DMR - I have a radio; Now What

The X-plod-ed speaker

Graeme's Equipment

And More

19/06/2019

Contents.

Note: - club meeting minutes are on the club website

Event Queue

June:

21st   General meeting – Guide hall
22nd   Annual Dinner, Dandenong Club, Dandenong, for 6pm

July:

 5th   Prac night – club rooms
13-14th   IARU HF World Championships   (courtesy WIA)
19th   General meeting – Guide hall
20th   GGREC Hamfest – see Page 13
20th   Trans-Tasman Low-Band Contest (courtesy WIA) – see page 5
22-23rd   WIA Winter VHF-UHF Field Days (courtesy WIA)

The GGREC is planning to hold some Club Events. These are the Summer Field Day, the John Moyle Memorial Event and possibly the Winter Field Day. Dates will be forwarded at a later date. The Clubs participation in these events means that, besides having fun in setting up and operating our gear, we also promote our club. Furthermore the club is equipped with a complete set of portable gear. Why not use it? Please consider to be part of these events.
The Committee of the GGREC

President's Report - Tony Doyle VK3QX

From the President

To GGREC members,

It's been a busy month with ongoing preparations for the Club Hamfest, at last count this week there were only 10 tables unsold with just over a month to go. It is looking very good, many thanks to Di (VK3JDI) for taking the bookings and Mark (VK3PKT) for the updates to the GGREC website.

We are still looking for names to help with setup and help on the day so please put your hand up at the GM on June 21.

Work is progressing on the 7Mhz split for the RGW repeater, however, it isn't a simple matter due to the current channel allocation being in the 5Mhz split band segment. We are working on available solutions for this which may mean shuffling around some repeater frequencies.

We had a couple of enjoyable Prac Nights this month. On the 7th Bruce (VK3BRW) continued work on the Receiver project, and on the 14th, Al (VK3BQO) ran an informative DMR session for around 10 members.

David Rolfe is activating a special call, VI3MOON, which will be active from the 16 July 2019 through 24 July 2019 to celebrate the 50th Anniversary Of Australia's Contribution To The Communications With The First Manned Moon Landing. This is being done with the participation of the Mornington Peninsula Astronomical Society. Keep an ear out for this one.

I will give a short presentation at the GM on a vital piece of state telecommunications infrastructure, the Emergency Alerting System, for anyone interested in radio networks.

We will see you at the GM on Friday night.

Tony Doyle (VK3QX)
GGREC President

From The Editor – The X-plod-ed speaker

The other day a mate handed me this Sony Xplod sub-woofer, obviously originally intended for a car. I'm not sure how one is supposed to pronounce the name of this line of Sony products, the letter O has a dash accent above it, I looked through the fonts available to me in Microsoft Word, the editor I use to produce the magazine, and yes there are several O's with assorted accents, but not a solid bar like Sony are using, it more looks like the bar that is used in mathematics to indicate a recurring number. I can't help but to pronounce it as "X plod", kind of like the noise you here for the 'young ones' as they drive past with their 'upgraded' sound systems, Plod Plod Plod Plod goes the bass. In reality you should not hear sub bass, only feel it.

As you can see it had been converted to a house sub-bass box, it kind of worked (after I sorted out the wiring) but it sounded awful, it was going clack clack buzz buzz, I soon found out why, the box was falling apart, it had kind of exploded, or as I titled this article, X-plod-ed. To fit it into a car, a full size speaker box was definitely out of the question, so they used brute force and ignorance, the box eventually paying the price.

I had a laugh, the speaker front says 1000W, but the real power on the driver's back label was 300W

A 1KW speaker run by a 550W PC supply!

Paul VK3TGX

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June Contest Report

Hello and welcome to the monthly contest report. The VK Shires contest was held over the Queen's Birthday weekend of the 9-June. This is a 24 hour contest that is open to both VK and DX contestants. The goal of this contest is to work as many different VK shires as you can in a 24 hour period. You can operate as a fixed station or as a rover station. To qualify as a rover you need to operate from a minimum of two shires.

For folks in the northern states this is a good opportunity to camp out and play radio. Some operators also combine the contest with Parks on the Air activations. For those of us down south it is a more chilly affair but still lots of fun. Bands are limited to 80m,40m,20m,15m and 10m. In past years modes were limited to CW and SSB but this year digital modes were introduced. The use of digital modes is still experimental and a straw poll was taken with results evenly distributed between RTTY and FT8.

From the VK3TIN QTH activity was a little slow on the Saturday with dedicated operators staking out their spots on 40m and 80m. With about 1.5 hours of daylight remaining after the 06:00 UTC opening the initial action took place on 40m and soon after sunset stations moved to claim a spot on 80m and continued operating from there. On Sunday the action was back onto 40m and by mid-morning there was a decent turnout. It was good to hear lots of F-Calls getting involved.

VK3TIN was able to work the following rover stations, VK5PAS/P, VK6MB/P/VK3, VK3XPT/P ,VK4VXX/P/VK2, VK2PRC/P with one international station ZL2AYZ. At the VK3TIN QTH a non specific noise floor of an average of S7 was observed for most of the contest on 40m and an average of S5 on 80m. MUF moved between 2 MHz and 5 MHz over the contest period.

This contest is a little quiet when compared to other Australian contests. It is still a fantastic contest with lots of scope for park and curbside operation. Also you don't need to support 160m to be in with a chance.

Next year this should be on your contest calendar for sure.

The next Australian contest is the "TT" the Trans-Tasman Low Band Contest which is held on the 20th of July 2019.

See http://www.wia.org.au/members/contests/transtasman/ for details and rules.

Contests to start planning for:

Remembrance Day Contest (17/18 Aug).
See: http://www.wia.org.au/members/contests/rdcontest/

OCDX contest, first and second full weekends in October for phone and CW respectively.
See: http://www.oceaniadxcontest.com/index.html

73 Megan Woods, VK3TIN

DMR - I bought a radio; Now What?

By Albert VK3BQO

On June 14, the Committee arranged a prac. session aimed at DMR newbies and old hands alike. About 10 people attended with varying levels of experience and with interests in different areas of the mode. Digital Mobile Radio has come a long way since several of us tried it a couple of years ago. Radios are still cheap and getting your head around the programming is hard on the hair follicles, but it is hard not to enjoy this mode of communication since it is so easy to make contacts anywhere in the world or just here in Oz. Popularity of DMR has rocketed in the last year and with possibly 130,000 users around the world and growing daily, it must have something going for it.

At the first of what may become a several sessions, we discussed some technical stuff and a lot of "how to" information and although some went away more confused than when they arrived, at least they had a good time with other likeminded (bald) users. Allan VK3SLR and Rob VK3BRS shared some of their learned knowledge and I presented some notes which I borrowed from lots of internet sites that appeared to know what they were talking about. All in all, it was a good social evening that even allowed us to meet the faces behind a callsign or two.

Admittedly there are changes afoot to the Australian DMR scene that has left many users confused about technical issues, but if we persist with the mode, things will become clearer. Keeping yourself in the loop will certainly give you the best chance to sort things out and the best way to do that is to use the radio. Get on and make a contact.

See (or hear) you on 505.

From The VK3TGX Repair Bench

The Window 10 Laptop.

I had been given this laptop to repair, the owner had asked me to de-install Microsoft office as it no longer worked, and to factory reset it.

A Factory reset usually uses a special recovery partition on the HDD put there by the laptop's manufacturer, for initial install and disaster recovery. Invoking it deletes all your data and software and returns the machine to how it was when you first took it out of the box and ran it for the first time. I was hoping that a less drastic solution was possible.

One hint as to why it was so 'up the creek' came from the owner, He really hated Microsoft's Windows 10's continuous updates, and that he had 'deleted them', a function that Microsoft does not directly support. So how was he doing this? Probably by using a solution gleamed from Mr Google. I suspect he was only partially successful, and that bits of the various upgrades had been installed, and that he now had a mishmash of various bits that were not happy living together. Really, if Windows starts an update, there is only one option, let it complete. (Then if it is 'broken' worry about it) **I trust you do backup your computer?**

First things first, Get a backup, either install something like Macrium Reflect, or pull the HDD and do the backup/drive imaging on another computer, i.e. to save your skin if you do something really wrong and lose all the owners files etc., or just have the option to undo all you work and give it back as it was (assuming he is not happy) so he can take it elsewhere....

So after doing a virus scan and been mildly comfortable that his woes were not virus related I tried doing a 'Windows 10 reset' this is supposed to optionally let you keep all your user files and a fair amount of your software. However the machine was sufficiently borked that this only came back with an error. So what was left, a hard drive format and Windows re-install?

One thing to watch out with a Windows 10 reset, it deletes far more than you would expect, the main one the annoys me is that whilst promising to keep your files, it happily deletes all your emails, Usually a rather important set of 'your files' that they said they would leave alone! The other one that puzzles me is that it usually deletes Microsoft's own Office! Crazy.

In the end I managed to get it to do a feature update, and that corrected things enough that the Windows reset could now proceed. After that I was sufficiently assured the machine was now back to normal and fit for return to the owner. (Minus his emails....)

Paul VK3TGX

Coffee Morning

On a chilly morning on Thursday the 6th of June some GGREC members visited the Cannibal Creek Cafe in Garfield for a hearty breakfast. Warmed by the wood fired bakery oven and a couple of mugs of coffee, we attempted to solve the problems of the world, shared some funny stories and discussed our latest projects. Helmut talked about leaving for warmer climates and promised to catch up with us on the radio so that he could tell us how warm he is basking in the Queensland sun. Mike Ide and I shared some photos of classic Riley cars, Ron gave us an update of his radios installed in his shack and some testing that he and Albert have been up to. Andrew said that he will need to install a new outdoor antenna for his DMR radio to access the Cranbourne repeater VK3RDR.

We hope to get together once a month on a weekday somewhere in country Victoria. If you would like to join us for a mid-week outing once a month please email me (btonizzo@bigpond.com) and I will put you on the mailing list.

Kind regards,

Bruno Tonizzo

VK3BFT

Graeme's Equipment

Over the past several weeks I have been slowly cataloguing the late Graeme Wheatley VT3XTA's equipment for sale to members and friends. (Usually once per week)

Quite a few items (about 87) out of the current list of 180 items have already sold.

This list will only grow, most of the true Amateur radio gear is already listed, however there are a few more CB radios to add, and probably a fair few more electronics items

There are also a few items for collectors, like an AM broadcast radio & an AWA TV etc.

I have been maintaining the list on my DropBox site.

https://www.dropbox.com/sh/tkqdg6hlg1og9ru/AAByDrL8lCu4RZadFkL3l7UOa?dl=0

In it you will find an Excel spreadsheet of the items available, alongside two pdf files, one containing the radio's etc. The other a list of IC's he had, although most of these are now quite old, probably out of production.

Also in there is a set of photos of most of the available items. (That's where the pics on this page came from)

So Don't hang around, hop onto your computer, **follow the link above** and either get in touch with me (Paul VK3TGX), or Toni, just look up Graeme in an old membership list for the contact detail – Graeme's email address (and home phone number) are good for talking to Toni.

Some Purchased items have already being delivered to the club rooms for pick-up, and there should be more for this Friday's general meeting, along with another box of freebies.

And remember to check back for updates to the list

Fun With Counters
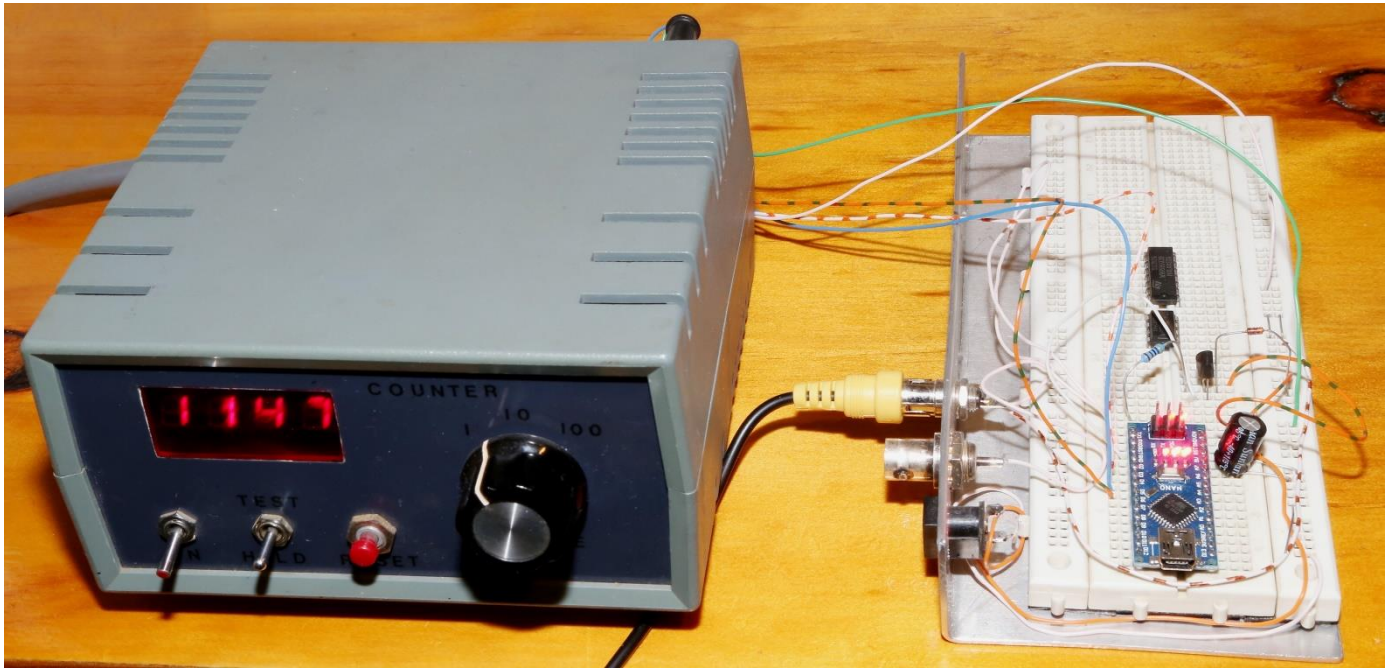
The Forty Year project

Many years ago, when I was just starting out in electronics, there were basically two avenues I could see, audio (as in analogue) and digital. The only source of parts back then (apart from a TV repair shop) was a Tandy shop. They had many kits & a few project books. One of these had a few digital IC projects, so I started by building a counter. This took a while as the design specified a cold cathode display tube, a part no longer available from Tandy. Eventually I managed to get a 7 segment LED display to work in its place. Now one digit is a bit limiting, so I built a 4 digit version on a printed circuit board that I designed and etched. Unfortunately it didn't readily fit into any of the cases I could buy from Tandy, So Mk 2 was born. With Mk 2 I started with a case, and then I added a switchable two stage pre-scaler (or x10 / x100 divider). I was eventually going to make an add-on box to turn it into either a frequency counter, or a digital volt meter etc.

  – However that never happened and it's just been sitting in a corner ever since.

Recently I spotted it and thought it's about time I found a use for it. Can it be driven from an Arduino and used as a display for something or another? The short answer was yes, and I soon found that it was relatively easy to 'clock in' any number fast enough that it looked like the displays were being directly driven by the micro. The counter was fitted with latches so you did not see the rapid count up, but after a few runs I soon found that this process was fast enough that one could almost get away without the latches. As a trial data source, I fell back on my old standard of a clock, however this was just a quick mock-up, any 4 digit number is usable.

I am currently looking out for a matching box to put the Arduino in, that way it can sit under the counter, probably with a selector knob to choose what it shows. Yes this as a tad over engineered as I could easily connect a modern display straight up to the Arduino and it would be much more compact etc. But this counter has a fair few memories attached to it, so I'd rather see it in action – so does anyone have a spare ARLEC grey plastic case…..

(They are designed to stack together)

The Six Digit Nixie Counter

This then led me to a few other projects that have been lying around, one is a 6 digit nixie tube module that Graeme VK3XTA had, it was originally targeted as being a clock by Graeme, I had just got mine running, but time got the better of Graeme, so I ended up with his module, so here it goes. In my Nixie tube clock project, finished off in the Editor section two months back, the original display in the "Pulse Measuring Set" that the clock was based on was basically a counter, I had ripped out the SN7490 TTL counter and 7475 Latch IC's and connected the inputs of the 7441 Nixie tube decoder drivers BCD inputs strait up to an Arduino Nano board. With Graeme's board we have 6 digits to drive, which means 6 by 4 BCD lines, or 24 lines, way more than the Nano board has pins to control. Even on my 4 digit clock I cheated a bit using only 2 bits to control the first tube as I only needed it to display '1' or '2'. So what are my options?, **1** – use a bigger Arduino board for more I/O, **2** - use a few 8 bit shift registers to give me a few more outputs, or **3** – build on my previous success with my 4 digit counter, and just leave the thing as a counter and write some code to make it go. With a 6 digit clock, the largest number that would need clocking in is 235959, and with no latch IC's in this case to hide my trickery, it would need to be done in under 100 milliseconds or better, that means I'd need to be pumping out better than 2.4 MHz. With an 8 bit, 16 MHz Arduino, this is really going to be pushing it, Maybe in optimised assembly code but extremely doubtful in Arduino code. Whilst Arduino sketches are built on the C language, they are not directly C, but rather a group of libraries or functions written in C. One can easily not use the Arduino 'DigitalWrite()' commands and
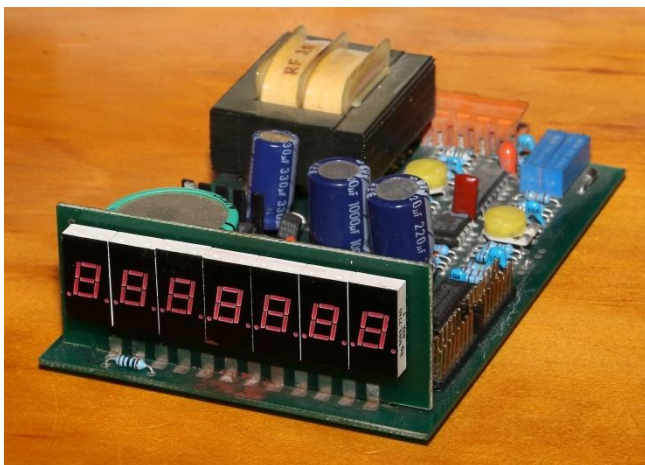

directly write to the micro's ports in C, that would gain me quite a bit of speed. There is a simpler solution that involves breaking the 6 digit module into 2 or 3 separate counters with just a few track cuts, but for now I want to avoid that solution as I also have a few other counters that I would also like to repurpose, that cannot be easily modified in this way.

Here is one of those other counters, its actually an industrial display module called a totalizer, the two bits I'm interested in are the 7 digit counter/display and the 240V power supply, if one just wanted a cheap 8 digit display, go look on Banggood etc. However an industrial module that comes in a nice panel mount case with a ready built in power supply seems more interesting to me.

Paul VK3TGX

Prac Night 27/05/2019
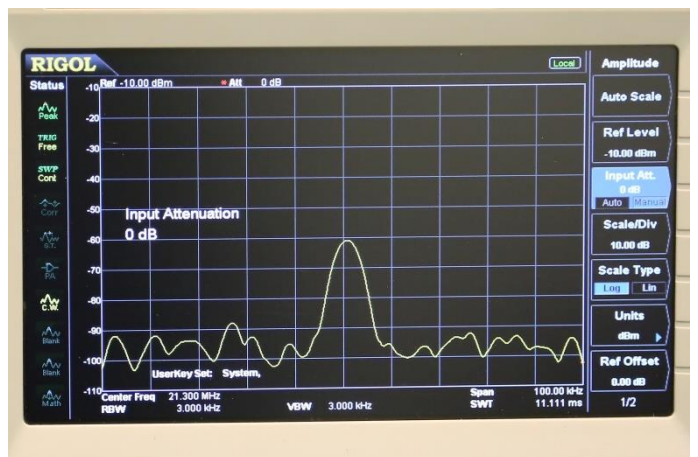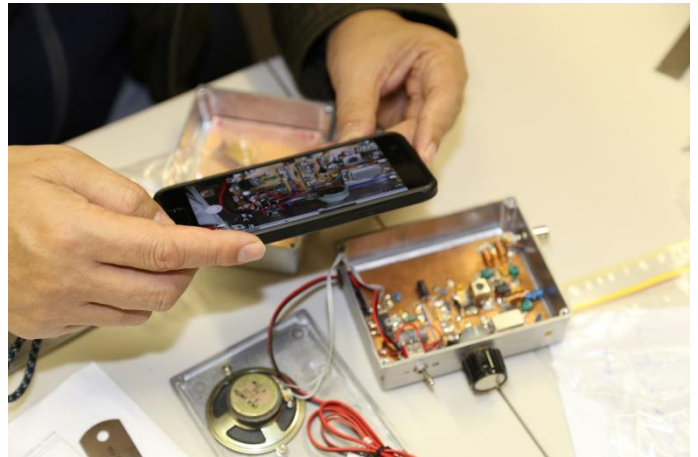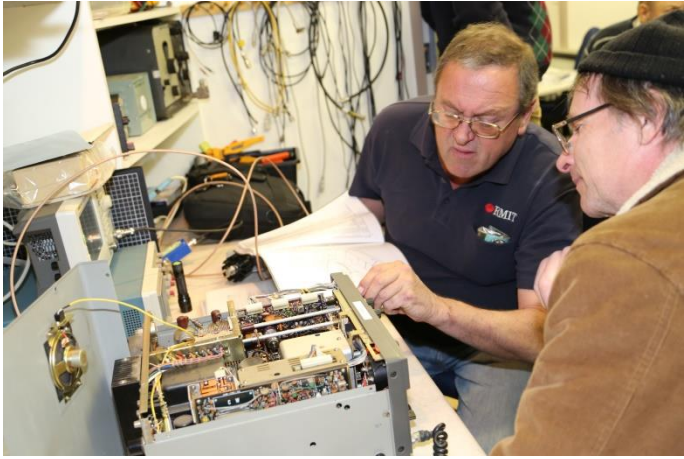
What was Rob doing wrong? – a non insulated tip

Gippsland Gate Radio & Electronics Club Inc.

AN INVITATION TO STALLHOLDERS

On Saturday the 20th July, 2019, the Club will be conducting its annual HAMFEST for the sale of new and used electronics and radio equipment.   As it was last year, the venue will be at the **Cranbourne Community Hall** on the corner of Clarendon and High Street, Cranbourne. High Street is part of the South Gippsland Highway Melway 133-K4.

The Club takes pleasure in offering you the opportunity to become a Seller at our 2019 event. Forty one tables will be available for stall holders and can be booked online.

Details can be found on our web page at:
ggrec.org.au/site/hamfest

- Table hire remains unchanged at $22 per table. A maximum of 4 tables per Stall Holder applies. A **booking** provides access for 2 people to operate the stall and includes 2 tickets to the door prize and free tea/coffee throughout the day.

- The $22 fee must be paid in full to the Club within 14 days of making a booking else your selected tables may be reallocated. Cancellations made more than 14 days prior to the event will be given a full refund by Direct Transfer (EFT) or by cheque if Direct Transfer is unavailable.

- To make a booking please contact us by email at: hamfest@ggrec.org.au. Payment may be made by direct transfer (EFT) to: **BSB 633000 ACC 146016746** or by sending a cheque or money order (payable to 'GGREC') to: GGREC c/- Dianne Jackson 408 Old Sale Road Drouin West VIC 3818. If paying by direct transfer (EFT), please include your call sign/name as the reference.

- When making a table booking, Stall Holders will need to provide a **Name**, **Postal Address** and **Contact Phone Number** with a **Return Email Address** if different to that in a reply. Table requirements will include **quantity,** if **240v power** is needed and preferred table number(s) from the website plan. Preferences are not guaranteed.

- Upon receipt of the $22 per table fee and contact details, a **Booking Number** will be sent as a receipt of payment. IMPORTANT! **No booking is confirmed until this number has been received by the Stall Holder.**

- Access to the Hall shall be from 8.30am (earlier if ready) for Stall Holders (and not later than 9:30am unless by arrangement).

- Transfer of your booking to another person is not permitted. Please contact us if you cannot attend or wish to discuss your booking at: hamfest@ggrec.org.au .

- The doors will open for buyers at 10am with a $7.00 entry fee.

Each year, this event is a great success with many hundreds of people through the door in our large Cranbourne venue making it a premier event for radio markets in this state. We look forward to hearing from you.

Club Information

Meetings 20:00hrs on third Friday of the month at the
Cranbourne Guide Grant Street Cranbourne
Prac nights first Friday in the Peter Pavey Clubrooms Cranbourne 19:30hrs
Visitors are always welcome.

Office bearers

President	Tony Doyle	VK3QX	Web Master	Mark Clohesy	VK3PKT
Admin Sec	Rob Streater	VK3BRS	Magazine Editor	Paul Stubbs	VK3TGX
Treasurer	Albert Hubbard	VK3BQO	Property Officer	'committee'	
General 1	Helmut Inhoven	VK3DHI	Assoc. Secretary	'committee'	
General 2	Ron Lacy	VK3FRDL			

Call in Frequencies, Beacons and Repeaters

The Club Station VK3BJA operates from the Cranbourne Clubrooms.
6m Repeater Cranbourne VK3RDD, In 52.575 Out 53.575 CTCSS none
70cm Repeater Cranbourne VK3RGW, In 434.475MHz Out 439.475MHz CTCSS 91.5Hz
VK3RGW Repeater supports Remote Internet access (IRLP), Node 6794.
70cm Repeater Seaview VK3RWD, In 433.575MHz Out 438.575MHz CTCSS 91.5Hz
Simplex VHF - 145.450MHz FM, Simplex UHF - 438.850MHz FM
VK3RLP Beacons 1296.532MHz & 2403.532MHz (currently inactive)

Membership Fee Schedule

Pensioner member rate $40.00 Extra family member $20.00
Standard member rate $50.00 Junior member rate $25.00
Fees can be paid by EFT to BSB 633000 - Account 146016746
• Always identify your EFT payments
• Membership fees are due by each April Annual General Meeting (AGM)

Magazine Articles to editor@ggrec.org.au Cut off, 10th of the month
All other Club correspondence to: secretary@ggrec.org.au
or via post : GGREC, 408 Old Sale Rd, Drouin West 3818
GGREC Web Site & Archive may be viewed at: www.ggrec.org.au
Website errors, contact web master: webmaster@ggrec.org.au
Facebook Page www.facebook.com/GippslandGate