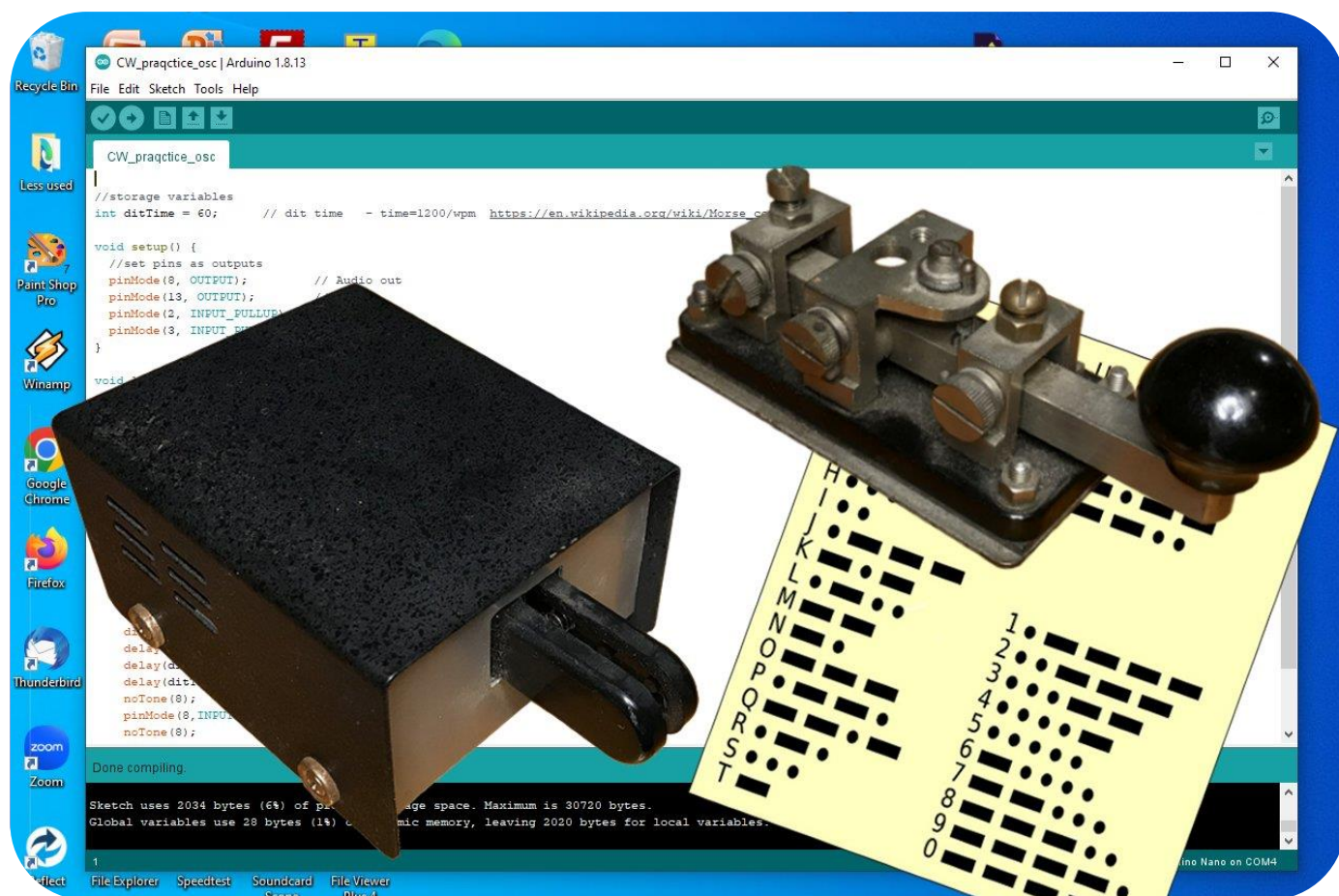




GATEWAY

**The Official Magazine of the Gippsland
Gate Radio & Electronics Club Inc A0016893M**

February 2023



Iambic Morse Code Practice Keyer

Antennapalooza 2023

Robovac Teardown

And More

Cover photo, Iambic keyer/practice oscillator project, page 6.
(If you have any good photos, please send them in)

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Event Queue

February:

17 th .	8:00	General Meeting
25-26 th		New Zealand's Jock White Memorial Field Day (wia.org.au)

March:

3 rd	7:30	Prac night
17 th .	8:00	General Meeting
18-19 th .		John Moyle Field Day (wia.org.au)

April:

7 th	7:30	Prac night
21 st .	8:00	General Meeting (Nominations for all Committee positions open 20 th Feb)

Club run events are only possible with the involvement of ALL members.
Without volunteers to coordinate and participate in club events the club will fail to prosper

President's Message

Presidents Message February 2023

Hi GGREC Members,

Committee Update- As you know, the Secretary position is still vacant which has increased the workload on me and Klaus. Klaus is an excellent Treasurer and has also helped by taking on some Secretary tasks as well to help out. Yarn, VK3NOV is unable to help at all as he is unwell. Bruce VK3BRW has done a fantastic job by providing construction projects, advice and guidance with the Prac nights. Bruce is currently away on holidays at the moment but should be back for the March Prac night. Unfortunately, Helmut, Klaus and I have all been sick with the flu for the last couple of weeks and have had to rest as much as possible. Coughing for two weeks knocks you about a fair bit.

So, what does all it mean for GGREC? Well, the February General Meeting will be a meeting and social night as we have not been able to organise a guest speaker.

The Australia Day BBQ had a total of eight members come along for the lunch. The weather was very good and we enjoyed celebrating Australia Day. Thanks to Klaus, Fred and Christine, Helmut and Dorothe, Paul and Mariana for coming along on the day.

Our GM / AGM will be in April and we will elect a new GGREC committee to carry the club forward. Nominations for Committee positions open 28 days prior to the AGM (24 March) so please consider nominating for a position. The Editorial Policy and Bullying and Harassment Policy have been completed. They can be fine-tuned to keep them current as time goes on.

The John Moyle field day will be on the 18th and 19th of March this year and GGREC will be participating with a field day activation. I would like to see as many members as possible come along to make the day a success. More info about the field day will come soon but book these dates in you diary and keep them free.

Kind regards,
Bruno Tonizzo VK3BFT
President GGREC Inc.

From The Editor



This month I was watching a YouTube video on work been done on a very old Centurion minicomputer, getting it to emulate a home brew vacuum tube computer. https://youtu.be/c_KWEBjdc8k

This got me to thinking about my old 6800 box that I had put into an old HiFi cabinet in the corner of my study, trying to make it much easier to use should I be inspired, trouble was I never quite finished it. So with renewed enthusiasm I pulled through the last two cables and powered it up.

After much head scratching I finally figured out how to access the serial to Ethernet adapter I put together so I could actually talk to it – (Note to self, leave some documentation in a conspicuous location), in the end “telnet raspberrypi.local 2000”, or its equivalent using TeraTerm on a Windows box. I could just run a serial lead, however this adapter allows WiFi access using a tablet, laptop, or dare I say itmobile phone. (I can also use SSH)

<https://www.jpaul.me/2019/01/how-to-build-a-raspberry-pi-serial-console-server-with-ser2net/>

After connecting I told it to boot – shudder, get stuck, lots of complaining from a stepper motor not being able to step as commanded. It sounded like the stepper had a competing signal, something like 50Hz/100Hz mains ripple on the power supply.

So off with the lid – a multimeter soon ruled that one out, so something is wrong with the disk drive – oh darn, this drive is like first generation 5.25, full height, basically museum material. Yes I could try and source one on ebay etc. however who’s to say theirs is any better. I could migrate over to 3.5 inch disks, but that is just replacing very old with old, another product no longer stocked by anyone, including blank disks, so kind of a silly route to go. I could also fit a disk emulator, but the tech in them kind of make it like wrapping a top end Ferrari around your VW beetle to keep it moving – not quite what I am up too. As an external add on, like my serial to Ethernet adapter, fine, but not as a main part of the old box. Maybe I should add a switch on the back panel to swap the internal/external drives, allowing booting from the external drive.

Anyway I partially pulled the drive apart, being careful to not touch anything that will upset the drives alignment. Rotating the stepper motor (head positioner) revealed it to be extremely rough, like the motor was polling, or it had destroyed ball bearing’s in there. I kind of needed to pull out the motor to isolate it and find out if it’s at fault, however I’d then have to re-align the drive, so not my preferred option. So with nothing to lose I applied a little Singer sewing machine oil to the slide rails (actually way too much), I quickly discovered putting some oil on a screwdriver blade then touching that on the surfaces the better way.

This all proved surprisingly effective, so I swapped over to some VCR grease and now the drive is back together, it has never sounded so quiet. This is probably the first drive I ever had, back from when I built up my TRS-80 model 1 years ago, so having it now so quiet is kind of strange.



Paul VK3TGX

Antennapalooza 2023

2022 was too wet! Antennapalooza, now in its 8th year, will return to Drouin West in 2023 on April 14, 15, 16 (The weekend after Easter)

The theme for 2023 will be 'Station Efficiency'. It will include talks and demo's on different ways that Amateurs can improve the way they operate.

Visit: <http://antennapalooza.net.au/>

Set in a 6 acre field, 50km due East of Dandenong, visitors can bring their tent or caravan for the weekend, or just stay for the day. Set up an antenna and have a play on-air, or take in the demonstrations. Entry is Free. Bookings are not essential, but please email a registration with your **name** and **callsign** so we can plan logistics. Let us know if you plan to camp or just stay for the day. Email us at: sparky@dcsl.net.au

The website <http://antennapalooza.net.au/> will provide info on how to find the venue, what to expect when you get here and list the short lectures that will feature on the Saturday and Sunday.



Free tea, coffee & barbecue facilities will be on hand. Toilet facilities are provided. In the evening a warming fire will be lit in the Forest Area.

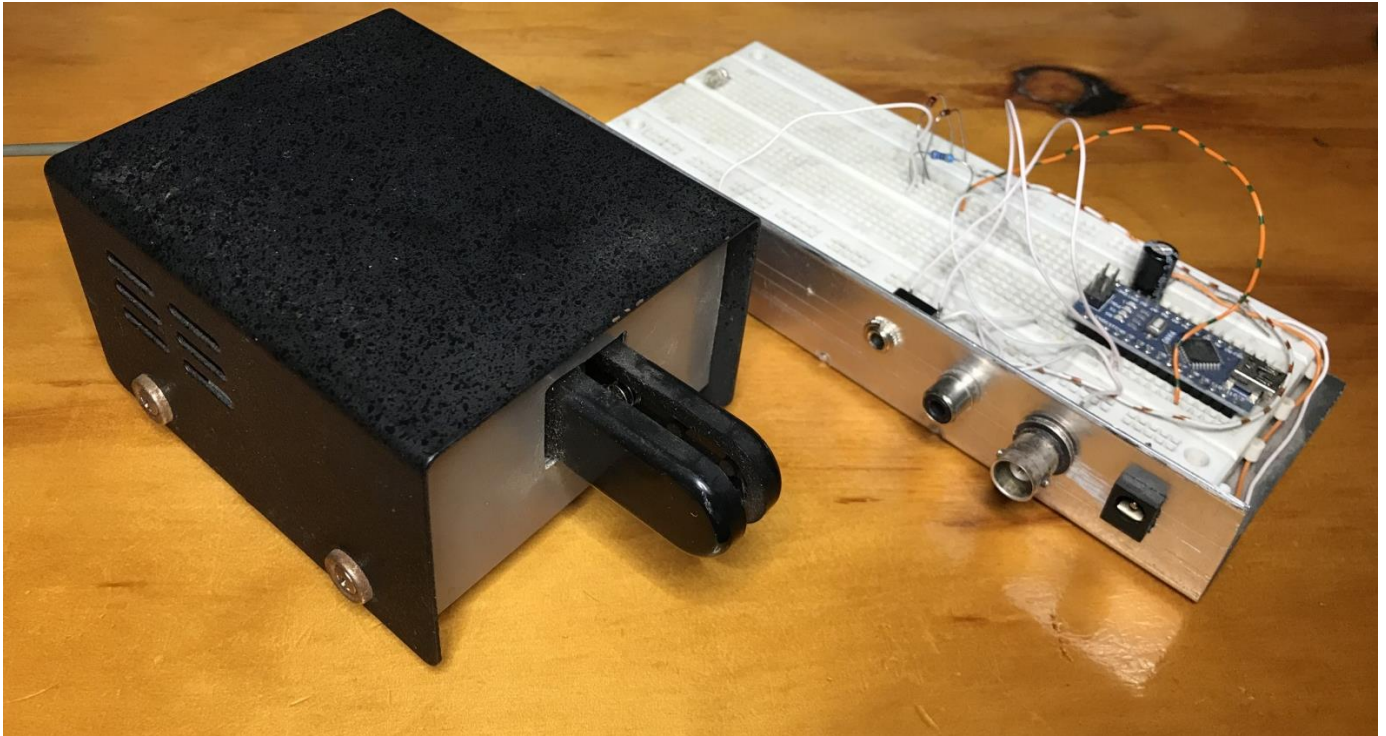
Amateurs can try their field equipment, meet old friends and throw

some snags on the barbie. Visitors, who are just learning about Amateur Radio will benefit from this event. The brief lectures in the central pavilion will focus on topics like antenna efficiency, power consumption, having everything at your fingertips when you operate.

Several clubs in the region have been invited to participate.

See you there!

Iambic CW Practice Oscillator



With the upcoming CW practice sessions hosted by Klaus, it got me to thinking about a practice oscillator. Whilst many exist for straight keys, I can't say I've seen many for a paddle, or Iambic keys. Klaus seems rather keen on the paddle, so I had a thought about making one using an Arduino processor, a task that in its simplest form is incredibly simple, as opposed to a hardware approach using, say 555 timers etc.

```
//storage variables
int ditTime = 60;      // dit time    - time=1200/wpm

void setup() {
  //set pins as outputs
  pinMode(8, OUTPUT);    // Audio out
  pinMode(13, OUTPUT);   // LED
  pinMode(2, INPUT_PULLUP); // Dit switch
  pinMode(3, INPUT_PULLUP); // Dah switch
}

void loop() {
  if (!digitalRead(2)) // dit
  {
    tone(8,700);
    digitalWrite(13,HIGH);
    delay(ditTime);
    noTone(8);
    pinMode(8,INPUT);
    noTone(8);
    digitalWrite(13,LOW);
    delay(ditTime);
  }
  if (!digitalRead(3)) // Dah
  {
    tone(8,700);
    digitalWrite(13,HIGH);
    delay(ditTime);
    delay(ditTime);
    delay(ditTime);
    noTone(8);
    pinMode(8,INPUT);
    noTone(8);
    digitalWrite(13,LOW); // LED off
    delay(ditTime);
  }
}
```

Here is the code I started with, I initially thought I'd get the basic paddle bit going, then think about adding Iambic keying, however I didn't have to do anything extra as this code pretty much totally mimics the keyer in my HF set.

It's so short here, that it's almost a waste using an Arduino Nano to run such a small program, however they are so cheap out of China, there is not much lost.

Years ago the club ran a programming course using an Arduino Uno, so if you still have yours, you're ready to go with this project.

The most complex bit is the audio output, if a small piezo speaker suits you, then it can be directly connected to the Nano, however if you want something a bit larger, then an amplifier is needed.

If you need an Arduino programmed, give us a call

For my initial testing I just fed it into a little test amp/speaker I use for chasing audio signals; I could easily put the Nano inside that speaker and just add another socket for the key. It would not interfere with my usual use of that test speaker.

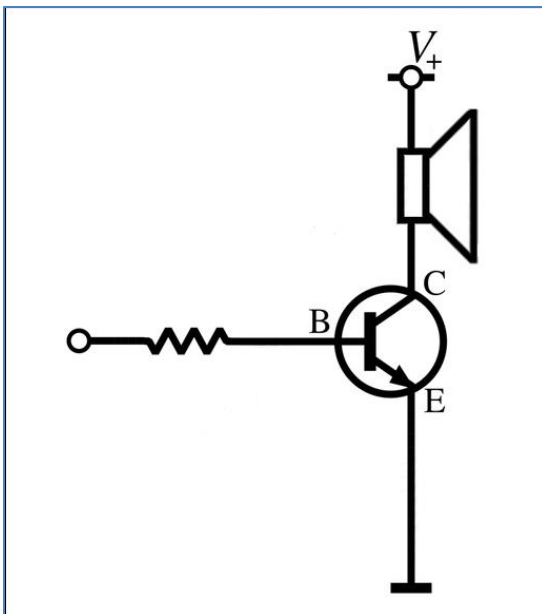


As it stands it only does paddles, however a few more lines of code will soon have it supporting straight keys as well, the easiest way is to use a separate input pin (and matching socket) for a straight key. That way you can have both connected, and just jump between them as you like.

Also, at present it's hard coded for a 700Hz tone, at 20WPM. Two pots could be easily connected to the 7 analogue inputs to enable easy speed and tone variation, if desired.

I purposely left the code in a rather simple state, as that makes it easier to read and understand in this article, however there is absolutely heaps of room for extra's.

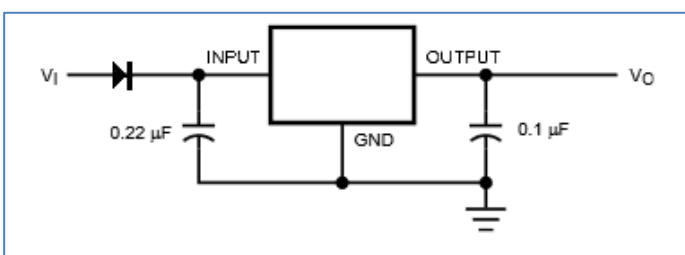
For a case, almost anything goes, however a speaker grill could be handy, an old mini speaker, or a dead 'trannie' radio. For power, the Nano has an onboard regulator rated up to 12.0 volts the Nano also has a USB socket, so a USB power bank (battery) or a phone charger would work well. About the only thing I'd advise is if you are adding an amplifier stage, don't run that from the Nano's onboard regulator, as it's not that strong, and has no heatsink. (i.e. easily killed).



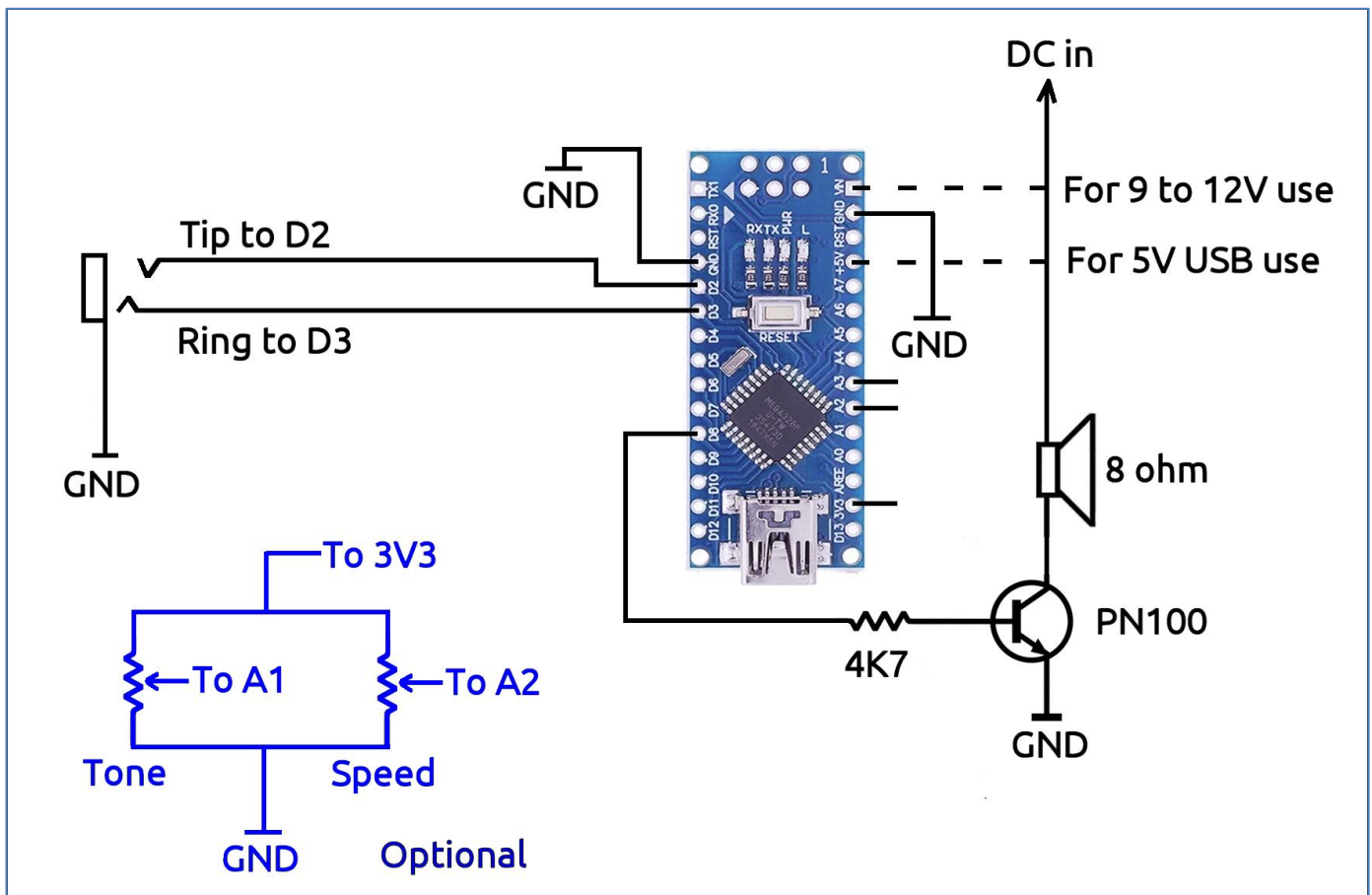
The simplest amplifier is a resistor feeding a single transistor. The Nano's output is limited to an absolute maximum of 30mA, ideally 20mA. An 8 ohm speaker on 5V will pull over 600mA, way more on 12V, (although I doubt you'd need that much audio from a practice oscillator), anyway that's way more than the Nano can handle on its own.

Or just buy an amp module online – very cheap.

The 'V+' in this diagram is the incoming supply, be it 5V from USB (loud enough) or say 9V from a battery etc. but NOT from the Nano's onboard regulator.



If you want to use 13.8V from your shack supply I would use a 7805 or equivalent regulator with caps on the input and output, have a look at the data sheets, this is the normal way to use these (Keep the caps close)



Here is the circuit, along with the optional pots. You can also add a second 4K7 resistor and transistor to pin 'D13' and use it to key a radio that does not have a paddle input.

diymore IC Chips ATMEGA8A-PU ATMEGA8A MEGA8A DIP-28 8-bit 8K Bytes In-System Programmable Flash ATMEGA8 Integrated Circuit

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The other day I saw these on Ali-express, although you'll need to add a 16MHz crystal

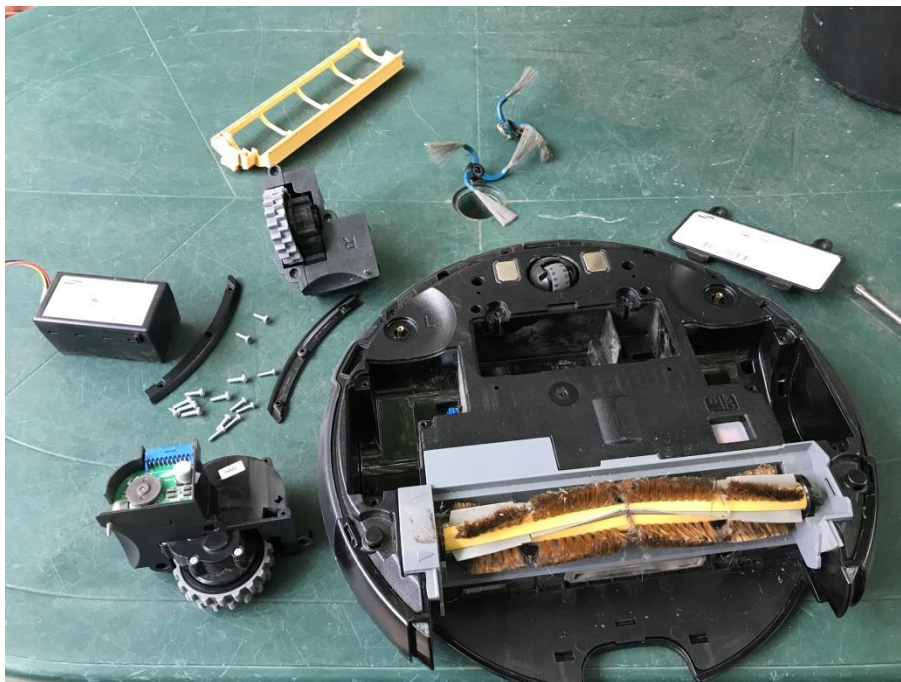
Maybe a club project ??

Paul VK3TGX

Samsung Robovac Teardown



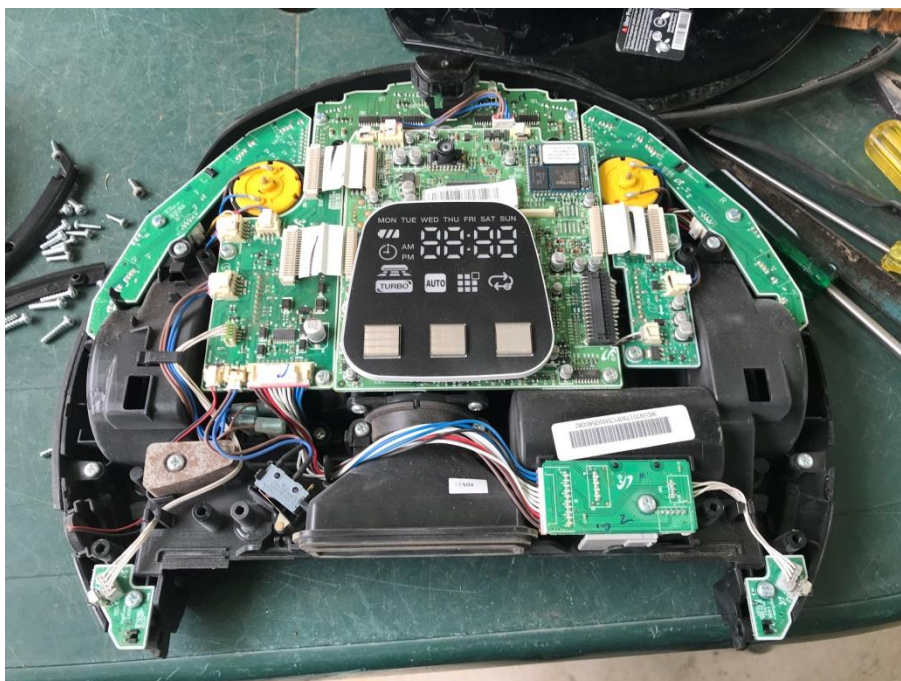
Some 'Road Kill' just waiting to be pulled apart. This is the second robovac I've attacked, the previous one being way simpler, basically a kids bump car with a purpose.



The biggest challenge is trying to find all the screws, rather than just going for the brute force approach.

The battery pack and the drive motor wheel assemblies, whilst stubborn soon gave way.

Years ago I made a little three wheel remote controlled 'bot', the wheel assemblies on here make me feel like giving that one a second go.



Getting the main lid off proved a touch destructive as I didn't find the hidden screws in time.

This thing is fairly hi-tech with an ARM CPU and several other modules to make it all work.

Unfortunately not a lot of the silicon is easily reusable. I would like to find a back door into those ARM chips, it would be nice to have a monitor rom that gives me serial terminal access as was done in the early 8 bit computer days....



One thing that surprised me was this thing has a camera, why?, the best thought I came up with was it was using images of your ceiling etc., like an optical computer mouse uses a camera to figure out where it is moving too. It didn't appear to have enough storage to keep many pictures, as in build up an image/map of your house, but then again I'm probably wrong. I wonder if these use your WiFi to upload the images to a Samsung server for analysis? Probably not.



Then blow be down, David of EEVblog.com finds one and does a YouTube video on it, so for more info, have a look at his video.

Click the pic to launch.

EEVblog 1523 - Dumpster Samsung Cleaning Robot TEARDOWN

<https://youtu.be/531R4DE275U>



Paul VK3TGX

New GGREC Policy Docs

Bullying Policy

Purpose and Scope

GGREC Inc. is committed to ensuring that all members enjoy their hobby in an environment where people are treated with mutual respect. It is important for a productive and harmonious club that members are aware of the impact of their behaviours on others.

Bullying in the Club is inappropriate as is unreasonable behaviour. Members found to have either committed or condoned such behaviour in the club may have their membership terminated by the committee (see incorporation rules).

.....

5 page document,

<http://ggrec.org.au/Downloads/GGREC%20bullying-policy%20Issue%20V1.pdf>

Always use the GGREC website for the latest version <http://ggrec.org.au/Downloads/>

GGREC Editorial Guidelines

The following criteria shall be applied to all content published in the Gateway Magazine, regardless of the source.

Relevance

Is the topic of relevance to Amateur Radio operations, radio technology, Electronics or science? Is the article chronologically current? (Unless the content has contemporary relevance, it may have no interest for the readership. Some articles of nostalgic or retrospective content may still have general interest merit)

.....

2 page document

<http://ggrec.org.au/Downloads/Editorial%20Policy%20Issue%20V1.pdf>

Always use the GGREC website for the latest version <http://ggrec.org.au/Downloads/>

Ballarat Hamfest



The Ballarat Amateur Radio Group – Hamfest, held at their clubrooms at the Ballarat airport on Sunday the 5th February was well attended

Parking was well organised and the \$7 entrance fee which included a ticket in the raffle could be regarded as cheap entertainment for the morning

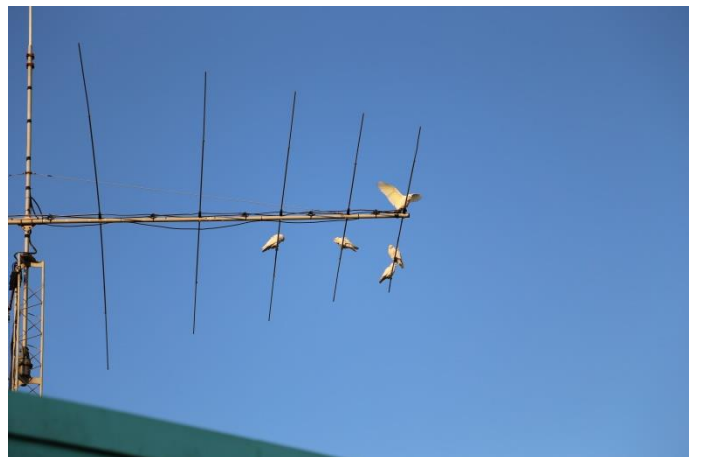
A very pleasant morning had initially around 100 attendees partaking of the sausage sizzle and coffee as they keenly awaited the official 10.00am start.

It had the usual mix of items from small components to radios, power supplies, books and all of the accessory items found in the shack plus various types of antennas ranging from small yagi's to coiled up dipoles and long wires, there were even antenna towers and poles and apart from the fact that there were the odd few items that appeared to have been stored in the old chook shed, never the less it was keenly scrutineered by one and all with many taking a prize purchase under their arm.

It was estimated that there may have been around 200 attendees at the Hamfest

Regards,
Bruce Thorn VK3BPT

Australia Day BBQ



Interesting YouTube Videos



Top 10 Portable HF Antennas
<https://youtu.be/BYG76axXoFo>



How Does A 100-Year-Old Ford Model T Stack Up Against A New Tesla Model Y

<https://youtu.be/nJNJS2bP1RE>



The GGREC is an affiliated club of the WIA
<https://www.wia.org.au/>

WIA Affiliated Club

We also give Thanks to



<https://www.jaycar.com.au/>

&



<https://www.altronics.com.au/>

For their generous support over the years



Club Information



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

Office bearers

President	Bruno Tonizzo	VK3BFT	General 3	Bruce Williams	VK3BRW
Admin Sec	vacant		Web Master	Mark Clohesy	VK3PKT
Treasurer	Klaus Illhardt	VK3IU	Magazine Editor	Paul Stubbs	VK3TGX
General 1	Yarn Oncken	VK3NOV	Property Officer	'committee'	
General 2	Helmut Inhoven	VK3DHI	Assoc. Secretary	Bruno Tonizzo	VK3BFT

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 431.425MHz Out 438.425MHz CTCSS 91.5Hz

VK3RGW Repeater supports Remote Internet access (IRLP), Node 6794 **offline**.

70cm Repeater Seaview VK3RWD, In 431.575MHz Out 438.575MHz CTCSS 91.5Hz **'Testing'**

Simplex VHF - 145.450MHz FM, Simplex UHF - TBA

VK3RLP Beacons 1296.532MHz & 2403.532MHz (**currently offline**)

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

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