



GATEWAY

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

June 2013 From The President

What a great prac night we had this month. Albert showed us the repeater controller that is being assembled for the new 70cm repeater. The photos of the repeater cabinet looked good on the big screen and we all discussed the progress being made to date.

There was a good mix of new and old members in the shack and we all settled in for the evening with lots to chat about.

Ian Jackson took the opportunity to set up the ventilation system extractor fan to stop the air in the shack from getting stale. Please let me know if you notice an improvement. Vents will need to be fitted to the floor or doors to let fresh air in so until they are fitted, please leave one of the doors slightly open to allow for air circulation.

The hamfest is fast approaching so make sure you have freed up some time to come and help out for the day or part any of it.



Bruno Tonizzo

Wayne has been doing an excellent job of organizing the event so let's make sure we are there to help make the day a success.

In closing I would like to thank Naree and the ladies of the club who wash up the cups after each general Meeting and to Dorothy for baking such delicious cakes for our supper. Don't forget to drop a donation into the tin to show your appreciation.

See you at the May General meeting,

Bruno VK3BFT

CONTENTS

<i>Australia Post Woes</i>	<i>3</i>
<i>Mid Year Lunch</i>	<i>4</i>
<i>The Concrete Curse</i>	<i>5-6</i>
<i>RWD Working bee Photos</i>	<i>7</i>
<i>Just Screw It</i>	<i>8-9</i>
<i>DC-2GHZ Dummy Load</i>	<i>10</i>
<i>May Minutes</i>	<i>11-12</i>
<i>Antenna Weekend</i>	<i>13-14</i>

Event Queue from June 2013

June 21st – Friday Night. [General Meeting at the Guide Hall](#)
From 2000hrs Video on the ISS

June 22nd – 23rd – Sat - Sun. [Winter VHF/UHF Field Days](#)
Head for the hills and see how far you can work

July 5th – Saturday . [Prac Night](#)
[Come](#) along and have a chat, Dummy load Construction

June 19th – Friday Night. [General Meeting at the Guide Hall](#)
From 2000hrs

July 13th – 14th – Saturday & Sunday . [Gippstech](#)
VHF/UHF and Microwave Convention see www.vk3bez.org/

July 20th – Saturday . [GGREC Hamfest](#)
From 1000hrs \$6 entry see www.ggrec.org.au

July 29th – Saturday . [GGREC Midyear Lunch](#)
Details in magazine Held at Arthur's Seat \$10 deposit required

FUN AND GAMES WITH AUSTRALIA POST

As most members will know the GGREC has a Post Office Box in Cranbourne, that it has maintained for the past 20 years or so. Since the Treasurer (Ian VK3BUF) and Secretary (Graeme VK3BXC) both live in Drouin, emptying the P.O.Box in a timely way has been difficult. For the past two years the Club has paid for a mail re-direction from the P.O. box to Drouin. This has worked well and cost about \$70 for a year.

A couple of months ago a renewal notice arrived for the mail re-direction where they had increased the fee from \$70 to \$576 for the current year. As this was pretty outrageous, we sought the reason for the vast increase. It seems that since an audit in late 2012 Aust post decided to deem that all addresses not owned by a private individual, were by default a 'business'. They didn't care that the GGREC was a Not-For-Profit community group. This was a pretty crappy outcome, so we decided to let the mail redirection lapse and have the box emptied manually by a Club member.

Two weeks after the redirection stopped we went to clear the P.O. Box, but it was empty. It had a red 'Cancelled' card taped over the post office side of the sorting room. So where was our mail? We knew we had some membership subscriptions and some Hamfest Sale table hire fees that should have arrived, plus probably some power and water bills.

A quick check of our records proved that the P.O. box 12 month subscription had been successfully renewed and paid for back in March. We then received proof that Aust Post had cancelled our box and was returning all correspondence back to the Senders. Albert, VK3BQO attempted to sort this out at the Cranbourne Mail Centre, but the dullard there insisted that they could do nothing as all accounts were handled by the Cranbourne Post Office. Albert then visited the Post Office where he was told that according to them our P.O.box was paid for and active, but they could do nothing and that he had to go back to the Mail Centre to resolve this.

A distinct lack of interest by the post office staff and a long queue forming behind him prevented further discussions. So where we are now is that we have no working mail address for the Club, even though we are paying for it and all inwards mail is being bounced back to the Sender. We will be returning to the Mail Centre again this week to bring the issue to a head. Hopefully, it will be resolved by the June General Meeting (next week), but anything is possible at this stage. In the mean time, the only safe way to send money or correspondence to the Club is to do an EFT transfer or to pay it in person to the Treasurer.

Ian VK3BUF

GGREC MID YEAR LUNCH



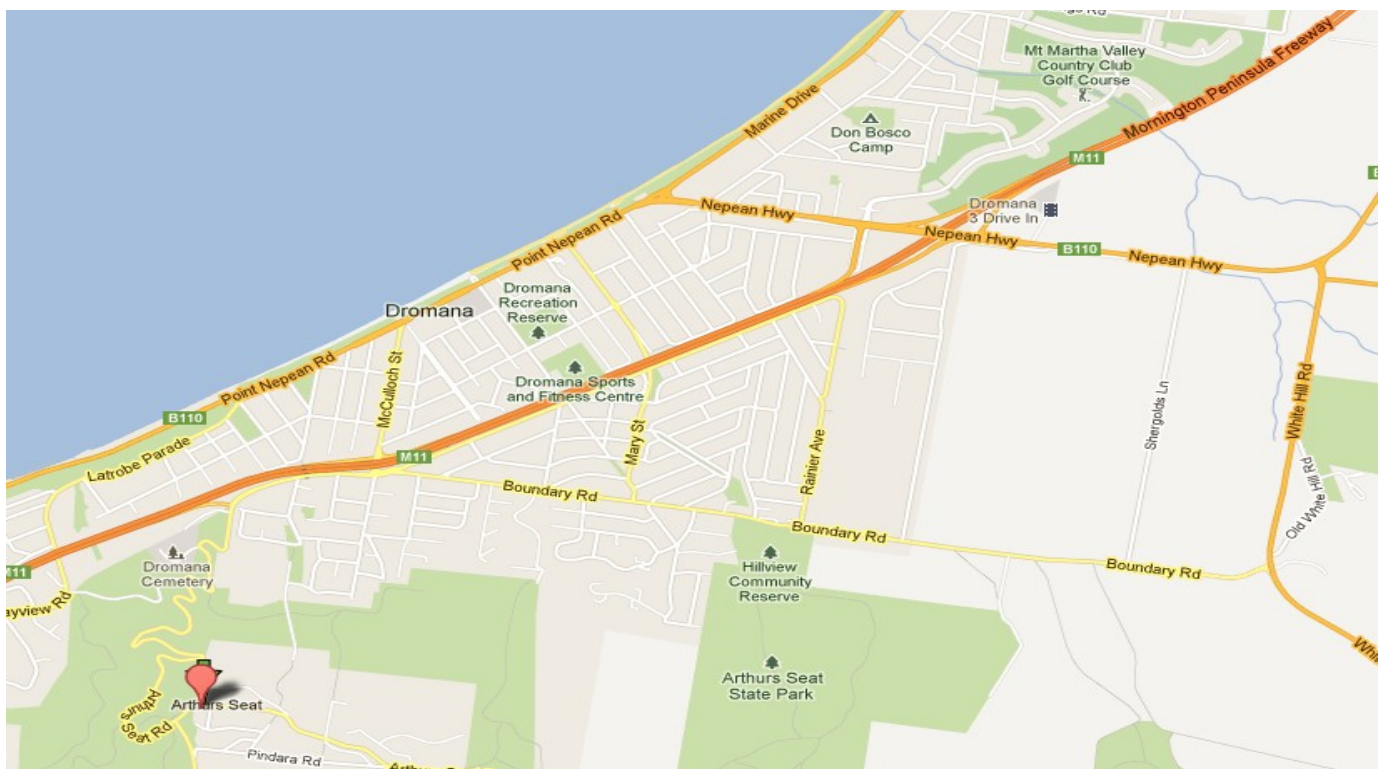
This year we are doing something different. Instead of the traditional dinner at the Guide Hall in Cranbourne, we are going to have a long-lunch at Arthur's Hotel at the top of Arthur's Seat above Dromana. One of the best VHF sites in the state! (bring a hand-held and see for yourself)

This event will commence at midday on
Saturday the 29th of June

For more information on the venue visit the link:
<http://www.arthurs.net.au/>

If you want to join us, we will need a \$10 deposit per-person to be made to the treasurer by the upcoming JUNE general meeting.
(This deposit will be returned on the day as you arrive.)

The venue is Arthur's Hotel, 790 Arthur's Seat Scenic Road. A map of how to get there is below



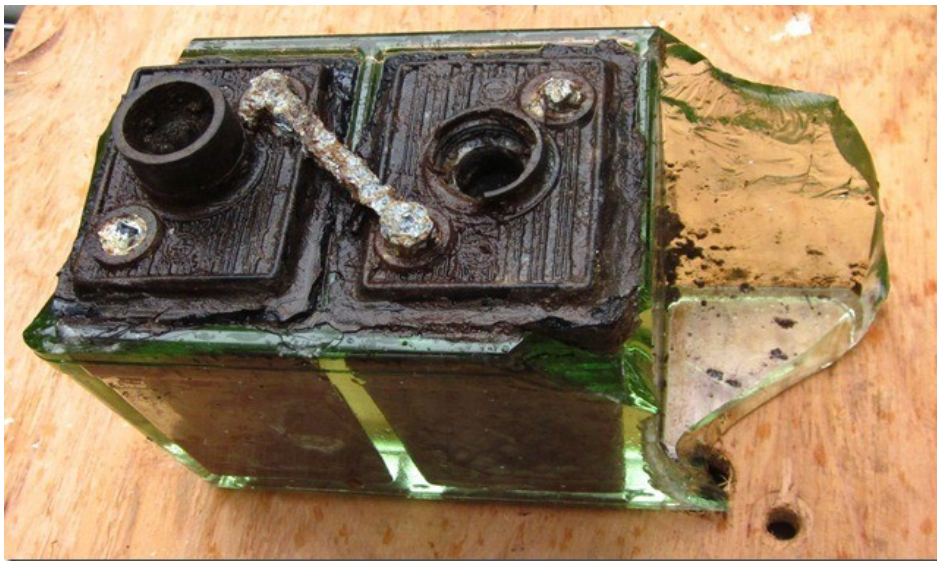
Storing Lead Acid batteries On Concrete

Fact or Fiction

Well, is it true? Will a battery be damaged or discharged by letting it sit on concrete? NO!

Why then do so many people believe that concrete is a battery enemy? Years ago, batteries could have been electrically discharged by sitting on a concrete floor. My dad, for instance, owned an automotive shop for many years. In fact, I grew up on a creeper. My dad reminded me time after time, "Set that battery on wood! I know batteries discharge on concrete because I've witnessed it!" And he was right at that time.

Historical Basis

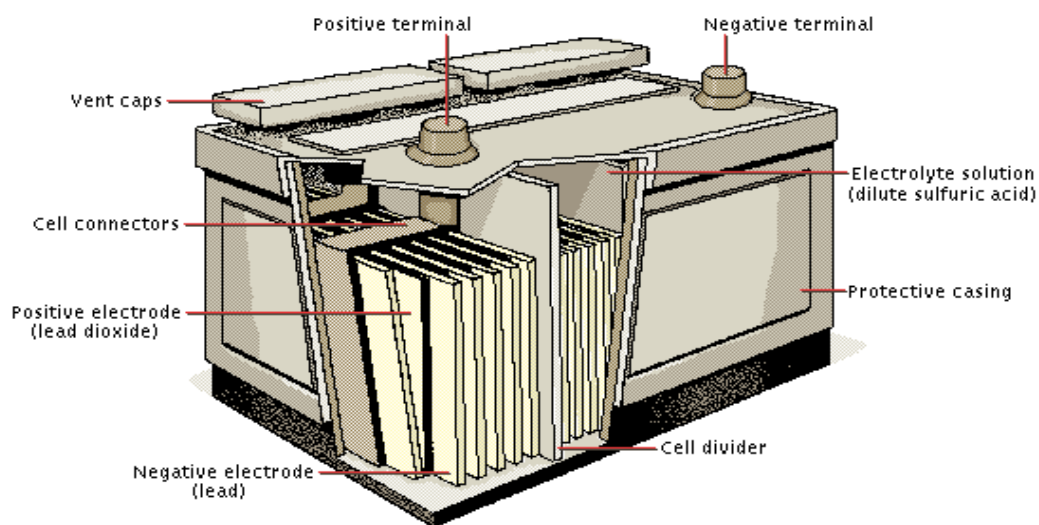


You see, the myth that concrete drains batteries does have some historical basis. Many, many years ago, wooden battery cases encased a glass jar with the battery inside. Any moisture on the floor could cause the wood to swell and possibly fracture the glass, causing it to leak. Later came the introduction of the hard rubber cases, which were somewhat porous and had a high-carbon content. An electrical current could be conducted through this container if the moist concrete floor permitted the current to find an electrical ground. The wise advice of the old days to "keep batteries off concrete" has been passed down to us today, but it no longer applies because of the advanced technology of today's batteries.

Today's Technology

For more than a decade, automotive and commercial battery containers have been made of polypropylene, which is a highly insulative material. In fact, the

Interstate Batteries poly material is at least five times more insulative than the old hard rubber. Also, tremendous technological improvements have been made in the seals around the posts and the vent systems, which have virtually eliminated electrolyte seepage and migration.



Battery Discharging

The fact is, all batteries self-discharge whether they're sitting on the shelf or on concrete. This is why we regularly rotate your inventory. As the temperature increases, a battery's self-discharge level also increases. Some lead acid batteries discharge 4% - 8% per month at a temperature of 80°F. The level of self-discharge is also contingent upon the type of lead plate alloy plus the age and cleanliness of the battery.

If the battery has a surface layer of acid or grime, which is electrically conductive, it self-discharges more rapidly. This surface layer may actually allow you to measure the DC voltage across the battery's poly case (using a 10 meg-ohm digital voltmeter). For that reason, we recommend that you always keep batteries clean, whether they're in storage or in a vehicle.

Grandfather Clause

You may now be thinking that you know more than your grandfather, who tells you that batteries stored on concrete will be damaged. Next time your grandfather says that, I recommend that you just say "Okay" and continue about your business. I'm a grand-father now, and I know that we like to have our way and we like to be right. If my grandson, for instance, tries to tell me that concrete won't damage a battery, you know what I'll say? I'll say if you drop a battery on concrete, it will be damaged.

Article from Interstate Battery Systems of Amercia

RWD Working bee at VK3BXG's

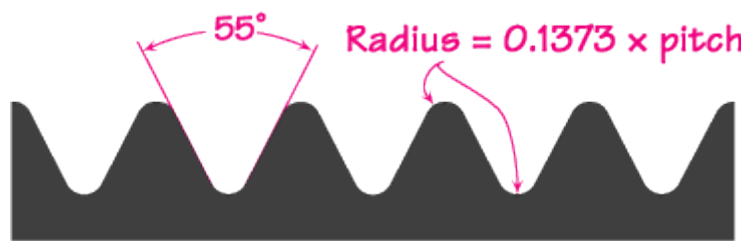


HISTORY OF SCREW THREADS

An extract from the web site: sizes.com

Modern machining was born in the industrial flowering in *late 18th century* Great Britain. The modern lathe, capable of cutting threads with great precision, was invented in 1797 by Henry Maudslay. Even today, for most purposes there is no need for any greater precision than that achieved by Maudslay. Creating threaded fasteners became much easier, but everyone made them to his own pattern. If you lost a nut from a machine, and the shop that made it was out of business, a new nut would have to be custom made to match the existing bolt. Maudslay took on an apprentice, Joseph Whitworth, who proved exceptionally talented. While he was with Maudslay, Whitworth invented the method for producing a true plane surface in steel, one of the fundamental operations in precision machining. He next worked at Joseph Clements, where they were trying to build Babbage's calculating engine, the first computer, and finally set up shop for himself as a toolmaker. By 1859 he had produced a machine capable of measurements to one two-millionth of an inch.

Whitworth set himself the task of devising a standard for threads. He had his own ideas about what would work best, but being a pragmatist he also collected bolts from all over England, noting which sizes experience had shown to be most useful, and the results of various thread forms. In 1841 he proposed as a standard a thread form with an included angle of 55° , and the tops and bottoms of the threads rounded with a radius equal to 0.1373 times the pitch.



In 1857 experience with the first proposal led Whitworth to greatly expand the original [table](#).

Due in part to the immense prestige Whitworth gained from the display of his machines at the Crystal Palace Exhibition of 1851, Whitworth's system was in general use in Great Britain by 1860.

Later a second series with finer threads (BSF) was added.

Americans experienced the same problems from lack of thread standardization that Britain did. The challenge was taken up by William Sellers, scion of an eminent family of American "mechanicians," whose grandfather had made the plates with which the Continental Congress printed its currency. To William himself, among other things, we owe the color "machinery gray." When others were decorating their machinery, he insisted on painting his a uniform light gray, in order not to obscure the functions of the parts. Sellers specified a thread form and a graded series of nuts and bolts that used it.

In 1864, a committee of the Franklin Institute recommended the adoption of Seller's system of screw threads. The thread form became known as the "Franklin thread," or, more commonly "Seller's thread," and later as the "United States Standard Thread." It became the basis of the French standard thread, and then of the *Système International* thread. In May 1924 it was designated the "American Standard Thread."



The main difference between Seller's thread form and Whitworth's is that the tops and bottoms of the threads (the crests and roots) are flattened. The flattened roots was a bad choice. Such angular joins in metal concentrate stress, and the process of manufacture results in high stresses at the roots of threads anyway. The result is cracks and broken fasteners.

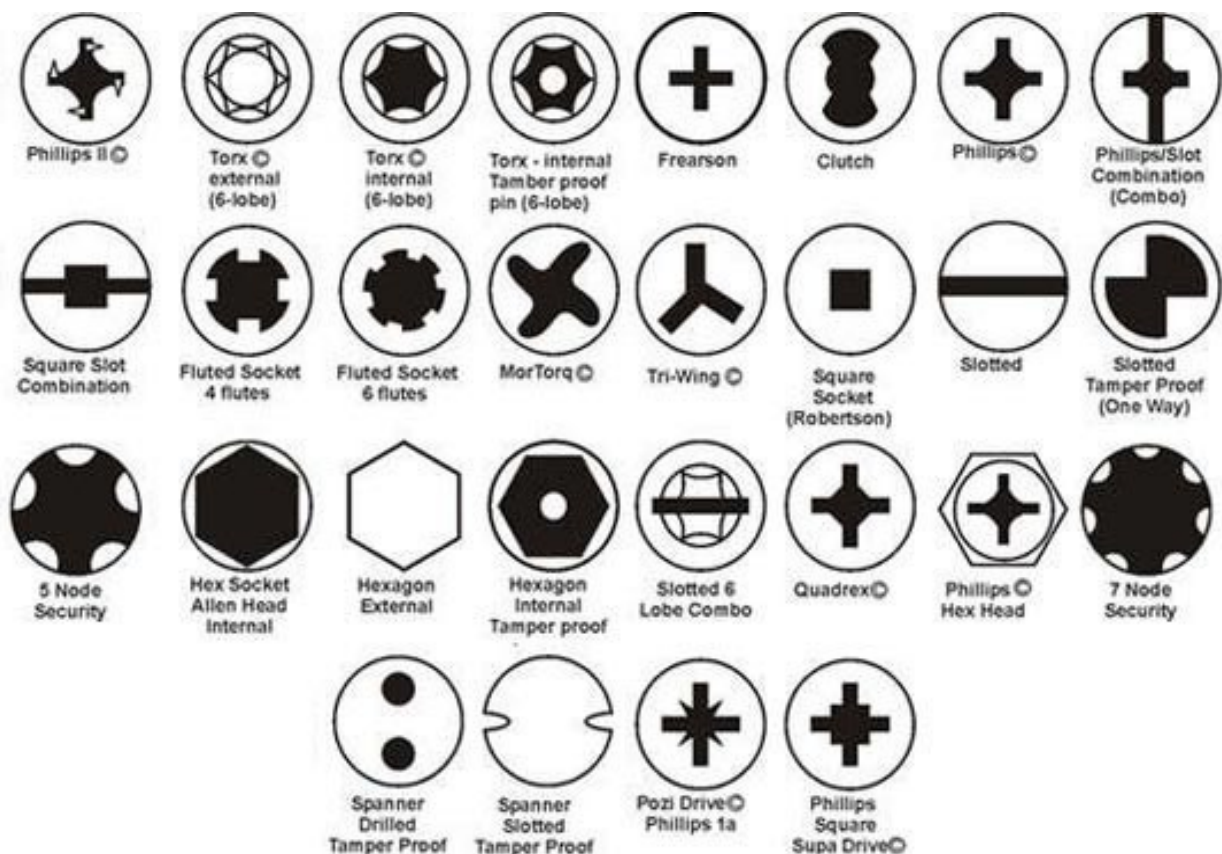
This problem was not so noticeable in Seller's day for two reasons. One was that most machinery was stationary and the weight of a bolt rarely mattered. If a bolt broke it could be replaced with a larger one. The second reason was that thread roots tend to be rounded anyway as the tools that make the bolts become worn.

With airplanes, "just put in a bigger bolt" was not a satisfactory solution, and aerospace engineers finally introduced an American thread form (UNJ) with rounded roots. For example, by changing to this thread form an American car manufacturer finally solved a persistent problem with connecting rod breakage.

Manufacturers adopted Seller's thread form but rejected other parts of his system, such as the formulas for the size of square and hexagonal nuts and bolt heads, and they chose to use a different number of threads per inch for the $1\frac{1}{16}$ inch and $1\frac{5}{16}$ inch bolts.

National societies get into act

In 1907 the American Society of Mechanical Engineers (ASME) defined two series that used Seller's thread, numbering the sizes by gage numbers from 0 to 30. In the series the major diameter increased by 0.013 inch with each size. The obsolete ASME gages are described in this table. Yet another ASME "special" series used the same major diameters, but assigned different thread frequencies.



DC- 2GHz Dummy load

As mentioned at the AGM last month, I have built and tested the Dummy load and can advise that it would be a good addition to any Shack that is on a budget. 5 or 6 people have shown interest in building the dummy load so I have obtained 6 of the Diconex chips along with the F BNC / SO239 connectors and the parts to make a short coaxial lead to connect the load to a rig.

The only part interested parties need to organise themselves is the heat sink , I purchased mine from another club member Doug, VK3KMN who still has some 2nd hand pieces of heat sink available or, you can buy something from Jaycar or Altronics if more convenient (and more expensive ?) ...

On testing the dummy load and with the heat sink pictured, it absorbed just over 100 Watts CW for one minute and it could still be picked up in my hands afterwards (equating to a heat sink temperature of less than 45°C) . It must be mentioned that the Dummy load will only absorb 250 Watts for a short period of time in this current configuration. To increase the duty cycle of the load some means of mechanical / forced cooling is going to be required, possibly a project for later on if there is enough interest ?

The return loss plots (VSWR) shows that it maintains an acceptable VSWR (< 1.1:1) from 1 MHz up to 440 MHz and better than 1.2:1 up to 1300 Mhz.

I am proposing that the prac night on 5th July will be set aside to assemble and test the dummy loads. Bring your heat sinks and \$ 15 (per dummy load) and we will build and test them. If we don't get them all finished on the night then possibly the next prac night can be used to finish them off.

If you have any questions in the mean time, you can send me an email via vk3brs@gmail.com or, a call on the radio.

Cheers and 73's *Rob VK3BR/S*



General Meeting 17th May 2013

Location: Guide Hall Cranbourne
Start Time: Meeting commenced at 2002 hrs
Chairperson: Albert VK3BQO
Minutes taken: Graeme VK3BXG
Present and Guests: As per attendance sheet.
Apologies: As per attendance sheet
New Callsigns: None

Correspondence in:

Consumer Affairs wanting the club's annual return, Email from E Thrift re WIA insurance, ACMA re VK3RDD repeater fees due, ACMA re VK3BJA fees due, A.R Magazine, EMDRC news letter, Wansarc news e-mail Llink, Nerg news e-mail link, South East Water regarding a key audit for the water tower, Insurance certificate from QBE Insurance, ACMA with VK3RDD licence, ACMA with VK3BJA licence.

Correspondence out:

ACMA re VK3BJA and the VK3RDD repeater payments, South East Water with the key audit reply, Consumer Affairs with the annual report.

Treasurers Report:

Ian VK3BUF reports there were no transactions during April but 20th March to 10th May total income was \$337.65 with total expenses being \$4,436.33 which included a write down of \$3864.00 on assets. Net loss of \$4,098.68
Bendigo cheque account \$2,809.51, Bendigo Investment account \$9,221.31
Undrawn cheques now at \$1,085.03.

Moved accepted Helmut VK3DHI, seconded Leigh VK3FACB all in favour, carried.

Ian VK3BUF further reiterated that our income will increase with the increase in membership fees and hamfest but our budget will also increase

Previous general meeting minutes of the April meeting as distributed in Gateways but also read out by Bruno VK3BFT. Rob VK3BRS moved accepted, seconded Leigh VK3FACB all in favour carried.

Albert VK3BQO as an amendment wanted to include a vote of thanks to Mike VK3KTO for doing the QSL cards for the club and members. By consensus all agreed.

Business from the Previous Minutes.

Repeaters Albert VK3BQO reported that VK3RDD was well received for the Oxfam event and since Geoff VK3ZGW has done some changes but it is back on air.

VK3RWD is on schedule and there is a working bee at Drouin on Saturday 25th May – no tools are required just muscle power.

Beacon 1296 is not a hundred percent and suggested we need help maybe from the microwave group.

Hamfest Wayne **VK3ZWC** reports that an advertisement is to go in next month's AR but also requested that flyers be handed out at Gippstech in July. Nineteen tables are still available – two sold today. Ideas for a door prize are still needed. Bruno suggested a tool-kit as a door prize.

TTS, David Wilson – maybe not this year but maybe next will be present.

Bruno advised that the food handling application for a permit has still to be done and food handlers have to be appointed.

All is in progress and soon job appointments will be sought.

I, **VK3BXC** requested flyers for the Eastern Zone dinner Saturday 18th May.

Antenna weekend Ian **VK3BUF** reports will be without limitation – set up an antenna and work on them. Speakers will be needed for the demonstrations and Albert **VK3BQO** and Mark **VK3FSWP** have agreed to co-ordinate the talks. The event will be BYO.

Midyear dinner Ian reports is planned for Arthur's Hotel, Arthur's Seat for a midday lunch on Saturday 29th June A \$10 deposit will be required which will be returned on the day.

New Business

A working Bee to fix a guy wire to support the coax cable from the tower to the shack 22nd June will be undertaken.

For the **June talk** Mark **VK3FSWP** has offered to put together a 55 minute movie off youTube of a floating guided tour of the space station.

Guest speaker ideas are now being sought.

Long term planning example for Melbourne Cup Weekend Ian **VK3BUF** reports is hard to get members to commit but member's thoughts are needed.

Fees, reported by Ian were raised to cover club running costs without having to draw on assets and are due after the meeting tonight.

A heat exchanger design for the shack has been suggested by Ian **VK3BUF** with the out-going air warming / cooling the incoming air. This has come about with members mentioning the air in the shack can get a bit stuffy.

Prac-night Albert **VK3BQO** will be a show and tell of the new **VK3RWD** equipment.

Dxexpedition on Norfolk Lee **VK3GK** reports that over 13 days nearly 25,000 contacts were made world-wide.

Dummy Loads, Rob **VK3BRS** reports the project is moving forward.

Meeting finished 8:45 pm.

Tonight's talk is by Rob **VK3BRS** and Albert **VK3BQO** speaking on tuning cavity tuners.

GGREC Antenna Weekend in October

On October 12 and 13 (Saturday & Sunday) GGREC will be conducting an Antenna Field Weekend in Drouin West. This event will have both social and educational aspects. It will be the first of its type ever conducted by our Club.

There are no fees, charges or booking requirements for those who are attending.

Members and guests of members are invited to attend both days to set up antennas, operate and attend short talks on antenna technology on a quiet 3-acre paddock . The format is informal. Those not wanting to set up and operate are welcome to bring a folding chair and refreshments and just enjoy themselves.

Visitors may travel from home on each day, or camp overnight. There is space for tents and caravans at the site. The Club will be hiring a large, walled marquee to provide some common sheltered space. The Club barbeque equipment will also be available for use. A central campfire will be operating for the duration of the event.

Visitors can erect their own tents, shelters and antennas within the large space provided, using their own power sources. No AC mains is available at the main location, but a battery charging shed has power for re-charging battery packs. One of the themes is to encourage preparation and independence when using of Amateur Radio equipment.

The Club callsign of VK3BJA will be active and full-call licensees will be present, so 'F' calls and those studying for their licenses will have the opportunity to operate at full-license power levels.

On each of the two days there will be two one-hour Tutorial sessions where short lectures on different aspects of antennas will be explored.

Saturday, 1:30 to 2:00pm.....A discussion on random length Long Wire antennas
2:00 to 2:30pm.....A talk on portable masts for field use.

Saturday, 3:30 to 4:00pm.....Mapping antenna radiation patterns
4:00 to 4:30pm.....A summary of VHF & UHF antennas

Sunday, 11:00am to 12:00.....A discussion & demo on Mobile antennas

Sunday, 1:00 to 2:00pm.....Using Antenna test equipment

Visitors are encouraged to bring their own field equipment and gadgets to experiment with.

The location is at the QTH of Ian VK3BUF and Dianne VK3JDI on Old Sale Road in Drouin West. This 7 acre property has an access path to a lower 3-acre paddock where most of the action will take place. This includes a half-acre forest area. The event site is approximately 100 metres above sea-level, secure and secluded from view by roads and adjacent properties. Unless extreme weather prevails, most vehicles should have little difficulty in accessing the site.

Basic toilet facilities will be set up near the pavilion, with AC power, water and conventional facilities present at the top of the hill for caravan owners not wishing to setup down the slope.

For those staying late, or staying overnight, there are some fine take-away Chicken, Fish & Chip and Pizza shops in nearby Drouin township that can provide a meal to be brought back to the camp, or cook your own food on the Club barbeque.

More details about this special weekend will be printed in Gateway as the date draws closer.





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	Bruno Tonizzo	VK3BFT	Repeater Officer	Albert Hubbard	VK3BQO
Admin Sec	Graeme Brown	VK3BXC	Web Master	Stephen Harding	VK3EGD
Treasurer	Ian Jackson	VK3BUF	Magazine Editor	Mark Clohesy	VK3FWSP
General 1	Mark Clohesy	VK3FWSP	Property Officer	Bruno Tonizzo	VK3BFT
General 2	Wayne Cooke	VK3ZWC	Secretary	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 **1296.532 MHz & 2043.532 MHz**

Membership Fee Schedule

Standard Member rate \$40.00 Junior Member rate \$25.00

Pension Member rate \$25.00 Extra Family Member \$20.00

- 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

Facebook Page www.facebook.com/GippslandGate

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

The opinions expressed do not necessarily reflect the official view of GGREC Inc

The Club cannot be held responsible for incorrect information published.