BARG News

Ballarat Amateur Radio Group

Inc. #6953T

May 2022

Monthly Newsletter

Next Meeting

7:30pm, Friday 27th May 2022

At the Airport

All Welcome

Contacting us

You can e-mail the secretary

vk3bml@barg.org.au

We're on the web

www.barg.org.au

https://twitter.com/vk3_barg

https://www.facebook.com/groups/VK3BML/

President's May Report

The last two meetings have been very productive with a lot of good work down on antennas and antenna towers. Both meetings ran on a Saturday with a sausage for all who attended.

The next meeting will be a Friday night meeting, face to face out at the airport. 7:30pm start on Friday 27th May. There'll be a brief meeting followed by some technical discussion.

A question for members regarding the timing of our meetings. Should we move to Saturday only meetings? Should we go back to Friday only? Should we have a Friday, a Saturday and a Virtual meeting each quarter?

Construction night will be Monday June 6th at 7:30pm, also out at the club. There's some discussion about making up equipment to run in a fox hunting event one weekend later in the year.

The club is planning to run another Bunnings BBQ later in the year. And also a Ham-fest in February of 2023. Actual dates and arrangements are still to be finalised.

I look forward to seeing you on Friday.

Malcolm. VK3OAK

IF YOU HAVEN'T BEEN TO A COFFEE MORNING, GIVE IT A TRY

The location is "Food Seduction on Doveton", a locally owned café on the site of Gove's Bike Shop, on Doveton St Nth.

10:00am start is the usual drill and we sit down, enjoy a great coffee and snacks provided by Micheal and Tina and discuss and solve the worlds problems in a couple of hours.

Great service, you order, Micheal serves.

Food is available from Tina's homemade cookies to light snacks and toasties, endorsed by Craig VK3KG, a larger meal menu is available.

Comfortable atmosphere and convienient location.

Club Nets: **VHF NET:** Every Tuesday Night at 8 pm on 146.750 MHz - VK3RBA
HF NET: Every Thursday Night at 8 pm on 3.608 MHz - VK3BML
6m NET: Every Tuesday Night at 8:30 pm on 53.650Mhz RX / 52.650Mhz TX - FM with a 91.5 tone - VK3RWU
BEACONS: VK3RMB 432.536 & 1296.536
REPEATERS: VK3RWA - 147.100, VK3RBU - 438.475, VK3RPC - 144.750, VK3RBT - 146.650
VK3RBA, Mount Buninyong - 146.750 & 439.275 & 1273.925
VK3RBA and VK3RWU on Mt William, VK3RCU on Mt Moliagul, VK3RBH in Geelong and VK3RAD in Mitcham are linked. All on 70cm.
VK2RWB, Mt Gwynne added to the linked system. The system can be accessed via IRLP node 9503.

VHF and Above for May 2022

With the colder weather starting to arrive there's not a lot to report regarding activity on the VHF and above bands.

I hear that Steve VK3ZAZ is copying bursts of DX signals on 6 metres which is due to the ability of digital programs being able to decode signals below what we can hear audibly.

Paul VK3TXR is active on the weekends on 6 metres using meteor scatter with signals being decoded from within Australian States.

It's good to see that some of our enthusiasts are still plugging away showing us that it's still possible to have contacts when the doesn't appear to any usual SSB type propagation.

I can also report that a few of the members have been working on a portable unit to determine Grid Square locations for use when going portable including for field day activity. Using an Arduino Nano and a program developed by VK5APN it's possible to have grid square readout to 10 characters which dramatically provides the exact location from where a station is operating from.

If any other members are interested, I suggest you have a look at the website of VK5APN where the Arduino Sketch, Circuit Diagram can be found. Further info can be obtained from VK3KQT, VK3KG or VK3AXH.

http://people.aapt.net.au/~pearsons/Grid_Square_Display.html

There is an activity on 23cm on the 23rd of May being organised by stations in VK7. If you are interested in this activity, get your gear organised and have a look on Facebook for further details.

Reports have been received regarding the 1296MHz beacon which have been noted. Coverage seems to be quite good particularly towards Melbourne which is partly shielded due to it's location. Special thanks to Roger VK3ADE for his donation of the P.A. module and Lachlie VK3ALM for the temperature control module which will hopefully protect it against extreme changes.

Work also continues on the 432MHz beacon with an intermediate amplifier being put together to drive the P.A. Steve VK3ZAZ organised a driver amplifier which will hopefully do the job.

The support given to these projects is well received and allows us to keep providing these facilities for this part of the county.

Till next time cheers, Ian VK3AXH

ITEMS FOR INCLUSION INTO THE MAGAZINE

If you have even an idea for articles or data for the newsletter, please let me know.

If you have information and would like a newsletter article written on it, please let me know.

Web links and/or printed material will be accepted, I can scan any articles you want returned.

I can write the article around the material or idea you supply.

Knowing what you want to see in the newsletter helps immensely toward what I publish.

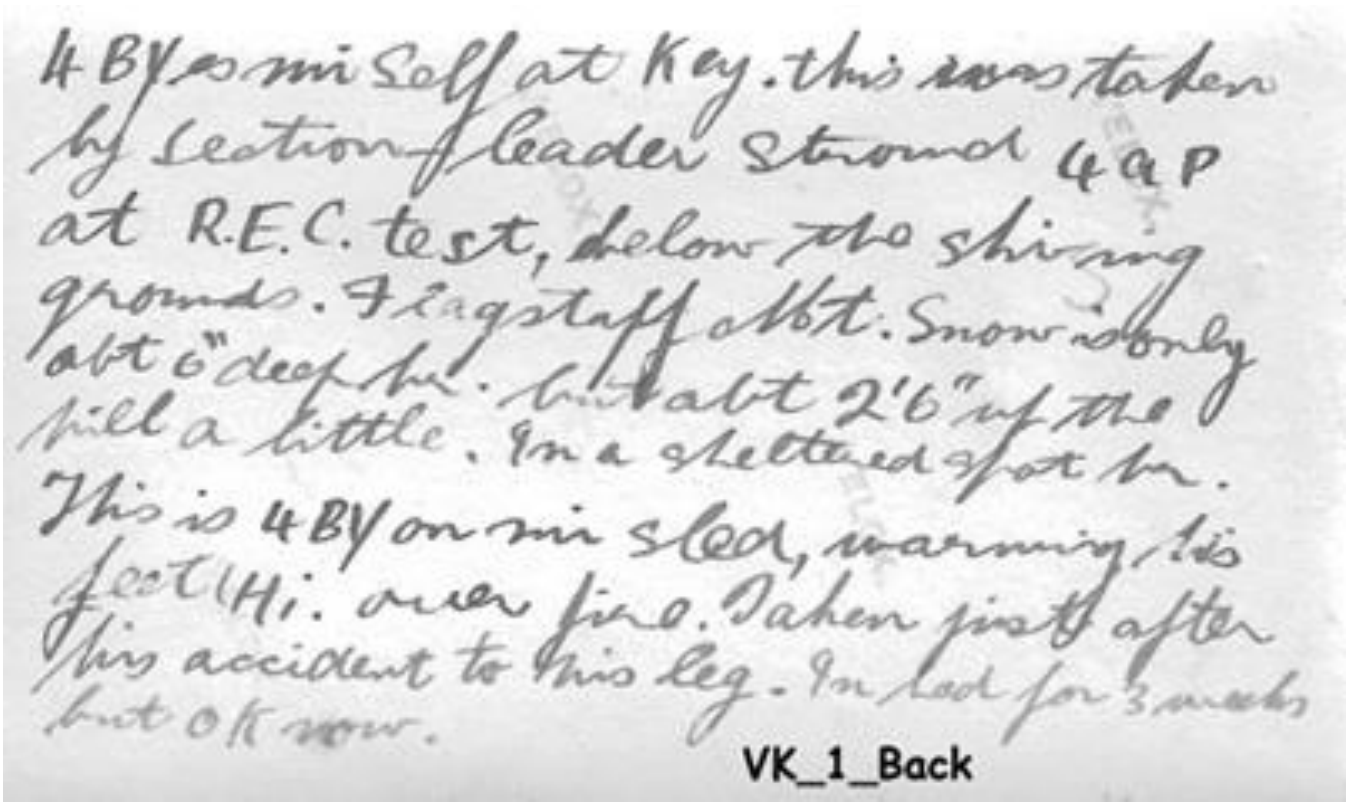
Anyone with old photographs of amateur gear or operation and club activities will be very welcome.

Tom.. VK3DMK… tomvk3dmk@gmail.com

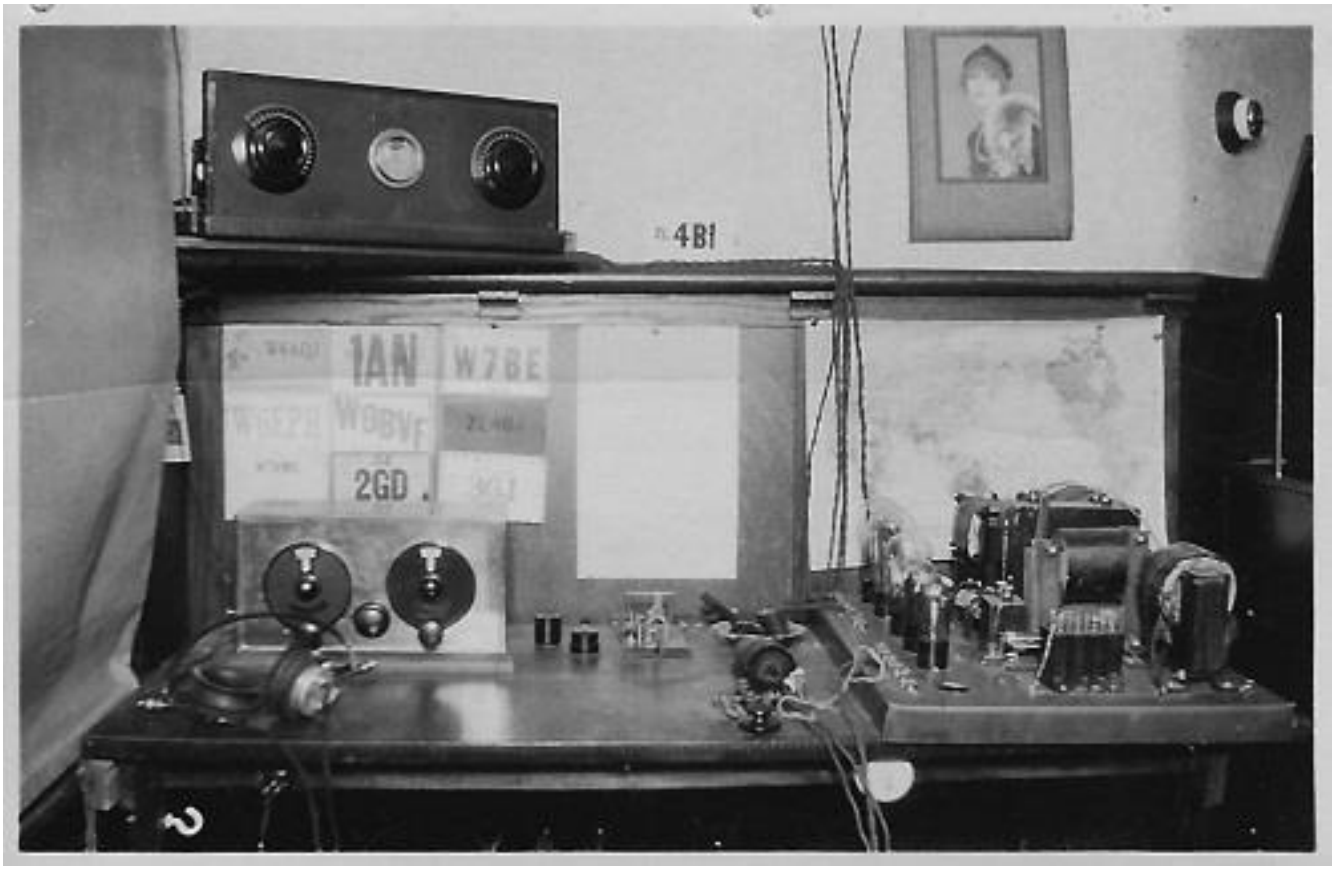
Some More VK3NQ Archive Pictures.

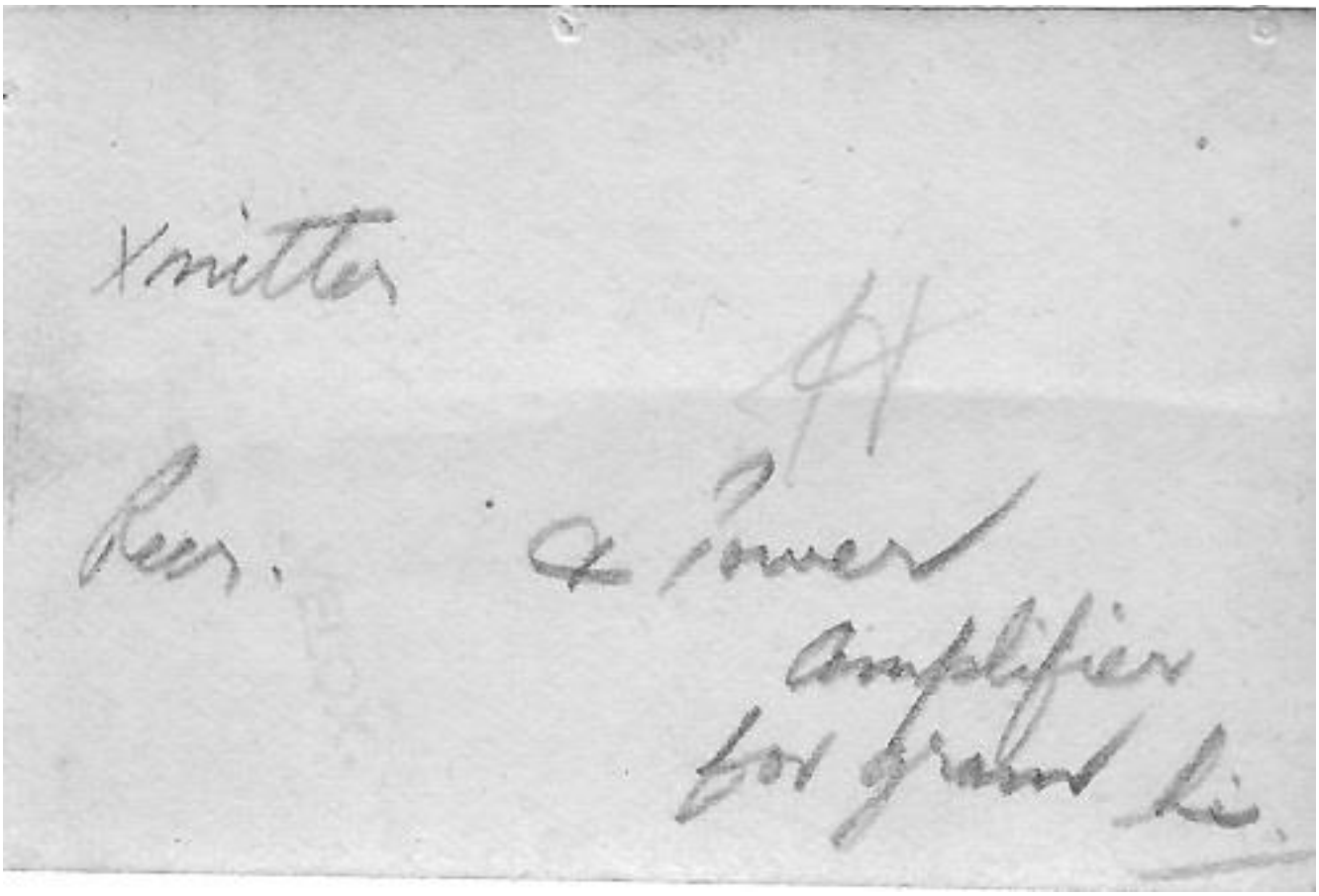
Contributor Tom VK3DMK
Some more pictures from VK3NQ collection.

VK_1_Front



VK_1_Back


4B1
1AN
W7BE
2GD


Xmitter
Rec.
& Power
amplifier

AUSTRALIAN RADIO TIME-LINE

With 2022 being the 100 anniversary of ABC radio.
2023 will be the 100 anniversary of regular radio broadcasting.
Craig VK3KG, has shown me a Philatelic Bulletin December 1973 from the Australian Post Office, with an article of the brief history of broadcast radio in Australia.

I found this timeline of various landmarks in Australian Broadcast Radio.
Highlighted are some of the more notable periods in time, including Henry Sutton's contribution to wireless in Australia.

https://austamradiohistory.files.wordpress.com/2021/01/australian-a.m.-radio-timelines.pdf

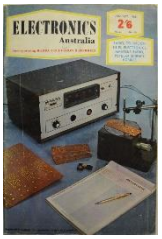
1906 The first official Morse code transmission in Australia was conducted by the **Marconi** Company from Victoria to Tasmania.

1908 Ballarat inventor Henry Sutton demonstrated voice transmissions while contacting a U.S.A. naval fleet visiting Australia.

1910 The Wireless Institute of Australia (**W**.**I**.**A**.) is formed by Walter Hannam (the first Australian radio operator in Antarctica).
1912 A Government network of coastal and island Morse code stations was established for telegrams and shipping emergencies.
1913 Amalgamated Wireless Australasia (**A**.**W**.**A**.) was established by merging Marconi and Telefunken.
1918 The first experimental direct Morse code transmissions between England and Australia were conducted by **A**.**W**.**A**.
1918 The first public demonstrations of music and speech broadcasts in Australia were conducted over several days at the Perth Agricultural Show by licensed amateur operator Walter Coxon (later **6AG** and **6WF**).
1919 A.**W**.**A**. conducted their first demonstration of music and speech broadcasts to engineers in Sydney, hosted by Ernest **Fisk**. Coverage was 500 yards and lasted long enough to play the record "God Save the King".
1920 A.**W**.**A**. became Australia's first manufacturer of valves.
1922 A.**W**.**A**. applied for broadcasting licenses in all parts of Australia. All their applications were refused.
1922 Charles MacLurcan is issued with Australia's first broadcast licence, signed by Prime Minister Billy Hughes, for **2CM** Sydney.
1922 Thomas Edison (inventor of the phonograph) said *"The radio craze will soon fade"*.
1922 The popular magazine "*Wireless Weekly*" was launched by Will MacLardy from **2HP** (which later became **2SB**/**2BL**).
1922 Valves were installed in **A**.**W**.**A**. radios for the first time, enabling loudspeakers to be used instead of headphones.
1923 2FC in Sydney (273 KHz.) is licensed as the first commercial station in the Southern Hemisphere (10-9-1923). However, **2SB**
in Sydney (previously **2HP,** which changed to **2BL** in March 1924), was launched before **2FC** on 23-11-1923, using 857 KHz.
1924 3WR in Wangaratta is the first non-metropolitan station to be issued with a commercial licence.
1924 Grace Bros. department store in Sydney established the first retail outlet in Australia for selling receivers.
1924 2CM in Sydney (Australia's first fully licensed broadcast station) moved to short wave.
1925 Research in August indicated that 75% of listeners were using crystal sets.
1925 Numerous attempts were made to experiment using radio to transmit light, heat, power, refrigeration, cancer cures, and movies.
1925 2UE in Sydney was the first in Australia to experiment sending still pictures by radio to newspapers.
1925 2XT was launched as the world's first broadcasting station in a train. They broadcast weekly in different towns until 1927.
1926 2BL programs were relayed through shortwave station **2YG** to allow **2BL** to be heard throughout Eastern Australia and N.Z.
1926 2UW in Sydney was the first station in the world to broadcast serials. They didn't stop until 1964.
1926 2BL in Sydney was the first to try "Talk Back" radio. They soon realised the drawbacks of not being able to delay or edit calls.
1927 A.**W**.**A**. shortwave station **2ME** in Sydney was the first Australian station to experiment with F.M. (mono only on 9 MHz.).
1927 A.**W**.**A**. shortwave station **2ME** in Sydney relayed some **2FC** programs to medium wave stations in India, South Africa, Canada, United Kingdom, and the U.S.A.
1928 6WF in Perth became the only station to be operated by the Federal Government (for 10 months).
1928 3UZ programs were relayed through shortwave station **3LG** to allow **3UZ** to be heard throughout Victoria and Tasmania.
1929 6WF broadcast the first Australian stereo experiments by broadcasting a play using two microphones into two transmitters on
different frequencies. Two receivers were needed to hear stereo.
1929 4CM in Brisbane was the first Australian station to experiment transmitting television (earlier called 'radiovision').
1929 The privately owned Australian Broadcasting Company completed the takeover of programming all twelve "A" class stations:
2FC, **2BL**, **2NC**, **2CO**, **3AR**, **3LO**, **4QG**, **4RK**, **5CL**, **5CK**, **6WF**, **7ZL**, creating Australia's first programming radio network.
1929 3DB and **3KZ** cooperated by using their transmitters for television experiments (one transmitter for sound and one for vision).
1930 2UW Sydney formed the Federal Radio Network with nine other stations in five states, including **3DB**, **4BC**, **5AD**, and **6ML**.
1930 Marconi, by sending a radio signal from his yacht in Italy, turned on 2,800 lights around the Sydney Town Hall.

1930 The Federation of Australian Radio Broadcasters was established (later Commercial Radio Australia).
1931 3AK in Melbourne, owned by the Akron Tyre Co., was the only applicant for a "C" class licence, which were for specific sponsor licenses (none were issued). Their application was rejected; however, they were eventually issued a "B" class licence.
1931 2KY in Sydney was the first station in the world to broadcast parliament.
1932 3KZ in Melbourne stated that "*Television will never be introduced into Australia*".
1932 The **A**.**B**.**C**. was established, taking over the twelve commercial "A" class stations previously programmed by the privately owned Australian Broadcasting Company.
1932 A proposal from Ernest Fisk at **A**.**W**.**A**. that all country stations use long wave instead of medium wave was considered.
1932 The first independent Australian radio survey was conducted in Sydney by Bill McNair (later McNair Anderson).
1933 2GB in Sydney was the first station to play transcription records and had the world's largest transcription library.
1933 The popular **A**.**B**.**C**. program the "Argonauts Club" was launched by **3LO** and went national in 1941 until closing in 1972.
1934 3DB in Melbourne had the largest record library in the world.
1934 Glebe Council in Sydney built a "Wireless House" in a park, relaying the **A**.**B**.**C**. for people who couldn't afford a receiver.
1935 Amateur **r**adio **4CM** in Brisbane was granted the **first television licence in Australia** (closed in 1939 due to WWII).
1935 2UW in Sydney was the first station in the British Empire to broadcast 24 hours per day.
1935 The **A**.**B**.**C**. in Sydney installed a disc recorder, enabling the recording of programs for the first time.
1936 An undersea cable was installed across Bass Strait allowing radio programs to be relayed to Tasmanian stations.
1936 A.W.A. launched radio **9MI** with two studios on board the M/V Kanimbla. This station was used to relay some programs to **A**.**W**.**A**. network stations via a shortwave transmitter.
1937 The one millionth listener receiver licence was issued.
1938 The first demonstration of Australian stereo broadcasting using one transmitter was trialled by Ray Allsop from **2BL** on 9 MHz.
1938 The Major network, headed by **2UE**, and the Macquarie network headed by **2GB**, were established.
1938 6PM in Perth started Australia's first music chart with their "Top 8 Hit Parade".
1938 Ferris produced the first car radio designed and built in Australia; the Ferris Fultone 56.
1939 All television, amateur radio, and experimental broadcasting licences were cancelled due to WWII security concerns.
1939 The **A**.**B**.**C**. launched their periodical "*A.B.C. Weekly*".
1939 2UE in Sydney was the first Australian station to broadcast the six pips every hour.
1939 The periodical "Radio and Hobbies" (previously "Wireless Weekly") was launched.
1939 Radio Australia ("Australia Calling" until 1945) started with VLR (A.W.A. station **3ME**), and VLQ (A.W.A. station **2ME**) with **A**.**B**.**C**. programming in English, Spanish, French, and Dutch. All programs commenced with a kookaburra laughing.
1940 A secret underground station was installed in Perth to keep information flowing in case of attack during WWII.
1940 2GB in Sydney became the largest producer of radio drama programs in the Southern Hemisphere.
1941 2HD, **2UW**, **3AR**, **3KZ**, **4AT**, **5KA**, and **5AU** were closed by the military for airing security breaches during WWII.
1942 2UW broadcast the first nationally sponsored top rating serial "Big Sister", five days a week for five years.
1942 The **A**.**B**.**C**. program "Kindergarten of the Air" was launched by **6WF** and went national in 1943 until moving to TV in 1965.
1942 Hector Crawford established Crawford Productions, specialising in radio serial transcriptions.
1944 The Australian Military open 29 radio stations in New Guinea and several Pacific islands during WWII to entertain our troops.
1944 "The Lawsons" (later "Blue Hills") started on the **A**.**B**.**C**. with 7,094 episodes. It was Australias' longest running radio serial until surpassed by "How Green Was My Cactus" which was still in production in 2018.
1944 2BH Broken Hill broadcast several WWII Relief Concerts which were also on shortwave via the Royal Flying Doctor Service.
1944 Grace Gibson established her radio production company, specialising in radio serial transcriptions.
1945 5KA Adelaide was the first Australian station to experience an announcers strike (caused by a flea infestation).
1946 A Government hearing recommended that television should start immediately, and all A.M. stations be issued an F.M. licence.
1947 Commercial radio programming consisted of local live 32%, Australian records 64%, and U.K. and U.S.A. records 4%.
1948 Australia's first Antarctica broadcasting station, **0HI**, is opened on Heard Island (moved to Mawson as **0MA** in 1955).
1948 The **A**.**B**.**C**. launched experimental F.M. stations in most capital cities on 92.1 MHz. They were all closed by 1958.
1948 The Australian Broadcasting Control Board is established to regulate broadcasting.
1951 The transistor (which led to Integrated Circuits) is invented, which revolutionised portable radios and other electronic devices.
1952 Most radio variety and drama programs were replaced by quiz programs compared by Bob Dyer and Jack Davey.
1956 Television was relaunched in Australia, causing an increase of music programs on radio, and a further decrease in radio serials.
1956 The **A**.**B**.**C**. opened news offices in London, New York, Singapore, and Port Moresby.
1956 The Periodical "Radio, Television and Hobbies" (previously "Radio and Hobbies") was launched.
1957 2GB in Sydney is the first Australian station to broadcast news on the hour, every hour.

1957 A.W.A. produced Australia's first transistor radio. It was called the "Transistor Seven".
1957 A Government inquiry into the possible introduction of F.M. radio generates little interest.
1958 2UE in Sydney started the popular "Top 40 Charts" with "*April Love*" by Pat Boone as the first number one.
1958 2CH/2SM, **3UZ/3XY**, **3CS/3GL**, **4BK/4BC**, **5AN/5CL**, and **6PM/6PR** experimented with stereo by broadcasting the left and
right channels on separate stations. Listeners needed two receivers to hear stereo.
1961 2UV in Sydney was issued with the first educational broadcast licence in Australia, operating on 1900 KHz.
1962 2FC in Sydney established a duplicate station at Emu Plains in case of a nuclear attack on Sydney during the cold war. Apart from late night testing from a Bathurst studio, it never went to air. The tower was in the Emu Plains prison until 2009.



1966 The periodical "Electronics Australia" (previously "Radio, Television and Hobbies") was launched.
1967 2UE in Sydney and **3DB** in Melbourne were the first to legally broadcast "Talk Back" programs at midnight on the 17th of April.
1972 A decision to introduce F.M. radio on the U.H.F. band was quickly changed to V.H.F. after intense industry lobbying.
1972 5UV in Adelaide was issued with the first community broadcasting licence in Australia.
1972 2MBS in Sydney was issued with the first fulltime F.M. broadcasting licence in Australia.
1973 The Australian music quota for commercial radio was 10% (12.5% in 1974, 15% in 1980, and 20% in 1986).
1974 The Federal Government abolished radio and television receiver licence fees which were used to fund the **A.B.C.**
1975 Ethnic radio stations **2EA** in Sydney and **3EA** in Melbourne (Ethnic Australia) were launched.
1975 2JJ in Sydney became the world's first non-commercial 24 hour rock music station.
1975 Some stations started using satellites to relay their programs.
1976 The Australian Broadcasting Tribunal was established (previously the Australian Broadcasting Control Board).
1977 The Special Broadcasting Service (**S.B.S.**) was formed to take over **2EA** and **3EA** after the **A.B.C.** refused to.
1978 A.M. radio station frequencies were changed from 10 KHz. spacing to 9 KHz. spacing, creating twelve extra M.W. channels.
1978 2WEB in Burke became the first of a small number of A.M. stations to be issued with a three letter callsign.
1980 3EON in Melbourne was the first commercial station to be issued with an F.M. licence.
1982 7RPH in Hobart became the first Radio for the Print Handicapped station.
1985 A.M. radio stations were allowed to convert to stereo; however, A.M. stereo receivers were almost non-existent.
1986 2GF Grafton announcer Mike Summers broke the world record for the "*Longest Continuous Broadcast by One Announcer*".
1990 The **A.B.C.** launched its' Parliamentary Broadcast network (**2PB**, **3PB** etc.).
1990 2VM in Moree became the first A.M. regional station to be granted a supplementary F.M. licence.
1992 Programs were presented in 69 languages across Australian radio stations.
1992 The Australian Broadcasting Authority was established (previously the Australian Broadcasting Tribunal).
1993 Bruce Carty on **2CCC** broke the world record for the "*Longest Continuous Broadcast by One Announcer*" as recognised by the "Guinness Book of Records". He achieved over 121 hours.
1994 The ABC Parliamentary Broadcasting Network went 24 hours with "News Radio" programs when Parliament wasn't sitting.
1998 Some stations started relaying their programs live on the internet. **2GB** in Sydney was the first.
2002 Commercial Radio Australia was established (previously the Federation of Australian Radio Broadcasters).
2004 Australia had 107 AM and 150 FM commercial stations, plus 14 AM and 328 FM community stations.
2005 The Australian Communications and Media Authority was established (previously the Australian Broadcasting Tribunal).
2007 The M.W. band was extended to 1701 KHz. creating 11 more channels. However, few receivers covered the extra frequencies.
2009 Digital radio transmissions were introduced in Sydney, Melbourne, Brisbane, Adelaide, and Perth, using the proposed but never
activated 9A television channel (digital trials commenced in the following year in Canberra and Darwin).
2013 Commercial Radio Australia appoints GFK to replace Nielsen as their ratings research entity.
2013 The moving of all television stations from the F.M. band was finally completed, allowing more F.M. radio licenses to be issued.
2014 On 2nd November Alan Jones on **2GB** achieved his 100th consecutive ratings win. (His last **2GB** shift was 29th May 2020).
2015 2GB and **2UE** announced a forthcoming merger, with **2CH** to be sold. (**2CH** became an SEN outlet in September 2020).
2017 Ray Hadley stated "*when I leave this industry, it will owe me nothing, but I will owe it everything*".

An interesting fact about Henry Sutton;

Sutton demonstrated a light globe sixteen days after Edison's demonstration on 31 December 1879.[1]:38[3]:316

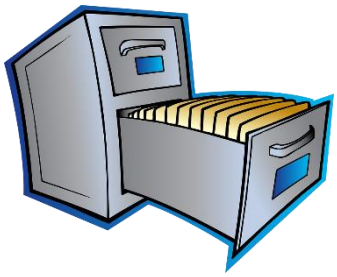
Subsequently[*when?*] Sutton's vacuum pump design which overcame deficiencies in the Sprengel pump, was used for the production of light globes by the Edison Swan company.[1]:42–4[3]:316–7[26]

The Philatelic Bulletin also lists 2FC Broadcasting times. These were published in newspapers and the emerging wireless publications.

2FC BROADCASTING TIMES
Sydney Mean Time

P.M.
12.55: Tune in to the Music of the Chimes.
1.00: "Sydney Morning Herald" News and Cable Service.
1.25: Coastal Farmers' Market Reports.
1.30: Stock Exchange Intelligence.
1.32: Weather Report.
1.35: Midday "Evening News" News and Cable Service.
1.45: Close down.
3.00: Chimes.
3.05 to Musical Programme.
3.45:
3.47: Afternoon Weather News.
3.50: "Evening News" News and Cable Service.
4.00: Close down.
6.30: Chimes.
6.33: Children's Time — Lamplighter Stories.
7.00: Dalgety's Market Reports.
7.05: Fruit and Vegetable Market Reports.
7.07: Closing Stock Exchange Intelligence.
7.10: Late "Evening News" News and Cable Service.
7.15: Close down.
7.55: Tune in to the Music of the Chimes.
8.00 to Entertainment
10.00: See List hereunder.

EVENING ENTERTAINMENT
Mondays: Popular Concert.
Tuesdays: Theatrical Items.
Wednesdays: Dance Programme by Farmer's Novelty Jazz Orchestra.
Thursdays: Music Lovers' Night.
Fridays: Popular Concert and Amateur Theatricals.
Saturdays: Choral and Popular numbers.



FOR THE BARG ARCHIVES

Would old and new members please take a photo of yourself.

Please print name call sign and year on back of photograph as these will be used for history of BARG.

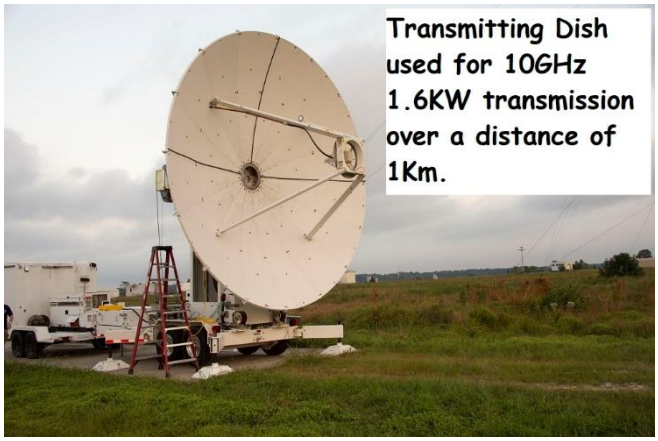
Please contact Doug vk3vba

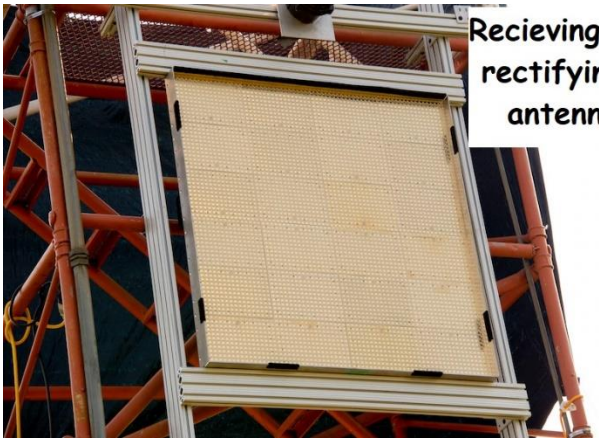
dougr@ncable.net.au 53323565

NRL Conducts Successful Terrestrial Microwave Power Beaming Demonstration

On 20th April 2022 a team of Washington researchers from the U.S. Naval Research Laboratory recently demonstrated the feasibility of terrestrial microwave power beaming by transmitting 1.6 kilowatts of power over 1 km at the U.S. Army Research Field in Blossom Point, Md., the most significant power beaming demonstration in nearly 50 years.

The project, Safe and COntinuous Power bEaming – Microwave (SCOPE-M), was funded by the Office of the Undersecretary of Defense for Research and Engineering's Operational Energy Capability Improvement Fund and led by the project principal investigator, Christopher Rodenbeck, Ph.D., Head of the Advanced Concepts Group, NRL.





Brian Tierney, Ph.D., SCOPE-M electronics engineer, said the DOD is interested in wireless power beaming, particularly wireless power beaming from space, and that a similar rectenna (rectifying antenna) array as used for SCOPE-M could be used in space. A rectenna is a special type of receiving antenna for converting electromagnetic energy into direct current electricity in wireless power transmission systems.

The transmitter consisted of a 100-kW high-power amplifier to boost the signal going to a microwave dish antenna. The dish could be electronically adjusted so that the beam could be focused at a specific distance.

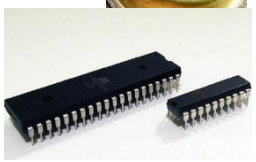
The power was sent at 10 GHz. This was high enough to keep the beam tightly focused, but not so high that the beam lost power to the atmosphere. In fact, tests showed that even in heavy rain the beam would lose less than 5% of its transmitted power. Equipment needed to work at 10 GHz is also inexpensive and well-tested.

https://www.navy.mil/Press-Office/News-Stories/Article/3005894/nrl-conducts-successful-terrestrial-microwave-power-beaming-demonstration/

Silicon Chip April 2022 Review.

P14 Geiger Counters and Radiation; Investigates ways to measure radioactivity electronically plus some of the basics of radioactivity. Includes map of Australia's uranium resources and why bananas are radioactive.

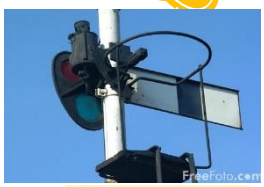
P38 The History of Transistors Part2; Continuation of the discoveries and processes of semiconductor types as the science and engineering advances from point-contact to JFETs. Very good explanatory diagrams and text.



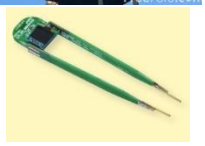
P80 New 8-bit PICs from Microchip; Not pictures but new 8-bit microcontrollers that even though we have a chip shortage are still being developed with better and greater resolution ADC to faster and more RAM/ROM plus extra functions to make coding and peripherals easier to add.

P82 Dick Smith Contest Results; The results of the Noughts and Crosses contest, inspired by Dick Smiths device he made many many years ago. Some interesting results from using microcontroller to an electromechanical model.

P27 500W Power Amplifier, Part1; A new design for all the audiophiles keen on lots of watts. This first part discusses performance, how the circuit works and the physical design decisions as well a schematic.



P50 Railway Semaphore Signal; A small controller for servo operated British and Australian type semaphore signals. It has trim controls to set the range of actuation so it can be adapted for many servo applications that need a set max and minimum turn angle. A simple single pole switch selects up and down.



P72 Update: SMD Test Tweezers; Improved SMD tweezers over the previous model, measures resistance, capacitance, diodes, LEDs. I have had a play with one of these devices and when working with SMD components this will be great for doing in-circuit tests.

P100 Capacitor Discharge Welder, Part2; Construction details of this interesting welder for those looking for a spot-welder. It has output volt and pulse time controls.

P89 Circuit Notebook; Simple adjustable electronic load: Three reaction time games in one project: NBN backup battery:

P92 Serviceman's Log; IR viewer: Ducted Gas Heater controller: Tektronix 556 Scope Repair: Faulty Air Conditioner switch:

P110 Vintage Radio; Monopole D225 tombstone radio from 1934: The usual high quality review and restoration of our wirelesses from the past.

P120 Notes and Errata; Dual Hybrid Power Supply, Feb 2022: The Mysterious Mickey Oz, Jan 2022: Remote Controller Range Extender, Jan 2022: Solid State Tesla Coil, Feb 2022.

Silicon Chip May 2022 Review.

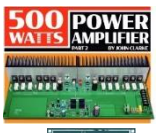
P19 All About Heat Pipes; The technology involved in heat transfer in your PC to major projects such as NASA experimental reactor for space exploration. Vapour Chambers and Thermosyphons principles are explained.

P30 The History of Transistors Part3; In depth look at BJTs, JFETs and MOSFETs. A look at the dark art of semiconductor numbering systems.

P70 Air Quality Sensors; A look and explanation of the various types of sensors that are used to measure the constituents of the air we breathe, also a look at what is available to the tinkerer/hobbyist in us that would like to experiment with some of these relatively inexpensive devices.

P34 AM-FM DDS Signal Generator; Using a DDS, Direct Digital Synthesis, IC and a microcontroller to produce an accurate sig-gen from 0.1Hz to 10Mhz, offering AM and FM modulated output for testing purposes.

P61 500W Power Amplifier, Part2; Continuation of this high-power audio amp, construction details including winding the inductor and heatsink construction. Next part (3) will be the power supply needed to let this amplifier make noise.



P76 Slot Machine; Instructions on how to make your own digital slot machine with screen and all the usual machine buttons. Uses the Micromite microcontroller and 240x320 pixel touchscreen.

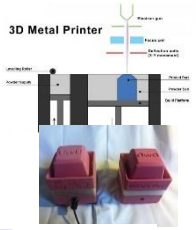
P92 Oatley LED Lighting & driver Kits; Reviews a LED light controller that can drive up to four configurations of LED lights in your shack or over your workbench. Includes schematics and construction details.

P98 Circuit Notebook; Simple Stereo Microphone: Simple Wireless Charger that includes details of the receiver if you want to integrate wireless charging into your project: Li-ion battery reconditioner: Motion-triggered ESP32-CAM WiFi Camera.

P102 Vintage Radio; Calstan 559M2 superhet; Some history about the manufacturer and restoration process to get this wireless up and running.

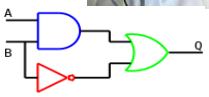
DIYODE April 2022 Review.

P35 Making with Metal; Using a laser to 3D print in metal, how it is done with YouTube links to video examples.



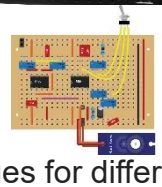
P76 Feeling “UwU”; A nerds giant 3D keyboard for using with Arduino Leonardo as the keyboard emulator to display preprogrammed emoji or phrases.

P65 Classroom Flip-Flops & Latches; An in-depth look at some basic devices that are often bewildering for the beginner to digital electronics. There is discussion of the main terminology, and cover what makes each device type unique. Also highlighting several specific ICs that are readily available on the domestic market.



P8 DIY Big Brother Part1; Multi-part series that explores DIY surveillance, so you can create your own powerful (or tiny) surveillance solution. Looking at equipment available to let you install your own video surveillance system.

P42 Non-Microcontroller Servo Driver; A servo driver made from discrete components, without the need for a microcontroller. Discusses the way a servo drive is controlled and using an LM555 to make them operate/test.



P80 Frequency Stable PWM Driver; A development of the NE555-based servo driver circuit to provide stable PWM control of larger motors. Shows component values for different PWM frequencies and output circuits.

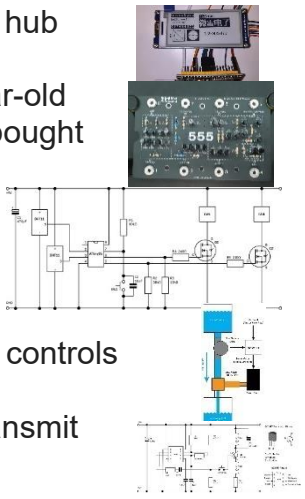
P88 Basic Telegraph Part1; Kids’ Basics; Overland Wired Telegraph. Using the venerable LM555 the article includes construction and history of Morse Code in the early communications era.

DIYODE May 2022 Review.

P7 Review FlashForge Adventurer 4; 3D printer Review and test.

P76 Home Automation Shield; A custom-made Arduino Uno shield with four relays, Bluetooth connectivity and power failure support. PCB, code all.

P83 Name that Tune; An ESP32-based e-Paper display and speech-driven hub that shows the artist, album and song details playing on your Spotify account.
P64 Celebrating The LM555 Timer; Taking a deep look at this iconic 50-year-old timer IC, how it works, and what makes it tick. Then, they assemble a kit we bought from Evil Mad Scientist.
P8 Humidity based Fan Controller; A controller which would measure humidity, and also give a PWM signal to control a MOSFET motor driver. Using an ATtiny85 for the sake of cost and space.
P33 P-I-D Control; Takes an in-depth look at PID Control and how it can be used in your own projects, including a simple garden watering system that controls water flow from a gravity-fed water reservoir.
P90 Basic Telegraph Part2; A revisit the telegraph to make one that can transmit wirelessly to a radio. Using a BC547 AM band transmitter.



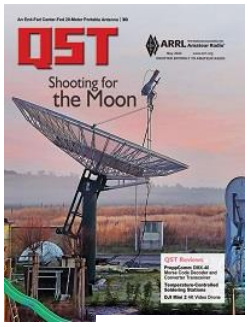
QST 10 October 2021

Craig VK3KG

P9 Social Media; - Friend and Foe. ?
P24 Letters; always may read something new or better explained.
P30 A Web switch for Selecting Antennas and radios.
P35 The DC2020 Receiver; Is a direct conversion receiver with minimum parts and easy to select other bands. Running on a 9V battery, five discrete transistors, using resistive tuning of varicaps and all fitting in a small metal tobacco tin.
P39 Review: MFJ9219 QRP Tuner, Wattmeter and Dummy load. Up to20W and for field operation. www.mfjenterprises.com
P41 Review; Dual band VHF-UHF Yagi antenna. The all-aluminium construction should give readers an idea how they can make their own antennas quite easily.
P43 Review; Portable Pro2 Equipment rack system. 12x22x18 inches suitable for an amateurs “Go To” emergency rack storage.
P46 SIGLENT SDG1062X Waveform Generator. Is dual channel 60MHz device.
P49 Pacific Antenna 20/40 Metre Trap Dipole kit. Roll your own. www.qrpkits.com
P51 ECLECTIC Technology. Voice Over LoRa Find software and docs at github.com/faydr/Qmesh
P52 Ask Dave. Getting antennas to play ball, Ground wave propagation. NVIS. Antenna tuners don’t affect antenna range, Unused antennas.
P54 Diversity Reception with two HF antennas. Calculating Transmission line Loss with SWR Readings, NOTE the small graph [figure 4] make a copy so you can make your own SWR calculations in house.
P56 Hints & Hacks. Money saving beads for standoffs, Removing Windows Ports for good and using photo albums for QSL storage.
P58 MICROWAVELENGTHS and Amateur Television. Digital. https://batc.Org.uk/live
P60 Youth on Air summer camp.
P63 Radio on the Island of Bonaire. PJ4 is an DXCC entity now since 10 Oct 2010. .
P80 Above 50MHz. Cycle 25 High activity also Noctilucent Clouds. Sporadic E. propagation.
P88 A Look Back. Threshold Detectors in a CW Audio filter. Also, a Tone generator for netting of SSB stations.
P94 Classic radio. Hallicrafters FPM-300 the last SSB-CW Transceiver.
P96 100, 50 and 25 years ago.

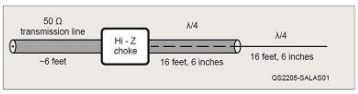
QST 5 May 2022

Craig VK3KG



P9 The Second Century, Looking back in Nostalgia.huligg

P30 End Fed Centre-Fed 20Metre portable dipole.



P33 `A simple Vertical Antenna with a spiral Counterpoise.

P36 An Inexspensive Battery Analysis.

P37 Eclectic Technology. JS6Call.

P39 Review: DMX-40 Morse code Decoder and Convertor Transceiver.

P43 Temperature Controlled Soldering irons. Looks at three and discusses importance of correct soldering temperatures and the look of the finished solder joint.

P47 Reviews the Dji Mini 2, 4K Video Drone. Very handy to observe antenna feeds and junctions without lowering devices. Of course there may be many more useses to which you can use.

P57 Wheelchair on the air. An interesting solution for an 82yr old amateur.

P89 Look Back. June 1972 An IC Audio Tune up device for the Blind amateur.

P51 Ask Dave… What do you need to ask.? Grounding matters, Balun Decisions and the Long and the Short waves.

P94 Classic Radio. Brief History of Swan Electronics.

P96 QST Index for May 1922, May 1972 and May 1997.

P53 Hints & Hacks. Repurposing PC cases; Crafting a Microphone adapter cable.

P55 Tech Correspondence. Receiver Calibration without Test Equipment. Testing a Rotator Start/Run Capacitors in circuit. worth a read and try it out. A Simple Vertical that Resonates at Two Frequencies. See QST June 2019 article refers.

Plastic Ground Rods

No more rusting or corroded ground rods! Use these plastic ground rods that will last many lifetimes!

- Very flexible and easily conforms to rocks, obstructions, etc. when driving into ground. They just bend around the rocks!
- No corrosion!
- No dissimilar metal issues...because it isn't metal!
- Low conductance.
- Impervious to red ants.