



Presidents Message for May 2012 (VA3KGS)



Spring is here and the bands are screwed up!! The solar flex's are really playing havoc with the bands these days. Maybe it's a polar flip were going through!! Yemen 7O6T from Socotra Island is on the air for a few weeks, working all bands, visit their web site at <http://www.yemen2012.com/plans.php> for further details. Have fun getting these guys.

Antenna & Towers Committee? I see that we have no representation listed on the club website. Do we have any volunteers to run with this? It is not to install the systems but only to assist someone with the technical and legal issues we face. Recent situations with some amutuers have prompted me to look into this area, and found that IC has made some clarifications on this subject. Visit the Industry Canada website at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08788.html> for updates. Note that IC governs the height of antenna's up to 15 Meters above ground, from there up, it's the Land Use Authority (Cities & Towns).

From what I know so far in our area is that Welland is the only location where the City say no hire that 10 Meters (30feet). You people from Welland need to read the website above and have a chat with your local officials. Watch out for Bylaws called "Unsightly". Pelham has one, and I'm currently talking to them about my antenna tower sections stored on my property. Stay tuned on this one!

July 1, War of 1812 event in NOTL is booked solid. Thanks for your support. See Dave FOI to obtain your period and band of operation during the month of July. All members are welcome to sign up. Peter WET is still looking for people for the upcoming Field Day event being held at Woodend Conservation Park.

Thanks to the team members that will be helping out John GBA Church Youth Group on May 9 in Port Colborne, as well as the Team that is at the Emergency Preparedness Event is St. Catharines also on May 9. We are still looking for people to assist us with Canal Days in Port Colborne at the end of August.

Finally, we have elections in June, so your support is encouraged, Sign up!!

PS we have two mystery presenters this month. I promise that there will be no Fish Pictures!!

Cheers, Kevin, VA3KGS

Upcoming NPARC Events (VA3KGS)

June 2012	VHF Filter Cavities	Speaker: Lloyd Kubis Ve3ERQ
June 23-24 2012	ARRL Field Day	Coordinator: Peter VA3WET
July 1st 2012	1812 Radio C3GB	Coordinator Dave: VE3FOI

Correction and Revision to the Notes from April 2012 (VA3DTP)

Dennis is a well credentialed mechanical / electrical technologist and experienced industrial electrician currently working with a major mining company supervising a maintenance team of 14 various trades, being responsible for the maintenance of two research facilities comprising a total of 142,000 square feet.

With over 25 years experience on the job, Dennis advocated a keen concern, the broad scope and technical knowledge needed to ensure electrical safety on-site. Especially useful to amateur radio operators is having an deep appreciation for the very serious risks involved with electrical shocks and hazards.

On display for our benefit, Dennis brought an array of specially insulated electrical tools, arc flash rated PPE (Personal Protective Equipment) including full face shield with helmet, earplugs, safety shoes, and safety glasses, etc. and insulating wear and flame proof coveralls typical of what the electricians and himself use at work to protect from electrical shock hazards and possible arc flashes when required.

The standards for electrical safety and work practices including maintenance, clothing specifications, equipment and procedures were explicitly referenced to CSA Z-462 Standard on Workplace Electrical Safety, Canadian Standards Association and the Ontario Electrical Safety Code.

Labeling of electrical equipment for potential shock and arc flash hazards referenced O.E.S.C. 2-306, Ontario Electrical Safety Code.

There are many causes of arc flash such as: insulation deterioration or equipment failure, corrosion of equipment, improper meter settings, contamination of the equipment (e.g., moisture, dust), rodents or other small animals, misplacement of tools, or fallen parts, equipment with inadequate short-circuit ratings (fuses, breakers, motor starters, etc), workers using improper or non-rated tools, improper or unsafe work procedures, or grounding or short circuiting of live conductors.

The presentation slide shown was prepared by the Construction Safety Association of Ontario dated March 2009.

To better understand degree of risks associated with electrical hazards and the needed safety precautions, Other slides, photographs, video clips and information, were added to enhance the presentation.

Most dramatic were the real photographs of electrical injuries individuals had sustained from an arc flash, and the several many real video clips examples of arc flash and arc blasts captured by security cameras. It was explained that the basic causes of arc flash and or arc blast is when two live electrical conductors are shorted to each other or one live conductor to ground.

These may be consequent to damaged or corroded wiring, use of improper test equipment, condensation buildup resulting from cold instruments being used suddenly in a warm environment.

Very serious burn injuries, leading to loss of life, or life time health concerns and physical damage result in the 5-10 electrical accidents per day in North America alone.

Describing the Arc Blast associated with copper vaporization in which the copper expands by a factor of 67,000 times creating an enormous pressure wave accounting for the shrapnel and piercings often associated with such explosive incidents. Videos showed a short circuit on a 480 volt three phase disconnect, and a outdoor pole

mounted transformer failure in which over \$() damage was from the Arc Flash.

Also shown was a video of an arc flash which occurred when an electrician was "racking in" a 600VAC 3 phase breaker which failed during the process. The electrician wearing arc flash PPE, was using a typical crank handle which is used to rack the breaker from switching between open, test and closed positions. In this case the electrician probably did not survive the arc blast, and there was obvious substantial equipment damage in the high voltage switchgear room itself. Failure most likely occurred due to the breaker's rear components that probably failed and shorted the live 3 phase bus bars which acted like a crowbar.

The various degrees and types of arc flash injuries depends upon on the amount of power, the distance form the arc flash, and the duration of exposure. A video clip entitled, "Not safe at 18 inches" demonstrated this.

Arc flash injuries can cause electrical shock, severe burns, blindness, mental / physical disabilities, and or death. Arc blast injuries can cause more severe and life threatening injuries due to shrapnel wounds, ruptured eardrums, pressure wave injuries, lung blast injuries or other internal / external injures, mental / physical disabilities, and or death.

Approximately 2000 such arc flash incidents per year occur in the USA alone. Burns from the Arc Flash are from the heat generated which is in the range of 35,000 degrees Fahrenheit (about 20,000 degrees Celsius) which is four times hotter that the sun's temperature at the surface runs about 9,900 degrees Fahrenheit. (about 5500 degrees Celsius)

A graph showing the probability of surviving burns with age and the severity of burns and percentage was presented.

Injury photographs of shrapnel wounds sustained from some 700 feet distance.

Blast Lung Injuries are caused by copper vaporization can result in the exposure to the body of over 100 toxic substances in the fumes. Affects on hearing from over 145 db at 2 feet distance is beyond the pain threshold of 130 db. Pressure waves injury caused by 200 lbs per square foot pressure wave is enormous which can throw individuals against walls, off platforms, etc.

CSA Z-462 and the OESC provide specifications for equipment labeling to identify the Arc Flash and Shock hazards. Warning labels defining the approach distances and required PPE to areas with a Arc Flash hazard are described as Limited approach boundaries, Restricted approach boundaries and Prohibited approach boundaries.

These must be developed by in which a proper study must be carried out, a plan developed, training provided, PPE equipment provided for qualified persons.

Engineering companies can provide services for Short Circuit and Co-ordination Studies, including Arc Flash studies, based upon field surveys, use of the companies updated electrical single line drawings (power distribution), and computer software designed to perform Short Circuit and Co-ordination calculations, and Arc Flash calculations. A detailed report would be created for the client, with proper shock hazard and arc flash values and boundaries, along with any recommended modifications to the power distribution system based upon findings of the Short Circuit and Co-ordination calculations. First time costs of such studies can range \$() to \$().

CSA Z-462 recommends updates every 5 years or when major power distribution changes occur within the facility which would warrant to obtain and updated study.

Arc flash clothing standards indicate self extinguishing FR (fire rated) materials with specified FR rating of 4 to 100 cal per sq cm. Arc flash hazard categories range from 0 to 4, with 4 being the most stringent required for the highest level of PPE required.

To compare the blue flame of a cigarette lighter is about 1.2 calories per sq cm. (Incident energy level) This will give a 2nd degree burn. Incident energy levels of 8.0 calories per sq cm would cause 3rd degree burns.

Flame test of FR clothing are carried out and shown on a video clip. The suit was complete engulfed by flames and sustained no visible damage. The head being an exposed area average about 9% of the body hence protective helmet and liners and inside coverings are needed.

A caution about the use of synthetic materials that will melt or become easily flammable which include Acetate, Acrylic nylon, Polyester, polypropylene, polyethylene and spandex. These materials can easily melt and stick to the skin, making it extremely difficult to remove.

Typical Arc Flash rated gloves have ratings such as 1,000 Volts and 16,000 Volts or higher. They look like ordinary rubber gloves but require outer protective leather gloves, used to protect the rubber gloves. The arc flash rated gloves are suggested to be tested every 4 months by an approved test laboratory.

A another arc flash video clip was shown where a mannequin wearing 100% cotton shirt and pants, with no PPE. It was engulfed in full flames in just a few minutes. Another video clip showing a mannequin wearing a level 4 FR, fire rated clothing was subjected to an arc blast, subjected to by molten copper and existing ignition hazards. No damage to the suit was visible.

Typical full PPE clothing costs and test equipment can run in the order of up to \$3,000 per electrician. For example, a complete Level 4 arc flash kit and run approximately about \$1,100.

Working on energized equipment is the most hazardous and least desirable. Always worked with de-energized equipment whenever possible and follow proper lockout and tagout procedures.

It was highly recommended to use Category III or IV CSA / UL approved rated measurement equipment with "fused" test leads.

When injuries or deaths occur due to arc flash, companies have been fined anywhere from \$() to \$() This does not include the costs to persons, equipment or property damage.

Questions included the following answers. A1) The service life of the arc flash coveralls is about 50 washings, depending on manufacturer specifications A2) Typical voltages which can be found in industrial settings are 115, 208, 230, 240, 377, 480, and 600, and 13,800 VAC A3) it is not recommended to work on live breaker panels which are typically found in a home. Ask a qualified electrician to perform the work. Typical house voltage is 240 VAC. A4) To upgrade a breaker panel in the home, the outdoor power meter is always for safety. Ask a qualified electrician to perform the work. A5) Arc flash gear is typically recommended on working voltages 240 VAC and above.

Final Comments : Working on energized equipment is the most hazardous and least desirable. Always worked with de-energized equipment whenever possible, wear the appropriate PPE, using the appropriate test measure equipment, follow lockout and tagout procedures, and be safe. Arrive home Alive !

Minutes of General Meeting #8 April 2012

These minutes taken by the Secretary, Dennis, VE3XC.

The meeting was called to order at 7 pm by President Kevin, VA3KGS. This was followed by a round of self-introduction of members and guests (about 40) including John and Gloria Gould from Niagara Falls and Denis Cahill from St. Catharines.

*Motion by Ron VE3MX / Seconded by Jim VE3BCA : To accept the minutes as printed and corrected tonight. Corrections: Wrong date in two places, spelling of Woodend Conservation Area was wrong also. The Secretary will make those corrections. Carried.

Treasurer's Report: Peter VE3HM: A printed copy of the report will be given to the Secretary at the next meeting. Current Balance \$()

*Motion by Jim VE3BCA / Seconded by John VE3ISC: To accept the Treasurer's report as presented. Carried.

Flea Market Report: David VE3BBN reported that all the tables next year would be 6 foot tables. He wondered if we should charge \$() next year which is what we charged last year for an 8 foot table or should we charge less. We will have to work out a re-arrangement of these tables for next year to allow more space in the aisles. Kevin talked about attending the HAMEX flea market recently in Brampton. They have a separate room for chatting which frees up space in the aisles. At our location we have a basement which is available to us, which we might use in that way. It would be at extra cost, but Kevin will speak with the owners to see if we can make some deal whereby they would have the entire building to re-book in the afternoon after 2pm. It's a big room with a canteen, and we could bring people in early and send them down to that room. Oscar, VE3PIO volunteered to do some planning of re-arranging the tables.

War of 1812 Update: Dave, VE3FOI reported that we will have an excellent location and that the organizers have been very helpful to us. Dave has some sign-up sheets at the back for people to volunteer. Some of this activity is being recognized world wide. This is July 1, 2012 at Fort George. For the rest of the month members are encouraged to use our special callsign CG3B. See Dave about this.

Reports by Kevin, VA3KGS

Repeater Committee: Kevin reported that Jake, VE3NCL has purchased a back-up battery for VE3NRS. Also, there is an antenna at the VE3RNR location which may be available for our use. Apparently other groups are interested in it.

Kevin announced that Geddie, VE3CJX and Dave, VE3RXN are away tonight at the Mississauga Club meeting accepting their advanced amateur certificates. Kevin congratulated Geddie and Dave on this accomplishment.

Emergency Preparedness Week: David VE3BBN, Peter VA3WET, Geddie VE3CJX, and Peter VA3WET will be there on May 9, 2012. More help could be used.

RAC Website: There is a notification that they are looking for a new co-ordinator for this area because of re-distribution of the districts.

Field Day: Email Peter VA3WET to let him know what band you would like to use, and whether you are staying overnight. There was a good turnout last year for Field Day.

Canal Days: Kevin says that there is not much to report yet. Kevin will see if he can get the Seaway to get an extra tent for our use. We help them with the generator so maybe they can help us with the tent.

New Business

Kids Camp in Niagara Falls: Presented by John and Gloria Gould. It will be held for nine weeks in the summer near Niagara Square Mall. They would like some community involvement with activities for the older campers. Kevin said that we will look into this and see what we might be able to provide. Geddie has done some work on this already.

Port Colborne Brethren in Christ Church Youth Group: John VE3GBA thought we might be able to give a presentation on a Ham Radio topic. This led to a discussion of Morse Code Text App for phones.

Doug, VE3GJ had a number of surplus printed circuit boards from his workplace. He described some of the types of boards that they use and said that members could help themselves from what he brought tonight. He can get more too.

E.L.Crossley Scholarship: Dale VE3LVW said that the cheque was needed by May 7th.

*Moved by Dale VE3LVW / Seconded by Peter VE3HM : That the club provide a \$() scholarship to E.L.Crossley this year with the same requirements as we have used in the past and is on file with the school. There was a friendly amendment from the floor that this scholarship continue on an annual basis. Carried.

It was decided that the executive should find if we had a member willing to attend the graduation ceremony or to let the school present the award themselves.

Adjournment

Presenter: Mark Fuller, VA3BGL gave an excellent description of his homebrew project which was a Software Defined Radio. He described the building, computer interface, and operation of the radio. The software Mark uses is Winrad 1.33. All the members were very impressed with how well the receiver worked and how few parts were needed to build it.

ARRL Field Day 2012 Update (VA3WET)

Last month I described some of the excitement of operating off the grid in the middle of a field under the stars. This month I would like to remind everyone that Field Day is quickly approaching.

Oscar VE3PIO has volunteered to cook. Thank-you Oscar. Oscar is going to need helpers. Kevin, VA3KGS has mentioned that he would like to be the 80 metre band captain and Rick, VA3WU will be the band captain for 40 meters phone. Rick tells me his daughter might be operating 40 metres PSK-31. I am planning to do 20 metres PSK-31 with my Butternut vertical. At this time 20 metres phone, 160 phone and 10 metres phone are available. Bob, VE3HNH will be operating 40 metres CW with plenty of helpful operators I am told. Lloyd, VE3ERQ mentioned he might be operating 6 metres phone with a tower set-up. All the above band captains need your help to set up, operate, log, tear down and operate portable gasoline generators. It is fun and these guys can use your help. Geddie, VE3CJX and Peter, VE3HM and will be manning the G.O.T.A. station and the NPARC information table. The G.O.T.A. station is our Get-On-The-Air station. If you are not a HAM then this station is for you. It will get you on the air for the first time. The G.O.T.A. station will be using the call sign VA3NRS. Larry, VE3TLN has offered us first-aid equipment, fire extinguishers and several big honkin generators if we need them. Thanks Larry.

Larry will also be our our Safety Officer. Dale, VE3LVW will be demonstrating satellite communications and explaining that is not rocket science. That is if the satellites are operating correctly. Good luck Dale.

Your membership dues finance Field Day. If you show up and help out we will reward you with a burger or hotdog and soft drinks. But you have to help. Make sure you get on a band sign-up sheet and help out by operating, logging, or putting up a station. For those that stay over night or return to operate, breakfast will be served Sunday morning early. Complimentary soft drinks will be available Sunday afternoon during take down and clean-up.

Field Day is an outdoor twenty-four hour rain (without lightning) or shine amateur radio event which simulates an emergency. It is for new and semi-new amateurs or hams to gain experience, test their skills and have fun contesting with friends. Niagara Peninsula Amateur Radio Club or NPARC members will gather at Woodend Conservation Area in Niagara-on-the-lake on Saturday, June 23rd and Sunday June 24th, 2012 to operate several stations off the grid with emergency power. Field Day is sponsored by the American Radio Relay League or ARRL.

We still need a Promotional Officer. The list of agencies, politicians and media to contact is extensive and we can use the help.

Peter, VA3WET, Field Day 2012 Co-ordinator.

Field Day - June 23rd and June 24th, 2012

WOODEND CONSERVATION AREA
Niagara Peninsula Conservation Authority
9653 Warner Road off Taylor Road
Niagara-on-the-lake, Ontario, CANADA
43.1433 N Latitude 79.1673 W Longitude
Grid Square: FN 03 kd - CQ Zone: 4 & ITU Zone: 4

C3GB Updates (VE3FOI)

Everything is coming together, We have a SELLOUT of operators for July 1st at Fort George. Thanks to all that have volunteered their time to operate and set-up and take down our special event operation. It really makes these projects easy when everyone comes together. I want to encourage all the newly licenced operators to come out and take part.

It can be an excellent way of getting used to HF operation is to take part in Field Day with the GOTA station set up. We still will be using the special callsign during the rest of July, anyone that wants to operate from the comfort of their home station or an hf mobile at one of many 1812 historic sites in Niagara please let me know.

It is very important to keep a log of all contacts. Also if attending the Niagara on the Lake Fort George site, please wear your NPARC ID tag. If you don't have one yet get in touch with Dale VE3LVW or Kevin VA3KGS at the meetings.

If anyone has any questions or would like to book their operating time please email me: at ve3foi@yahoo.ca thanks again, 73 Dave VE3FOI, sorry I won't be at the May meeting I will be celebrating my 34th birthday again.

Incoming QSL Bureau Update (VE3FOI)

As of this date there have been some changes to the Incoming VA3/VE3 Incoming QSL Bureau: the new Address is : **VA3/VE3 Incoming QSL Bureau, PO Box 216, Streetsville, On L5M 2B8**, please send your funds and address labels to that address. Envelopes will be provided. Also when you attend the Hamfests look for the Incoming QSL Bureau Table, you can update your account at that time as well. Always let them know of your change of address as well as Industry Canada.

Gary VE3NIT has retired as manager of the QSL Bureau after many many years, the new manager is Mike VE3XMS/VA3FS of Hamilton On, we wish Mike and all the many volunteers many more years of sorting QSL cards for the amateurs of Onatrio.

73 **Dave VE3FOI, Dale VE3LVW, John VE3LL** local volunteers for the QSL Bureau

FOR SALE from the VE3AUE estate of John (VE3FOI)

Partial list:

Heathkit, HW-100, , SB-300(receiver) SB-400(Transmitter) matching pair, HQ-13 ham scan scope.

Hammond HL-2000A high power Linear Amp 75 metrs to 10 meters ,

Dentron MT-200A Antenna Tuner(high power), homebrew antenna tuner meduim power colours to match

Heathkit, Yaesu FT-101 HF transceiver with matching FV-101 VFO, also matching Landliner phone patch with speaker.

Open for Offers on each equipment, There will be more equipment for sale as we inventory them, email Dave VE3FOI: ve3foi@yahoo.ca or call him at 905-562-7979

