high, considering some of the options that are offered on the higher priced cars. However, the auto manufacturers think that by the mid-80's, these items can be made available. It's time to get "genned up" on this technology. The mechanic of the future is going to need lots of help.

Speaking of automobiles, it is interesting to observe the driving habits on the highways in various parts of the continent. On our travels north and south between Ontario and Florida, many strange things show up in driving habits.

As we procede south through New York State and Pennsylvania, we have noted that the highway speeds are remarkably close to the posted maximum of 55 mph. The road may be bare and dry, the sun shining brightly and the traffic light, but everyone is going along very sedately at 55. Occasionally on the throughways, some driver

will succumb to the urge to pass, but usually at a speed only one or two miles faster than we are going. It seems to take forever to pass, and it frequently happens that once past, the urge to "speed" passes too, and the driver reverts to the 55 mph everyone else is travelling, or even less!

However, as one proceeds to warmer climes, the autos on the highway travel faster, perhaps in anticipation of things to come. Is it that the grease in the wheel bearings thins and permits greater efficiencies? Or is it that the tires warm and the air pressure increases, thereby reducing the rolling friction?

Whatever the underlying reason, as one proceeds through Virginia, the Carolinas, Georgia and on into Florida, the average highway speed increases gradually until everyone is zinging along at 63 to 65 mph. The odd one passes everything, of course (greater urge, I guess), leaving one to wonder why the highway departments waste so much money on the "55" signs. 1

We have noted that it may be an educational question to some extent. In New York and Pennsylvania for example, we have noted a surprising number of motorists at the side of the road "being educated" by a gentleman in uniform. It is just possible that this information gets spread around very quickly and has the expected effects!

There has been activity recently in the Florida Legislature to raise the speed limit to 65, possibly simply to acknowledge what is happening anyway. With the threat of a cut-off of Federal Highway funds if they do this, it will be interesting to see what happens.

Finally, here is my monthly limerick:

The RST system worked fine,  
Before spark was considered  
a Crime,

Now the result

Is a blatant insult

If you give a guy less than T9

73, Gord VE3DY

### AUDIO RECTIFICATION

The first of these series of articles was published in the January issue of the GROUNDWAVE. The material is largely extracted from the "Consumer Electronics Service Technician Handbook on Audio Rectification" published by the Electronics Industries Association, Consumer Electronics Group which granted us permission to use their material. For further information on how to obtain copies of their publications, see the January GROUNDWAVE.

In the last article (March 1981) it was explained how to determine if the rfi was being picked up by the power line. If this is the case, one might try using the simple filter shown in Figure 1; if this does not solve the problem, then one should try that shown in Figure 2. If, when the power plug is removed, the rfi fades gradually, it is being picked up by the audio device. Reconnect the AC and switch the selector to each mode used with external equipment. Depending upon the following tests, try the filter shown in Figure 3 in the location specified below.

If the rfi persists in FM-AM or all modes, place the filter immediately following the volume control before the first audio stage. If it occurs in phono only, place it immediately after the phono input jack. If it occurs in either tape or aux modes, place it immediately after the respective input jacks. After these trials, if the rfi is reduced, but persists, the next step is to remove the connecting cables to the offending accessories at the input to the amplifier. If the rfi stops, the problem lies in the accessory equipment. If it is only reduced, and one hasn't yet placed a filter after the volume control, try this. If the rfi does stop with the cables disconnected, try placing the filter immediately following the mode switch. The next step is to see if the rfi stops when the volume control is set to minimum.

In this case, try placing the filter immediately following the mode switch, before the volume control. If the rfi persists but is weaker, try placing a filter after the tone controls and before the second audio stages. If the rfi is unchanged, try placing filters after the volume control, before the second audio stage, immediately after the first audio stage and following the second audio stage.

Next turn the power off on the audio device. If the rfi is still present, try placing the filter before and/or after the driver/power amplifier stage. If this does not work, try the filters shown in Figures 4 or 5 in the same positions. If the rfi still persists, try using shielded speaker cables.

If the rfi seems to be entering the tape deck, try a line filter in it, try using the filter shown in Figure 3 at the input or just before the record/play amplifier.

When installing a filter, use physically small components where possible. Install the filter as close as possible to the input stage of the appropriate amplifier section, that is as close to the base of a transistor or grid of a vacuum tube as possible. All leads should be kept as short as possible, ground leads as well as the "hot" ones. Use ceramic capacitors. Use only as many filters as absolutely necessary. Make sure that the filters do not significantly change the gain or frequency response of the device. If IC's are used, install the filters as close to the input and output pins as possible. To avoid "ground loops", shunt and by-pass capacitors should be grounded directly to the emitter of the transistor where filters are installed in the base circuit.

NOTE: many manufacturers will supply rfi filters when requested. Include model and serial numbers in request. GOOD LUCK! - VE3JSO

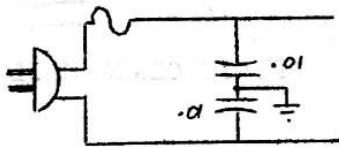


Figure 1. Simple line filter

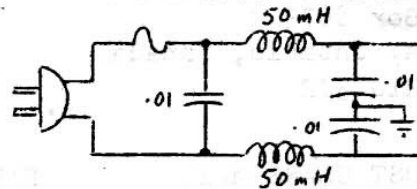


Figure 2. Line Filter

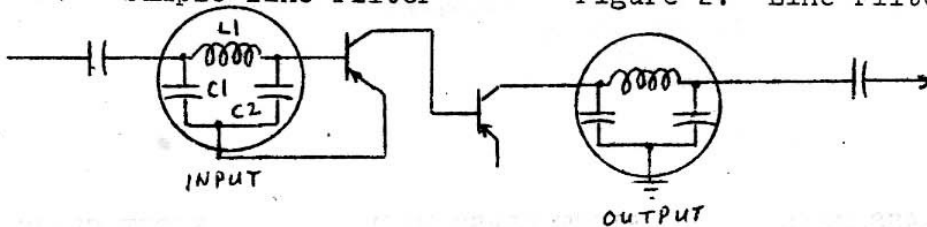


Figure 3. The most effective rfi filter from practical experience is a PI filter network consisting of a series rf coil and two shunt capacitors. Suggested values:

- C1: 250-500 pf, 50-100 vdc
- C2: 250-500 pf, 50-100 vdc
- L1: 5-10 mH

In mild cases of rfi, a single by-pass capacitor between the base and emitter may be sufficient.

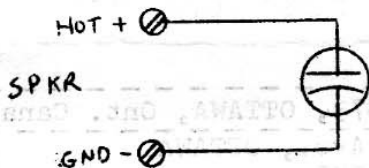


Figure 4. Interference due to long speaker cables

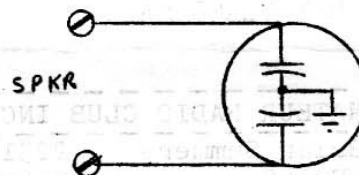


Figure 5. Alternate filter for rfi due to long speaker leads.

SAFETY AGAINST ELECTRIC SHOCK

Tom Rosica, W2GIR  
(From Worldradio, April 1980)

How many times have you worked on a piece of electrical equipment and received an uncomfortable shock? After further checks you may have realised that it was some simple "normal" AC leakage to ground, which sometimes must be tolerated for line-to-chassis bypass capacitors. The Consumer Electronic Industries Association has a guideline to be used by radio and TV service repair people which covers their service obligation to deliver a safe unit to the user. Their AC leakage test may be performed as follows. Connect a 1500 ohm 10 watt resistor paralleled by a .15 mfd AC type capacitor between a known good earth ground (e.g. water pipe) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination 1500 ohm resistor and .15 mfd capacitor. Reverse the AC plug and repeat the AC voltage measurement for each exposed metallic part. The voltage may measure as much as 7.5 volts RMS (corresponding to 5 mA AC). Any value exceeding this limit constitutes a shock hazard and must be corrected immediately. The lower the value, the better.

THE OTTAWA AMATEUR RADIO CLUB, Inc.  
P.O. Box 8873  
OTTAWA, Ontario, Canada  
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: Emrg Coord	VE3IHX	Ontario K1V 6L9	:
: EMI Cmttee	Fred Green	118 Riverdale Avenue, OTTAWA	232-5920
: Chairman	VE3IO	Ontario K1S 1R2	596-9359
: Membership	Jack Garrett	3011 Rankin Street, OTTAWA	521-6528
: Chairman	VE3HJI	Ontario K1V 8L2	993-9740