



GATEWAY

The Official Magazine of the Gippsland Gate Radio & Electronics Club Inc.

January 2013 From The President

Welcome to the first edition of Gateway for 2013. I hope you all enjoyed Christmas as much as I did, and that you are revved up and ready to go for another eventful year.

On the night of the January meeting, three club members, Albert VK3BQO and Ian VK3BUF, will be giving a talk about circuit board design. Each will be talking about different aspects, traps for beginners, handy hints and an introduction to "Design Spark", a user friendly, downloadable, circuit board design program. This talk will be an introduction to circuit board design. If there is enough interest, we will continue the theme of circuit board design at the prac nights, held on the First Friday of every month.

Also at the January meeting we will be voting on the change of name for the Club Secretary. To comply with new corporation laws, the Secretary must be the public officer, however if we change the name of the Secretary to Admin Secretary, then we can keep going as we have been, without too much disruption.



In 2010, the GGREC, in conjunction with the WIA, the Koo Wee Rup Swamp Historical Society, and the Dragon Radio Club in Wales, re-enacted the first direct press message, from the United Kingdom to Australia.....

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Event Queue from January 2013

January 18th – Friday Night. General Meeting at the Guide Hall
2000 hrs PCB Design and Design Software

January 26th – Saturday. Australia day BBQ at the Clubrooms
BYO Everything from 1200 hrs

February 1st – Friday Night. Prac Night - Peter Pavey Clubrooms
From 1930 hrs come & socialise have a chin wag or a QSO

February 10th – Sunday. Centre Victoria Radiofest
Kyneton race course, details to be announced.

February 15th – Friday Night. General Meeting at the Guide Hall
2000 hrs Talk to be announced.

March 1st – Friday Night. Prac Night - Peter Pavey Clubrooms
From 1930 hrs come & socialise have a chin wag or a QSO

March 8th – Friday Night. Committee Meeting

March 15th – Friday Night. General Meeting at the Guide Hall
2000 hrs Talk to be announced.

...Cont from Page 1

A commemorative plaque was commissioned for the event, and I am happy to announce that it is now, proudly on display at the Koo Wee Rup Swamp Historical Societies Museum. Members of the KWRSHS have expressed an interest in finding the original location of the transmission site, and planting a memorial marker there that will be less likely to be vandalised.

The GGREC Honour Roll has been updated to include all non executive committee members, as well as magazine editors. It is worthwhile taking a look at this to trace some of the Club's history. We appreciate all the efforts of our members, who keep our club running smoothly. To view the new honour roll, go to, ggrec.org.au , click on, [About us](#), a page of text with a map will come up, on the right hand side of the text, there is a short list, click on [Honour Roll](#). (Thank you web master Steve for a very professional presentation of this page)

A very big thank you goes to Leigh, who hosted the GGREC Christmas party, in very hot conditions. Graeme Brown VK3BXG, won the Christmas hamper, Dorothy won the jelly beans in the jar, and I VK3JDI won the connector connecting competition. Thanks again Leigh and congratulations on getting your new call sign VK3FACB.

Don't forget our Australia Day barbecue, at the Peter Pavey Club rooms, on Saturday the 26th of January. The Club barbecue will be in action, you will need to bring your own meat, salads and drinks. We do have a few chairs available but it is always a good idea to bring your own.

I'm looking forward to seeing you all at the January meeting

Dianne Jackson VK3JDI

Traps for young & not so young players

1: Some years ago I had been doing some work on one of the club's antennas and turned on the Kenwood TS440 that the club owned at the time. Although it appeared to be receiving normally, any attempt at transmission proved fruitless, as the SWR went completely off the scale. Trying other antennas and the use of the built in as well as other antenna tuners was of no avail. After quite some time of this frustration, just as I was considering booking myself into a psychiatric institution, I looked at the power lead and noticed it was fused in both the positive and negative side. Sure enough when I pulled out the negative fuse, it was found to be blown. When it was replaced everything performed as normal. Conclusion: The TS440 must have been deriving its negative supply via a circuitous route involving the antenna system.

2: The other night when I was trying to tune up my FL2100Z amplifier on 20 metres, I found that I was unable to obtain more than a few watts of output. As I was trying to remember where I had put a spare set of 572B tubes, I happened to look at my logbook that was open at my last QSO that was with T30PY, working split in the 80 metre DX window. Although I had selected 20 metres, the transmitter was still transmitting on 3.795Mhz. A quick press of the split button was all that was required to tune the FL2100Z to full power. (into a dummy load of course!) Conclusion: When after completing a split frequency QSO, always return your rig to normal operation.

73 de Mike *Vk3kTO*



Fireflies improve LED output

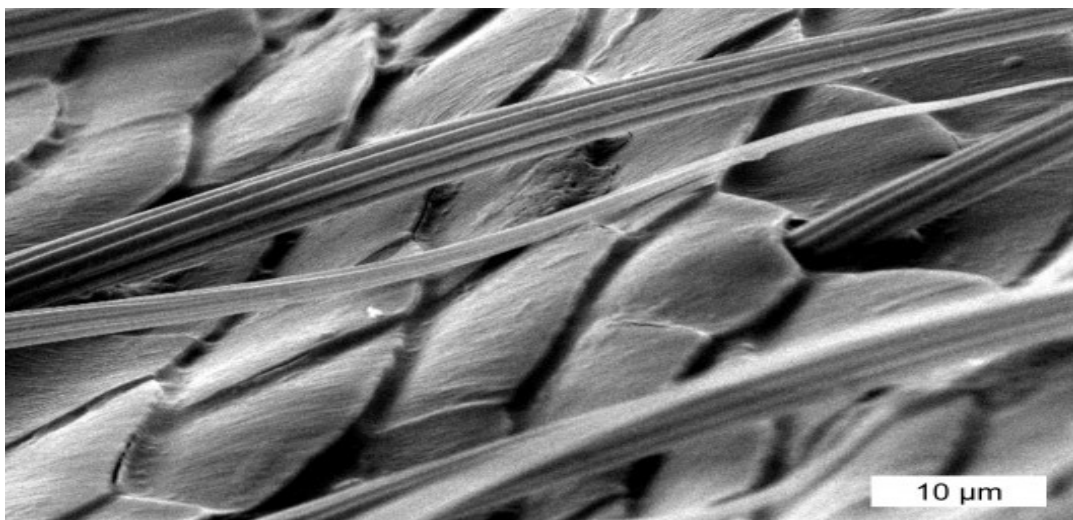
Fireflies have helped a team of international researchers to get over 50 percent more light out of existing LED's. It is the scales where the secret lies, specifically in the scales of the Photuris firefly.

In fireflies the bio luminescence is emitted through the exoskeleton. Mostly, the cuticle reflects some light back inwards, reducing the total light given off a similar problem that happens with the coatings of LED's.

It has been discovered that in the Photuris genus scales in the cuticle possess optical qualities that boost the amount of light that can get through. The qualities are concentrated along the jagged edges of the roof tile like scales.

To test if the same principle would work for LED's, a researcher at Canada's University of Sherbrooke deposited a light-sensitive material on a standard gallium nitride LED. Then using a laser he etched a profile into that coating, similar to the edges of the firefly scales. This resulted in an LED that was able to emit approximately 55 percent more light.

Annick Bay, a Ph.D. student at the University of Namur in Belgium said "The most important aspect of this work is that it shows how much we can learn by carefully observing nature,"



Firefly Scales Under Electron Microscope

Morse Code Inspired the Bar-code

Over six decades ago a mechanical engineer to be, he was still in training named Joseph Woodland was sitting on a beach, he was dragging his hand in the sand drawing Morse code trying to work out how the code could be used graphically when a revelation hit him...

He was quoted in 1999 during an interview with the Smithsonian magazine as saying,

"What I'm going to tell you sounds like a fairy tale, I poked my four fingers into the sand and for whatever reason I didn't know I pulled my hand toward me and drew four lines. I said: 'Golly! Now I have four lines, and they could be wide lines and narrow lines instead of dots and dashes.'"



Woodland and his design for the 1st scanner

Until this day the only code he knew was Morse Code but it was with the dragging of his fingers in the sand that this man came up with the idea of the bar-code used today. He worked with a classmate Bernard Silver to create the technology based on a series of thick and thin lines.

With that stroke of his fingers creating a literal set of lines in the sand he had invented the bar-code. — Mr. Woodland, died on Sunday December 12th 2012 at age 91.

Expressions of Interest.

Some club members are looking at purchasing LDF 4-50 Helix or similar and connectors for some up coming projects I am wondering if other members are interested. We are thinking of a group purchase, please contact me with questions or if interested with how many meters you would need via email at vk3brs@gmail.com or see me at a meeting

Rob VK3BR/S.

Radio, Antennas and iPhone Apps

I started my interest in Amateur Radio like many playing on CB long before I was licensed as an amateur. With electronic engineering as my trade I obtained my limited license (VK3UGC) in 1991, however for various reasons, the main one being my laziness to learn CW, I was restricted from operating on HF.

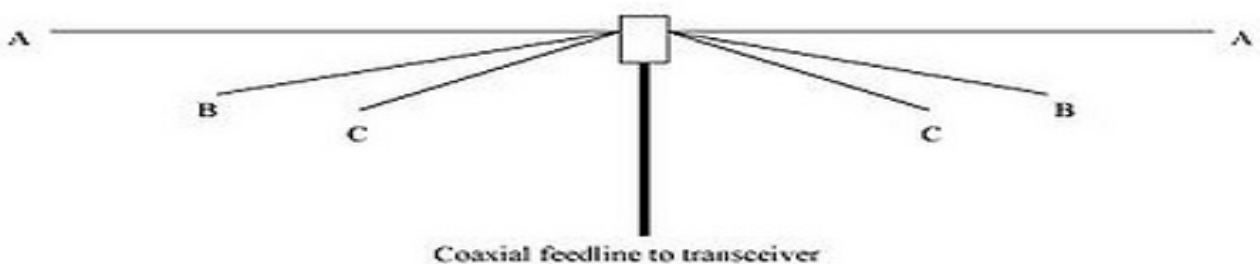
Move forward twenty years, many things have changed, less hair, more kilo's around my middle, a new call-sign (VK3GC) and the ability to access the HF bands have reinvigorated my desire to play around below 30MHz. (About time I hear you say?)

As the lucky new owner of the Nally Tower relocated from Ron VK3EXJ's QTH (Refer Gateway July 2012) I now have some serious real estate available to put more antenna's into the air, but where do I start?

A single guyed pole held my 2/70cm vertical and an 80m Inverted Vee, whilst the Inverted Vee and auto tuner 'worked' ok the combination above 40 meters wasn't that flash. Although I could hear people and the auto tuner told me the SWR was ok, the remote stations couldn't hear me. It was pretty obvious the antenna wasn't performing well enough.

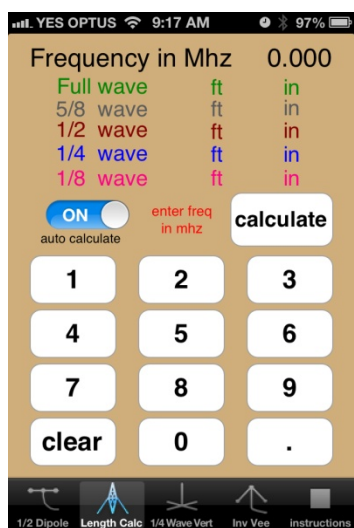
The Nally would have no problems holding up more antennas, but I wasn't in the position to run out and spend a few thousand dollars on a rotator and a decent yagi.

I decided to manufacture a Fan Dipole, a simple design of multiple inverted Vee's all terminated onto a common feed point. This antenna has many great advantages (and a few disadvantages), it is a simple design and cheap to make.



There is plenty of information available on the google interweb thingy on the computer if you would like to research it further! Whilst I understood the mathematics of calculating the lengths of each pair of elements, I thought that surely someone else has already designed a calculator that will do it for me? (Hmmm is this my laziness coming out again?) Out comes my trusty iPhone (thanks Steve Jobs) and a quick search on the App Store for "Ham Antenna Calculator" and I found a simple App developed by Joseph Garber, his notes give a good insight to this simple but handy app!

"Ham Antenna Calculator will simply and intuitively calculate for you the starting length needed for constructing your antennas. It will calculate the starting length for "Dipole's", "Inverted Vee's", "Vertical's" and has a page for calculating 1/8, 1/4, 1/2, 5/8 and "Full Wave" lengths The "Inverted Vee" calculator also uses this same formula plus a percentage added to the length of the antenna based on the angle of the wires down from horizontal. No antenna calculator can give exact results in every case. Much will depend on the wire used, the height above ground, the ground itself, nearby objects, etc.... It's always a good practice to add a little extra wire and then trim up to the desired frequency."



Now if only the author realises that others in the world uses the metric system and adds in an option for Meter and Centimetres!

Today I now have 5 band Fan Dipole with elements for 80, 40(15), 20 and 10 Meters and have started to log some good contacts on these bands I struggled with before.

Now it's time to save my \$\$ for that rotator and yagi combination!

Glenn VK3GC

JOTA 2012

The 55th JOTA was held the weekend 20th October 2012 and again we had a lot of fun. But it was not without its frustration despite all the work the weekend before.

We arrived early to set up the tent for 2 meter use, but the grass had not been cut so it was decided to set up between the Guide Hall and the tennis court. Craig, VK3FDRG tied the 2 meter antenna to the tennis court fence and the position proved to be ideal and later saved the day.

By 1:30 the activities were well under way with units from as far as Phillip Island with over 50 children attending during the day. The ever popular "fox hunt" as well as Yarn VK3NOV instructing with the morse code activity and those children on the key board with JOTI.

But it was at this point my statement that "it will all happen on the day" had come back to haunt me the off-centre fed dipole would not now tune up! Even the "bullet proof" TS520s could not "kick it into gear".

With guides waiting a call from Hobart on IRLP was taken by Bruno VK3BFT as a priority with the consequence that it put an end to the fox hunt due to QRM! So an hour long contact on to Bendigo filled in for that.



In the meantime Max had lowered the dipole and found one wire broken off the balun and the other not much better but that was quickly fixed and we were now on air on 40 meters.

Members Present. VK3BXG VK3FWSP VK3NOV VK3BFT VK3FDRG
VK3ZWC VK3TMK VK3MWR VK3FOAB

A Club Project

The opportunity has arisen for GGREC to take over the rebuilding and commissioning of a UHF repeater in Drouin Gippsland. Several years ago during the bush fires that ravaged Victoria, VK3RWD, which was under test at a temporary location at Jindivik was destroyed by fire. The present owners of the licence are happy to transfer ownership to GGREC allowing us to reinstall a missing link in Victoria's UHF amateur repeater system.

I have investigated the requirements for such a repeater and in preliminary discussions with several club members, have been able to get a show of interest from them to assist in the building, testing and commissioning. I would like to see this become a "Club Project" in which many of our members can help, learn and hopefully contribute knowledge to the work.

At this stage, I have presented to the committee, an interim report along with an estimate of cost which would need to be paid by the Club. At the general meeting in January, I will present this to the members as a viable project and ask that an amount of money be approved for the purpose. If you wish to participate in this discussion, please attend the January meeting.

A brief description of what is proposed will be presented but the in depth technical issues will be discussed at a later meeting of interested people should the project move forward.

Having been the licensed operators of two repeaters for many years (VK3RLP and VK3RDD) and two beacons also, GGREC is well capable of making this happen. When operational, this repeater would benefit several of our members in the immediate area and be accessible by many of our members from other areas as well. The overall Amateur community would benefit also including the previous owners. If considered viable, the project would be a long term one lasting several months. *Albert VK3BQO*

General Meeting of 16th November 2012

Location:	Guide Hall Cranbourne
Start Time:	Meeting commenced at 2010
Chairperson:	President Dianne VK3JDI
Minutes taken:	Secretary VK3BXG
Present and Guests:	As per attendance sheet.
Apologies:	As per attendance sheet

Correspondence received:

AR magazine, EMDRC news letter, Famparc news letter Wansarc news e-mail Llink, Nerg news e-mail link, Club repeater, VK3RLP licence, Letter from Incorporation Dept. Justice regarding the incorporation changes, Hall hire regarding the Hamfest.

Correspondence out:

E-mail to the Guides regarding the rental payment cheque not yet presented.

Treasurers Report:

Ian VK3BUF reported total income \$216.67, total expenses \$696.96 this being a loss of \$480.29 for the month.

There is \$9,000 in fixed term deposit and \$3345.72 in the "working" cheque account. Moved Ian VK3BUF, seconded Albert VK3BQO, all in favour, carried.

Minutes from September general meeting:

read out. Moved accepted Dianne VK3JDI, seconded Russ VK3MWR, all in favour, carried.

Business from the Previous Minutes.

Repeater Report, Albert VK3BQO reports all is working well and nothing of significance to report.

Christmas Hamper Dianne VK3JDI reports will be drawn on the day of the barbeque but it will be available for late donations before the draw.

Christmas Barbeque is still being held at Leigh Findlay's on Saturday 8th December and appears to be a quite suitable venue – plenty of room Ian VK3BUF reported.

Coffee Cups and Glasses – more orders if required. A suggestion was made for an advertisement for people to order more if required with glasses at \$14 each.

Cups are still in stock if required but orders will need to be taken before or at the December barbeque for a January or February meeting delivery. [JOTA report](#) . I, [VK3BXC](#) reported about 50 children attended from various units as far away as Phillip Island with a regular flow of comings and goings during the afternoon.

Our “quick shade” was put up next to the tennis court fence and proved to be quite an asset for 2 meter repeater operation which served as a diversion because of the initial problem with the off-centre fed HF antenna. UHF operation again upset the fox-hunt for a short while but it proved as popular as ever whilst Yarn [VK3NOV](#) entertained with his morse code lessons.

[Camping Weekend](#), Cup Weekend Pat [VK3OZ](#) reports went well with a good time had by all those who attended with picnic lunches and barbeques although there was a little rain towards the end.

New Business.

[Prac-nights](#). Ian, [VK3BUF](#) reminded that although this is the final meeting night for the year there will be a prac. night in December but not in January. There is no theme for December prac-night.

Wayne [VK3ZWC](#) mentioned slow scan TV again for some future prac. night and interest from EMDRC.

[Circuit Design](#). An introduction to circuit design – eg. “Design Spark” was suggested for January general meeting with three members to speak on the subject followed up possibly with different aspects of it covered on subsequent meeting nights.

[Changes to the Incorporation Act](#), Ian [VK3BFT](#) reports that the main issue will be in future that the public officer must be the secretary.

An independent audit is no longer required but we will continue to do it. Privacy if required by members must be maintained.

Because no significant action apart from public officer, Ian [VK3BUF](#) proposed that the title of Public Officer becomes Secretary and Secretary become Admin-secretary but this proposal will be published in December “Gateways” and will be put to the general membership for vote by the membership at the January general meeting.

Meeting Closed at 8:40 pm.

Next Meeting 19th January 2013.

Tonight is a video from Bell Labs. (c 1959) on waveforms



Club Information

Meetings 2000 on third Friday of the month at the Cranbourne Guide Grant Street Cranbourne, Prac nights first Friday in the Peter Pavey Clubrooms Cranbourne 1930 Visitors are always welcome to attend

Office bearers

President	Dianne Jackson	VK3JDI	Repeater Officer	Albert Hubbard	VK3BQO
Secretary	Graeme Brown	VK3BXG	Web Master	Stephen Harding	VK3EGD
Treasurer	Ian Jackson	VK3BUF	Magazine Editor	Mark Clohesy	VK3FWSP
General 1	Michael Van Den Acker	VK3GHM	Property Officer	Bruno Tonizzo	VK3BFT
General 2	Mark Clohesy	VK3FWSP	Public Officer	Ian Jackson	VK3BUF

Call in Frequencies, Beacons and Repeaters

- The Club Station **VK3BJA** operates from the Cranbourne Clubrooms.
- 6m Repeater Cockatoo **VK3RDD** : Freq. In **52.575 MHz**, Out **53.575 MHz**
The 6m Repeater requires CTCSS tone access of **91.5 Hz**
- 70cm Repeater Cranbourne **VK3RLP** In **434.475 MHz** Out **439.475 MHz**
The 70cm Repeater requires CTCSS tone access of **123 Hz**
The 70cm Repeater supports Remote Internet access (IRLP) Node **6794**.
 - Simplex VHF - **145.450 MHz FM**
 - Simplex UHF - **438.850 MHz FM**
- **VK3RLP Beacons** **1296.542 MHz & 2043.532 MHz**

Membership Fee Schedule

Standard Member rate \$37.00 Junior Member rate \$22.00
Pension Member rate \$22.00 Extra Family Member \$17.00

- Fees can be paid by EFT to **BSB 633000** - Account **146016746**.
 - Always identify your EFT payments.
- Membership Fee's Are Due at each April Annual General Meeting.

Magazine Articles to editor@ggrec.org.au or pockets@twistedsouls.com

All other Club correspondence to: secretary@ggrec.org.au
or via Snail Mail : PO Box 1098, Cranbourne 3977

GGREC Web Site & Archive may be viewed at: www.ggrec.org.au

The deadline for magazine items is the Tenth day of each month.
Commercial Advertising is \$10 full A4 Page or \$5 ½ A4 Page per edition

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The Club cannot be held responsible for incorrect information published.