

Oct 2000

# FEEDBACK



The **OFFICIAL** Newsletter

of the

## Georgian Bay Amateur Radio Club Inc.

P.O. Box 113, Owen Sound, Ontario N4K 5P1

<http://greynet.net/~gbarc/>

**GBARC Meetings** are held on the 4th Tuesday of every month except July and August in our CLUBHOUSE, Unit 6 Rockford Plaza, Rockford On. 5km S of Owen Sound. 7:30 p.m.

**Breakfast Anyone?**  
Any Saturday 9:00 a.m., at the Rockford Esso.

### **Nets**

80 metre net on Sunday at 9:30 a.m. on 3.783 Mhz.  
Two metre net on Thursday at 9 p.m. on VE3OSR 146.94-Mhz.

### **Submissions**

are always welcome.  
Send them to  
Tom

## This Month

**Message from the President**

**Minutes of the Last Meeting**

**Electrical Safety Tips**

**Terry Fox Run 2000**

**Mailbox**

**President**  
Bernie  
VE3BQM



**Vise-President**  
Bob  
VE3XOX



**Secretary**  
Susan  
VE3TLK



**Treasurer**  
Bob  
VE3LKD





# Message from the President

Hello Everyone

The Scouts would like to extend a big salute to all GBARC members that assisted to make their JOTA weekend (October 21) a fun one. I would also thank all that attended and volunteered their time donations and energy to make this happen for them.

This past month many members have worked very hard to help other members with winter preparation setting up, testing antennas, other work needed to keep everyone on the air.

Tuesday October 24 our monthly meeting, Items on the agenda, VA3PM will be coming from Toronto to do a presentation on Emergency Preparedness and traffic handling. A Motion of changes to the Constitution and Bylaws to be voted at the November meeting. Constitution changes are;/ separation of the Secretary-Treasurer from one person to two. New Rates for 2001. Please be present, the changes require your attention.

The Allan Park tour November 04, all you wanted to know on communication on that site Christmas Parade November 18, again this year we received a request to provide communication, check your batteries because volunteers are needed. Our goal is to provide communication, assisting the organizers and keeping children safe.

Your vote for the Amateur of the year award will be at the November meeting and presented during the Christmas dinner, each of our members deserve it, but only one will receive it with your vote.

73 ve3bqm



## GEORGIAN BAY AMATEUR RADIO CLUB

### Minutes of meeting, September 26th, 2000

The meeting was called to order by President Bernie VE3 BQM at 7:30 P.M.

Dave Pearce VA3 DVP made a slide presentation on the facilities at HCJB Quito Ecuador. A question and answer period followed. He was thanked by Bernie BQM.

#### Old Business

Joe JNA made a motion to accept minutes of the June meeting, seconded by Jim CJM.

Bob LKD was absent from the meeting. The Treasurer's Report was presented by Bernie BQM. There is a balance of \$3,869.34 in the bank, with \$1,764.36 after the cheques are cashed.

There was a successful Terry Fox Run on September 17. Gene ran again and raised close to \$700. Lee Erstine thanked those who attended and both the organizers and runners appreciated our help. Twenty one members volunteered.

Stan ZON and Walter FFN organized a booth at the Split Rail Festival in Flesherton. A list of contacts that were made were kept and they would like to consider sending them a certificate or QSL card. The antenna is in poor shape. It needs to be taken down and repaired for next year. Next year, we need to encourage more club participation.

The Sunday net is on 3783 at 9:30 a.m. Members need to be encouraged to participate more actively. Consider closing the net for the summer and opening again in the fall.

Gene IJD and Bob XOX participated in the Canada Day Contest from the Clubhouse. They made approximately 500 contacts in their 24 hour marathon. They received some QSL cards and some email eg. Contact in Wales.

It is good news to hear that Ian HXX and Gary IOD who are in the hospital are feeling better. We also send our best wishes to John TXB..

### **New Business**

There was a discussion on how much farther amateur radio can go.

JOTA is on October 21 and October 22. The scouts will be coming to the Clubhouse to operate radios build projects and Join the club members to an evening BBQ on Saturday October 21.

Two proposed amendments to the By-Laws were put forward. One was to amend the By-Law for a new fee structure and the other was to make the Secretary/Treasurer into two positions. A motion will be made at the next meeting with a vote at the November meeting. An application/information form was given out.

A motion was put forward by Grant. The motion was as follows: "As well as a full membership fee of \$100., there would be an alternative associate fee, without key privileges available. This would be a basic membership so that a member could come to the special events etc. An association membership would not have a vote". The motion was tabled at the October meeting to be voted on at the November meeting.

At the October meeting there will be a presentation on "Emergency Traffic Handling".

There will be a tour of Telesat on November 4. Let Susan Webster know if you are going to attend by the October meeting.

The Christmas Parade will be held on Saturday November 18. Volunteers are needed to help.

The meeting adjourned at 9:40 P.M. Motioned by Jim CJM and seconded by Bert AEG.



# Safety Guidelines for Building Line Powered Equipment

This document intends to give you some guidelines how to to make your homebuilt electronics equipment safe. I have tried to make those guidelines to be as simple as possible. However, I do not assume, and hereby claim, any liability to any party for any loss or damage, direct or consequential, caused by errors in these guidelines.

## Basics

Equipment must be designed and built so that they do not cause a danger to the operator or the environment in the normal operation or in case of equipment damage. Especially in shielding against electrical shocks, high temperatures, explosion and fire.

### *There are two classes of insulation:*

Class I: single insulation which requires three core mains cable with ground.

Class II: double insulation which requires no earth

#### *Class I characteristics*

Insulation between mains and every touchable part must withstand flashover voltage of 1010V.

The distance between mains voltage carrying parts and touchable parts must be at least 3 mm.

All touchable conducting parts must be properly grounded.

#### *Class II characteristics*

Insulation between mains and every touchable part must withstand flashover voltage of 2120V. The distance between mains voltage carrying parts and touchable parts must be at least 6 mm.

If you are designing electronics projects you should aim for making your project class I and you should be very clear in the installation instructions and the correct methods for wiring the equipment to a supply. There are several club members with this expertise.

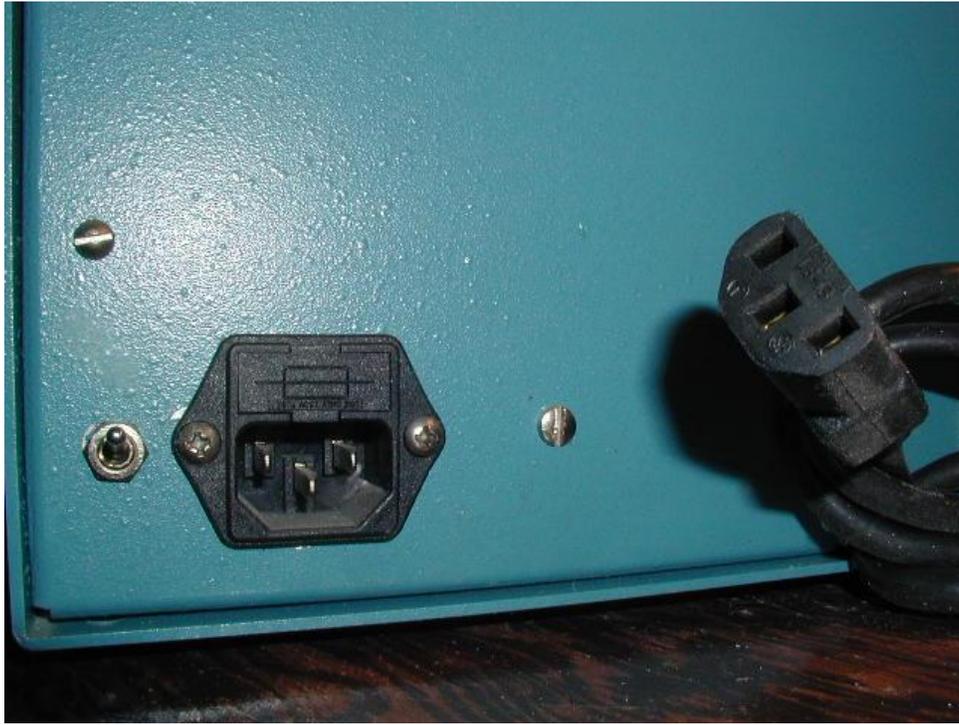


Figure 1 This is an example of a modular plug and socket. Most of you have seen these on the back of your computers. This one has a fuse built into it and that's nice because it's one less device to mount. Except for the case , all the parts I used were scrounged from junk equipment. I like to use a metal case for all projects because it can be positively grounded.

### *Practical considerations on building safe equipment*

It must not be possible to expose any dangerous voltage carrying parts without using tools to open the equipment.

Keep the distance between mains carrying parts and other parts as large as possible.

Try to make the mains carrying parts as compact as possible.

Use approved parts for mains carrying parts of the circuit (mains entry, fuse holder and switch)

If you do not use an intergrated entry, use a strain relief on the mains cable entry point. You must also provide some

mechanical protection between the mains cable and the equipment case.

The wires from the mains cable must not be directly soldered to the circuit board and the grounding wire must be connected so that it will be disconnected last if for some reason the strain relief in the mains cable gets loose.

Use preferably double-pole mains switch in all your circuits. Single pole mains switch is allowed only on equipment that is

powered by transformers with isolated primary and secondary windings. Fuses and mains interference suppressors do not need to be switched off. Use only the approved color coded wires for carrying the mains voltage. Black for hot, white for neutral and the green colored wire can be only used as a grounding wire. All wires inside equipment which carry mains voltage must use wire approved for this kind of application with a voltage rating of no less than 300 volts. To make sure that the power is disconnected, do it twice for safety:

switch the equipment off and remove the power cord.

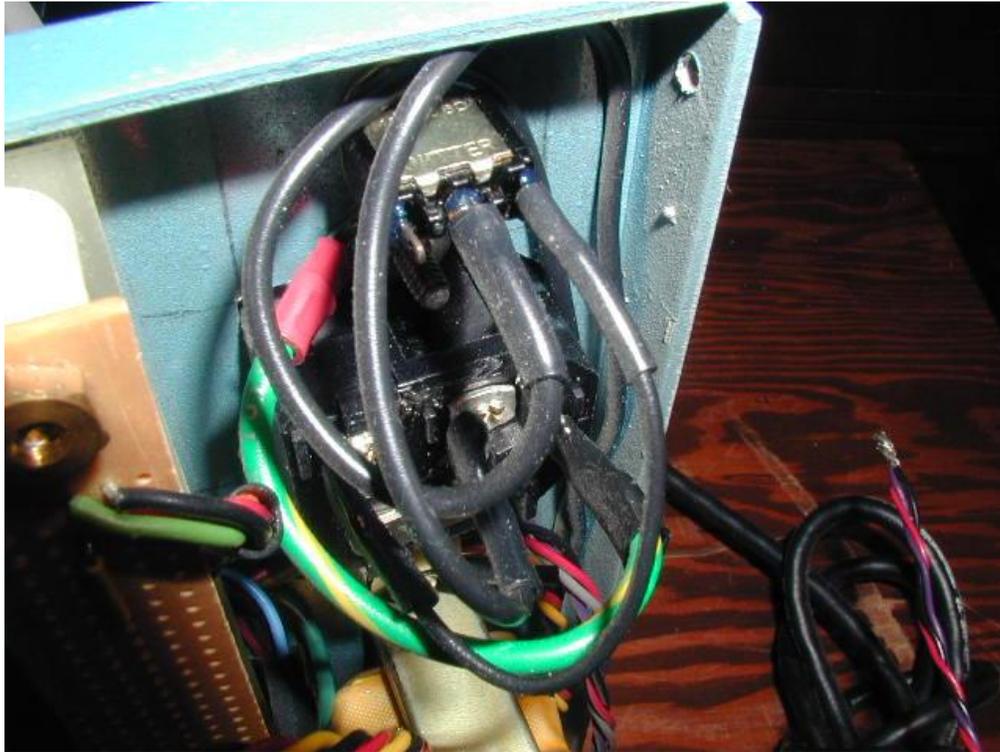


Figure 2. This is the other side of the modular socket, I know its not too clear but hopefully you can see where the green ground wire leaves the socket and mounted to the chassis. Notice how all soldered terminals are covered with heat shrink tubing.

### ***Fusing***

The fuse is to prevent overheating or fire hazard in case of a short. The protection for the user is not by fuses, instead the ground. It's the same thing for your panel box. The breaker or fuse is to protect the cable it feeds, not you. Again, it's the ground that protects us. Ground fault circuit interrupters are a good investment for any budding experimenter itching to get their feet wet (that doesn't sound quite right.....does it). The hardware store had one that plugged into your existing socket and whatever is plugged into it, is ground fault protected. That means, the breaker will trip, if the current from the hot wire, to ground, exceeds 5 milliamps. So use one of these and power your test bench with it. Generally all equipment needs a fuse. Use only approved fuse holders, labelled and stating the rating and type. The rating of a slow blow fuse should not be greater than 1.25 times the normal operating current of the equipment.

***In case of failure, the equipment should not be a danger to the user.***

### ***Mechanical construction***

Mechanical construction of the equipment must be sturdy enough to withstand equipment operating conditions.

Repeatedly dropping the equipment onto a hard surface from height of 50 mm must not cause damage.

Greater impacts must not loosen the mains transformer, electrolytic capacitors and other important components.

Use mains cable with molded plug.    Use good strain relief on mains cable.    Use an approved mains on/off switch.

Use insulating sleeves to provide extra protection.

The distance between transformer and other parts must be at least 6 mm.

Use wire with insulation of 4 mm or more and core diameter of at least 0.75 mm and a rating of at least

300volts.

Any circuit boards must be secured firmly.

Temperature of touchable parts must not be so high that they can cause injury or create a fire risk.



Figure 3 You can see the transformer used in this project. All devices are securely mounted in the chassis with machine screws and nuts, to ensure sturdiness and to maintain a good ground.

### *Materials*

Do not use dubious or flammable materials.

Do not use material which emit poisonous gasses.

The case must be made of such material that does not burn by itself.

### **Three safety rules when troubleshooting line powered**

Rule 1: switch the power off.

Rule 2: work with one hand.

Rule 3: keep the other hand behind your back or in your pocket.

## electronic equipment

That way you live longer when you work with mains powered equipment.  
Failing to follow all 3 rules may shorten your life span.

### *Additional safety tips when operating with mains powered equipment.*

Use a Ground Fault Interrupter (GFCI) for your own safety.  
When you power down the equipment wait some time to allow dangerous voltage carrying capacitors to discharge.

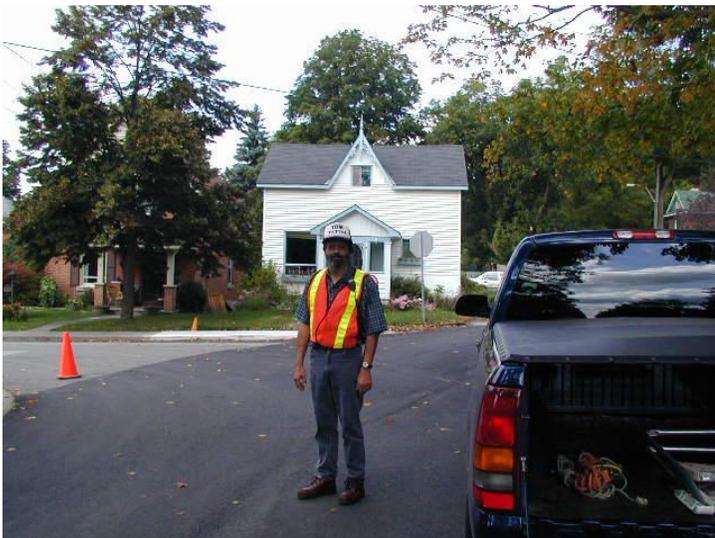
Do not wear anything which can fall inside the equipment and cause a short circuit.



Figure 4 This is my weather station I built from junk parts. All the meter scales were custom made. The centre top gauge is a digital wind direction indicator. Its a digital indicator made to look analog. Far left is the wind speed indicator, Temperature on the right, with relative humidity and barometric pressure on the bottom.

# Terry Fox Run 2000

I'd like to take this space in the newsletter to thank all of those who supported myself and the Terry Fox Run Foundation. To date over \$745 has been collected and I still have one more pledge to come in. Won't it be a great feeling when the research finally brings in some type of cure for this terrible thing that happens to many old and young. I was never much of a long distance runner until I started boxing 4 years ago at Holly's in Chatsworth. He made us run around the village twice before the main workout. I can remember stopping every 150 feet or so to catch my breath while all the others passed me. Gradually,,I was able to go one lap then it became two,, then three ,,then after about 4 months.....look ma,,,no oxygen mask. The radio club had supplied communications for the run the year previous so I thought that since I was there anyway I'd give it a go....I almost ended up in that St. Johns truck....was I glad that 5kms was over.....but I had raised over \$100.....WOW...the next two years would see \$300 then \$500 and two 10kms runs.....this year,, although I had been sick for a couple of weeks and had trained for 10kms ,,my run was cut to 5kms.....but over \$700 was raised...almost 10 % of the total for the whole OwenSound run....and the thanks goes to you the members of the GBARC group,, not only to the 21 of you that showed up for communications (yes you read correctly 21) but to all who donated very generously with pledges. Thanks Tom,, VA3TS for some fine pictures and I hope to see you all out again next year for the 21st run....I'm looking forward to it,, and maybe the \$1000 mark will fall....wouldn't that be a hoot.....Gene...VE3IJD



# From The Mailbox

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## THE BRUCE AMATEUR RADIO CLUB NEWSLETTER

IS NOW POSTED 73 DE JIM COVERLEY VE3OVV

<http://www.brucearc.on.ca>

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## THE RADIO H.F. INTERNET NEWSLETTER

<http://www.anarc.org/cidx/radiohf/index.html>

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### Interesting Sites

[http://housecall.antivirus.com/housecall/start\\_pcc.asp](http://housecall.antivirus.com/housecall/start_pcc.asp)