



Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 3632
June 2022

SADARC committee

President:- Rob Hose - VK3BLD	Vice-President:- Barrie Halliday - VK3KBY
Secretary:- Arthur Duke - VK3AFD	Treasurer:- Ian Saunders – VK3YYY
Membership Sec:- Ian Saunders - VK3YYY	Assistant Secretary:- Geoff Angus - VK3ZNA
Webmaster:- Ray Gardiner - VK3YNV	Hamfest Co-ordinator:- Peter Rentsch - VK3AXI
Newsletter (editor):- Rodney Champness - VK3UG	
Tech. Committee:- Geoff VK3ZNA, Ray VK3YNV, Josh Gardiner & Rodney VK3UG – power to co-opt.	

To contact any member of the committee above, email committee@sadarc.org and specify who you wish to communicate with and the subject. Items for the newsletter newsletter@sadarc.org

Communications Managers (External Events):- Bruce (VK3PNG) & Darren (VK3HEN) Glasson

Meetings the first Saturday of the month from **10 am** for informal chats and technical talks. A BBQ follows (a gold coin donation). Business meeting 1 pm (except January when no meeting occurs) at Flexible Learning Centre, 18 Channel Road (250 metres from Archer Street), Shepparton.

Variations in these times, days and location are normally notified in the preceding newsletter.

DISCLAIMER: - No guarantee is given as to the accuracy of information in this newsletter. E. & O.E.

WARNING: - There is a danger of electrocution or injury when working on electrical/radio gear or working at heights doing antenna work. You do so at your own risk. 23/06/2022

President's Report

It has been a great month on the home front. Some good contacts have been made by some members. Band conditions have been very good. We have added some new members to our Facebook page, so we look forward to their contribution to the Club.

Preparations are well underway for our Hamfest. There has been a lot of interest from marketers and Hams who are interested in attending.

The next big event for the Club will be J.O.T.A. which is in October. Any members who would like to contribute should send an email to president@sadarc.org advising what you are able to assist with. We will be contacting the Scout groups in the area once we have an idea of what we can offer on the weekend.

At the next meeting, Josh will be giving a presentation on PCB manufacturing. Many of our senior members will remember the process we used to make our Printed Circuit Boards. It will be interesting to see how much the process has changed.

We are offering an Arduino course through the Club. We will be starting at 10:00 A.M. before the Club meeting. If you wish to participate, bring your laptop and any Arduino hardware you may have. We will be starting with the basics so it is a great opportunity to discover the power of the Arduino. Our next meeting will be on July 2nd at 11:00. The BBQ will be running, as well as tea and coffee facilities for us.
See you there.

73 Rob (VK3BLD)

(Note:- Arduino course at 10am and 11am Printed Circuit Boards, editor)

SADARC June 2022 Meeting Minutes.

Club Rooms, Shepparton

In Attendance: VK3BLD Rob, VK3ZYZ Denys, VK3FALN Allan, VK3BPH Kevin, VK3TEX Les, VK3GSR Geoff, VK3AXI Peter, VK3KBY Barrie, VK3YYY Ian, VK3UG Rodney, VK2JKN Jim, VK3BF Allan, Josh, VK3AFD Arthur, VK3OV Pat, VK3ASK Peter, Bill C., VK3EB Dallas, VK3TJS Jacek VK3JSD Stevo. VK3ZNA Geoff, VK3TEX Les.,VK3BPH Kevin, VK3YNV Ray, VK3UG Rodney

Apologies: Nil

Minutes of last Meeting: Read by Arthur VK3AFD Moved by Geoff VK3GSR Seconded by Peter VK3ASK, all in favor.

Business Arising

Denys VK3 ZYZ will begin Arduino course next meeting 10am. Those participating to bring Laptop with aduino software downloaded.

Correspondence Inward: Nil

Correspondence Outward: Nil

Moved by Peter VK3AXI Seconded by Jacek VK3TJS, all in favor.

Financial:

Treasurer VK3YY Ian reported income of Interest \$0.09 and membership of\$ 25.00, there were no expenses.

Moved by Ian VK3YYY Seconded by Geoff VK3ZNA, all in favor.

Technical:

Ray VK3YNV. Observed that there is no crackling on the 2 Meter Repeater since recent alteration.

Moved by Ray VK3YNV, seconded by Geoff VK3ZNA , all in favor.

General Business:

Nets. Should we continue the extra weekly nets ?---Yes.

Hamfest – Peter VK3AXI has followed up on advertising in WIA magazine - cost VK3 only would be \$70. VK2 could be included for an a little extra.

Peter VK3AXI Moved that he be allowed an initial budget of \$100 Seconded Rob. VK3BLD , all in favor.

Peter has emailed previous exhibitors, at present 13 tables have been booked. Local Jaycar is keen to participate, will have a table at no charge.

Advertising will be via our Facebook, hamfest facebook and VKHAM. On the day, two people to set up tables, Arthur VK3AFD and Rob. VK3BLD have volunteered.

Geoff VK3GSR asked about Jaycar “loyalty cards “. Peter VK3AXI will send all info. Rob. VK3BLD and all members will receive a card.

Members badges -- Jacek VK3TJS Jacek produces the badges, the club pays for new member badges, replacement badges are paid by the member. Members to email Jacek with details if name badge required.

Membership fees – President Bob. Noted that as at present we do not have an accurate list of financial members, it will be deemed that this year all members are financial. Dues will become payable after our next AGM. Members that have paid this year will receive a credit. Motion was moved by Peter VK3ASK and seconded by Kevin VK3BPH. All in favor.

Promotion Rod VK3UG suggested that our Arduino project could be a great focus for promoting our hobby. We could invite the Shepparton News, we could be interviewed by Matt Dowling on the ABC etc. Will reconsider after project is off the ground.

Stevo VK3JSD Suggested perhaps in Oct. we could have an active public display of Ham Radio to perhaps attract new members .

Club Project. Ray VK3YNV has plans for a combined 2m/70 cm yagi that could be a club construction project.

Outings President Rob. Asked - when would we have the club visit to Mt. Wombat? It was decided just prior to the commencement of the fire season, BBQ lunch.

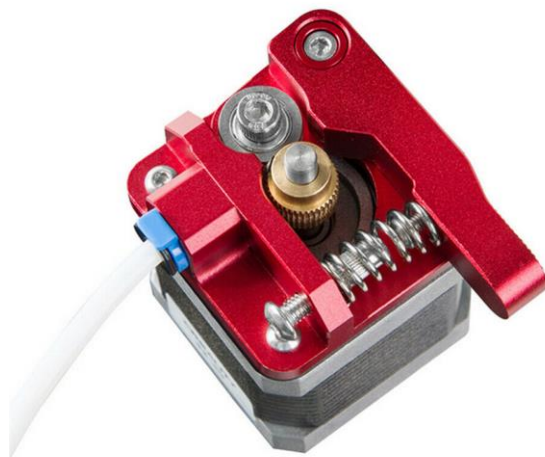
Stevo. Suggested a visit to Geoff's Ham Shack at Ardmona. Geoff is willing to host a BBQ.

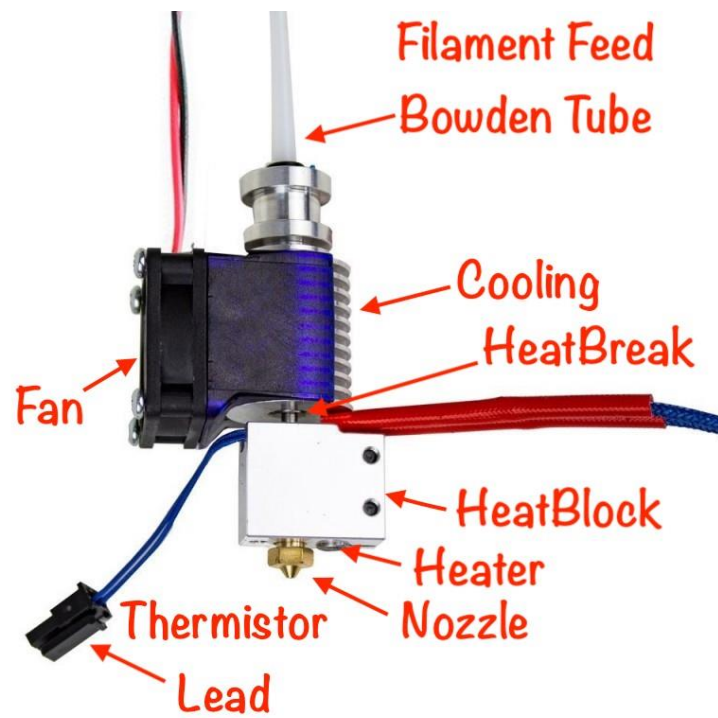
PCB Boards At our next meeting, Josh has offered to talk about designing printed circuit boards. Meeting Closed. 2:20 pm.

Getting to know Three Dimensional Printers – Denys VK3ZYZ

At my place there are currently four 3D printers. These printers use *additive manufacturing*, that is, material is added to make an object as distinct to something like a mill or lathe that removes material. There are a number of methods to 3D print an object, but all my machines use melted plastic applied to a flat build platform via heated nozzle similar to a hot melt glue gun. But usually quite a bit hotter (220C for example) and with a smaller orifice. Three of the printers I have here use 0.4mm nozzles and the fourth a 0.5mm one.

Here is a typical hot end that has the filament pushed down a Bowden Tube (usually PTFE for low friction) by an extruder gear driven by a stepper motor.





Here is a typical 3D printer.

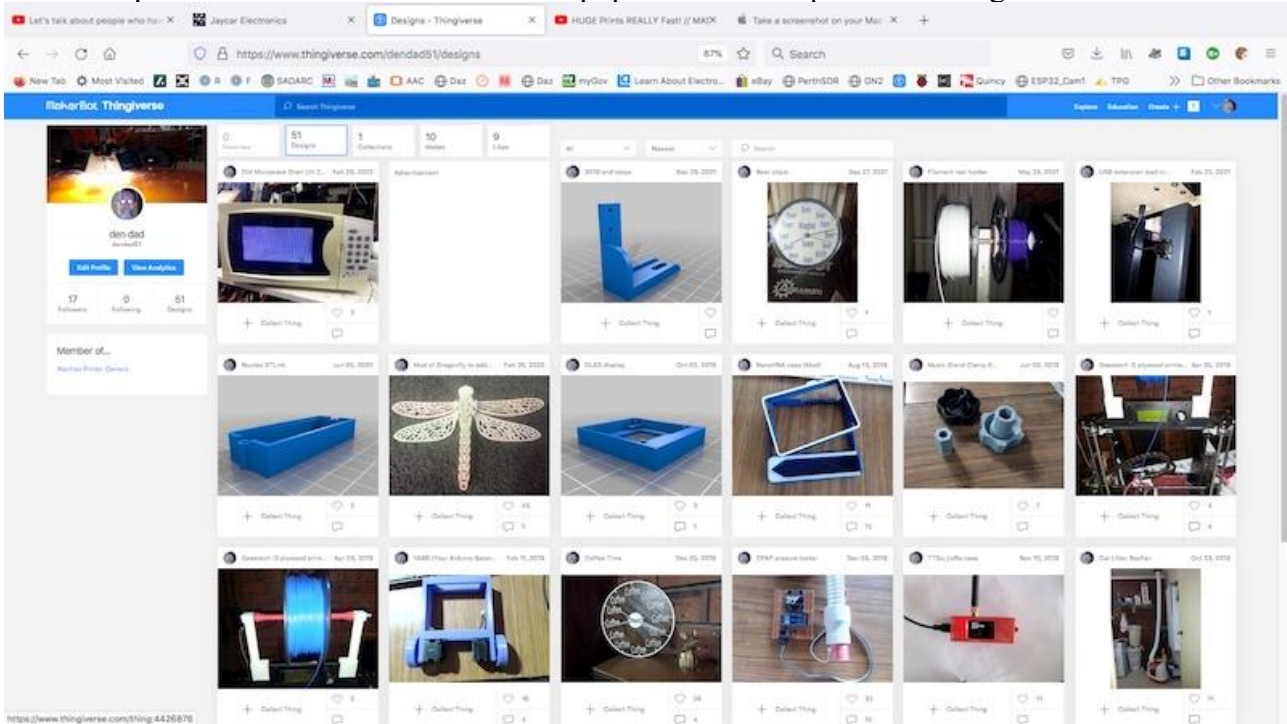


This is quite a good machine with a large on-line support base.

Various filaments are available, in many colours and material types.



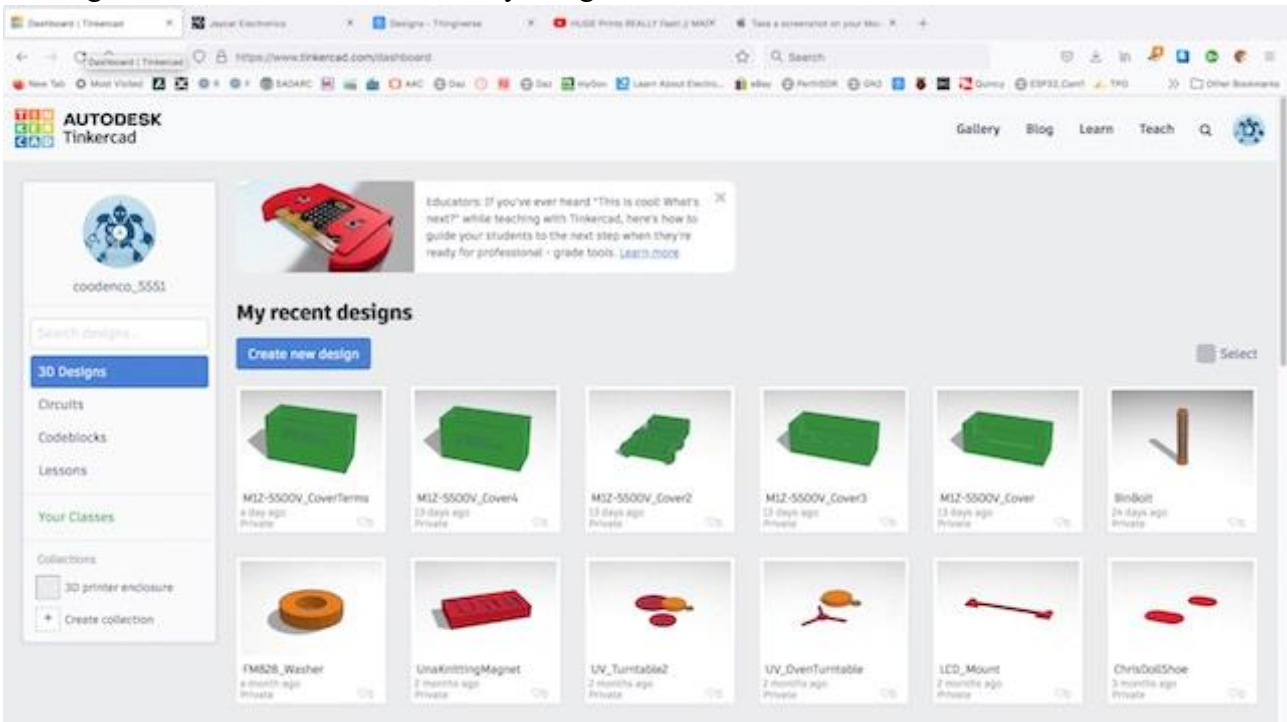
Models to print can be found on line and one popular site is <https://www.thingiverse.com/>



This shows some of my postings. Some of these are originals, and some are mods of other folk's items. All these are freely available to download and print. Some other sites exist that have items for sale.

Another option to produce printable things is to draw them yourself. I use a simple on-line drawing application at <https://www.tinkercad.com>

Once again, here is a shot of some of my designs.



Other free and for purchase drawing packages are available but I have not spent the time to learn any that I've installed.

Once you have a design file on your computer, usually in a .stl format, the next step is to load the file into a slicer program. This program has a description of your printer and converts the .stl file into layers or slices (hence the name “slicer”) in a language your printer understands. I use Cura.

The slicer has settings for print speed, heater temperature, layer height, fill density..... and others.

Also, each machine you have has a separate profile to specify the filament diameter, printable size, nozzle size and some other settings specific to that machine. The resultant file is a .gcode file and here is a part of one...

```
;LAYER_COUNT:200
;LAYER:0
M107
G0 F3600 X252.545 Y174.308 Z0.3
;TYPE:SKIRT
G1 F1500 E0
G3 X255.249 Y177.739 I-0.571 J3.231 E0.29765 F1800
G1 X255.25 Y221.804 E3.04567
G3 X255.070 Y223.533 I-5.563 J0.295 E3.15459
G3 X251.761 Y225.749 I-3.111 J-1.067 E3.42091
G1 X148.665 Y225.75 E9.85026
```

As you can see, it is just a text file and if one wanted, it can be edited by hand. One edit I do is to insert a pause set of commands that tell the printer to stop printing, move the head up a bit and then to the side, and wait for me to push a button to continue.

This allows me to change the filament to another colour for example. Here is the code to pause between the end on layer 2 and 3. Note, the layers start at 0 so “;LAYER:2” is the third layer.

```
G0 X149.997 Y188.752
;TIME_ELAPSED:539.488466

; begin layer pause code
G91 ; Put in relative mode
G1 Z10 ; Lower bed by 10mm
G90 ; Put back in absolute mode
G1 X0 Y0 ; Zero (home) the X & Y
M84 S0 ; Disable the stepper motor timeout
M0 WHITE then Click to Restart ; Pause and wait for the user
M84 S60 ; Reenable the default timeout
G91 ; Put in relative mode
G1 Z-10 ; Raise the bed back up 10mm
G90 ; Put back in absolute mode
; end layer pause code

;LAYER:2
;TYPE:WALL-INNER
;MESH:CM1Z-5500V_25A.stl
G1 F1500 E859.82855
```

Some materials need to be kept hot as they print and some do not.

Also, a heated build platform is required for some plastics.

Most of my printing is done with PLA, or Ploy Lactic Acid, but many others are available.

A 1KG reel of PLA is around \$30 at the moment. One of my aims is to print with Carbon Fibre Filled Nylon. It has superior strength and stability. The reel I purchased was around \$70, but it can go way up for stronger mixes.

Nylon needs to be dried out before printing as it rapidly absorbs moisture and you can just imagine how that water likes to be rapidly heated to about 250C in the hot end. Also, that filament with Carbon Fibre, along with quite a few others with rock, metal wood.... powder included, is very abrasive. My printers came with brass nozzles and they would be ground out fast so a harder material needs to be used for the nozzle. Tool steel is one and they will need to be run a bit hotter as the heat does not flow as well as Brass, but the nozzle I have is Brass with a Ruby insert.



This is just a quick intro to the fun world of 3D printing and the other technologies have not been mentioned. It is worth a look at some really good YouTube channels for more info.

Some of my favourites are...

<https://www.youtube.com/c/3DPrintingNerd>

<https://www.youtube.com/c/MakersMuse>

<https://www.youtube.com/user/ThomasSanladerer>

<https://www.youtube.com/c/IvanMirandaCom>

...just to name a few.

This is a great thing to get into, and not really expensive now. A quite good machine can be had for \$300 or even lower if you want a bit more hassle.

I hope this explains a bit.

Denys VK3ZYZ.

Items for sale deceased estate,

Looking to sell as a lot, if not individual offers Please.

Jacek 0408 313 649 vk3tjs@gmail.com

Brand	Cosmetic cond	Operational
Kenwood TS 520 S	Fair some scratches, manual	untested
Kenwood TS 130SE	Fair lots of scratches, manual	untested
Phillips FM 900 2m remote	Fair	untested
MFJ Deluxe Versa Tuner II	Good	untested
Leader Dip meter	Good boxed, manual	untested
AEC pwr/swr meter 1kW	good	untested
Yaesu VX3R 2/70 h/held	good boxed manual	untested
Realistic HTX 100 10m ssb	Fair	untested
Dick Smiths Freq counter	OK	untested
Dick Smiths multimeter	fair old	untested
Kewood TH 25A 2m h/held	OK NI Cads batt	untested
Morse keys x2	poor	untested
Lesson Desk mic	Fair egr call sign	untested
Kemtronics Reg power supply 2A	Fair	untested
LDG 100 Pro II auto tuner	good	untested
Disk Smiths soldering iron	Good	untested
Antenna whips various		untested
Low Pass filter	fair	untested
Various hook up cables	good	untested
HF tapped mob whip 80-10m		untested
HF trapped antennas wire		untested
Base vertical 2m/70 ?		untested

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Editor's Ramblings

- The shack is cold and uninviting, plus the shack 2 mx transceiver has quit operating as has some other electronic gear, hence no enthusiasm for much amateur radio.
- I am expecting to publish an article next month by Ray VK3YNV about his VHF/UHF diplexer. A much better device than most of the diplexers sold at hamfests.
- I've been reading a book titled *The tiger has many lives – the story of Rod Wells POW survivor* compiled and published in 2022 by Pamela Wells his wife.

Rod Wells was born in 1920 in Dhurringile and attended much of his schooling at Tatura. After he finished school, he did various technical training courses and joined the army in signals in 1939 and eventually ended up in Singapore where he and many thousands of allied soldiers were captured by the Japanese Imperial Army. He spent the rest of the war in various POW camps and related his experiences there in considerable detail. (He must have had a phenomenal memory). They as we have been led to believe from other books that the treatment was barbaric and certainly Rod describes it as such.

One interesting section is about the building of a receiver and a transmitter within the camp to get news from the BBC and VOA, our Radio Australia transmissions were not all that good in that period.

The methods used to make components etc and to obtain what they couldn't make is quite interesting and makes you think of the inventiveness of the men. Whilst the transmitter is described I doubt from reading the book that they ever got it functioning. The fact he and others recovered from the extreme privations suffered is a tribute to them.

After the war and he had recovered he did many high-level jobs in the armed services throughout the world (electronics, and over a wide range of allied tasks), including Maralinga atomic bomb tests. He eventually retired as his health was deteriorating (no surprise there) back to Tatura near Waranga Basin. He died in 2003 after a very eventful life.

It is a book of 304 pages and well worth a read. Libraries should have a copy otherwise you can buy it at book shops.

- There is another book worth a read which is *The Tatura Secret Radio* by Haakon Nilsen published 1997. Haakon and some others in the German POW No. 1 camp near Tatura build a clandestine receiver of some sophistication that could receive German and other overseas broadcasts. Thankfully the atrocities handed down to POWs in Japanese POW camps did not occur here which meant it was in some ways easier for the inmates to build such receivers. This book may be available from the Irrigation & Wartime Camps Museum in Tatura.
- Both of these stories indicate how the bits to build the radios were obtained, both ingenious and cunning. Both books are worth a read.

VK3RGV repeaters and transmitter operating frequencies Mt Wombat

53.725MHz (-1 MHz), **In Service**

146.65MHz (-600 kHz), **In Service**

438.2MHz (-7 MHz -D-Star), **In Service** 438.650MHz (-7 MHz 91.5 Hz tone), **In Service**

438.9MHz (-7 MHz - DMR), **In Service** 439.775MHz (-5 MHz), **Out of service**, IRLP (node #6990)

476.475 MHz (+750 kHz) CB Repeater WBT03 Channels 3- 33, **In Service**

VK3RDS, 438.7625 MHz (-7 MHz DMR) **Shepparton on test @ VK3YNV QTH**

The three following repeaters are not the clubs but are allied to the club in one way or another.

Mt Major VK3RDU, 146.850 MHz, 439.875MHz. Mt Bruno VK3RWC 147.325 MHz **(-1.6 MHz 123Hz)**

Access to most analogue repeaters is by sub-audible 123 Hz tone or noise/carrier mute (less sensitive).

Your TX offset is shown in brackets

Club informal on air get together, all welcome. Club call sign VK3SOL:-

Wednesday- 2mx repeater 146.65 MHz 8.00pm,

3.63 MHz SSB ± interference 8.30pm,

Sunday – 2 mx repeater 146.65 MHz 2 pm & 8 pm & The Vintage Radio Club – 2 mx repeater 11 am

Website – www.sadarc.org or www.sadarc.org.au Face book Page – Shepparton and District

Amateur Radio Club

Direct Link: <https://www.facebook.com/groups/481867453084459>

Note: Want to get your licence? SADARC has examination assessors, contact the secretary for details.