



GATEWAY

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

May 2015 From The President

The New Club year is up and running!

With the AGM over and done with , well nearly done with, as we still need a Secretary to complete the 2015 – 2016 Committee.

The secretary is a key position in the Club and need to be filled as soon as possible. I'm sure that there is one member of GGREC that can spare a small amount of time each month to keep the Club running efficiently. I would like to thank Graeme Brown VK3BXG continuing as Treasurer and Wayne Cooke VK3XF for helping out for another 12 months. I welcome Rob Streater VK3BRS to the committee. I'm sure Robs knowledge and guidance will be a great asset to the Committee. Lastly, a big thank you to Bryan Simm who put in a fantastic term as Secretary.

GGREC is an awesome amateur radio and electronics Club but it is all wasted if you do not join in and participate. There is a saying that you get out of a Club what you put into it.

May's General Meeting is all about QRP operation so make sure you bring along your QRP radios and share some interesting stories with the rest of the Club. If you don't have a QRP rig, bring along your oldest amateur radio device. This should be a bit of fun and I can't wait to see what you bring along.

Sunday night's 8:30 PM GGREC NET has been going well with good support from the members. If you can't make it, call in between 8:00 and 8:30 just for chat and catchup on any news.



We have the mid-year lunch coming up soon, have you booked? If not, what's stopping you?

So together, let's make 2015-2016 a great Club year.

Bruno Tonizzo VK3BFT

President GGREC Inc.

P.S. Don't forget to pay you membership subscription.

Contents.

- 3 – Editorial
- 4 – Plastic cancer
 - Club subs due and payable
- 5 – 2015-2016 committee
- 6 – A Book Report – By Ian Jackson VK3BUF
- 10 – GGREC Hamfest invitation
- 11 – 10 meter CB conversion
- 12 – General Meeting Minutes
- 14 – Club Information

Something missing? – YES, YOUR content – Send it in!

Event Queue

May:

15th General Meeting

June:

2nd Committee Meeting

5th Prac Night - Field Day Equipment

13th-14th Foundation Course and Assessment weekend

19th General Meeting

20th Mid-Year Lunch, Arthurs Hotel & Restaurant, Arthurs Seat

July:

3rd Prac Night

7th Committee Meeting

11th -12th Gipps Tech

17th General Meeting

18th GGREC Hamfest

August:

1st -2nd Foundation Course and Assessment weekend

4th Committee Meeting

7th Prac Night

21st General Meeting

22nd -28th VI100ANZAC Activation

From The Editor

Well I finally got the club power supply back in order and re-installed. It must have been missed, because as soon as it was in place several members immediately jumped on the HF rig (for a long overdue HF 'FIX'?)



Now for some notes, You will notice that the front panel has two power switches, the first only turns on a pair of 240V sockets on the back panel, it has NO effect on the 12V output, and for the most part (for now) can be left turned off.

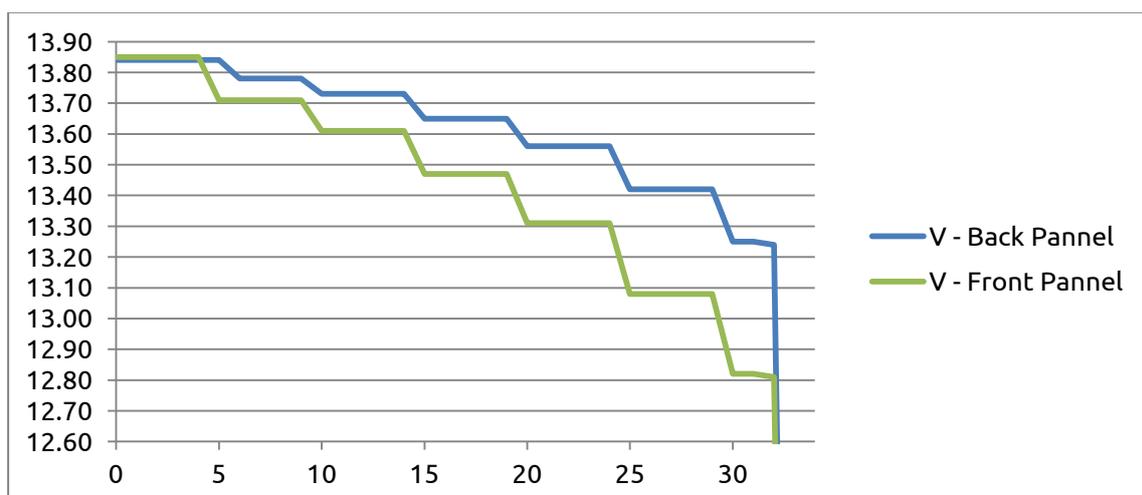
If you want to use the HF radio etc, you only need the second power switch.

Both front panel fuse holders are **LIVE** with **240V**, and if you need the touch them, then the power supply must be **UNPLUGGED** from the wall socket.

The fuse holders are **BEFORE** the switches, don't think you are safe by turning them off!

The front panel 12V binding posts are **NOT** intended for heavy loads. I have labelled them as 5A, you can get more, but expect some voltage loss.

Maximum output is about 33A



Paul VK3TGX

Plastic Cancer – Demise of the Door Computer



If you have tried to access the club rooms of late, you will have noticed that the keyfob access system is down.

Well here is the main part of the problem, the laptop used has literally fallen apart. If you try and open any of the hatches etc (ie remove the battery) the you end up with a pile of crumbled plastic in your hands!

Unfortunately the electronics is not much better, probably a pile of new capacitors in the power supply might have fixed it, but it's almost impossible to work on as it just keeps crumbling in your hands!

I'm not sure what has caused this, other than old age, however I have a few computers much older than this that are still ok in the plastic department.

Paul VK3TGX

Dear Colleagues,

As most of you would be aware, **club subs are due and payable** at the Annual General Meeting each year.

If you have overlooked paying your subs, all is not lost. Payment will be accepted until 1 June 2015.

It would be preferred if payments were made by EFT via your local branch of the Bendigo Bank. The payments can be made to BSB 633-000 Account 146016746, and ask the teller to insert your callsign as the reference for your payment e.g. "Subs VK3***"

Subscription rates have not changed -- Standard Member \$40.00, Junior Member \$25.00, Extra Family Member \$20.00 and Pensioner Member \$25.00. Alternatively, payments will be accepted at the General Meeting in May, or via snail mail, addressed to Treasurer, GGREC, PO Box 1098, Cranbourne 3977.

Regards,

Bryan VK3FOAB

Acting Admin. Sec.

Dear GGREC members,

At the April AGM, the following were elected unopposed for the 2015-2016 committee.

President	Bruno Tonizzo	VK3BFT
Secretary	Vacant	
Treasurer	Graeme Brown	VK3BXG
Committee Person	Wayne Cooke	VK3XF
Committee Person	Rob Streater	VK3BRS

As you can see we have vacancy for a Secretary.

If you were unable to attend the AGM and think you can spare some time to help out the Club, please consider taking up the position of Secretary.

The position of Secretary is vital to the Club and needs to be filled quickly to ensure that your Club runs smoothly.

If you think you have what it takes, please reply to President@ggrec.org.au .

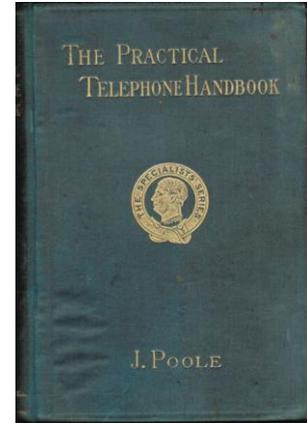
Thanks
Bruno Tonizzo
VK3BFT



A Book Report – By Ian Jackson VK3BUF

Today I found myself at the Moorabbin Hamfest sale, where along with many others, I dug my way through various strata of pre-loved equipment. Before the pressing need for air forced me to the surface I was able to find a book on a topic of interest dear to me. So for five dollars I was the new owner of ***The Practical Telephone Handbook*** as written by **Joseph Poole**.

I figured that it was quite some time that I had put together a book report and that this 533 page tome would be worth a bit of a look. It is not what one would call a contemporary work as it was written in 1905, but fortunately it is the updated edition from the original 1895 release, so there is a wealth of new technology to be seen in this new 'third' edition, which originally sold for six shillings. A quick check with the *Historical Currency Conversions* website assures me that this amount has the same buying power as \$42.16 USD in today's value, or fifty four dollars and five cents in Australian tender. So by this standard alone I consider my new purchase to be a bargain.



So, where to start? The book is a hardcover printed in London by Whittaker & Co, who published many technical documents in the day such as ***Crappers Electrical Measurements*** and ***How to Manage a Dynamo***, plus ***Hertzian Waves & Wireless Telegraphy***. All of which would make sterling reading, I am sure, but this document focuses on the then state-of-the-art of telephone equipment, an enormous topic in its own right.

The book makes a noble start in its introduction:

The remarkable development of the art and practise of telephony which has taken place during the last decade and more especially during the last five years has necessitated the complete re-writing and rearranging of the edition of this book published in 1895.

Well it's true that technology does continue to change quickly....

It is not too much to say that within the period mentioned there has been a greater revolution that has taken place in any other technical business at the same time....

In a bizarre twist exactly the same words could have been written a century later. Still, as with most civilisations at any given point in time, there is a feeling that there is nothing much more to be done as everything useful has now been invented.

...Whilst in the future there will no doubt be many improvements, those made will, it is believed, more likely in connection with smaller details than with general principles, unless some very great advance in automatic exchange working should lead to its adoption, which, however, is not considered likely by the writer.

It appears that at this stage the author had not considered the advantages of building cameras into telephones, or last number redial...

Moving into the technical sphere, there is an enlightening description of how there are two types of electricity depending on whether one is rubbed with silk or flannel but the latter type may often escape if the rubber is not very careful. This is not so much an ill-informed description of electricity, but a dumbed-down introduction to those who wonder why it is so difficult to see this stuff with the naked eye.

There is a lot of solid data in early chapters on resistance of various metals and significant description of capacitive and inductive reactance with formulas. It then covers much on magnetism, electromagnetism and how currents flowing through wires generate these fields. Battery technology descriptions seems to be a who's-who of researchers with Hellese, Obach, Gasner, Leclanché and Daniell Cells all getting rated on their efficiency and usefulness in the field.

The question of "Who invented the Telephone" is one often posed by people with too much time on their hands. Many will instantly declare 'Don Ameche', but he was just the guy playing Alexander Graham Bell in the 1939 movie when he sent "*Come here Watson*" to a young Henry Fonda. This book does give credit to Philip Reis, a German fellow who in 1861 made a crude device for sending audio over wires and successfully sent: "*Das Pferd frisst keinen Gurkensalat*" (*the horse doesn't eat cucumber salad*) which sounds more like a press release than an audio test. But the book makes no reference to Antonio Mecucci of whom it is now regarded as doing serious phone pioneering work in front of Alexander Graeme Bell.

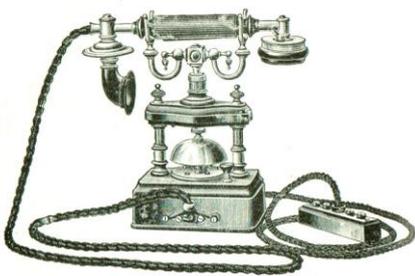


Fig. 124

*Are you the person in charge of
All your power bills???*

Bell got some solid patents lodged first and usually takes credit for the invention. He was a seriously clever man and it helped that his father-in-law *Gardiner Hubbard* (that name again) was a lawyer and the foundation member of the National Geographic society. The book tells us it was Mr Hubbard who worked out that *Telephonic Exchanges* would be necessary and proceeds to describe how this guy figured out how to charge for phone calls. (If I had a time machine, it would be nice to go back and egg his house.)

Later on Bell did invent a type of metal detector, but it wasn't very good, as it couldn't find the assassins bullet wedged in the then president James Garfield, who promptly died from his spontaneous incursion of lead. (not in the book) Bell was renowned as being a great teacher who went on to marry one of his younger female students. (Hmmm) When he died in 1922 all the phones in the USA were briefly turned off in honour of the man and they haven't stopped ringing since.

The book has many diagrams and pictures of early telephone microphones and speakers (transmitters and receivers) and spends a lot of time on the attributes of each type. Lots of phone components were then built by the Kellogg Co. (does that name ring a bell?) It seems that this company had little to do with the breakfast cereal manufacturer of the same name.

There are whole chapters on switchboards, manual phone exchanges and party line operations. It seems that telephony services were just beginning to take off as major employers of men and women, but this was taking place alongside an impressive level of automation development.

Although the book is largely a technical document, there are interesting debates buried within the text.



Fig. 74

*Resistance is futile,
you will be assimilated!*

It has now become in many cases a serious question for discussion as to which is the better system to adopt – the so-called “manual” switching by human operators or the automatic” system.

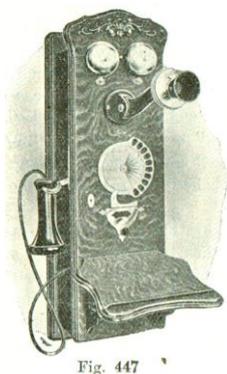
Although the automatic system has had and still has many great difficulties to overcome, it has in America made such astonishing strides that it is likely to play a great part in the telephony of the future.

The penetration of this new technology more than a century ago was larger and deeper than I had previously been aware of.

At the time of writing some 23 towns are working with automatic exchanges. The largest is Chicago which is already operating upwards of 5000 lines and is arranged for a capacity of 100,000 lines.

Perhaps Bart Simpson thought he had invented the prank call at Moe’s Tavern (*I’m looking for Amanda Hugankiss*) but this book succinctly highlights the issue from a long, long time ago.

What is in practise has been found to constitute a very serious defect with the automatic system is that owing to its secrecy (which is in itself one of the greatest advantages), it is especially open to silly tricks of the practical joker, who can operate by calling up any subscriber and give fictitious orders, or use bad language, but with little risk of being discovered. This has become so serious trouble in some towns of the United States that special laws have been proposed to frighten the jokers.



The book introduces the concept of the rotary phone dial and elaborates in great detail on the dial impulse process. *A pivoted dial is provided with a set of finger holes numbered upward from 1 to 10 or 0.* Then it proceeds to describe freshly implemented systems for automated exchanges called Strowger systems, where mechanical banks and wipers create automatic subscriber links.

Many more chapters detail procedures to install underground and overhead phone wires in city and rural areas. Pictures and diagrams show how to manually stand up tall poles with ropes and pulleys.

Rotary Dial phone

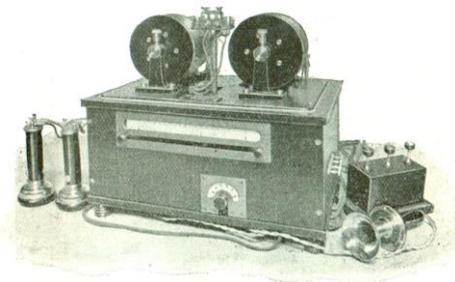
The final chapter titled *Miscellaneous Applications XXXI* is an extraordinary one that describes some of the potential of this new technology. It describes how networks may be used for fire and security alarms. Trials had been performed on dual phone lines to give the listener true stereo sound for transmitted music at remote concert halls. There were also some rather ominous toys for the police to play with:

Another special use is that of checking the speed and the intercepting of offending motorists. For this purpose lines are run along main roads in country districts and at various points provision is made for telephone sets so that two or more policemen may keep in touch with one another along any one line, or connected lines at certain measured distances apart along the road. By means of carefully timed and compared stopwatches the speeds of the motors between the points can easily be observed and the guilty ones brought to book.

Many military applications of telephones are described, with references to the Boer War in South Africa and the Japanese using their phones when fighting the Russians.

The invention of the *Telegraphone* rates a special mention. Phone conversations can be stored with wire recorders. A bobbin with 3 and a quarter miles of fine wire can record a full 30 minute conversation.

This hardware may be used in conjunction with the *Teleautograph*, which it says can use phone lines for sending SMS like messages to unattended phone points.



The Telegraphone

The author even describes *Simultaneous Telephony and Telegraphy* which is essentially voice-over-data networks by keying the line polarity of working voice lines with CW impulses.

APPENDIX 521

TELEPHONE DEVELOPMENT IN
VARIOUS COUNTRIES *
1st January 1905

Country	Population in Millions	Telephones	Inhabitants per Telephone	Telephones per 1000 Inhabitants
United States . . .	76	3,400,000	22.2	44.8
German Empire . . .	58	518,489	112	8.9
United Kingdom . . .	42	365,198	115	8.7
France . . .	39	122,191	320	3.15
Sweden . . .	5.25	112,250	46.8	21.4
Austria-Hungary . . .	48	74,600	644	1.55
Russia . . .	135	60,000	2250	.44
Switzerland . . .	3.3	52,509	62.7	15.9
Denmark . . .	2.5	41,650	60	16.7
Norway . . .	3	41,500	72.25	13.8
Holland . . .	5.3	29,500	180	5.36
Italy . . .	32	27,147	1180	.85
Belgium . . .	7	24,750	284	3.5
Spain . . .	18.6	16,000	1160	.86

The book then finishes with numerous references, charts and call density statistics. There is an interesting chart reprinted here describing populations and telephone penetration in 1905.

It too is worth a bit of a look.

So what can we learn from such a document 110 years later? Certainly concepts, problems and technology that we thought was relatively new were already established back then. The world in 1905 didn't yet know of the ravages of global war, just nasty local ones here and there. A rich

climate of innovation was in progress with a lot of people thinking very hard about technology and problem solving. This tells us much about humans in general today. I see a wide perception that all useful technology we now covet was developed in the past ten years and everything technical *before* that time is useless and irrelevant, which is of course a lie. The building blocks of what we now use were all shaped a long time ago. Our natural curiosity for how we got to here has waned considerably and basics are forgotten.

Between the diagrams and technical details of the book there is another message in the use of the language itself. It is a chatty and well written prose that rivals much of contemporary documentation for its clarity. Today it is not a book to be read cover-to-cover for its expert content, but rather it is a benchmark of its time so that our rate of progress to *now* may be examined and perhaps to extrapolate our potential for advancement in the future.



Gippsland Gate Radio & Electronics Club Inc.



AN INVITATION TO STALLHOLDERS

On Saturday the 18th of July 2015, 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 streets, Cranbourne. High Street is part of the Sth Gippsland Highway. Melway 133 K4.

The Club takes pleasure in offering you the opportunity to become a Seller at our 2015 event. Forty tables will be available for stall holders but due to our NEW early table reservation system, many tables have already been allocated.

Details can be found on our web page at:

<http://ggrec.org.au/hamfest.html>

- Table hire will be unchanged at \$22 per table. A limit of four (4) tables per Stall Holder applies. Table Hire provides access for **TWO** people to operate the stall. It will also include **two** tickets to the door prize and free tea/coffee throughout the day.
- The \$22 fee must be paid in full to the Club within *7 days of booking your table*. Cancellations made more than 14 days prior to the event will be given a full refund by cheque.
- To make a booking contact **Albert VK3BQO** via email to hamfest@ggrec.org.au Payment may be made by sending a cheque or money order (payable to 'GGREC') to Post Office Box 1098 Cranbourne 3977 or by direct transfer to: **BSB 633000 ACC 146016746**.

If paying by direct transfer, please include your callsign / 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** and if **240v power** is needed.
- 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 Albert if you cannot attend or wish to discuss your booking.
- The doors will open for buyers at 10am with a \$6.00 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 working with you again.

10 meter CB conversion

Hi Everyone,

As a follow up from Prac night last week I have put together a list of "specific" 27 MHz C.B.s that can be "easily" converted to 29 MHz.

[The list should be attached to the magazine email in PDF format.](#) – Editor VK3TGX

There are a couple of very specific things we are looking for, they are as follows....

1/ The radios we are after were made by "Cybernet" in the late 70's, early 80's.

2/ The main circuit board in the radio will have the manufacturers part number PTBM-049 on it.

3/ The radio will have 2 crystal oscillators in it and not 3 crystal oscillators. (very important)

4/ Stick to an 18 Channel or 40 Channel radio only, not a 23 channel radio as these usually don't have a PLL in them (there are a few exceptions) .

5/ I've had good success with the Midland 77-882 AM radio, I also have the service manual for this radio as well... (I have also had success with the Midland 13-882 too (a 23 channel set))

Note, other 27 MHz PLL radios can usually be modified up to 29 MHz as well but, I haven't done the research, or, modified any of these radios for over 30 years so you will be expected to research it yourself.

By sticking to the above we only need to cut 2 tracks, solder in 2 links and retune both RX and TX to get the radio working on 29 MHz. Receive is excellent @ 0.35 uV for 12 dB SINAD on AM with a TX power output of 2 to 4 watts on AM depending on how many broken slugs there are.

If you have any questions let me know, I would envisage that a few of us get some radios first and then we can make a night of it. I would suggest looking for them at Hamfests, Ebay and GumTree as a start.

Also note the radio has to be working first before we attempt to modify it. If you get one thats not working let me know and it will mean a trip down to my place so WE can get it going.

Cheers Everyone and 73,

Rob. VK3BRS



General Meeting Minutes 17/04/2015

Start time: 8:00 pm.

Location: Club rooms.

Chairperson: Bruno

Minute Taker: Bryan

Present: As per attendance sheet

Visitors: Nil.

Apologies: As per attendance sheet.

Correspondence received:

1. Renewal notice for VK3BJA received from ACMA.
2. Notice from WIA re. arrangements for ANZAC 100 program in VK, ZL and TC.
3. Notice from Bruno re. participants and proposed program for VI3ANZAC from 2-8 May at GGREC.
4. WIA Board Report #3, March 2015.
5. Note from WIA re. arrangements in place for amateurs to have AR access at Gallipoli ceremonies.
6. Tax invoice from Annis Group re. public liability insurance.
7. Certificate of Currency for public liability insurance for the period 01/04/15-01/04/16.
8. Notice from VK3BRS re. prac night on 3 April.

Correspondence sent:

1. Invitation to Secretary ALARA for members to attend mid-year dinner on 20 June at Arthurs Seat Hotel.
2. Notice to members re. participants required and proposed program for VI3ANZAC from 2-8 May at GGREC.
3. Notice from VK3BRS re. prac night on 3 April.
4. Notice from WIA advising that the TRAC want to know names/callsigns of amateurs who will be on Gallipoli on Anzac Day.

Treasurer's report:

Graeme presented the financial reports for the period 15 March-15 April 2015 and tabled a copy for review by members. If members wish to obtain a personal copy of the reports, they should communicate directly with the Treasurer.

Read: Graeme VK3BXG **Moved:** Graeme VK3BXG **Seconded:** Leigh VK3FACB **Carried:** yes

New Callsigns: Nil. However, Graeme VK3BXG indicated that two candidates were successful in obtaining their Foundation licences. Congratulations Gerard and Aaron.

Previous Minutes:

Read: as distributed **Moved:** **Seconded:** **Approved:** yes

Business arising from the previous minutes:

1. Pub Lunch – a reminder that this will be held at the Cranbourne RSL on 3 May at noon. The Treasurer will be accepting \$5 deposits tonight from those who want to attend.
2. Mid-Year lunch – A reminder to members that this will be held at Arthurs Seat Hotel on 20 June.
3. EMDRC Hamfest – There was a good turnout of people at the hamfest and a wide variety of gear, with some members managing to secure some bargains as they checked out the stalls.

4. Hands-free Kit: We have struck an issue with the manufacture of the boards, which has led to an unavoidable delay. As soon as this is resolved, the project will resume.
5. Repeaters/Beacons – Some issues with VK3RWD have been found. A mod to the PA means that we are now getting 45w to the duplexer. It is now running without faults. The antennas are to be taken down to be fine-tuned. The beacons project is proceeding slowly, and Rob is aware of the deadline to have them on the air, but is hopeful that the work will be done within the timeline.
6. VI3ANZAC Commemoration – At present, we only have 5 people to operate the callsign for 7 days, so if other people are available (even for a short period of time), it would be good to hear from them. To kick off the day (on 2 May) we will have a display of wartime memorabilia. If you have any gear for the display, please bring it along.
7. Fox Hunt – The fox hunt went very well, with quite a number of members participating. Thanks Albert for your work in organising it, and scoring the results. The EMDRC is looking at organising a similar event in future, if participation in this event has whetted your appetite.
8. Eildon Weekend – An enjoyable time was had by those who took part in the Labour Day long weekend excursion.
9. Fire extinguishers – have been replaced, but need to be installed in the shack.
10. Annual General Meeting – a reminder that as tonight is our AGM, subs are due.
11. GGREC Hamfest – At this point in time, bookings are about half full, which is gratifying to see. Advertising is being worked on.
12. IRLP – Equipment is to be collected, and outstanding issues have still to be resolved e.g. where the gear will be housed. The internet connection (for the IRLP) will also have to be arranged. It is important that whoever hosts the devices is aware of the ongoing costs involved.

New website – Is still going well

New business:

1. Working bee for tomorrow (18 April.) This will primarily be to remove the satellite dish from the tower. Bruno and Michael are currently available. If others can attend, that would be much appreciated. Meet at 10.00 am.
2. Upcoming events – May: QRP Radio Show & Tell, together with a display of the oldest bit of gear you have in your shack. June: Antenna photo gallery.
3. Home Brew Award – to be awarded in November.
4. Club shack power supply – Paul VK3TGX is continuing to repair the club power supply. In the interim, Bruno's offer of a replacement is still available. (After discussion, it was suggested that the larger capacity unit might be better for the beacons, while the old beacon p/s could be used for club purposes.)
5. Reduction of costs – The club has just paid for its post box at the Cranbourne Mail Exchange for another 12 months. Given the rising fees associated with the club post box, together with increasing power bills, consideration needs to be given to finding alternatives. One suggestion was that Ian VK3BUF be approached to see if the club could make use of his PO Box so that correspondence could be received in a timely fashion. Investigations would also be undertaken to see if a better deal could be obtained as far as our electricity bill is concerned.
6. Club calendar: Yarn VK3NOV suggested that the event queue appear as a separate page on the club website (as previously) rather than being located within the monthly magazine. (Discussion to take place with Mark VK3PKT to see if this is feasible.)

Meeting closed: 8:45 pm

Next Committee Meeting: 05/05/2015

Next Prac Night: 01/05/2015

Next General Meeting: 15/05/2015



Club Information



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

Office bearers

President	Bruno Tonizzo	VK3BFT	Repeater Officer	Albert Hubbard	VK3BQO
Admin Sec	Bryan Simm	VK3FOAB	Web Master	Mark Clohesy	VK3PKT
Treasurer	Graeme Brown	VK3BXG	Magazine Editor	Paul Stubbs	VK3TGX
General 1	Rob Streater	VK3BRS	Property Officer	Bruno Tonizzo	VK3BFT
General 2	Wayne Cooke	VK3XF	Secretary	Vacant	

Call in Frequencies, Beacons and Repeaters

The Club Station VK3BJA operates from the Cranbourne Clubrooms.
 6m Repeater Cockatoo VK3RDD In 52.575, Out 53.575 CTCSS 91.5
 70cm Repeater Cranbourne VK3RLP In 434.475 Out 439.475 CTCSS 123Hz
 VK3RLP Repeater supports Remote Internet access (IRLP) Node 6794.
 70cm Repeater Drouin VK3RWD In 433.575 Out 438.575 CTCSS 91.5Hz
 Simplex VHF - 145.450 MHz FM • Simplex UHF - 438.850 MHz FM
 VK3RLP Beacons 1296.532 MHz & 2043.532 MHz

Membership Fee Schedule

- Pension Member rate \$25.00 Extra Family Member \$20.00
 Standard Member rate \$40.00 Junior Member rate \$25.00
 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 vk3tgx@gmail.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
 Facebook Page www.facebook.com/GippslandGate