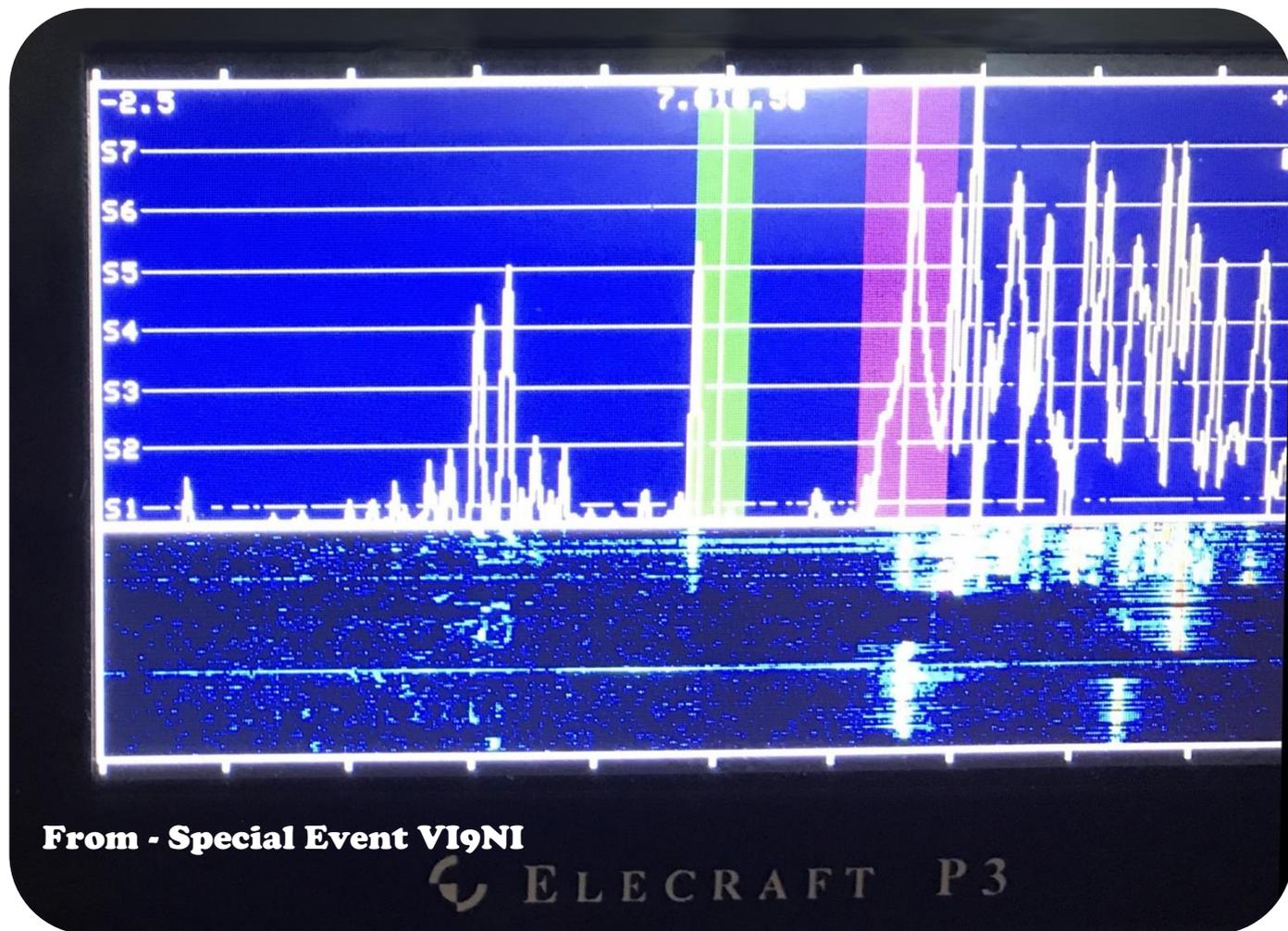




GATEWAY

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

May 2019



From - Special Event VI9NI

Fun With Radiosonde's

Pictures from VI9NI

Super-Capacitor Rocket

And More

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Note: - club meeting minutes are on the club website

Event Queue

May:

17th General meeting – Guide hall, inc a talk on "Experimenting in the 21st century"
24th-26th WIA Annual Conference, Sydney (courtesy WIA)

June:

7th Prac Night – Club rooms
21st General meeting – Guide hall
22nd Annual Dinner, See the bottom of page 3 for details

July:

20th GGREC Hamfest – see Page 9

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President's Report Tony Doyle VK3QX

From the President

To the GGREC members I haven't had an opportunity to get to know as yet, I am a relative newcomer to amateur radio but not to radio communications. I started my radio communications journey in the early 70's on 11 metres. Whilst dissuaded from amateur radio at the time by the need for Morse code, my interest led to my apprenticeship with Philips Telecommunications where I worked in the 2-way radio factory and, later, in field service.

This was followed by the Department of Conservation & Environment working on mobile & base station systems and fireground communications.

I was then seconded to Telstra to help build and maintain the Statewide Mobile Radio network and I was based in north east Victoria.

I then moved back to Melbourne after getting a job with Vertel looking after commercial communications networks and for the past 13 years I have worked for Visionstream managing the Emergency Alerting System paging network used by Victoria's emergency services organisations.

Anyway, enough about me, I hope over time to get to know everyone a bit better.

It has been a very interesting and challenging month resulting in a new committee being elected.

Our committee's vision is to focus the club on its core values of promoting all aspects of the Radio Communications, Telecommunications, Computers and Electronics hobby.

We have a long road ahead of us in ensuring that the club is seen in the amateur radio community to exist for its members.

However, we can't do this alone. We need input from you, the members, to make it work.

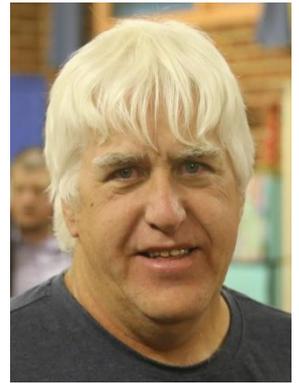
We need volunteers to run the Prac Nights and provide suggestions on topics of interest so that we can find and engage the subject matter experts.

Also, as you will be aware, we now have only 2 months until the GGREC Hamfest. The hall has been booked, but we still have much to do and are working hard to try to make it a success.

At the next GM we will be looking for volunteers to set up and help with running the day, as it is a great source of revenue for our club.

We will see you at the next GM.

Tony Doyle VK3QX



Experimenting In The 21st Century

Presented by Wayne VK3XF and Allan VK3SLR

It's a light hearted talk about D-Star, C 4 fm and DMR including access through a hot spot (dv mega blue stack) using an old android phone and a phone app.

The talk will also include i.P. phone technology to radio and some applications that link android devices to radio linked chat rooms that are connected to repeaters worldwide so it will be a bit of fun with technology and no valves will be harmed.

GGREC Annual Dinner

As the original idea was just that, a private room has been tentatively booked at the Dandenong Club, corner of Heatherton and Stud Rd's in Dandenong, for 6pm on 22nd June.

To hold the booking, we need to know numbers of attendees by the end of this month's GM. Please note the time as it is not for lunch.

Members will be asked on Friday night for guaranteed attendance as there is a minimum number required.

From The Editor



This is going to take some time!

The other week, Me, Ian, & Bruno met up at Graeme's QTH to start sorting through all of Graeme's equipment so club members can make a selection of what they may like to buy.

Graeme was quite a collector, with three trades under his belt, plus an active radio, Camping, music and a bit of motorcycling/automotive interests, his collection is shall I say 'vast'

There is this growing pile of 'stuff' to be sorted, catalogued, and moved on. It would be nice if it all finds a new home but unfortunately some will probably end up in landfill. Finding a home for an open reel black and white video recorder is a tough one, etc. The picture above is the results of day 1, about 60 items, on my next visit I catalogue another 6 items (on my own), and I basically have not yet touched the radio's as I had to do this lot before we could get anywhere near them. Hopefully they will be front and central to my next visit. Graeme didn't restrict himself to Amateur gear, he loved picking up CB's and the occasional flying doctor radio when attending hamfests and the occasional automotive buy swap sell events. As such he also has a well-stocked pile of "For Parts"/repairers delight radio's and test gear.

I have been building an Excel spreadsheet of the items so far catalogued; it can be accessed on my DropBox account using this link.

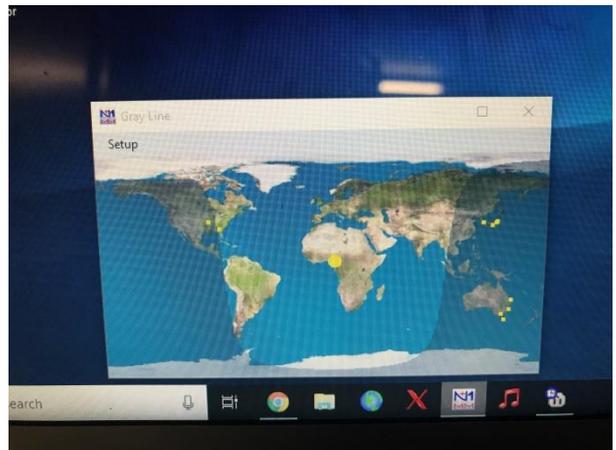
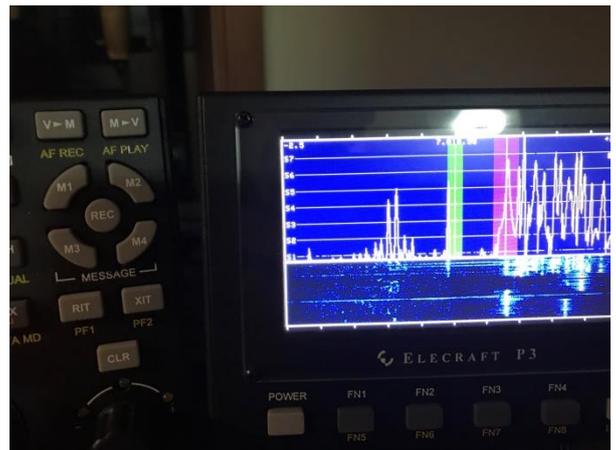
<https://www.dropbox.com/sh/tkqdg6hlg1og9ru/AABYDrL8lCu4RZadFkL3l7UOa?dl=0>

Download it to your PC and view it there, Don't try any of DropBox's viewing options, they can't handle it. If you hover your mouse over the 'Description' field you will find most items have an attached picture. I'll try and keep the DropBox file updated, so check back now and then.

If you have any idea's how to do this better – Speak!

Paul VK3TGX

Special Event Callsign VI9NI

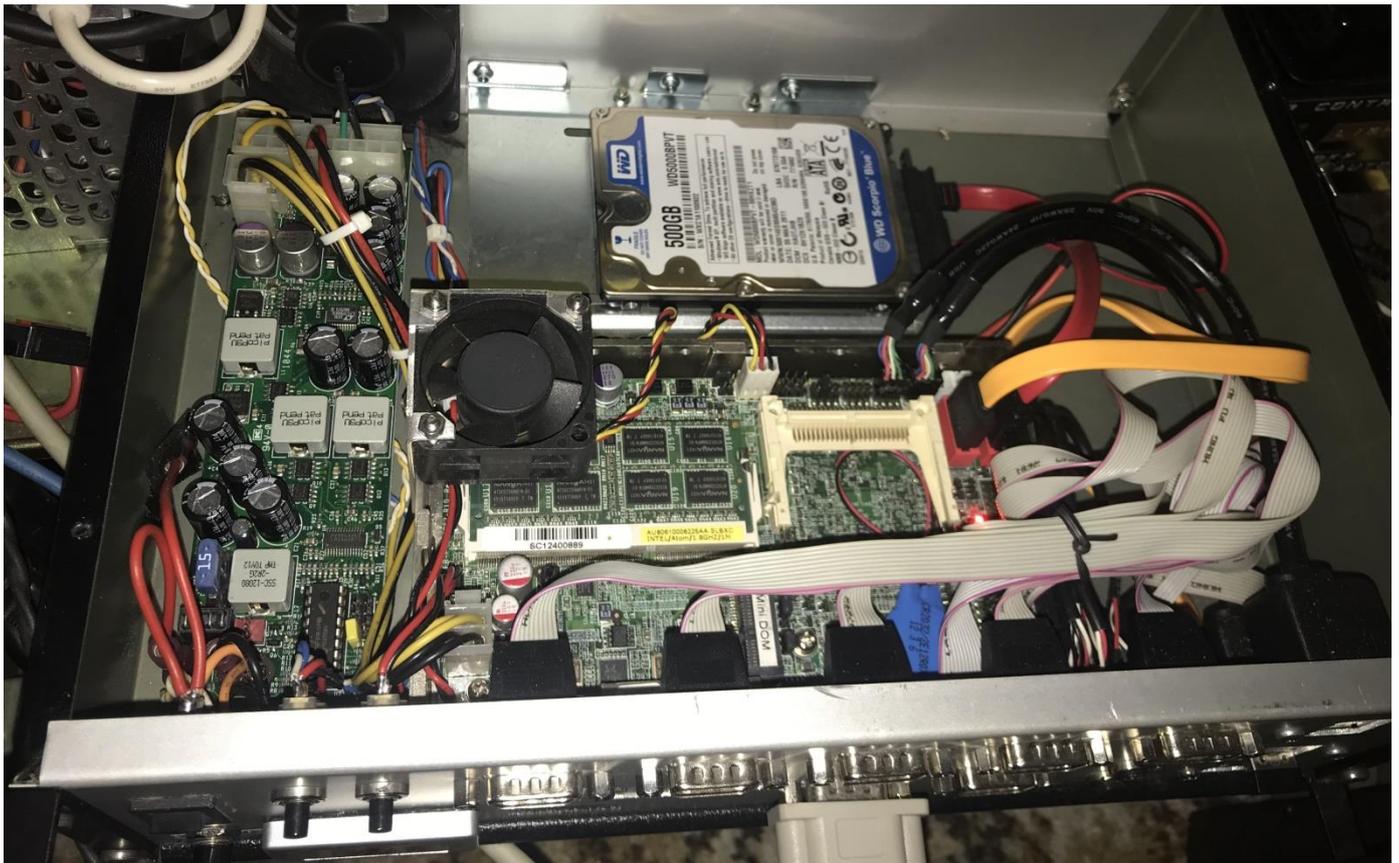


Some photos from the VI9NI event that didn't make it into last month's Mag.

Thanks go to Chris Chapman VK3QB.

From The 3TGX Repair Bench

The Dead DVR PC.



The other day, a computer I use as a security camera recorder (among other things) decided to crash. It had done this twice in the past few months, I had just hit the reset button and it had roared back into life. This time it was different, pressing reset got me nowhere, after seeing the POST (Power On Self-Test) boot screen, nothing. So next was a full power cycle, that got it going, but only for a short while, about an hour, then I was back to square one.

So I tried to get into the bios setup screen to see if any hints could be gained there, it would not enter setup, it just froze, until eventually self-resetting. I tried half a dozen times to enter the setup screen to no avail, so is the main board dead? Then I remembered one possible cause, the hard drive. The HDD on this machine is connected by a SATA cable, and a lockup on the SATA buss can easily cause a computer to hang as it waits for a response.

So without cutting the power I gently slid the machine part way out of the cabinet, just enough to let me unscrew the lid and gain access to its innards. If I cut the power everything would reset and I'd be none the wiser as to what was stopping the show. Now with access I gently pulled the SATA HDD cable from the motherboard/mainboard (actually it's a one board industrial controller PC) and I was then immediately able to access the setup pages.

So there we have it, a dead hard drive. These things are defiantly built to a price, I'm not talking hardware here, rather the on-board software and how they handle troubles. Quite often if they cannot do what has been requested of them, (Like write to a flaky sector) they will just lock up and not respond to any commands at all, so if the computer is reset (or has an auto reset 'watchdog' function) you won't get anywhere because the only command this drive will obey is a hard power reset – pretty poor in my book. In the 'Good old days' the operating system would see the errors on this sector and flag it as bad, never again attempting to use it, sure you just

had a file corrupted, but the show would go on and you could fix the corrupted bit. Not with these newer drives, it all comes to a screeching halt with no way to recover, pity if you are part way into editing a masterpiece, no option to save, nothing just lose the lot with a power reset.

WD, or Western Digital hard drives come in several grades, the base is WD Blue, economy drives for the everyday home PC user, Next is WD Black, High performance for those who want speed, then we have WD Red, rated for NAS (Network Attached Storage), or in old school talk, file servers, where the drive has to handle read/write requests from multiple users, then we have WD Purple surveillance hard drives, designed to handle continuous writes 24/7, Yes there are higher orders, but they are aimed at enterprise etc., and are not as easy to afford/source.

I personally am biased towards WD, they are not the only kid on the block, but I know more about their range, so I tend to default to them. Seagate use to be the lesser brand, but they seem to have come back with a vengeance, so maybe they will be my next source.

This machine was built with a WD Blue 500 Gig laptop drive, I figured it would take it as the write load from the DVR security side of things was fairly low as I am only recording from 4 composite video cameras, and that is only at 1 frame per second, I've gotten a few years out of it (I think, I don't know the build date). Now I've swapped in a 2TB WD Purple drive, providing 400Gig of video (several months' worth), & 1.4 TB of general usage NAS storage.

The Dead XP PC (Long live the XP king)

The next problem came when I tried to boot up my Windows XP box. This machine is a bit of a play thing, not used for much in the way of serious work, I scored on old smallish case fitted with an Intel Core2 duo motherboard. Handy at the time was an old Intel 32Gig SSD that I scored from my previous employer. Now popping in a HDD setup for a different machine is usually bound to bring on a whole lot of troubles, it will have all the wrong hardware drivers, and trying to run things using them usually causes lockups, or a 'Blue screen of death' etc.

Amazingly this time it did boot, and was then able to pull the correct drivers from the Microsoft servers. When done I looked at it and said 'Yes this looks like an XP box', that and the fact that an SSD on a Core2 duo made it boot darn fast, I was happy so that's how it now lives.

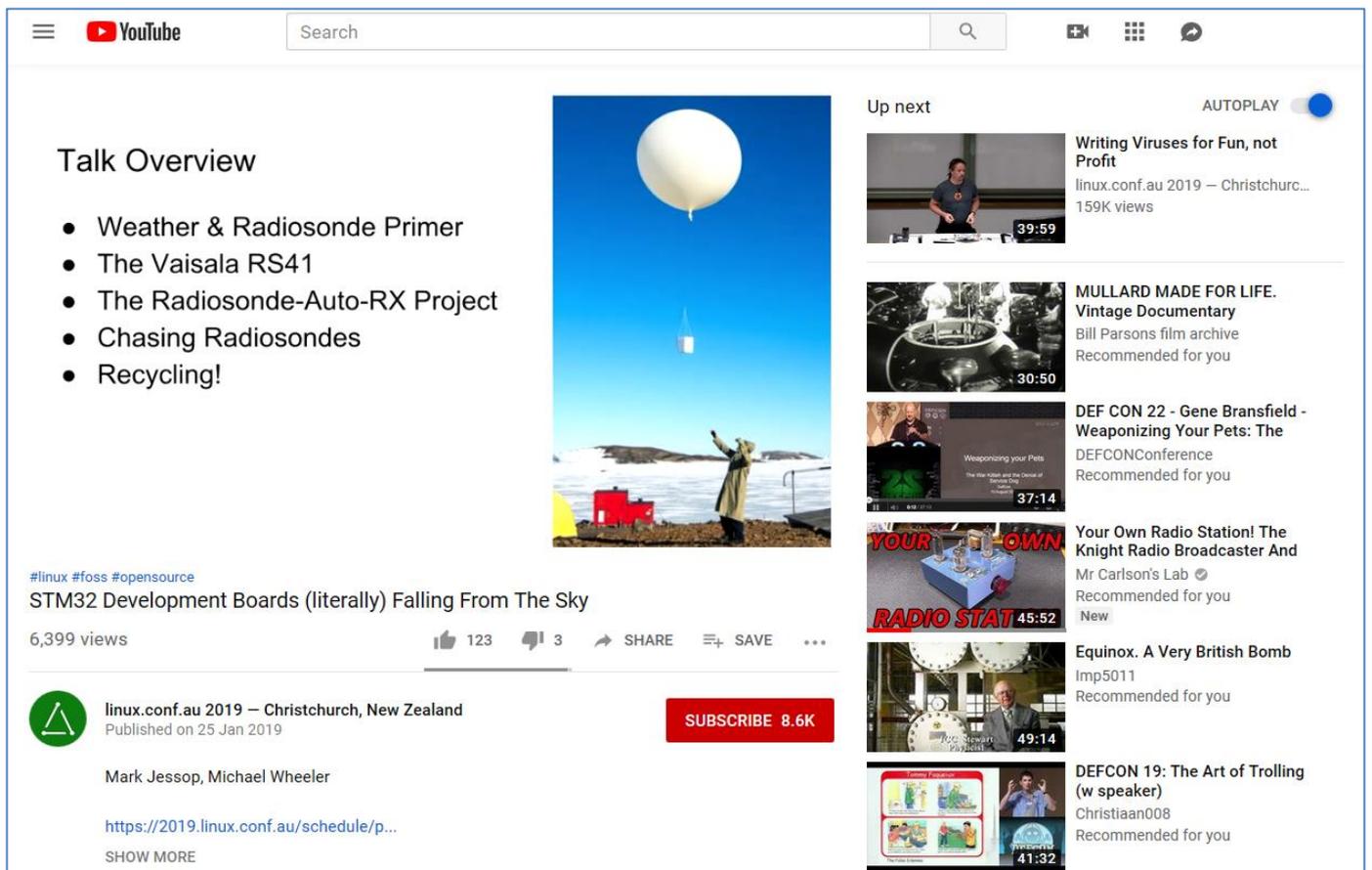
Now to the story, I was playing with a Teac Digital Juke box, it came with software to allow PC access. I loaded the software onto an i5 Windows 10 PC, no joy, so how about using an XP box, so out with the above machine, Dead, nothing, no video (the screen went to sleep), and no lights from the keyboard or mouse, and even more strange, no beeps from the motherboard.

So off with the lid, wiggle a few connectors, half unplug the ram and reseal it etc. etc. etc. No luck. So I disconnected everything possible (actually not that much) to bring us to the barest minimum, still nothing, not even a beep. Time to get drastic, so I pulled both 1Gig ram sticks and turned it on, finally something, the standard slow BEEEP BEEEP BEEEP. This is normal, it's telling you 'I have no memory, I can do nothing'. Finally, signs of life, so I plugged in the first memory stick, back to totally dead. Ok, lose that one and try the other stick, success – Oh it looks like we have a dead RAM stick. Now 1Gig is enough for Windows XP, so that's it for now, time to put the lid back on and play....



Paul UK3TGX

Fun With Radiosonde's



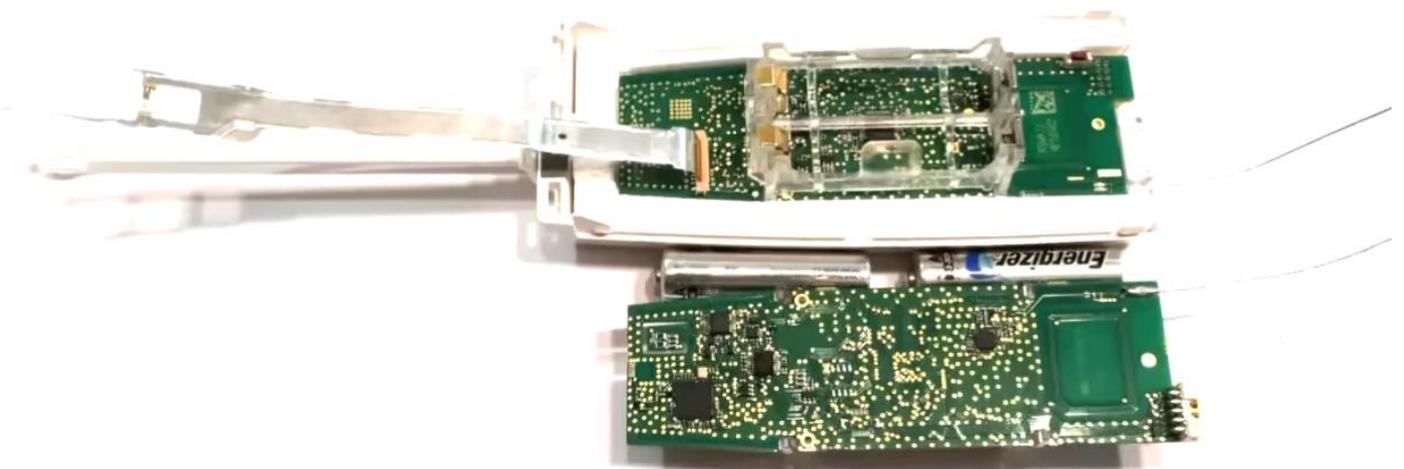
The screenshot shows a YouTube video player interface. The main video is titled "STM32 Development Boards (literally) Falling From The Sky" by the channel "linux.conf.au 2019 - Christchurch, New Zealand". The video has 6,399 views and 123 likes. The channel has 8.6K subscribers. The video description includes a list of topics: Weather & Radiosonde Primer, The Vaisala RS41, The Radiosonde-Auto-RX Project, Chasing Radiosondes, and Recycling!. The video thumbnail shows a person in a field with a white balloon and a red box. The "Up next" section on the right lists several other videos, including "Writing Viruses for Fun, not Profit", "MULLARD MADE FOR LIFE. Vintage Documentary", "DEF CON 22 - Gene Bransfield - Weaponizing Your Pets: The DEFCON Conference", "Your Own Radio Station! The Knight Radio Broadcaster And Mr Carlson's Lab", "Equinox. A Very British Bomb", and "DEFCON 19: The Art of Trolling (w speaker)".

Here is a good YouTube video to watch

<https://youtu.be/YBy-bXEWZeM>

This talk was given to the Linux community at a Linux conference in Christchurch, hence the difference to their naming and mine, it was presented by Mark Jessop VK5QR and Michael Wheeler VK3FUR. Radiosode's are a onetime use 400-406 MHz weather telemetry 'beacon' launched all over Australia by the BOM, after they come down, they are free to a good home.

Vaisala RS41 Radiosonde





Gippsland Gate Radio & Electronics Club Inc.

AN INVITATION TO STALLHOLDERS



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

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

Details can be found on our web page at:

ggrec.org.au/site/hamfest

- Table hire remains unchanged at \$22 per table. A maximum of 4 tables per Stall Holder applies. A **booking** provides access for 2 people to operate the stall and includes 2 tickets to the door prize and free tea/coffee throughout the day.
- The \$22 fee must be paid in full to the Club within 14 days of making a booking else your selected tables may be reallocated. Cancellations made more than 14 days prior to the event will be given a full refund by Direct Transfer (EFT) or by cheque if Direct Transfer is unavailable.
- To make a booking please contact us by email at: hamfest@ggrec.org.au. Payment may be made by direct transfer (EFT) to: **BSB 633000 ACC 146016746** or by sending a cheque or money order (payable to 'GGREC') to: GGREC c/- Dianne Jackson 408 Old Sale Road Drouin West VIC 3818. If paying by direct transfer (EFT), please include your call sign/name as the reference.
- When making a table booking, Stall Holders will need to provide a **Name, Postal Address** and **Contact Phone Number** with a **Return Email Address** if different to that in a reply. Table requirements will include **quantity**, if **240v power** is needed and preferred table number(s) from the website plan. Preferences are not guaranteed.
- Upon receipt of the \$22 per table fee and contact details, a **Booking Number** will be sent as a receipt of payment. **IMPORTANT! No booking is confirmed until this number has been received by the Stall Holder.**
- Access to the Hall shall be from 8.30am (earlier if ready) for Stall Holders (and not later than 9:30am unless by arrangement).
- Transfer of your booking to another person is not permitted. Please contact us if you cannot attend or wish to discuss your booking at: hamfest@ggrec.org.au.
- The doors will open for buyers at 10am with a \$7.00 entry fee.

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

The Teac DJ-505 Digital Juke Box



Recently I got to play with one of these machines, it was actually Graeme's, I stumbled upon it whilst sorting through Graeme's things. So I asked Toni if I could borrow it.

It is basically a computer hard drive based audio source. Inside is a Western Digital 80 Gig hard drive where all your music gets stored, so to play anything from your selection just requires one remote, no getting up to change disks or turn tapes over etc. Graeme had three of these things, I believe obtained from eBay. He did mention he had trouble talking to them with a computer, so this looked like a golden opportunity for a play/review.

As you can see, they are sized to slide right into your Hi-Fi system, and not look out of place like a computer may do, that and the fact all you need is the included remote control to run the show, sold what could go wrong, musical nirvana.



The first thing I noticed is it vibrates somewhat, mostly from the spinning hard drive. The drive is mounted on rubber dampers, however they are not very effective, oh well, don't mount it near your turntable. The second thing of note is the remote control, it's a brute, complete with a back-lit graphical LCD display, all run by 4 AA cells, not the 2 AAA's more commonly seen.

I hooked up an amp and let it run, it sounded fine, I felt limited by the selection's available on the HDD, I was first off listening to the Rhinestone Cowboy' by 'Glen Campbell', source recording (i.e. CD, Vinyl, Tape etc.) unknown. next came ABBA, However I then found the good stuff, later on I suddenly realised that my neighbour could come over and punch me in the nose, it's 1:46 am, A tad late to have the house a thumping! One annoying thing is all this music is being stored in a compressed format, with no info provided about file size, bit rate, or sample rate available. I pressed the 'info' button on the remote and got nowhere. On the back panel is 4 RCA sockets, two out, and two in, so Yes this thing can record directly to the hard drive. Also back there is also a Toslink digital output, so yes this thing could serve as a source for a much more upmarket Dac (Digital to Analogue Converter), but then again, if you are spending up big on high-end Dac's, amps and speakers etc, then why

Yes the LCD is missing a line

would you then limit your listening by using compressed audio?

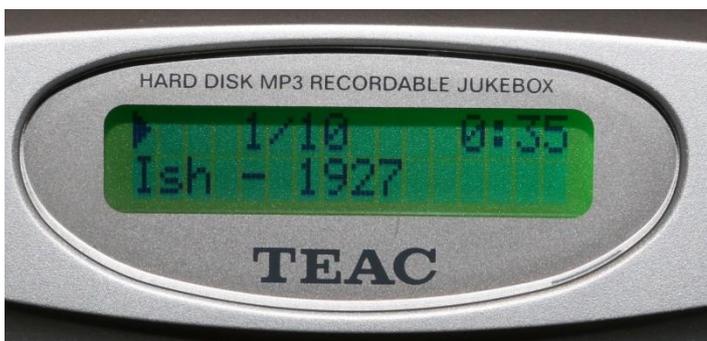
So out with a computer, let's see what the front panel USB 'B' socket provides. Being a USB 'B' means it is expecting a computer, not a memory stick etc. With the computer connected all audio operations cease immediately. It appears to a computer as a USB hard drive, with two volumes. The first contains the PC software you need to control it, the second, has a heap of hidden one gigabyte files, totalling 74 Gig, along with two blank files whose titles say this is the system disk, DO NOT TOUCH. To a lot of people all these hidden files will not be visible.

It would appear they (Teac) have built a 'secret' file structure inside these hidden files. They probably are trying to sit on some high moral ground saying 'no one can pirate audio from our devices'. Somewhat pointless given that 99% of audio will probably enter it via either the front panel CD drive, or through the back panel audio in jacks, so the owner has the source discs that he can else wise copy to his heart's content, all this carry-on isn't going to stop anything.

So I installed the software on a Windows 10 computer, all went well till I tried to use it, amazingly Windows didn't pop up an error message saying this software will not run on this computer, quite a common and annoying occurrence when playing with yesterday's toys.

Unfortunately that's where the fun stopped, windows ran it fine, it just could not see the players USB connection, strange as I have just installed the software over that very USB link. Maybe it's Windows 10 after all?, how about an earlier OS, so next I plugged it into my XP computer, No. How about Windows 7, still No. I could dig out a copy of Windows Vista and try that, however that's a complete system setup/install etc., I'm not sure I want to go that far. The next thought is it computer speed, my XP machine is quite a bit fast by XP standards of the day, so I dug out my old HP laptop, same story, The software always installed with no errors, and ran just fine, it was the USB connection that had it stumped. In the end, 5 computers, same story.

So off with the lid, let's pull the HDD and have a look with a HDD to USB adapter. Unfortunately this revealed nothing the machine was not telling me via its own USB interface. So time to experiment, How about seeing if I can grab an image of the whole HDD. These days my tool of choice is Macrium Reflect, commercial hard drive imaging software that can be used for free if you are a home user. That worked fine; there was one error message however I did get a usable whole drive image. Then to further the fun, I tried imaging the drive whilst it was in the player using the front panel USB socket, again, it worked just fine. One of the computers

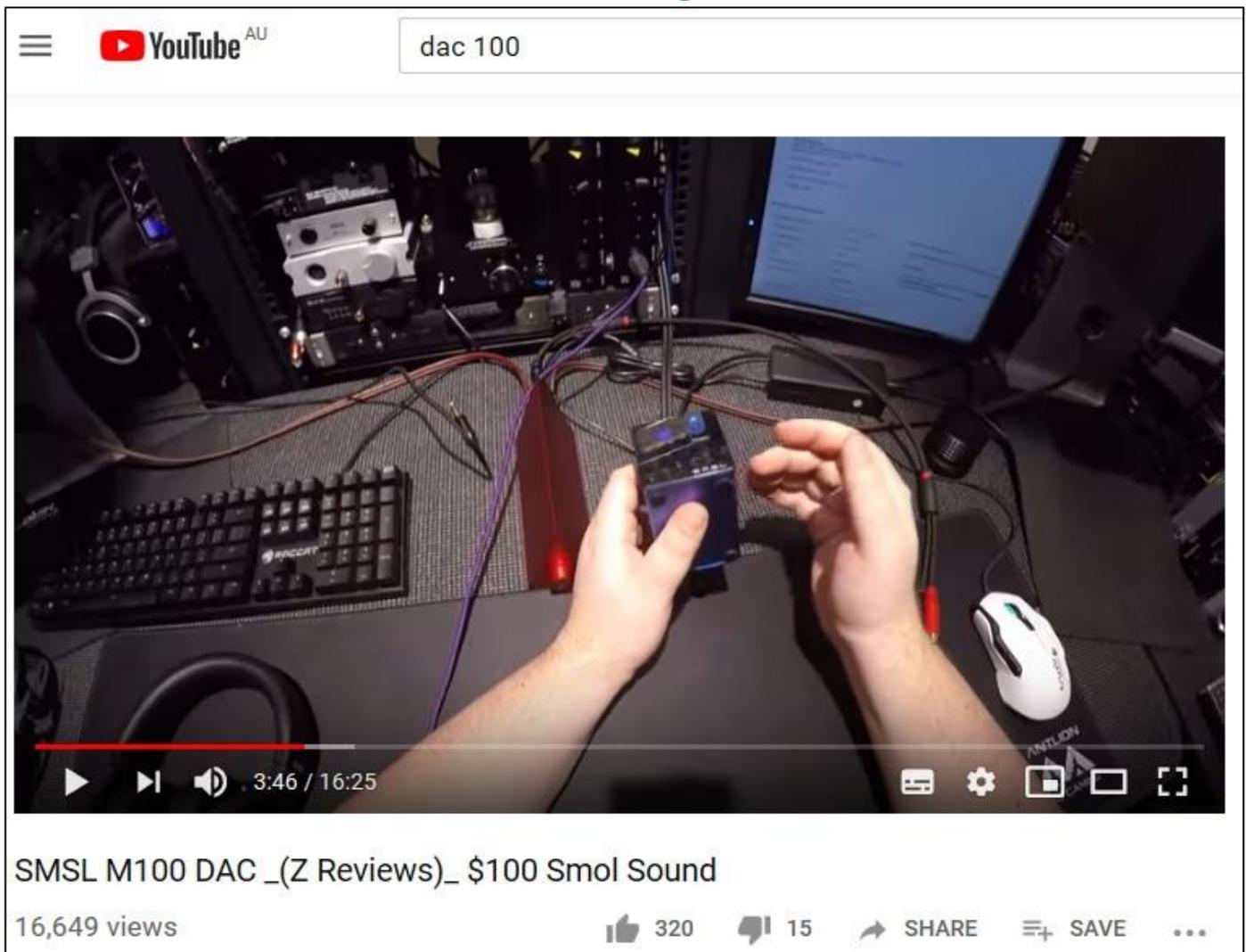


used in the testing was an old full size XP tower PC, given to me by a lady from church, it was going out next week on the annual hard rubbish day, so I might as well have it for parts she said. It had an 80 Gig Seagate drive in it, so I plugged it into my USB adapter and got Macrium Reflect to copy the image into it, no errors, and what's more, the Teac machine appeared totally happy with it.

So there you go, if you do get one of these, whole hard drive backup and replication is easy, just don't expect to retrieve the actual music. (I wanted to see the audio files to see what compression was being used) The biggest problem is they use the old and now hard to get IDE style hard drives, so once they disappear forever the fun begins – yes there are options, but it's no longer a simple disc swap.

Paul UK3TGX

The Modern Day 'Juke Box'



My nephew, Brendan the 'other day' said, here have a look at this YouTube video

https://youtu.be/Ey_4ebq4LLY

Unfortunately it's targeted at a younger generation, and is somewhat 'colourful', and non-technical. He then said would I like to play with one of them?



Well that's what I thought he said; anyway a few days later he said your Dac has arrived. It turned out that he had been talking to this reviewer, and the unit I now had was the very same unit being reviewed in that YouTube video!

Also some nice headphones have been coming his way, more on this a bit later.

So after reading the previous article about a Teac Juke box, and wondering what the present day crew are up to, well this is it, a fairly cheap, but excellent sounding Dac's that ticks most of the boxes, that is unless you have a spare \$10,000 to go really up-market, but then again it's going to cost you more than that, because you have to get some equivalent speakers and an amplifier to go with it, oh and did I forget, you better replace your house, as you need a

decent listening room. No point blowing 100K if your acoustics are sub optimal. This seems to be how quite a few young ones see the world these days, so if you look on websites like 'Drop', (previously known as MassDrop) you will see a never ending parade of headphones and headphone Amp/Dac combo's. The house bit is too hard (or they live with the parents etc.) so upmarket headphones seem to be all the rage. Other places, like Kickstarter show up crazy handmade creations, like these verum-1 open back planars, from the Ukraine.

Team them up with a good amplifier, Dac, and a computer to hold all your music – or subscribe to an online music source like Tidal etc. that supply lossless audio and you are set.



They tend to look like head clamps, but you would be wrong, boy are they comfortable. –



That is as long as you don't mind looking like a cyberman from one of the Doctor Who TV shows. However if you can avoid any mirrors, then these and some of the other creations can bring you some seriously good sound that would cost far more to create with real speakers, and a place to set them up.. However for me, nothing beats a real set of speakers, with real bass you can feel, and not being tethered to an amplifier.

Paul VK3TGX

Super-Capacitor Rocket



Super Capacitor Rocket

449,078 views

18K likes 467 comments

Tom Stanton
Published on 19 Apr 2019

SUBSCRIBE 196K

It looks like we now have electric rockets, powered by super capacitors.

<https://youtu.be/vWgwYBDSHGo>

Wow, I didn't think this was possible. Yes Li-Po powered electric planes are now very common, along with drones etc., but straight up vertical, ballistic flight, using only a few capacitors to run the show, not bad. And there is plenty of room for improvement. (me thinks)

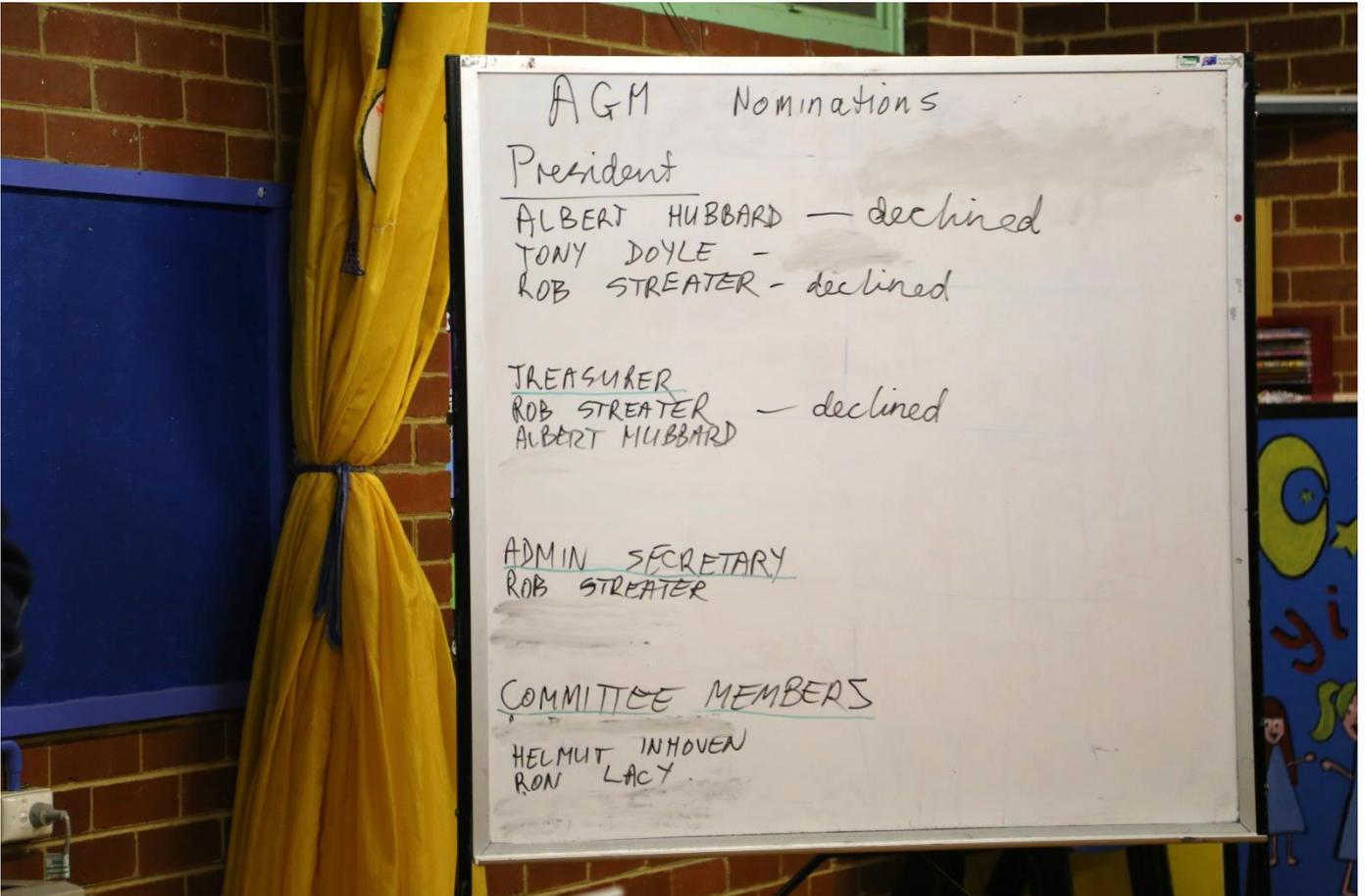
Point your computer to the above URL and enjoy.

At present he is only getting a few seconds of run time, so not much room to get into trouble, however I think losing the remote (used for launch control & parachute deployment) and the heavy-ish 3D printed parts could yield some extra height.

It makes me wonder if we could team up one of these with a Fox-hunting transmitter for some radio club activities.

Paul VK3TGX

The AGM





Club Information



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

Office bearers

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

Call in Frequencies, Beacons and Repeaters

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

Membership Fee Schedule

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

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