# GATEWAY

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


## *September 2014 From The President*

September has come and is nearly gone. When I look at what I have done over the last wintery months, it feels like there isn't a lot to report on.

But, when you think about the Mid-Year Dinner at the Hastings Marina, our Hamfest and other Club Hamfests, Pub nights, Guest speakers, working bees and prac nights and all the conversations on the radios at night, you realize that we have had a busy winter. Let's keep the momentum going!!

Ian is preparing for the next Antennapalooza which will go from strength to strength as we attract more speakers and cover more antenna topics. It is also a fantastic social weekend camping in the back paddock surrounded by acres of bush land. I will be looking forward to the warmer months and the new activities that we can participate in.

*Bruno Tonizzo*

Don't forget JOTA/JOTI will be on the weekend of the 18th and 19th of October. This is our chance to introduce Amateur Radio to young girl guides and scouts some of who may one day be GGREC members.

Bruno VK3BFT

# CONTENTS



---

# Event Queue from September 2014

**September 19th – Friday Night. General Meeting at the Guide Hall**
**Video on Valve Construction by Mullard**

**October 3rd – Friday Night. Prac Night at the Club Shack**
**From 1930 Hrs**

**October 17th – Friday Night. General Meeting at the Guide Hall**
**From 2000hrs**

**October 18th – Saturday. JOTA At the Guide hall**
**See Graeme VK3BXG for details or to help on the day**

**October 25th - 26th – Saturday/ Sunday. Antennapalooza**
**See attached flyer for details**

**November 7rd – Friday Night. Prac Night at the Club Shack**
**From 1930 Hrs**

**November 14th – Friday Night. Committee Meeting at the Club Shack**
**From 1930hrs**

**November 21st – Friday Night. General Meeting at the Guide Hall**
**From 2000hrs**

# Working Bee and BBQ Christening

On Saturday the 6th of September a small group of members attended the working bee at the Club shack to fix up the Off Centre Fed Dipole (OCFD) which had come down some time earlier. We thought that it was a bit unusual as we had recently worked on this antenna and all looked good. After working on the balun for a while, fitting new fly leads to connect to the dipole arms, the antenna was hoisted up again and restored to its operating position.

Having completed that task, Ian Jackson and I took off to the shops to get some food to christen the new BBQ. When we returned, we found Wayne still half way up a tree with Bryan and others pointing towards the sky.

It turn out that the temporary OCFD mounting (Tennis court light pole) had completely disappeared. This explained why the OCFD had come down. A new pole was erected in a safe place and the antenna was hoisted up and tested, passing with flying colours.

The new BBQ was christened with sausages and burgers and it was good to note that the knobs stayed cool.

Thanks to Ian, Bryan, Wayne, and Dave for another successful day at the Club.

Bruno VK3BFT

# September Prac Night

It was another busy night at the Club rooms as Rob introduced the latest construction project for members.

The portable 2m/70cm J-Pole antenna made from ribbon cable was presented to members and the theory of operation was explained along with how the measurements were calculated.

It was time to roll up the sleeves and warm up the soldering irons before construction began. Everyone enjoyed the night and they will end up with a very handy antenna for portable operations when a rubber duck antenna is just not up to the task. The antennas will be finished off at the next October Prac night.

# Low Cost 10Mhz Frequency Standard

## by Mark VK3PKT

I was looking at a low cost way to build a 10Mhz frequency for my electronics lab. I had a few options that I could pursue, these were...

- GPS Disciplined Crystal Oscillator (GPSDO)
- Rubidium atomic standard (RbXO)
- Caesium atomic Standard
- Oven Controlled Crystal Oscillator (OCXO)

So to make a choice on what I should use I had to come up with design parameters for my frequency standard, these were as follows.

- Had to be low cost
- Had to be portable
- Had to work inside of a building
- Had to be stable, better then +/- 0.5 hertz drift over 2 minutes

The preceding criteria ruled out a GPSDO as that requires an antenna that has a view of the GPS satellites, this would be ok at home but I didn't want to have to make sure I had a outside view of satellites if I was taking it to someone else's shack or like the club shack with no windows this would have been impossible to get a GPS lock.

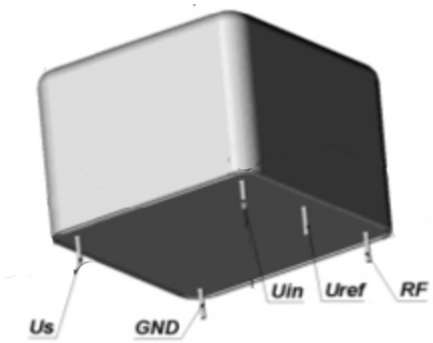
I next looked at atomic standards. The Caesium standards were out of the question due to the cost, second hand you could expect to pay upwards of USD$5000 for one, certainly not low cost by any measure. The rubidium standards were a lot cheaper at around USD$200 so that was an option. This raised the question, did I need the accuracy of a Rubidium or could I get away with a cheaper option ?

This led me to investigate OCXO's to see if they would suit my needs. First was to see if they met my stability requirements. A typical 10Mhz OCXO has a stability of $5x10^{-10}$ This is ±5 mHz drift per second on a 10Mhz signal, well within my requirement of 0.5hz over 2 minutes. The reason I need this stability is for WSPR digital which requires a very stable clock signal.

What about the cost of an OCXO ? Well a quick search of eBay led me to a Double Oven OCXO from a Russian company called Morion. I could get a second hand unit for less than $40 delivered. This particular unit listed stability of better than $2x10^{-12}$ over 1 second which is 0.005 mHz and stability of $\pm5x10^{-10}$ per day at 10Mhz. These figures were well within my requirement's so I ordered two units from eBay.

I now started to put some thought in to the design and construction of the complete unit and what I would need.

- *Very high stability vs. temperature - up to $\pm 5x10^{-11}$*
- *Very low aging - up to $\pm 5x10^{-9}$/year*
- *Not sensitive for rapid changes of ambient temperature*
- *Ideal for GPS, CDMA, 3G applications*




I had an old car computer case that I could use for the project so I ripped out the old motherboard and found some rubber feet in my junk box to put on it, this gave me an idea of the size case I had to work with so I grabbed a ruler and measured it up to see if the OXCO would fit. It would fit with heaps of room for an internal 240 to 12 VDC power supply and a battery.

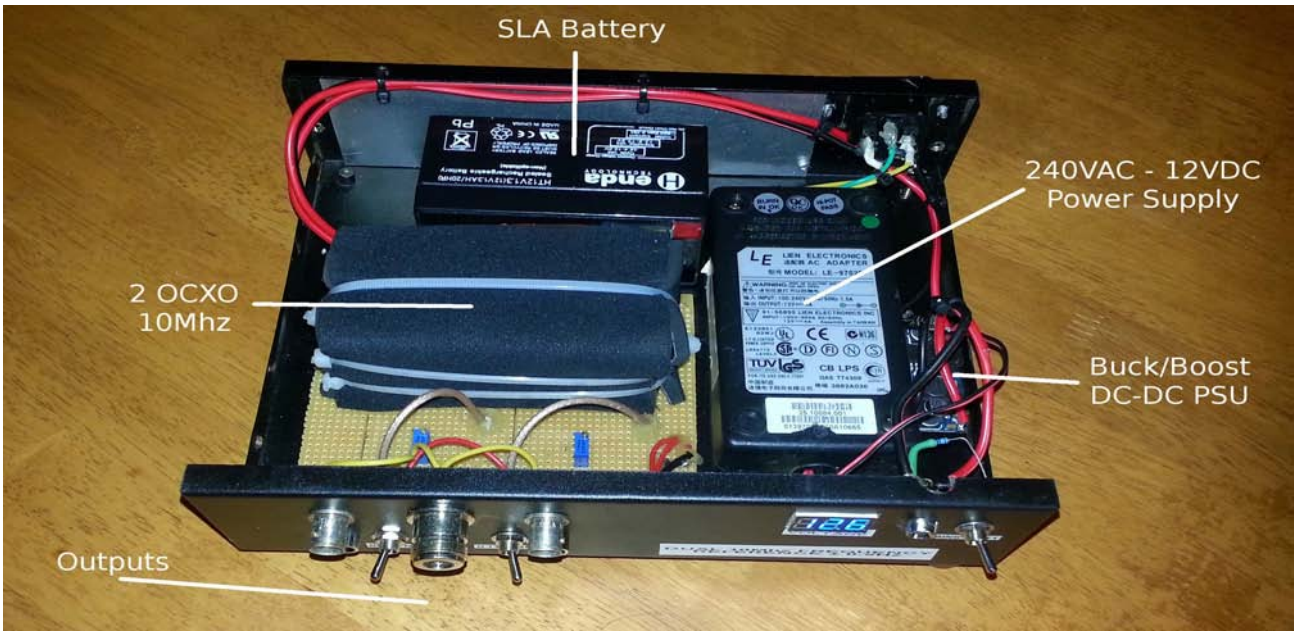
I was thinking about the power requirements for the unit and how I was going to power it. I needed about 1.5 amps for the oven while it is warming up with that dropping to about .5 amps once warm. Wrapping the oven in insulation should drop that even lower. I had an old 4 amp 12VDC power supply from a computer monitor that I could use so I dug that out as well.

At this stage I put the project aside for a couple of weeks while I waited for the OXCO's to arrive in the post. When they had arrived I put one in the case with the power supply and soon realised I actually had the space for both of the OCXO's.

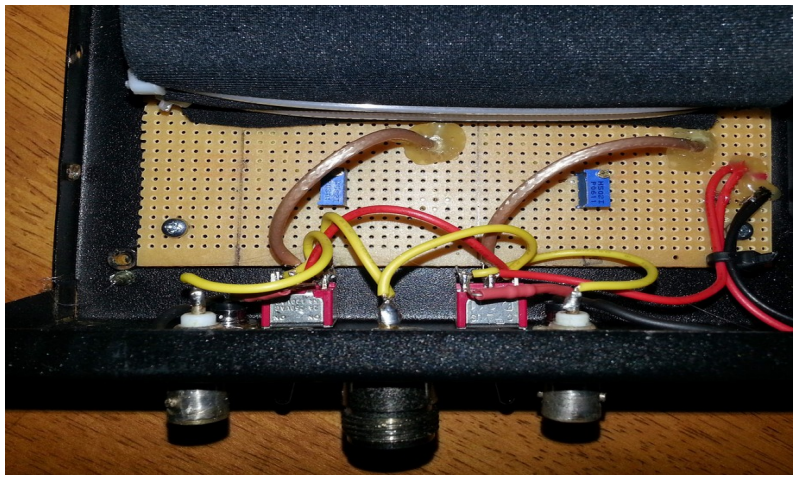
I had originally bought two so I had a spare but I quickly decided at the cost of them I could just run both so I would have two units that I could compare against each other to make sure they were still within specification and also It meant I could connect it to more than one device at once. The signal quickly attenuates if you are splitting it.

I then got all the other stuff together to assemble the unit this consisted of the following.

- Trimpot's to adjust the OXCO
- SLA 12V Battery
- Switches to switch power and outputs
- Veroboard to mount it all on
- LED's for status indicators
- Volt Meter for battery level
- IEC Socket for Mains input
- DC Barrel plug and socket for 13.8VDC to charge battery
- DC-DC Buck/Boost converter to level out battery voltage
- BNC Sockets for the output
- Current limiting resistors for the LED's

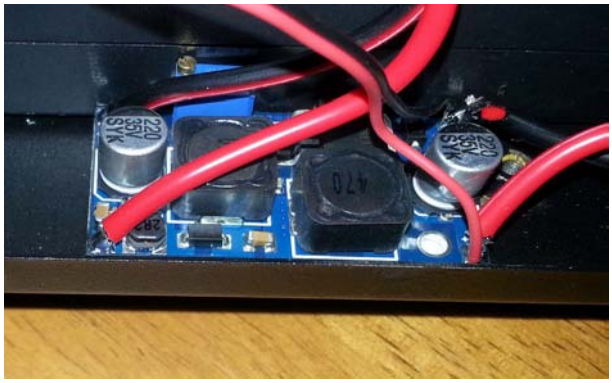



I soldered the two OCXO's on to a bit of veroboard and then connected 25 turn 2KΩ trimpot's with the wiper to the calibration pin with one side of the trimmer to GND and one to the 5VDC reference output on the OCXO, this forms a voltage divider to calibrate the oscillators. I measured the output of the power supply I was going to use and it was 12.3VDC which is within the spec of 12VDC ±5% that they require.



*Trimmers and Front Panel Connections*

The next problem I would have was to power it while travelling, I didn't want a huge battery so I used a 1.3AH SLA battery that I would charge off the car while travelling. I needed to keep the battery voltage at 12VDC into the oscillators while I would see between 14.2VDC while charging and 11VDC if the battery was a bit flat.



*DC-DC Converter*

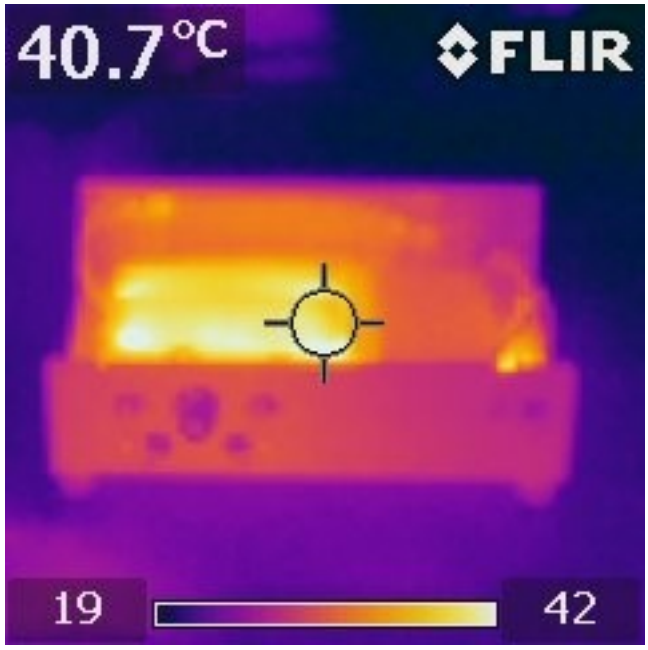
To get the nice 12VDC I used a cheap $2 buck boost DC-DC converter from eBay. They wont supply the 3 amps I need to warm up but it would handle the .5 amps that I had measured once warm. I had managed to get the 400mA current per OCXO down to around 500mA for both once warm by wrapping the ovens in neoprene foam from a stubby holder.

I adjusted the DC-DC converter to output 12.3VDC so it was the same as the mains power supply, this prevents instability of the 10Mhz signal due to supply differences.

I have each oscillator feeding a DPDT switch, one pole switches the signal the other switches an LED on to show the output state, I can feed either the A or B signal to a common N Type connector or to their own BNC connector. A cheap LED volt meter was added to the front panel to show the battery voltage, these are available on eBay for a couple of dollars.


If you were building the unit with one OCXO and had to buy everything instead of raiding you junk box for parts you would need to invest around 80 to 100 dollars. This includes a case the OCXO and the needed hardware. It took me around three hours to assemble.

So what is it useful for ? Well some of the things you can use it for are as a stable reference to calibrate test equipment like frequency counters and signal generators. With a divider board to generate a one pulse per second signal to sync your PC time. This is useful for the digital mode WSPR that requires no more then ±1Hz drift over two minutes. With a general multiplier/divider DDS you can produce signals from 1 hertz to around 100Mhz from the 10Mhz input. This is useful for calibrating rigs to see if they are on frequency.



*FLIR Image Showing Ovens*

All in all I am very happy with the resulting unit and it makes a nice addition to my test bench. If you want to construct one please feel free to ask me questions at a meeting or shoot me an email I will also be bringing it Along to the next meetingif you want to see it

Mark VK3PKT

# SENSORS AND SENSIBILITY

**Ian Jackson VK3BUF**

I can always tell if it is going to be a nice day by getting up and looking into my toilet. This is not like some sort of clairvoyant gross tea-leaf reading thing, it's a scientific observation. You see, we have a septic tank system which is partially sealed through a network of vapour locks and automatic vents. A sudden rise in air pressure that heralds a sunny day also turns our toilet system into a giant barometer and the water level in the toilet will drop several centimetres.

It occurred to me that here is a topic worthy of expansion. Today our homes, our cars and our workplaces are crammed with sensor devices that did not exist outside of a lab only a single generation ago.

Generally speaking, there are two basic categories of sensor device. There are sensors which simply collect information for humans to observe and there are sensors which use the information to make decisions automatically. A thermometer on the wall showing outside temperature may be a passive device which could prompt an observer to put on an extra jacket before venturing outside. An active thermometer sensor can tell your kettle when to stop boiling, shut down your car engine or activate a fire sprinkler system.

*Old machines were heavy & tough*

These decision making sensors have crept into every facet of our lives. Go back a scant 50 years and examine how industrial machinery was manufactured. It looks quite big and chunky. Go back further and it gets heavier and chunkier. Machines were made to perform a task and they had to survive the worst case of stressful situations and unexpected events. To achieve this they used sheer mass to make them 'tough'. By adding more and more sensors to machines it allows machines to protect themselves better and therefore reduce their mass. The machines become smaller, lighter and cheaper to build.

*The Siemens 100 miracle ofMechanical engineering*

Consider the difference between a teleprinter and an inkjet printer. The teleprinter had more than a thousand carefully crafted metal parts and weighed maybe 50 kg. The inkjet may have 150 parts, mostly plastic, weighs about 4 kg. Inkjet printers have sensors to measure ink dosage, track the position of the print head, count the amount of paper left in the tray and much more. In terms of printed output, they perform a similar function, but the inkjet printer can do a lot more.

It is cheap sensor devices that have delivered these products in our homes. Indeed they make our lives safer by monitoring for contingencies we can not see for ourselves. The household smoke alarm is a fine example of this technology. The simple 2-bar radiator now has a sensor switch in its base to kill the

power if it falls over. Earth Leakage circuit breakers in all of our homes monitor both Active and Neutral currents at the same time. If they differ by as little as 30 milliamps, they assume someone is being electrocuted with-respect-to Earth and instantly disconnect the supply. (giving thousands of breakfast eaters warm, fuzzy self-assurance as they merrily pry their toaster with a butter knife to liberate a recalcitrant crumpet.)

We rely upon our sensors to work unfailingly every day. We get to turn our back on automatic garage door closers, safe in the knowledge that sensors will stop the cat from getting squashed.

But what happens when things go wrong. By being surrounded by hundreds of sensors do we not expose ourselves to more risk when they stop working? Many people find the presence of sensor devices as an intrusion. (Is sensorship a new word?) It may be argued that the more we rely upon sensors devices, the more risk we assume without being aware of it. Pushing the brake pedal really hard on a modern car is the right thing to do because the ABS sensors will keep your wheels turning, but put the same driver in another car *without* ABS lurking in the background and pushing really hard is one of the worst things to do. The driver of a vehicle therefore needs to know how much technology is lurking in the background. If they anticipate the presence of a feature that is not there, then they can come unstuck very quickly.

Unfortunately, there is not a lot of redundancy in our systems. A waste water or sewage tank may have a pump that starts when one level is reached and stop when a different level is reached. But a cheap float switch sensor may get stuck or fail at any time. One of two things will always happen. The tank may overflow with unmentionable substances spreading far and wide, or the pump may run-on, go dry and have an expensive melt-down a short time later. Good sensor technology should have a fall-back position. A second sensor is often needed to tell us when the first one has stuffed up. Doubling up on sensors in a given situation doesn't necessarily double the risk of failure, but it does give the monitoring systems more information for its decision making process.

Some of you may remember a classic movie from 1966 with Peter O'Tool and Audrey Hepburn called *How to steal a Million*. In this movie they needed to steal a statue from a Paris museum that was full of the latest sensor technology. It was impossible to get near the target without breaking beams etc and setting off alarms. So they hid in a cupboard at night and set off the alarms with a toy boomerang before hiding once more. Three times in the night they frustrated security staff and police with what they thought were false alarms, until they decided to turn the alarm system off. Later, our burglars simply walked across the room and stole the statue while the alarms were deactivated. For me, the moral of this story is in how do we know when we can trust what a sensor is telling us? With modern cars, almost half of all reported faults are not actual problems, but faulty sensors that are reporting problems. There are many real-life instances where people did not believe their own safety systems when sensors report faults, only to have calamitous failures causing terrible loss of life. Chernobyl's meltdown is just one example of this.

*The weak point in security was inconvincing human guards to loose*

(Jack Lemon tried to warn us….)

Recently I did some work with low-cost gas sensors that look for LPG and Carbon Monoxide build-up in caravans and motor homes. I was surprised to see how much variation there was between the gas sensor devices, sourced from the same manufacturer at the same time. The

baseline for 'no gas present' could be anywhere within 30% of the working sensor range. Unless each sensor was to be individually calibrated with a trimpot, there was no reliable threshold where dangerous gas levels could be detected. I didn't like that idea, because after 5 years these sensors need to be changed and there is no guarantee that the replacement gets adjusted properly. In the end a software solution was used whereby the sensor would run for a minute and self-calibrate whenever it was briefly unplugged and reconnected. With the result stored in memory the alarm threshold is automatically set at 10% higher than the variable baseline.

All too often Sensors won't tell you everything you want to know, but they will still work within a useful range. The trick is in knowing how to interpret the results that are returned. A good starting point is to see how the monitoring system deals with a sensor that has been either unplugged or shorted out. A good system will recognise an out-of-range reading and respond with a meaningful error. A bad system, such as an open-circuit temperature sensor may tell you that it is 255º outside, meaning you need a new probe or a really good sunscreen.

*A voting monitor for temperature sensors*

About 10 years ago I was approached to re-engineer a module for interpreting temperature measurements in a power station. (You can relax...I think it was for somewhere in Egypt) Power stations don't like to damp the fires and shut down because a single thermistor falls off the side of a furnace. This module would monitor three separate temperature sensors. If all three agree, then everything is fine. If one sensor did not agree with the other two, then that sensor was ignored, the plant continued and an alarm was triggered for a technician to examine the suspect device. The original version had a bucket of transistors and 24V logic circuits. The new version had software to perform the same tasks within a small microprocessor. The new unit was also cheaper to build and checked for a wider range of aberrant sensor behaviour than the original one designed in the 1970's. (Siemens distributors had been actively purchasing the spare parts of older power stations and crushing them as an added incentive for new multi-million dollar controls to be fitted where the old controls are no longer supported...but that's another story)

Fundamentally we don't want a sensor to fail right when it is needed the most. How many times have aircraft circled to use up fuel because they could not be sure if the landing gear was locked?. More sensors means more information and more intelligent outcomes. At our home we use infrared beams across the driveway to tell us when deliveries are arriving. One beam alone would drive us nuts with false alarms from birds, bugs and cars on their way out. By adding a second beam and some interpretive software we don't hear chimes unless both beams are broken in the right order. This gives us direction of travel, so the household chime only sounds when visitors arrive, not when they leave. If we were keen, it would be simple to also calculate the speed of the moving incursion, compare it with the duration of the beam break, then decide if it was a person walking, a single car, or a truck that had just arrived. More sensors means more information and better decision making.

*Is it really hot out here, or is that just mythermostat telling me it is...*

Once I was told of a classic case where the air conditioning thermostats on two floors of an office building had their wires swapped by mistake. The

problem took months to find. Someone in the upper floor would feel a bit hot and crank up the temperature on the wall. This just made the floor below hotter, so they would turn the thermostat further down, making upstairs even colder. Before the day was out the upstairs room had snow flurries while downstairs began to feel like Tatooine

There is a natural marriage between sensor technology and interpretive software. Making hot water is a good example. In its basic form, a thermostat heating up a hot water system is pretty dumb. If water is below one temperature it heats. If it is above another temperature, it doesn't. If the sensor is faulty, it can happily boil the water or let it go cold. If software is monitoring the system, perhaps checking other sensors or the time of day, it can figure out that it has been heating longer than usual, or not heating at all. Software can build up a profile of what is normal behaviour, then call for intervention when something doesn't seem right. Good software can find problems you don't realise existed.

A couple of years ago our solar hot water system seemed to be working well, but our power bills went up significantly. Certainly, we had plenty of hot water, but I had a vibe that something wasn't right. I set up a current probe on the booster heating element and connected it to a data logger for a few days. I found out that the Night/Day timer had a welded relay contact enabling the booster heater to operate whenever it liked. Each morning, after a few people had showers, the booster would kick in and re-heat the water to full temperature at the maximum power tariff before the solar panels had a chance to do it for us for free.

*Just because they are in the sun, it does not mean that they are working as they should be*

Without applying sensors and correctly interpreting the results, this could have gone on unnoticed for years.


In the movie 2001 the HAL9000 computer sensors thought that an AE35 unit was going to fail when actually, there was nothing wrong with it. The computer had made a decent attempt at diagnosing problems using its sensors and recommended repairs *before* it failed. It always thought it was doing the right thing "*I am putting myself to the fullest possible use, which is all I think that any conscious entity can ever hope to do*" But then of course, it tried to cover up its mistakes by killing people and generally things went downhill from there…

Sensors get really interesting when they are used in exotic ways to extrapolate information from obscure sources. Like measuring sewage flow rates during ad breaks to work out TV ratings, or a mobile phone camera measuring microscopic changes in facial skin colour from a few metres away to measure your pulse. Satellites can use microphones on their heat shields to triangulate the location and magnitude of strikes by meteorites and space junk particles. Similar technology is now being used by microphones on the tops of buildings to locate where guns have been fired in a city.

A few years ago I speculated on the design of a flow sensor that could be placed in series with the regular water meter. It was going to look for water flow that didn't change for say 30 minutes. If it detected this it could trip a servo motor on a gate valve and turn the water off,

just like a circuit breaker. (The unit could be powered by the water flow itself) In a normal home an extended, unchanging water flow would be abnormal and could mean that there was a burst pipe causing a lot of water damage while the residents are out for the day. A burst laundry hose could give the owner a $1500 water bill on top of the damage to the home. In country areas, prematurely draining the household water tanks through a forgotten tap or a burst pipe would be a huge inconvenience to overcome in a long summer. Maybe one day....

Occasionally it is possible to measure something by omission, which is to say if you cannot measure the effect that you want, then measure as many other things as you can, then extrapolate details of the missing aspect from the hole in the available data. The presence of planets in other star systems can be proven, not by looking for the planet itself, but by looking at the wobble in the orbits of the nearby sun

If you were to plot the pervasive trend of sensor technology you will find that it continues to build up around us. Often helpful, sometimes intrusive. But they're not going away. We need to be aware that while sensors are a window into another world, someone must look through that window to make sense of what has been seen. The intelligence that evaluates the sensor technology is more important than the volumes of data it is possible to collect. Someone or something must establish the value and priority of the information. Like Jane Austen once said nearly 200 years ago... "*Which of all my important nothings shall I tell you first*"

## YOU KNOW YOU'RE A HAM OPERATOR When

- **- you buy electrical tape in ten packs.**
- **- you've stripped wire with your teeth.**
- **- you've told your son that, "One day, all this will be yours", and he doesn't respond.**
- **- you'd rather help a buddy put up a new tower than mow the lawn.**
- **- you've grabbed the wrong end of a soldering iron.**
- **- you start giving out RST reports when you are on the telephone.**
- **- the propagation forecast means far more to you than the local weather forecast.**
- **- the microphone at a meeting don't work and you rush up to the front to fix it.**
- **- you tell the XYL, when she notices a new rig, why that has been there for years.**
- **- your watch is set only to UTC.**
- **- you ever had to patch your roof after an antenna project.**
- **- Ham radio magazines comprise more than 50% of your bathroom library.**
- **- you ever put a GPS tracker in the XYL's car, just so you could watch her on APRS.**
- **- you and the XYL took a cruise so you could visit the radio room.**
- **- you ever tapped out HI in Morse on your car horn to another ham.**
- **- you ever had an antenna fall down.**
- **- your teenager refuses to ride in your car because it looks like a porcupine.**
- **- you know the Latitude and Longitude of your home QTH.**
- **- you go into the local electronics store and the clerk asks you where something is.**

# General Meeting 15th August 2014

| | |
|---|---|
| **Location:** | Guide Hall Cranbourne |
| **Start Time:** | Meeting commenced at 2000 hrs. |
| **Chairperson:** | Bruno VK3BFT |
| **Minutes taken:** | Bryan VK3FOAB |
| **Present and Guests:** | As per attendance sheet. |
| **Apologies:** | As per attendance sheet |
| **Visitors:** | Barry VK3ABH, David Rolfe. |

*Correspondence received :*

*1. Thank you letter from Bernd Wachs re. prize won in Hamfest.*
*2. Notice from WIA re. passing of Lyle Patison VK6ALU.*
*3. Email from President, thanking all members and ALARA friends for help at the Hamfest.*
*4. Emails/correspondence relating to security camera and privacy policy*
*5. Email from NERG re. Winter QRP Trip 2014.*
*6. Email from David Rolfe re. obtaining Foundation licence.*
*7. Email from EMDRC re. Bulletin currently available on EMDRC website (password required.)*
*8. Email from Edward Thrift (WIA) re. proposal for clubs to link with RSL sub-branches for ANZAC Day celebrations in 2015.*
*9. NERG Newsletter August 2014.*
*10. Receipt for Club Insurance received.*
*11. Rotorua ARC August 2014 newsletter received.*

*Correspondence sent :*

*1. Email to David Rolfe re. obtaining his Foundation licence. (cc. to Learning Coordinator.)*
*2. Email to members reminding them about pub night on 9 August and seeking confirmation of attendance.*
*3. Email to members re. Geelong ARC re-enactment of first shot of WWI from Fort Queenscliff, 5 August.*
*4. Email to members re. Pub Night at Cardinia Park Hotel*
*5. Email to members, NERG News August 2014.*

*Treasurer's report : Graeme presented the financial report for the month and tabled same. Members wishing to examine the accounts can do so at monthly meetings, or can apply to the Treasurer, and a copy will be made available to them.*
*Graeme also presented a report on the Hamfest, and while the returns were slightly down on previous years, it was still a very satisfactory result.*
*Read : Graeme Moved : Graeme Seconded : Russ Carried : Yes*

*New Callsigns : Nil.*

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

*Business arising from the previous minutes :*

*1. Beacons: Rob reported that the 23 cm beacon is ready for mounting in a box, while experimentation is still continuing with the 13cm driver boards.*

*2. New BBQ: Has been purchased and is now in the club shack for members to view.*

*3. Hamfest: Another excellent result achieved by the club – thanks to all members for their help in making it a success. For*
*future hamfests we need to consider: 1. Methods of reducing the amount of mud which is brought into the hall, and 2. Different access points for the sellers to unload.*

*4. Pub Night: An enjoyable night was had by those members and their partners who attended. The range of foods available was extensive, at a reasonable cost. The sweets menu was particularly impressive. Thanks to Wayne for organising the venue. Other venues for future nights are welcomed. The Lynbrook Hotel has already been suggested as one that is worthy of consideration.*

*5. Security Camera: A wide-ranging discussion took place about the need for/desirability of installing a security camera at the club. Discussions covered the technology to be used, the area/s to be covered by security, storage of the data, integration with existing security measures (keyfob access), and who should view the data in the event of an incident occurring, or for maintenance purposes. It was decided that the club would proceed with installation of an integrated security system after Committee had developed a suitable proposal bearing all these factors in mind.*

*6. Privacy policy: By law, we are required to develop a privacy policy. There was some discussion about the materials which we currently display on our website e.g. old copies of the club magazine, photos etc. In writing for the club magazine, we need to be mindful of the privacy of others. The Committee will develop a policy for members to consider at a later date.*

*7. Prac nights: We have had excellent turn-ups at recent prac nights, with some 21 members in attendance at the last night involving CROs. The next prac night will involve the construction of 2/70 j-pole antennas using 300 ohm TV ribbon and RG-174 coax. Consideration is also being given to the EMDRC hands-free kit.*

*8. VTAC meeting: Albert and Rob attended this meeting, involving stakeholders maintaining repeaters. Rob reported that there was nothing which directly impacted upon our operations, although an interesting point was raised about whether it is illegal to run an IRLP/Echolink node on a repeater, due to there being no way of preventing unlicensed persons from accessing same. (No clear answer is available at this time.)*

*New business :*

*1. Antennapalooza II document will go out shortly. Ian advised that help will be needed to gather some wood for the fire, and that the marquee has already been booked. We are also looking for speakers who would be prepared to give a presentation (for about 20 minutes) on relevant topics.*

*Meeting closed : 9 :15 pm*

# 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 | Stephen Harding | VK3EGD |
| Treasurer | Ian Jackson | VK3BUF | Magazine Editor | Mark Clohesy | VK3PKT |
| General 1 | Mark Clohesy | VK3PKT | Property Officer | Bruno Tonizzo | VK3BFT |
| General 2 | Wayne Cooke | VK3XF | Secretary | Ian Jackson | VK3BUF |

# 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

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.