



BARG News

Ballarat Amateur Radio Group
Inc. #6953T
August
Monthly Newsletter

Next Meeting
Friday 27th August - Online

Face to Face! Out at the clubhouse at the Ballarat airport

All Welcome



Contacting us

You can write to the club at the address below, or e-mail the secretary

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We're on the web
www.barg.org.au

Presidents May Report

Welcome to the August newsletter. As I write this we've just been put back into lock down. I hope everyone made the most of the 20 days of freedom we've just had because it looks like it's going to be quite some time before we experience it again.

I managed to get out and complete a parks activation in the Paddy Ranges State Park, rather sadly that was my first for the year. It took me longer than usual to get set up as I was a bit rusty. Once set up there was a good stream of contacts and quite a few people out despite the lock down in Sydney and Melbourne. I'd planned to be out again this weekend, but Covid's put an end to that.

Last weekend was the Remembrance Day contest. The club didn't run a station though a number of club members participated. I worked QRP from home. I was particularly keen on being able to make contacts on 160m, as these get double points and if you can make contacts on that band between 1am and 6am a single contact earns 6 points. I tried setting up a End Fed Half Wave with 80m of wire. It needed a couple of bends to fit onto the block and at 7m of height, was really too low for that band. The result was fantastic at picking up local noise, but otherwise seemed to work okay, with some good reports where the other end had a decent 160m set up.



If you worked even a couple of stations in the RD, it's worthwhile putting in a log even if not seriously chasing the top award as the number of log entries per state helps that state with their scoring details and there always is state based rivalry involved here as well as being an observance of remembering those amateurs who served in WW2 and didn't return home.

We're coming up to the the clubs AGM. Originally that was planned for the August meeting, but we've decided to postpone it to the September meeting. All positions will be up for reelection. A couple of members of the existing committee have decided to step down so there's opportunity for a couple of new committee members.

With the AGM coming up I've considered the time I'm spending on club activities given I currently have the President's role, am the acting Treasurer, Newsletter Editor and Website maintainer.

I took over the newsletter in June of 2015 and have enjoyed putting out something each month. I see the newsletter as both a way of letting members and friends of the club know what's coming up, as well as creating a historical archive of what the clubs done. It's a role that has been aided significantly by the contributions of Ian, VK3AXH and Craig, VK3KG. However over the last year or so I've found the task to be quite onerous, so I think it's time for me to pass it on to someone else. I'm prepare to do it for the year if nobody else is willing to do it. But then I'll be stepping down.

I also maintain the website, though it would be fair to say that I've not been that active doing that, meaning there are some aspects that aren't as current as they should be. The site is based on Wordpress, which is fairly easy to set up and maintain. Some might say it's easy to manage

poorly, much harder to do well. Sadly the plugin that I used to manage all the Newsletters has been abandoned, and won't work with the current Wordpress releases. So it needs to be replaced. That page has all the Newsletters back to 2005, each of which was manually loaded and labelled. So replacing that is a big job which has been on my 'to do' list for quite some time. If someone would like to take this over, perhaps redesign the whole site, please let me know.

I've also been President for the last four years. I have enjoyed this role and hope that the club feels that I've steered the club in the right direction. I do feel that I've become rather stale and not had the focus on some things that I might have, so perhaps it's time for someone else to take over the role. I'm fine to do the role for another 12 months, however I will be stepping back at the end of the next term, should I still be in the role.

For the last 12 months I've also been the acting treasurer. To manage this role I have made some changes compared to prior treasurers. In particular I've insisted on electronic banking with payments to and reimbursements from the club all done via Electronic Funds Transfer. (Well almost 100%. Though I am yet to write a cheque or physical receipt). This means that we don't have unrepresented cheques or monies waiting to be banked. When looking at the bank statements it's easy to see why money is coming in or going out. I do appreciate that this has been meant extra work for those members that don't make use of electronic banking

I've also moved the clubs books to an online spreadsheet which anyone on the committee with a gmail account can and does have access too. This change has enabled the automation of the monthly report for both the committee and general meetings and also the tracking of members subs.

I've looked at various commercial solutions, but yet to find one that does what we need at a price point that makes sense for us. For now a spreadsheet with a couple of pivot tables and vlookups is doing the job.

The Treasurer role is another key one and not one that actually takes up much time. I'm happy to hand over the system I've set up, or an incoming treasurer can implement their own system. I would definitely discourage going back to cash and cheques.

While preparing for the AGM I've looked at the clubs finances trajectory. I thought the club had run with a small surplus over the last few years, enabling us to spend money on items like radios, antenna's and other tools without too much concern. In reality the club has been running at a deficit, slowly eating into the reserves that were built up over many years.

The loss of the two primary club fund raisers for at least two years, being the Hamvention and George Fowler, have really put a lot of pressure on the clubs finances. While we're not about to go broke, we do need to manage our funds carefully or we will have a major problem in the next couple of years.

I'll talk about this in more detail at the next meeting, but will be recommending that we increase the subs for membership by \$10 / year, moving to \$60 for regular members. (That's only \$5 / month.) Small changes now will reduce the chances of having to make big changes in the future.

I expect that some will put forward a position that the fees should remain static for now. At the end of the day the club will need to decide.

Next meeting will be a talk on getting started on the microwave bands, led by VK3PWG. The meeting will again be on Webex. I expect that we'll be running Webex meetings for the remainder of the year.

I look forward to seeing everyone at the meeting on Friday @ 7:30. **Malcolm, VK3OAK**

VHF and Above for August 2021

With the winter rolling on there's not much to report on this month. I've not been active myself apart from a few 2 metre EME contacts over the past few weeks.

However I'm aware that Steve VK3ZAZ, Paul VK3TXR and Bob VK3BNC has been either using digital modes on the 6 metre band with success. The ability of digital modes to allow contacts to be made that often are inaudible has contributed to this activity.

Last Sunday afternoon Peter VK3PWG, Chris VK3QY and Ian VK3AXH ventured out in the field to conduct some test on 2.4G. Initially we went to Mt Buninyong but the path to Chris at One Tree Hill Ararat was obstructed by trees so a hasty change of location to Green Hill was undertaken.

With gale force winds pushing the tripod and grid pack antenna over it was difficult to set things up but eventually we managed to get things organised. Setting up a beeper on 2403.1 Chris replied via our local FM repeater he was hearing it at good signal strength so we switched to voice and signals were over S9 in both directions. We then connected Peter's setup to the gridpack antenna and again signal reports were excellent at S9 plus in both directions.

Another local amateur VK3IDL in Ballarat North also gave reports to us at Green Hill but was only able to detect Chris from Ararat due to obstruction in the path.

We were all well pleased with the results given the distance of approx 100 kms. Both Peter and Chris were using SG Lab transverters and Ian using Mini Kits transverter.

We look forward to doing more tests when the weather is better than that of last Sunday.

Ian, VK3AXH

REPORT on Reg VK3CAZ. On Thursday after doing a job on the club rooms second entry door with my planar , and also placed some wood to cover the hole in top of the door I went down to were Reg is staying. I had some reading matter I thought he may be keen to read although its very dated and it can be dumped when finished with. I didn't expect to see him due to their lock down at that time in force however it was around 430 and after "going thru the drill" of clean mask, wash your hands Geoffrey and lets take your temp I was allowed to see him for 15mins. He was very pleased to see me and also that others from the group had been asking about him and his welfare. He was sitting down however is walking and said they looking after him well there. That also applies to Kim who sees Reg and has attempted to get him on the repeaters a couple of times. Unfortunately they were going to try on that day but there was an organized Happy hour for residents at the time so couldn't get on air. There were a few people listening ready on VK3RBA as well but were disappointed not this time.

I told those on the HF net that night had seen and spoken to Reg who asked to be remembered to all. With this latest lock down it may be a while before we can have another face to face so it will be good if he can get onto the repeater again with Kim's help.

Den Sharp VK3FDAS SK 11 Aug 2021.

John Kerr VK3BAF SK Aug 2021

Both ex members of WICEN and John was the State wide Commander for many years.

Craig, VK3KG

FEATURES AND REVIEWS.

Digital Radio Modes. -Part 1. RTTY, Hellschreiber, DAB, Mobile TV, Amateur TV, Slow scan TV and FAX all get their place. The article has MANY web references for further reading. Too many for inclusion here.

History of Videotape – Helical Scan./

REVIEW. Wagner cordless soldering iron. www.wagneronline.com.au for \$139 RRP. Multiple tips for more than soldering this 30W iron with USB charging.

CONSTRUCTIONAL PROJECTS.

Digital FX [Effects] Pedal - Part 1. Want to lift your audio processing ability on a music box or recording mixer.

Refined Full Wave Universal Motor speed Controller. A 10Amp device to run a brush [series wound] motor and NOT an INDUCTION motor device.

A High current Four Battery/cell Balancer - Part 2.

Arduino – based MIDI Soundboard. 64 keys. – Part 1.



OUR FAVOURITES COLUMNS

The servicemen's Log.

Circuit Notebook. Always an interest circuit appears here.

Biofeedback for Stress management. Can be constructed using Vero board.

Latching output for a Remote Monitoring Station. Also see SC Feb 2020.

An alternative switched attenuator for the Sept 2020 Shirt Pocket Oscillator.

Follow on from SC Dec 2020 for Constant magnitude AC current into a resistive load. See also Circuit Notebook Oct 2020.

Vintage Radio. Phillips 1948 table model 114K Six valve radio.

EVERYTHING ELSE.

Mailbag always has some interesting questions.

Notes & Errata.. Feb 2021 Arduino based power supply. Mar 2021.High Current Battery balancer. Aug 2015. LED party Strobe Mk2.



FEATURES & REVIEWS.

P12 Advanced Medical & Biometric Imaging - Part 1. Looks at the start of X ray photography out of accidental discoveries in 1785 by William Morgan and a gas discharge tube, and 1888 by Phillip Leonard finding his photographic plates were exposed from a Crookes display tube. Rontgen is acknowledged as having made scanning.] and Magnetic Resonance Imaging [MRI] Other named processes are SPECT {Single Photo Emission Tomography} and Positron Emission Tomography or for deep tissue penetration or move up to 7-18MHz for shallow less tissue but better resolutions.

Television has been used in the process of body investigations and a flexible tube with fibre optics connected to a camera used is used to explore internal organs within the body and called Endoscopy. Final process is a special “pill” designed camera that can be swallowed and its pictures transmit as it passing around and out of the body. Ne4xt month wll continue on with Imaging and applications not with medical use such as archeology, biometrics, engineering defects and contraband detection.

P35 Automated PCB Assembly for Home Constructors. Smaller delicate components not your cup of tea in assembling projects then pay a bit more and have someone else put it together for you at a small charge . There is one requirement though that you need to supply the computer generated Gerber file and that means you have done the board design and layout plans with component listings.

P38 The History of Operation Amplifiers [OpAmp] Was first designed in 1927 by Harold Black on a scrap newspaper on his way to work at Western Electric later Bell Telephone. He thought about using negative feedback to lower distortion in telephone repeater amplifiers which were vacuum valves then. The name Opamp came about in 1940s and with development of the transistor in Dec 1947 leading to miniature amplifiers replacing bulky and hot valves. Burr Brown co made the first was about \$2 and still the LM741 available today. From here the IC Opamp is in regular use. Read on about how it works and the application of Negative feedback is used to make it work. .

P88 El Cheapo Modules: USB-PD Triggers. Jim Rowe again explains how this USB-PD system also has USB-Triggers and they appear to do the same job as the straight USB-PD chargers and there are some that are just used as a decoy. ?? whatever

Follow these links further.

USB-C: <https://w.wiki.nts>

USB-PD <https://w.wiki/34dT>

[Siliconchip.com.au/link/ab7I](https://siliconchip.com.au/link/ab7I)

[Siliconchip.com.au/link/ab7m](https://siliconchip.com.au/link/ab7m)

Quick Charge: <https://w.wiki/34dU>

CONSTRUCTIONAL PROJECTS.

P26 Second Generation Colour Maximite 2. – Part 1.

Backwards compatible with four times RAM. 24 bit color and 1920x1080 video and more.

P46 Nano Pong using an 8 -pin PIC.

Very cheap arcade unit on a mini PCB and connects to TV via a RCA cable.

P68 Multi Purpose Battery Manager.



An update to earlier Battery logger and interface the High current Bqattery Balancer Up to four chargers and switch over 20A at 10-60Volts.

P92 Simple Linear MIDI Keyboard. Alternative to the 64 key MIDI Matrix by use of 8 button modules.

YOUR FAVORITE COLUMNS.

P61 The Serviceman's Log. Dave presents a number of varied service jobs and discusses the current practices that involve industrial theft of designs by others and makes it difficult rfor the legit serve person gaining data about the equipment in use.

P80 Circuit Notebook.

1. Easy build portable amp using modules from the web and giving USB, MP3 Bluetooth, TF/SD, AUX with stereo out and battery monitor tester display.

2. Frequency meter with non contact main reading. Based on an ATMEGA 8A-PU and a 16x2 LCD Module all running from a 9V battery running thru a 7805 Regulator. A selector switch allows sampling the mains freq by an RF input via IC1 an 4024B IC and switched to coax input that allows sensing via a short wire antenna of the mains radiated voltage.

P98 Vintage Radio. Ian Baty Looks at the 1961-65 BUSH VTR103 AM/FM Radio manufactured in the UK. The BUSH company started in 1932 and later became part of the RANK organization and also manufactured TV of which the TV22 was one.

This radio has three bands and coming from the northern hemisphere starts with the long wave 158-280kHz LW band, 526-1605 kHz MW and the 87.5-100MHz FM allocation. .

With a well laid out open design on metal chassis and point to point soldered components and using transistors similarly mounted. Just a bit early for the usage of a printed circuit board here the FM tuner sits in its separate metal box and own antenna input lead. The VHF radio has its own RF coils mounted on a centrally mounted tube in the enclosed box while the HF coils are on a long ferrite stick running down the center of the radio. Thgese styled radios running off a 9Volt battery were very popular with young people down the beach or on picnics in the bush because they were very well designed and had better sensitivity than many sets about today. AM sensitivity was 3.4yVolts for standard 50mW out at 600kHz and 2.4yVolts at 1400kHz for 10dB S/N ratio.

EVERYTHING ELSE.

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| P96 | SC Online shop | P112 | Advertising Index. |

Notes and Errata

JUL/AUG 2015 Ultra-LD Mk4.4 Amplifier Incorrect values for couple of circuit voltages.

Please read and amend your copies in case you decide to build this unit at later stage.

SILICON CHIP MAGAZINE JULY 2021

FEATURES AND REVIEWS.

- P12 The 2020 mission to Mars. It arrived in Feb 2021 and looked for any signs of life. Past or present.
- P36 How USB Power Delivery {USB-PD} works. You can have 100W {20V@5A} max delivery using UHB-PD. Read how it works.
- P42 El Cheapo modules: The USB-PD chargers. The article has a warning by the author [Jim Rowe] with a warning on purchasing certain USB2.0 to USB-C and type A plugs for use with power transfer or data transfer in mind.
- P73 Review: Tecsun PL-990 receiver covers 100kHz to 108MHz in non continuous bands and comes with some very nice specs, a carry case, charger cable for USB, wind up ext antenna, lithium battery and stereo ear buds and for a few more \$ a hard shell carry case to protect. www.tecsunradios.com.au have the latest details and its early cousin PL-990 was reviewed in Dec 2014 and may be read at siliconchip.com.au/Article/8203 The PL-990 is \$ 550.

CONSTRUCTIONAL PROJECTS.

- P26A. Here is a 20A DC Motor Speed Controller suitable for wide range of uses with soft start and low voltage detect facility. Using PWM it will operate DC motors from near 0V up to 30Volts. The controller can operate from a separate lower voltage supply than the motor if required.
- P46 Model Railway Level crossing controller project. That operates two barrier servos from a small pcb. Make your own boom gates and signs.
- P64 Silicon Labs-based FM/AM/SW Digital radio uses a single chip with some side devices for red out, audio processing and power.
- P74 Advanced GPS Computer Part 2 cont. The assembly construction details and set up details. Sit down and take some instruction on how a GPS works and what they can do for you. Also see Sil Chip Aug 2019 for more details.

YOUR FAVOURITE COLUMNS.

- {61 Circuit Notebook. 1. Coded door buzzer.
 2. Adding Shuffle to low cost MP3 player module.
 3. DIY pulse Oximeter.
- P91 Serviceman's Log. Interesting usually for all types of electronic devices serviced but this time Dave has a tank, and it could be bottomless unless he stops somewhere. When do you decide a repair is not worth going on.?
- P98 Vintage Jukebox. The Rowe AMI JAL-200 Jukebox. An Aussie device C1963 by National Instruments. The photographs are reminiscent of my memories of playing with old RTTY machines. Real clunkers but interesting to read how it works from selecting your favorite record [45rpm] to hearing the sounds come out. . I had to service a similar brute once so this was interesting to read of.

EVERYTHING ELSE.

- P2 Editorial. P4 Mailbag where every one can have their say.
- P104 SI Online shop. P106 Product showcase.
- P107 Ask Sil Chip P111 Market Centre.
- P112 Notes and Errata see and amend your older copies and articles.
- JUNE 2021 Advanced GPS computer.re correct part no.
- June 2021 Mini Arcade Ping pong Part subs and pinout adjustment.
- Apr 2021 Refined Motor speed Controller Alternate PIC firmware refers to procedure of resetting.
- June 2018 USB Flexitimer. CCt swap for LED's 2&3 and connect to IC1 *And that's all folks.*

