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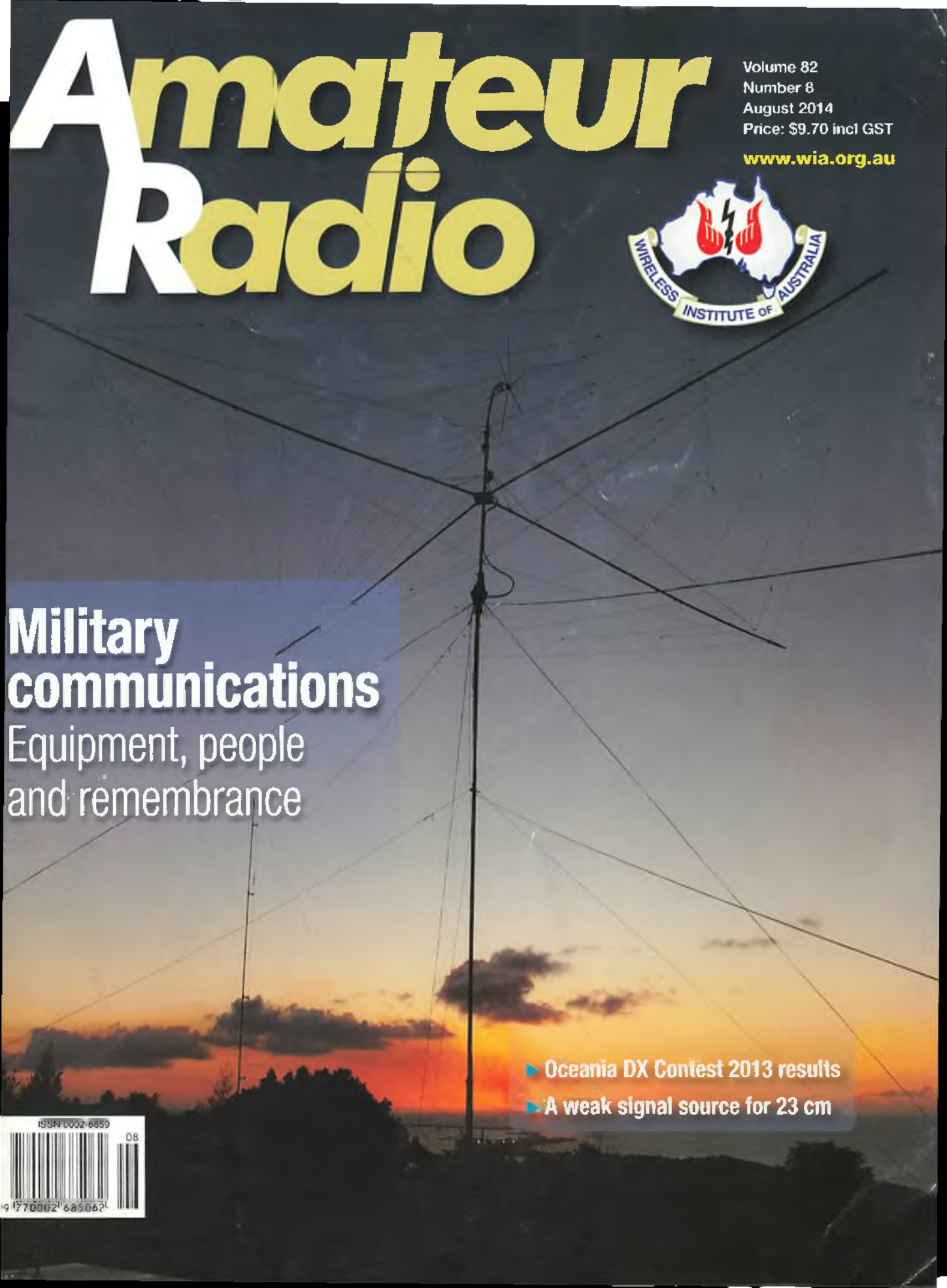

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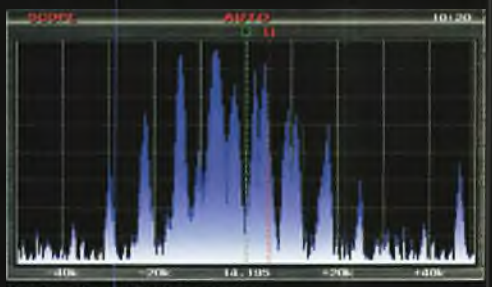

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General

Technical

Columns

This month's cover

This month features the spider beam antenna at NH2T, used in the Oceania DX Contest in 2013. See the story of the Oceania DX contest beginning on page 19. We also feature the first of a series of articles featuring Australian amateurs involved in the armed forces (page 6). The story of the ZC-1 receiver also links to conflicts past, as will the Remembrance Day Contest this month. Photo by David Mueller N2NL / NH2T.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $6.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Editorial

Peter Freeman VK3PF

Your digital *Amateur Radio*

The August edition of *Amateur Radio* is being prepared a little over a week after the July edition reached member's letterboxes in the south eastern states. In that first week, the new digital edition was downloaded by approximately 500 members. The Webmaster is tracking download times, which will feed additional information to the Board when it considers the results of the recent survey.

Several members have sent in comments about the digital edition; basically all that I have seen have been very positive. Some readers have made some suggestions about presentation format and one queried if back issues might eventually be available electronically. The Publications Committee will consider all suggestions.

Delving into the digital domain: SDR

I have been slowly building up a software defined radio (SDR) over the last few years. It all started with the *hpsdr* project. Phil Harman VK6APH gave a very stimulating presentation at GippsTech Special Edition back in 2009. GippsTech Special Edition was the first of the new format WIA AGM and Annual Conference events. Phil has played a major role in the *hpsdr* projects over the years. I read an early series of articles published in *Radio Communications* (our sister publication from the RSGB) and Phil's presentation was the final stimulus: I started ordering the various boards as they became available through TAPR. As each board arrived, I started assembling the various modules to make a radio. (That reminds me – I must actually fire the system up sometime soon!)

Between work pressures, playing a little radio and editing the magazine, the digital side was not cooperating for me. The project moved lower on the "to do" list. The *Hermes* board was announced, so I purchased one. This board will be integrated into a case, hopefully soon. I intend to use the *Hermes* in a couple of ways: as a transverter driver for higher bands, and as a Vector Network Analyser using the VK6APH (VK6PH) VNA software.

Then Apache Labs released the *Anan* series of radios. I decided to spend some more money. Workloads and a recalcitrant PC prevented me gaining much joy, so it joined the other system to be explored at a later date.

I recently purchased a new PC and last week hooked up the *Anan 100D*. But again the PC and software would not talk to the radio, so I sent off a query to the support team. I received a prompt reply with instructions on how to update the radio firmware. Once that task was completed, instant success! Initial use has only been on receive, but I am very impressed with the performance. The next task is connect a microphone (and perhaps even a CW key) and to use it on-air. Another task is to become more familiar with the software interface, as the radio has only one button – the power switch. Everything else is controlled via the software.

That only leaves one other major task for the shack/study: get the old PC to a suitable technician to sort

Continued on page 5

WIA comment

Phil Wait VK2ASD

Announcing a new WIA Grants Scheme

Earlier this year, the WIA Board was approached with a generous offer from Alan Devlin VK3XPD. Being a keen VHF/UHF/microwave operator with significant experience in weak-signal operation and the pursuit of distance records, Alan was very aware of the advantages of GPS-locking transmitters and receivers to enable very narrow band communications techniques. Alan also knew that many privately-owned amateur stations were GPS-locked, but Beacons - the very things intended to support weak signal operation by providing a propagation indicator and a frequency reference - were not.

In Alan's words, *"as an active amateur radio enthusiast, I want our beacon network upgraded to GPS-locking for the benefit of all amateur radio operators in Australia..."* and he proposed that he and the WIA should share the cost of the Beacon upgrade, to a total of $5000, half provided by himself and half paid by the WIA.

That gave us a bit of a dilemma. Although it was clearly a worthwhile project, the WIA Board is very conscious that members' money needs to be spent in an open, transparent and proper process, and although the offer was very generous, it was a one-off and 'out of the blue' proposal.

Around the same time, the Board had been discussing the future of the WIA Club Grants Scheme, which provided about $6000 per year to WIA Affiliated Clubs in a competitive arrangement for almost a decade, where clubs submitted their proposals to an independent selection committee. However, the Club Grants Scheme seemed to have run its course, with fewer submissions received in recent years, and sometimes for fairly low-grade project proposals. The WIA Board was looking for a better alternative.

Alan's offer to part-fund the Beacon GPS-Locking project, and his obvious enthusiasm to see it happen quickly, accelerated our thinking, and I can now announce that the WIA has introduced a new WIA Grants Scheme, similar to the old Club Grants Scheme, but with some important differences.

The new WIA Grants Scheme will be open to both affiliated clubs and individual members. It will also be open to non-members and non-affiliated organisations, so long as the project is for the benefit of amateur radio and the non-member or non-affiliated organisation contributes at least 50% of their own funds, with the WIA contribution paid retrospectively on completion of the project or at an agreed project stage.

But most importantly, the WIA will only fund projects that are in accordance with a strategic direction set by the WIA Board, and announced yearly, prior to the call for project proposals.

Each project will be vetted by an independent committee comprising Peter Freeman (Committee Leader and your *AR* Editor) VK3PF, Scott Watson VK4CZ, Gary Beech VK2KYP, Drew Diamond VK3XU and Peter Hartfield VK3PH, bringing a diverse range of skills and perspectives. The committee will evaluate proposals based on: benefit to the amateur radio community; not for-profit or non-commercial nature; stage of completion at the time of the application; likelihood of being completed within 12 months; and consistency with the WIA Board's specific criteria (i.e. strategic direction).

The committee quickly determined that Alan's Beacon GPS-Locking project met all the above criteria, and that it should be approved as the first project funded by the new WIA Grants Scheme. We expect there will be some interesting projects in the years ahead.

If Alan's GPS-locking proposal is fully-subscribed, at least 25 individual beacons will gain GPS-locking; more than that quantity if a number of multi-beacon sites gain the facility. I urge all beacon owner-operators – don't be shy, please apply!

On other matters, as I said in my last President's Comment, the WIA is going through a very busy period with change quickly occurring on a number of fronts, including: the Australian Spectrum Review; the review of Radiocommunications legislation; the remake of the Amateur LCD; and a newly-initiated Amateur Band Plan review. Make sure you check out the new 'Hot Issues' section on the WIA homepage, where the WIA activities with the highest importance are listed, and you can track their progress.

P.S. Alan's Beacon GPS-Locking project is featured in this month's *AR* magazine.

WIA news

Bandplans Review

The WIA has commenced a review of the Australian Amateur Radio Bandplans. Bandplans are a way of trying to give everyone a fair share; an aim which becomes increasingly difficult as spectrum becomes crowded. For instance, in the case of 2 metre and 70 cm repeaters on the east coast, the number of available frequencies is very limited and it has become necessary to reduce channel spacing or channel re-use distances, or both.

Band planning is also complicated by the need to plan, as much as possible, for emerging technologies. That means that some spectrum must be kept in reserve for new applications, and some band segments may need to be reallocated to new uses as some operating modes decline in popularity.

Some affiliated clubs and WIA members have already sent suggestions about how to improve the Bandplans, and work has already started on a revision of the 6 metre Bandplan following the closure of television Channel 0, but we are very keen to hear from all users in order to identify the current Bandplan issues.

Following identification of the issues, we will release a discussion paper later this year in preparation for the review by the Technical Advisory Committee early in 2015, led by John Martin VK3KM. Bandplan information, together with the draft 6 metre Bandplan and discussion paper, is available at: *http://www.wia.org.au/members/bandplans/data/index.php*

Please direct your comments and suggestions via email to *bandplan@wia.org.au*

Increased EMR knowledge in VK syllabus

The Australian Communications and Media Authority (ACMA) has amended the Amateur Radio regulations syllabus, to expand the demonstrated knowledge of Electromagnetic Radiation or EMR. Safety has been on ACMA's agenda for a considerable time, and it is seeking to minimise risk and promote safety across all its operations, including Amateur Radio. The process to include EMR in the existing Amateur Radio Syllabus at all three licence levels, commenced about 18 months ago.

One of the outcomes of the high-power trial for VK Advanced licence holders, the ACMA in consultation with the Wireless Institute of Australia (WIA), found that EMR knowledge could be increased. The teaching of prospective radio amateurs already includes the importance to keep all persons (and animals) a safe distance from antennas, their orientation, the role of Effective Radiated Power, and radio wave danger with higher frequencies and power levels.

The ACMA has gone further with its amended syllabus to spell out that knowledge of EMR is a condition for all classes of amateur licence, and recall where to locate the ACMA document titled *"EMR Assessment Guide for Amateur Radio"*. It also wants known that the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) sets the standard for Maximum Exposure Levels, 100 kHz to 300 GHz, its principles and methods of measurement.

New licence assessment papers from the WIA Exam Service issued to assessors from June 2014 will reflect the new EMR provisions. The additional teaching time should be minor, but it will reflect knowledge of the licence requirements and community concern about radiation from transmitters.

WIA Response to IPS Service Review

In June 2014, a Discussion Paper was released by the Ionospheric Prediction Service as the first step in what could be a wide-ranging review of the service.

The closing date for responses was the 4th of July 2014. The WIA has responded to the discussion paper, and a copy of the WIA's response can be viewed on the WIA website.

Latest on the ILLW 2014 fun-event

A friendly tussle between three countries for the leader board is being fought out in the 17th International Lighthouses and Lightship Weekend, held on August 16-17.

The USA on 55 registrations is followed closely by Germany 54 and Australia 53. Organisers have the fun-event well ahead of this time last year. The three have about 50% of all 330 registrations. With such proud coastline shipping navigation histories, last year saw Germany having 72 registrations outstripping Australia with 69, and the USA on 66. These three try to grab supremacy each year. In the USA there are a staggering 14 new or virgin lighthouses. These include South East Light on Block Island Rhode Island K1L. Among the many other new ones is Chatham Lighthouse in Massachusetts, with the Barnstable Amateur Radio Club K1KBO.

In the Americas this year there's also Barbados, Canada, Chile, Curacao, Falkland Islands, Honduras, Mexico, Puerto Rico and Uruguay. Australia has four

virgin lighthouses. The Whaler's Bluff Lighthouse at Portland Harbour in Western Victoria with Johnno VK3FMPB, up the coast from Griffiths Island Lighthouse, Port Fairy and Peter VK3ZPF. The Fingal Head Lighthouse on one of Australia's eastern points is activated by Grant VK2GEL. At Cape Tourville Lighthouse Eastern Tasmania will be Ken VK7HKN and wife Lyn VK7FROG.

In Spain is the Faro de Cabo de Silleiro Lighthouse, this year's 200th entry, to be put on air by Hans EA1/DK6EA and Heike DC2CT. Another first-timer is the Eckwarden Oberfeuer Lighthouse in Germany on the North Sea, registered by Sebastian DM1SW. Out of 38 countries already registered this year, England is doing well with 24. Also in greater Europe there's Denmark, Finland, France, Ireland, Italy, Netherlands, Norway, Northern Ireland, Poland, Portugal, Romania, Scotland, Spain, Sweden, Switzerland and Wales.

The Asian region has registrations so far from Japan, Malaysia, Taiwan and Thailand. In 2013 the final total of 526 was a record. The last 200-odd registrations are due in a few weeks. Maybe the event will again break through the 500 barrier? Who will score the prestigious 400th registration?

Already a dozen have registered for the 2015 annual event that helps increase the public awareness of historic marine navigation, their preservation and promotes portable Amateur Radio activity. To read the simple guidelines, see reports from others having participated at this event that began two decades ago, or to register for the International Lighthouse and Lightship Weekend on August the 16th and 17th, see the dedicated website *www.illw.net*

Another review of legislation affecting radio amateurs

The Australian Communications and Media Authority (ACMA) proposes to remake an important piece of regulation that affects all radiocommunications licensees holding Aparatus licences – which includes radio amateurs, broadcasters, land mobile operators etc., – and has put out a call for feedback on its proposal.

The Radiocommunications Licence Conditions (Apparatus Licence) Determination 2003 will expire – "sunset", as they say – on 1st April 2015, unless the ACMA "remakes" it beforehand.

Known as the Apparatus Licence LCD, it gives the ACMA the power to define permitted types of communications, the power flux density and field strengths allowed from a transmitter system, along with public exposure limits to RF emissions.

For amateurs, the Apparatus Licence LCD works hand-in-hand with our own LCD – the Amateur Service LCD (Radiocommunications Licence Conditions (Amateur Service) Determination No. 1 of 1997, updated 2013). Both LCDs are issued under the Radiocommunications Act 1992. The Act and the Amateur Service LCD are also to be reviewed, in due course.

The proposed changes appear to mainly bring the Apparatus Licence LCD in line with changes in the Australian Human Exposure Standard to RF emissions and other, more recent, instruments.

The consultation package for this remake is available on the ACMA website: *http://www.acma.gov.au/Industry/Spectrum/Radiocomms-licensing/Apparatus-licences/remaking-the-apparatus-licence-conditions-determination*

Additionally, in May this year, the WIA made a submission to the *"Remaking of the Human Exposure Standard"*, highlighting that, in the ITU definition of the Amateur service, amateur radio is an experimental personal pursuit and the WIA does not wish to see radiocommunications legislation or regulation unnecessarily restrict or otherwise trammel the individual or collective interests and activities of radio amateurs. That WIA submission, together with an outcome of the consultation process, can be viewed at: *http://www.acma.gov.au/theACMA/Consultations/Consultations/Sunsetting/remaking-the-radiocommunications-human-exposure-standard*

Editorial

Continued from page 2

out some issues with updates not loading!

GippsTech 2014

Several key members of the local club are hard at work this week preparing for the annual GippsTech conference. As Conference Chair, I too am busy with preparations, but am looking forward to the event: catching up with friends that you usually only chat to on-air or via email, plus listening to the many presentations. It will be a great weekend of camaraderie and sharing of technical information.

Given the weather forecast for Victoria, I doubt that I will be missing much SOTA action: Saturday was forecast to be very wet and cold, with high winds and snow down to 500 m. Such conditions are not compatible with operating portable on the summit of any hill.

Until next month,

Cheers,

Peter VK3PF

An inspired experimenter and leader: Walter Hannam – his part of the jigsaw!

Peter Wolfenden VK3RV

The ***Wireless Institute of Australia*** was established in Sydney on 11th March 1910, primarily to pressure the Federal Government into making the radio spectrum available to individual experimenters, private organisations and others including our embryonic aviators. This took place against a background of Crown control by bodies such as the navy - the Royal Navy at that time, which fervently attempted to maintain its monopolistic control of the radio spectrum. The Post Master General's Department (PMG) apparently had little interest in pursuing wireless telegraphy as conventional land-line telegraphy was earning the government a good steady income. The PMG did however conduct some early experiments in wireless, but the general consensus at the time was that wireless signalling speeds were far too slow to be profitable and that additional expenditure in another communications network was undesirable!

Photo 1: Walter Henry Hannam – photo used with the permission of Manly Library.

One of the attendees at the inaugural meeting of private wireless people in Sydney was Walter Hannam, known to most as Wally. He was born in 1895, the son of William Hannam an active and influential man in the Manly district of Sydney. Professionally, Walter's father was a manufacturer and supplier of hospital equipment and was one of the founders of the Manly Literary Institute. In 1901, it was decided to establish and construct the Manly School of Arts building which was duly opened in 1909. Walter went to the Sydney Technical College where he obtained his science diploma. He was a practical, inventive man with much enthusiasm and it is highly possible that young Walter's enquiring mind was fed with information about electricity and telegraphy from books held by the Manly Institute (1, 2).

A detailed article, *'Wally Hannam: First Secretary of the WI of NSW'*, written by Tim Mills VK2ZTM published in *AR* of September 2012, provides a lot of detail about Walter. Also, during the WIA Centenary Year in 2010, a series of articles entitled *An Arena of Wonder – QSP*, was published in *AR*. They also provide some background to him.

This article however, attempts to place a series of events involving Walter and others, into chronological order and hopefully help us to understand more about him and the events as they unfurled during those early days of wireless in Australia. It also attempts to paint a picture as to what provides the enthusiasm to drive and propel individuals, like Walter, forward!

An experimenter's frustrations

A revealing article in the *Adelaide Advertiser* on Thursday 10th March 1910 details a number of aspects in the development of wireless telegraphy in Australia and provides an insight to the frustrations experimenters were suffering at the hands of the authorities. The timing of this article is interesting, obviously prepared well before that first meeting of wireless experimenters in Sydney.

The *Advertiser* on page 6 reported:

'.....irritating and discouraging delays in the issue of licensees are sometimes experienced by would-be investigators. A young electrician, Mr. W. Hannam, it is alleged, after spending three years in equipping a comprehensive plant at Burwood, [NSW] applied for a

licence to work it for experimental purposes. Although a year and a half had passed since he made his first application, he had received no final answer.....' (3).

The wheels of bureaucracy apparently turned very slowly in those days; or was Walter really up to something else?

In Sydney, a similar letter of complaint had been published earlier to that in Adelaide and on the 4th March 1910, the *Sydney Morning Herald* published a response from the Post Master General:

'The complaint of Mr. Hannam, of Sydney, that he was interfered with in his experiments in wireless by reason of the sleepiness of the Postal Department was brought under the notice of the authorities today. The secretary of the Postal Administration (Sir Robert Scott) said that the only condition which the department imposed on wireless investigators was that they must pay a royalty of £3/3s (or 3 guineas) a year. This entitled them to a license to erect aerials. Mr. Hannan had applied for a license but had not paid the royalty. When he did, his request would be granted.' (4).

Walter must have been well aware of the department's press release and their 'solution' to his problem, days in advance of the meeting! So what was really going on here?

Firstly, the Adelaide Advertiser's report of 10th March appears to have been a re-print of earlier articles in other newspapers, but on the other hand, perhaps it was part of a 'crusade' by Hannam and others interested in private wireless communication. There is little doubt that the three guinea licence fee was considered extravagant! Trying to equate costs over 100 years ago with those of today is thwart with danger! However, here are a couple of ways of viewing it.

Using the Reserve Bank of Australia's Inflation Calculator, the £3/3s ($6.30) cost of a licence would be over $400 in today's figures! But there is another way of looking at this imposed cost and that is to compare wages. In 1907, the Sunshine Harvester Judgement set the weekly (six days) basic wage at 42 shillings ($4.20) for an unskilled worker. By 1910, a skilled worker earned about 65 shillings ($6.50) approximately the cost of the licence fee! One week's wages! In 2013 Ordinary Weekly Earnings was over $1400! *

Whichever way you look at this – it was an excessive impost on individual, potential wireless experimenters and would have certainly contributed to the number of 'school-boy pirates' let alone offend others such as Walter Hannam!

Then there is the public reaction of the Secretary of the Postal Administration. The joint issues of licence cost and apparent 'lack of enthusiasm' for private operators on the part of his department, together with Hannam's letters of complaint popping up in the press regularly, appears to have infuriated the Department and the Secretary to the extent that a rebuttal aimed squarely at Hannam was published and whom he

named in his response! All of this was good 'rallying material' for the forthcoming public meeting and I now believe that Wally knew very well this was the case!

Hannam and Taylor team

Hannam's association with George Taylor did not commence at that public meeting on 11th March, rather an earlier event at an earlier date. Taylor was interested in many aspects of flying which he saw as essential in defending Australia, he also acknowledged that the science of the fledging wireless telegraphy could also be a useful adjunct to flying and indeed, Australia's defence. At that time, Taylor literally wore many hats. He was Secretary of the Aerial League of Australia (which he formed at the Hotel Australia in April 1909), and was also a Lieutenant in the Army Intelligence Corps as well as associating himself with wireless experimenters.

Wally Hannam's recollection of the sequence of events which lead to the formation of the institute, introduces that other 'earlier exhibition event' in which he and Taylor were involved.

Apparently, Taylor invited Hannam to display some of his wireless equipment at an exhibition he was organising. We must remember here that Hannam had not as yet succeeded in obtaining that essential official licence from the PMG's Department to transmit or receive – or indeed to even establish an aerial!

In a c1955 radio interview, Hannam stated: .....

'In conjunction with the late George Taylor, he was keenly interested with all types of flying, he heard about me having this radio gear and he asked me to come and show it at this exhibition. Well, when I was at the exhibition, I suggested to him that as a lot of people had been round the stand and showed interest in the matter of radio, we called it wireless in those days, still do, I think most of us! Yes! he said, I'll arrange a meeting.

Well, a meeting was held in the Smoke Room of the Hotel Australia and I think there were about 50 people there. That's how the Wireless Institute of New South Wales was born and I became the first Secretary.' (5).

A review of newspaper articles at about the time of the formation of the Institute produced an interesting report on the number of licences issued since the inception of the 1905 Wireless Telegraphy Act. As of early March 1910 there were only six 'private' licences still current. Four others had been issued previously, but had since lapsed making a total of ten only being issued since the Act came into existence! One of these was issued in the name of George Taylor (6).

The 14th March *Melbourne Herald* article dealing with the Post Master Generals report on licencing, stated that Taylor's licence was issued for a demonstration at an ANA event, which may have been a miss-print – perhaps ALA or Aerial League of Australia (with which Taylor was involved, but then, the Australian Natives Association was also a very active, pro-Australian, organisation in those days, so it may well have been an ANA activity). Whichever, it tends to confirm Hannam's version of events as it was necessary to hold a licence for any form of wireless station at that time, either transmitting or receiving and especially so, if it was held in a public arena! It also helps explain the 'earlier, expired licence for G.A. Taylor' as mentioned in the PMG's March 1910 report on licence statistics.

A recent 'trawl' of Trove, the National Library of Australia's Newspaper database revealed that in October 1909, a *Building Australia Exhibition* was held at the Exhibition Building in Prince Alfred Park, Sydney. Taylor was involved, not only from the Aerial League of Australia's perspective, but as editor (and owner) of *Building Magazine*, he was one of the nominated trustees associated with the awarding of a construction scholarship at the exhibition.

The *Sydney Morning Herald* story of Tuesday 26th October, about the imminent exhibition also mentioned the presence of a wireless telegraphy display:

'The exhibition will do good work for Australia by winning the attention of the people that take practical interest in Australia's construction. Furthermore, it will show the latest achievement in engineering, particularly in those marvellous sciences by which the air is conquered, namely, wireless telegraphy and aerial navigation.'

This may well be 'the earlier exhibition' which had a temporary licence allocated to it (in Taylor's name) and which Hannam also referred to in his 1955 recording.

The first Wireless meeting

Only one newspaper reference to the proposed meeting of like-minded wireless people has been located to date and that was published barely 24 hours before the meeting. The publicity however, had its desired effect as some 50 people attended including two ladies! In hindsight, I now think that this meeting was well planned in advance as it appears that there was a lot going on 'behind the scenes'. A major issue was of course the high licence fee which the government appears to have used as a rigid form of controlling the number of wireless licences taken out. I also think that Hannam deliberately ignored, or played down the reference to a possible immediate response to his complaint if he paid this three guinea fee; thus providing him with 'another peg to hang his hat on' at that inaugural meeting of wireless enthusiasts (7).

Sure enough, at the meeting, Hannam raised the fee issue as reported by the *Daily Telegraph* of 12th March 1910. Hannam said:

'Why should we have to pay three guineas for the use of the air, so far as experimenters are concerned?

The aerial navigation experimenters are charged nothing.' By this he obviously meant the 'aerial navigators' or pilots. I wonder if George Taylor, wearing his Aerial League of Australia hat, really appreciated Hannam's rhetorical question? On the other hand, perhaps he also thought that the comparison could be an effective lever on the authorities! (8)

Hannam seconded the motion to establish an Institute of Wireless Telegraphy. According to the *Sydney Morning Herald* of 14th March 1910:

'Mr. Hannam in seconding the motion gave his experiences in endeavouring to secure fair play in his investigations and referred to the disadvantages private operators were at present labouring under.' (9)

He must have impressed those present because he was elected as the Institute's first Secretary!

Taking everything into consideration, I think that Hannam and Taylor (and perhaps unnamed others) succeeded in demonstrating clearly and forcibly to the PMG and through them, the government, that their followers meant business and that the government should no longer inhibit the development of wireless in Australia especially by private or non-government organisations!

In reviewing those present at that initial meeting, I think there is little doubt that many there felt that the development of communications in Australia could contribute to the defence of the country. Amongst those at the meeting were Major Fitzmaurice, Captain Cox-Taylor, Major Rosenthal and George Taylor of the Aerial League together with a number of prominent private experimenters. Twelve, including all above and George Taylor were elected to establish a provisional committee for the Institute of Wireless Telegraphy, perhaps an indication of their anxiousness to allow the wireless spectrum to be made more readily available to others besides the navy (8, 9).

In time, similar wireless groups formed in all Australian States and from state-based organizations, the Wireless Institute grew into a federated body covering Australia nationally, but still retaining the local structure in each capital city. By 1924 the WIA was coming together annually to discuss national issues. Although the raison d'être remained operating rights and conditions for its members, the organisation soon developed, particularly at the local level, into one of education, self-help, advice and friendship finally reaching out to the rest of the world via the United Nations International Telecommunications Union (the ITU) and its subsidiaries such as the IARU.

Involvement with pre WWI army signalling

Other than Institute activities, it appears that Hannam's next involvement with Taylor took place

just two weeks after the Hotel Australia meeting, when he was 'inveigled' to join with a few other private wireless men (civilians) to attempt to demonstrate wireless at the Army's Easter Camp at Heathcote (NSW). This took place over the Easter long weekend of 25th to 28th of March 1910. The three civilians involved were Messrs. Hannam, Kirkby and Wilkinson.

Brian Kirkby's excellent article in *AR* for May 2012 provides some detail about the weekend's activities and opens up aspects of early Australian wireless history, not only about Edward Kirkby, but also Taylor, Hannam and Fr Archibald Shaw of the *Maritime Wireless Telegraph Company of Australasia* – our first substantial, home-grown, coastal radio network. Brian's article is a 'good read' particularly where he quotes from George Taylor's published (but hard to find) account of that weekend – *'By Wireless'*.

In this booklet, Taylor promoted the activities at Heathcote as: *'how the first military wireless stations were successfully established in the Commonwealth...'* This claim is fair enough and acknowledgment is made in it of the skills and assistance of Hannam, Kirkby and Wilkinson. But stating that: '... *the first officially recorded stations on the continent to receive intelligible wireless signals,....'* is being a little 'pushy' and some would argue, far from the truth! Perhaps by saying this, Taylor was simply trying to justify the weekend's expenditure at the camp, to his superiors! (10)

The facts about earlier Australian wireless communication

In reality, there had been considerable activity by a few notable and reliable experimenters prior to Taylor's involvement with wireless. People such as Professor William Bragg and Charles Todd, of South Australia, who in 1899, communicated between the Observatory and Henley Beach in Adelaide or Walter Jenvey's 1901

MILITARY WIRELESS.

SUCCESSFUL INSTALLATION

Wireless in Australia is making good, the latest event to chronicle being the successful inauguration of military wireless telegraph, in connection with the Field Battery camp at Heathcote.

The installations were arranged at very short notice by Lieutenant George Taylor, of the Army Intelligence Corps, who was assisted by Captain Cox Taylor, of the garrison artillery, and Messrs. Hannam, Wilkinson, and Kirkby. The stations were established on Saturday afternoon and early on Monday morning were in intelligent communication with each other. This may be considered a speed record, as the instruments used were hastily put together, and the operators were only informed of the arrangements on the evening previous to their arrival in camp, whilst the aerials and other accessories had to be obtained at the localities of the stations. The enthusiasts have been congratulated on the successful result, as it is practically the first record of intelligible communication other than naval, in Australia, and now that the initiative has been taken, an extensive system of wireless may be expected to future Commonwealth military operations.

Photo 2: The Army Easter Camp, 1910 - article in the Sydney Morning Herald Tuesday, 20 March, 1910, page 8.

communication with the escort ship *HMS St. George* accompanying the Duke of York while in Victorian waters. Similar exchanges took place between the *St George* and 'Pop' Medhurst in Tasmania a few weeks later.

Other notable tests prior to the Easter Army Camp included the 1906 official communications between the heads of government in Victoria and Tasmania during the Marconi, Bass Strait tests. Notably and in addition, there were also newspaper reports of high profile private experimenter's activities such as C.P. Bartholomew and J.H. Pike in Sydney (11) and Victor Nightingal and Henry Sutton in Melbourne (12). All of these were involved in 'successful, intelligible, communication' before the Heathcote Easter Camp!

In fact, on the Wednesday prior to the Heathcote Camp, Pike was reported in the *Evening News*, as communicating with the flagship *Powerful* off the east coast of New Zealand – a distance of some 2500 km! Perhaps a short memory can be an advantage in instances where there is a political bent! (13)

There is little doubt that at the Easter Camp, Taylor's objectives were successfully met and the activities there helped cement the potential of wireless for Australia's defence as reported in the Sydney Morning Herald on the Tuesday after the camp (14).

A confused after-thought?

Many years later however, a monument was erected to commemorate the achievements of Taylor and the Camp. The monument, near the site of the 1910 Easter Camp, states:

'The first Military Wireless Signal in Australia Transmitted by Captain George Augustine Taylor 28th March 1910.'

Unfortunately on the monument, there is no formal acknowledgement of the 'real brains' and 'doers' behind this event, Hannam, Kirkby and Wilkinson! According to Lieutenant George A. Taylor's own publication *'By Wireless'*, communications first took place at about 9.00 o'clock on the Sunday night and that *'far into the night signals were repeated and verified. The small hours of Monday still found us successfully operating'*. The 28th of March 1910 was a Monday!

Show Business!

Later that year Hannam got a job to supply and install some wireless equipment for a stage show in Melbourne. The play was at the Kings Theatre in late October, during the Melbourne Cup Carnival. Entitled *'By Wireless Telegraphy'*, a similar name to Taylor's publication about the Military Wireless camp earlier that year, however, it bore no resemblance to the experiences of Hannam, Kirkby and Wilkinson! - nor was it intended to do so!

The review by the *Melbourne Argus* of 24th October included the following comments about the play:

'The large audience at the King's on Saturday night thoroughly enjoyed itself, as in 'By Wireless Telegraphy' it had blood-curdling melodrama entirely after its own heart, and breathlessly sat it out

until its conclusion within half an hour of midnight. To keep it going dramatically nearly all the commandments are broken, crude sensational incidents thrust in at regular intervals, and buffoonery added of a class that would make any pair of circus clowns look to their laurels....' Who said early wireless is not exciting and I wonder what part Wally's wireless gear played in the performance? (15)

Travelling south

While in Melbourne, Hannam, through his friend Sir Edgeworth David, a Welsh-Australian geologist and Antarctic explorer with Shackleton's 1908 *Nimrod Expedition*, arranged to meet with Dr Mawson with the view to join his forth-coming *Australasian Antarctic Expedition* (5).

Hannam joined the expedition and departed from Hobart on the *Aurora* on 2nd December 1911. Between 1911 and 1912 he served as wireless engineer in the Antarctic. He was described as being courageous, hardworking, obliging and persistent. Walter's warm and friendly personality was considered an asset to the expedition and was valued by Mawson. He is mentioned in many accounts of the expedition and was acknowledged as a jovial character who seemed to fit in quite easily and his many skills were useful during his stay there. Three small islands at the eastern end of Commonwealth Bay in the Antarctic are named after him for services to the expedition – perhaps a good future IOTA QTH! Walter was awarded the Polar Medal in 1914 (16).

In time the government issued Walter with his amateur experimenter's licence and a W. Hannam was included in the first Australian Call Book (1914) as station QXI with a Queensland address (perhaps he was still thawing out after his Antarctic adventure!).

World War I – serving in the AIF

On June 2nd 1915, Hannam joined the Australian Imperial Forces. He was 30 years old and was given service number 6976. By 4th of July 1915 he was on the 'Lydia' en route from Southampton to Rouen in France. There he was promoted and tasked to the workshops section in the field. Medical conditions plagued him, mainly in his legs. This was possibly aggravated by his weight and resulted in hospitalisation. On a positive side, Walter was moved to the ANZAC Wireless Coy; perhaps someone found out about his earlier wireless work with the army at the Heathcote Camp in 1910! The ANZAC Wireless Coy later became the Australian Army Signal Corps, from which Walter was discharged on 7th November 1919 (17).

After the war – peace-time developments

Walter's interest in private wireless communication continued well after WWI. He was a member of an exhibition committee, formed under the auspices of the Wireless Institute of NSW which organised a wireless exhibition in Sydney during 1923. There he served with other well-known early wireless experts such as Charles Maclurcan, Syd Colville, Phil Renshaw, J.H.A. Pike (all amateur experimenters) and E.T. Fisk (of AWA and WI NSW) (18).

There is little doubt that Hannam was also still in contact with George Taylor, who was by then deeply involved in promoting the development of radio broadcasting. Taylor's name was not included in the committee organising the wireless exhibition as he was now more professionally involved in promoting the possibility of broadcasting. Taylor reported in the December 26th 1923 issue of *Radio* magazine that the exhibition was a great success with some 14,000 people attending. However, reflecting his 'professional interests' he went on to castigate some of the amateurs involved in the demonstrations at the exhibition:

'The enthusiasm of the experimenters is to blame for this poor display, and it would be well worthwhile for this enthusiasm to be curbed so that no displays of broadcasting be given the public unless it is of the best, both in tone and quality'! Perhaps signs of a split between experimenters and commercial interests were forming (19).

Taking over from Ross Hull – the Delegates Council

During the 1920s the New South Wales Division operated a council of radio clubs – a Delegates Council. Ross Hull had moved from Melbourne to Sydney and in 1926 he was the chairman of the council. He subsequently left Australia for America where he was to work for the ARRL in various capacities, but mainly as a technical editor and finally Editor of the ARRL Handbook. Hull's untimely death in 1938 had repercussions around the world and Australia's *Ross Hull VHF Contest* was established in memory of him. Wally Hannam, now VK2YH, was appointed as chairman of the Delegates Council in place of Ross during September 1926 where he oversaw discussions on a wide range of issues such as a future exhibition, traffic tests, Federal Convention and Leichhardt Radio Club's visit to VK2WI (20).

Secretary to the Federal Council

During 1926-7 Hannam, as Secretary, was in written contact with the newly formed International Amateur Radio Union (IARU) based in Hartford USA, at the ARRL.

Amateurs in Australia wanted to join this organisation, as one of the driving forces striving to ensure some commonality of amateur bands and conditions on a world-wide basis.

Joining the IARU was finally achieved, largely brought about by the Tasmanian Division of the WIA and a group called the Hobart Radio Research Club. Employing a complicated manoeuvre involving twenty-five amateurs in Tasmania financially joining the IARU and after electing their President, the group was voluntarily taken over by the Federal Council of the WIA thus enabling the WIA to become the Australian section of the IARU!

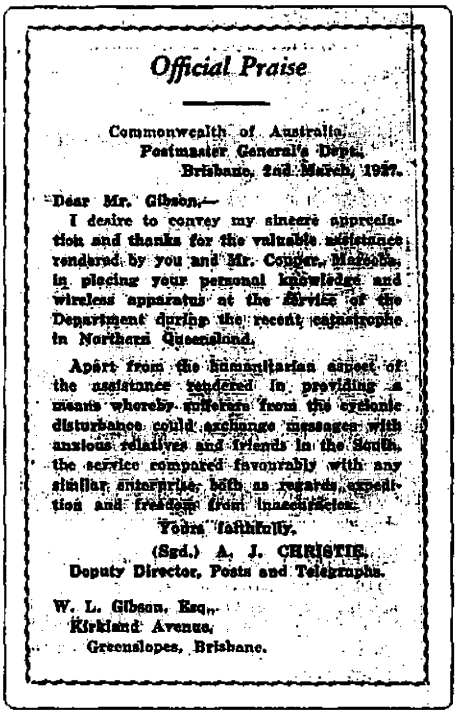
To the delight of the Federal Council meeting in Adelaide during November 1927, a message was received from the ARRL to the extent that the Washington International Radio Conference had just recognised the amateur service and:

'Will probably allot amateurs some short wave bands in harmonic relation.....and all amateurs to be on common bands.'

Walter Hannam, as Secretary, was also involved in attempting to establish conditions for amateur experimenters so that they could be involved with emergency communications. In writing to James Malone, the Chief Inspector for Wireless, he made the case for an emergency network using a reserve of amateur operators. However for the proposal to succeed, the government would have to allow for experimental stations to employ 'ordinary conversation' in their messages (21).

In substantiating his case, Hannam drew on the widely reported earlier breakdown in telegraph and telephone communications in Queensland in which two experimenters (VK4BW and VK4AN) maintained the only communication between the North Queensland area (Mareeba) and Brisbane during severe cyclone activity in February 1927 (22).

The NSW Division constructed a new lecture theatre at their Atchison Street, St Leonards rooms (often



Official Praise

Commonwealth of Australia,
Postmaster General's Dept.,
Brisbane, 2nd March, 1927.

Dear Mr. Gibson,—

I desire to convey my sincere appreciation and thanks for the valuable assistance rendered by you and Mr. Couper, Mareeba, in placing your personal knowledge and wireless apparatus at the service of the Department during the recent catastrophe in Northern Queensland.

Apart from the humanitarian aspect of the assistance rendered in providing a means whereby sufferers from the cyclonic disturbance could exchange messages with anxious relatives and friends in the South, the service compared favourably with any similar enterprise, both as regards expedition and freedom from inaccuracies.

Yours faithfully,

(Sgd.) A. J. CHRISTIE,
Deputy Director, Posts and Telegraphs.

W. L. Gibson, Esq.,
Kirkland Avenue,
Greenslopes, Brisbane.

Photo 3: The letter from the PMG, dated 2 March, 1927 thanking Messrs Gibson and Couper for their assistance during the catastrophe in northern Queensland.

referred to incorrectly as Crows Nest) and Walter, as guest of honour, opened it in March 1962.

When the unknown W. Hannam became interested in wireless (let's say about 1908), an experimenter's licence fee was £3/3/- ($6.30), or $400 (or $1400, depending on how you look at it) in today's value. There had been only ten non-government stations officially licensed since the inception of the Wireless Telegraphy Act in 1905 and only six were still current.

By the time that WWI broke out, licence fees had been reduced to £1/-/- ($2.00) and there were over 400 licensed experimenters.

At about the time of Walter's death, licence fees were still £1/-/- but because of inflation, the current value had effectively dropped to $63 in today's value and there were over 4800 licenced amateurs in Australia. I am not suggesting that Walter (or the WIA) were directly responsible for all of these changes, but there is little doubt that they both were major contributors!

Walter Hannam, XQI, 2YH, VK2AXH, returned WWI serviceman, wireless experimenter, Antarctic expeditioner, WIA office bearer and leader, continued to play an active role in amateur radio for many years until his death in 1965. It is regrettable that we only have a few minutes of oral history from him and limited documentary detail of his time in amateur radio. Unfortunately, there is not very much public recognition (even within the amateur ranks) for such a significant Australian who was involved in many public issues especially the development of radio communication and amateur radio in this country!

References

1. Website of Manly Council *http://www.manly.nsw.gov.au/library/local-studies-collection/people-of-manly/*
2. Website of Manly Council *http://manlylocalstudies.blogspot.com.au/2013/01/walter-hannam.html*
3. Wireless Telegraphy, Adelaide Advertiser, Adelaide, 10 March 1910, p6.
4. Wireless Telegraphy – An Experimenter's complaint, Sydney Morning Herald, 4 March 1910, p6.
5. Hannam W.H. XQI, 2YH, VK2AXH, Voice Recording, c1960, WA Archive. (Sounds of AR Vol 2).
6. Wireless Experiments, The Herald, Melbourne, 14 March 1910.
7. Aerial League, Sydney Morning Herald, 11 March 1910, p4.
8. A Wireless Enthusaists' Institute – The Government and Licences, Daily Telegraph, Sydney, 12 March 1910.
9. Institute of Wireless Telegraphy, Sydney Morning Herald, Sydney, 14 March 1910, p4.
10. A Little Known Pioneer of Australian Wireless – Edward Hope Kirkby, AR Magazine, May 2010, p24.
11. Mr. Pikes Wireless System, The Advertiser, Adelaide, 3 March 1910 p17.
12. The Leader – Victor Nightingal, The Age, Melbourne, 10 March 1910.
13. Wireless Telegraphy – Mr Pike 'speaks' over 1600 Miles, The Evening News, Sydney, 23 March 1910.
14. Military Wireless – Successful Installation, Sydney Morning Herald, Sydney, 29 March 1910, p8.
15. Kings Theatre – By Wireless Telegraphy, The Argus, Melbourne, 24 October 1910, p5.
16. Website Australian Antarctic Division - Walter Henry Hannam (1885–1965).
17. Hannam, Walter, H, records– Australian War Museum – *https://www.awm.gov.au/people/roll-search/all/*
18. WIA Book Volume 1, Wireless Institute of Australia, Melboune, 1982, Exhibition Committee, p64 i.
19. George A. Taylor, Australia and Wireless – The Outlook, Radio Magazine, Sydney, 26 December 1923, p495.
20. Notes from Delegates Meetings 1926, WIA Archive, Melbourne.
21. Minutes of WIA 4th Annual Federal Convention, Adelaide, 15 November 1927.
22. Official Praise, Deputy Director of Posts and Telegraphs, Radio Magazine, 30 March 1927, p3.

*The Reserve Bank of Australia's on-line Inflation Calculator was used for inflation costs.

I am indebted to Roger Harrison VK2ZRH who provided the wage-based cost increases.

The ZC1 radio revisited

Norm Bergen VK4ANB

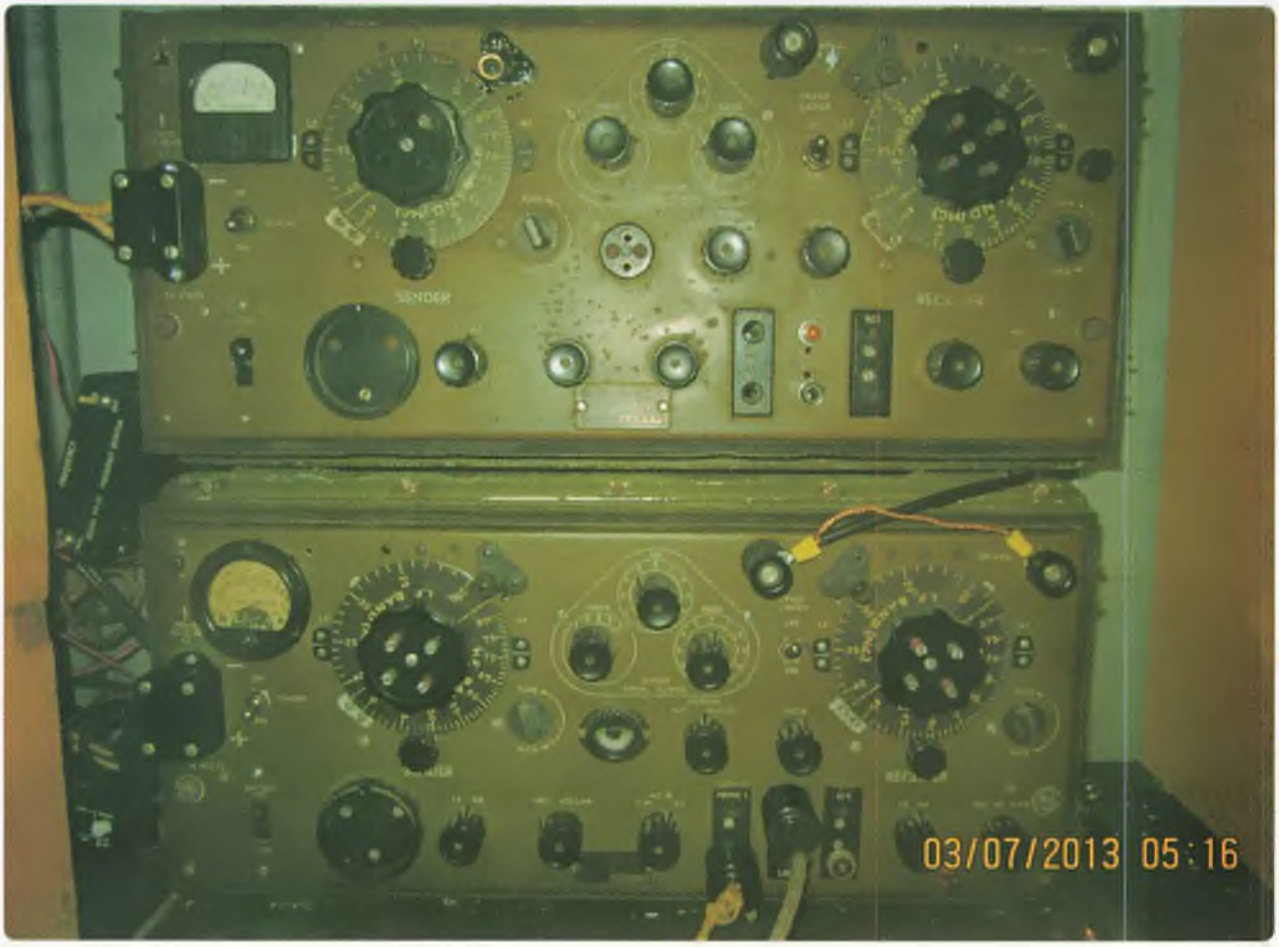
An article in the June edition of AR by VK7BI has prompted my memory and with the aid of some dedicated ZC1 fans (in NZ) I would like to add a little political, historical and personal information about these amazing radios.

In the years prior to World War II (1935-39), the British War Office was concerned about the build-up of armaments taking place in Europe. In particular they were concerned about what would happen to the Commonwealth if Britain was attacked. Did they have the forces necessary to repel an attack? The War Office decided to call in technical experts from both civilian and army sources around the commonwealth, to discuss and to view the latest military communication equipment. They also wanted to standardize the equipment used by the various commonwealth countries so that in the event of war the equipment being used by Britain and the commonwealth countries would be compatible. They were also concerned that if Britain was attacked they might not be able to supply communication equipment and that equipment capable of being manufactured in the Commonwealth countries should be used.

Included in the material brought back to NZ from this visit were prototypes of a newly developed British Transceiver known as the No 19 set manufactured by Pye Industries. This set was originally designed for use in armoured vehicles but most considered that with slight modifications it might be satisfactory as a general purpose communication set for the NZ armed forces.

The NZ contingent influenced by their commonwealth counterparts stated their intention to standardize on this set and recommend its adoption by the NZ armed forces. However the civilian members of the delegation which went to England disagreed and considered the No 19 set too complex and believed something better and cheaper could be designed and made in New

The author's ZC1 MkII radios.



Zealand. But was it possible that New Zealand, one of the smallest of the commonwealth countries, could produce a better set?

The debate raged for many months with claims and counterclaims. Meanwhile both Australia and Canada had adopted the No 19 set as the radios for their armed services. The arguments reached a stalemate and finally the frustrated New Zealand army representatives desperate to equip their services with good equipment attempted to place an order with the Canadian Government only to find all available production of the No 19 sets was already allocated many months ahead.

This forced the NZ government reluctantly to agree to the industry proposal that a competition for the design of a radio suitable for the NZ armed forces should be held. It was to be broadly based on the specifications of the No 19 set. The outcome was the ZC1 Military Transceiver designed by the Collier and Beale design team. Records show that the army initially rejected the design, because they wanted the No 19 set. They refused to fund the development of the ZC1 until it was totally proven to its satisfaction.

The design and performance of the prototype ZC1 Mk I was evaluated by the Canadian Army. Compared with the No 19 set they found the ZC1 Mk I better in the following areas:

- The ZC1 had a better range on both receive and transmit under both normal and abnormal circumstances.
- The ZC1 had a lower battery consumption.
- The ZC1 was easier to operate in the field by experienced and inexperienced operators.
- The ZC1 was much easier to repair in the field due to separate transmit and receive sections.
- The ZC1 was more flexible in the type of aerial that could be used.
- The ZC1 had a very simple netting procedure.
- The ZC1 was compact and light in weight when compared to the No 19.

Design

The design of the ZC1 Mk I is generally credited to Percy Collier and Bill Fever of Collier and Beale, a Wellington based radio design and manufacturing company. As far as possible it was designed around components readily available at the time that had been used in the production of broadcast radios for New Zealanders.

Circuit

The ZC1 Mk I is a 2-6 MHz single band CW, MCW and phone transceiver for mobile or base use. The receiver uses a 6U7G RF stage, 6K8G mixer, 6U7G If stage, 6Q7G detector and 1st audio stage, 6U7G output and 6U7G BFO. The transmitter uses a 6U7G master oscillator, 6U7G buffer, 6V6G modulator, a 6V6G PA and a 6U7G modulation amp.

The power supply uses a non-synchronous vibrator and two 6x5G rectifiers. Power consumption was 4-6 A at 12 volts. In transmit mode it delivers 2.75 watts. Using a base aerial 10 metres (34 feet) long and a counterpoise the range of the set was between 40-48 km (25-30 miles).

A companion linear amplifier for long range work was also designed and a few prototypes produced. This was known as the ZA1 Mk I or Mk II.

History

In all some 5,000 ZC1 Mk Is were produced. However even before the manufacturer had started design and production of a ZC1, a Mk II was being planned. The Mk II is a dual band set with a LF band (2-4 MHz) and an HF band (4-8 MHz). A synchronous vibrator was used and the set was 'tropicalized' by being encased in a completely sealed copper lined cabinet.

The ZC1 sets were used by the New Zealand armed forces wherever they went. The NZ 3rd Div 2nd NZEF records show these sets were used in conjunction with the American Army No 24 sets with good results.

In New Zealand the ZC1 Mk II continued being used by the Territorial Reserve Force until mid-1960. During the 1950s and 60s many NZ amateurs used these sets as their first amateur radios. Many have been extensively modified. The expected life of the set under wartime conditions was between 6-16 months! The production of them involved a total of 56 factories making parts or assemblies including two factories where production sets were assembled. At peak production during 1943–44 some 900 individuals were involved in their manufacture. A factory in my home town of Marton NZ was responsible for making the dial assembly.

Personal Connection

As a non-transmitting member of NZART from 1952-59 the local branch of NZART used a Mark II ZC1 at its branch meetings to listen to The Broadcast from NZART headquarters. In 1953 whilst in national service I was a signal-driver transporting operators and sets around the south Auckland region, and listening to these amazing sets.

In 1992 I officiated at the funeral of a fellow ham and noticed to my horror a ZC1 Mk II being used as a door stop in the house. It took very little persuading to convince the widow that a brick would work just as well. Since that time I have always had a ZC1 Mk II. This first one I used on 240 volts until I picked up an original burned out power supply and a new transformer. Two years ago I was offered another set in original condition by an old friend who had picked it up at an Army Surplus Store and never used it.

For the past five years I have been part of an AM net which operates in southern Queensland and northern NSW on Wednesday and Saturday mornings on 7.125. Of course everyone on that net not only knows about the ZC1 but hears it in action week by week!

Much of the information used came from research done by Chris Underwood ZL2CU and Roy Symon and can be found at *www.zc1-radioclub,wellington.net.nz/History*

AM and CW on ANZAC Day 2014

Johnno Karr VK3FMPB

We all love 'the park', our park, Bundoora Park. Fresh air, nice scenery, 123 metres elevation which all makes for a nice relaxing place to set up and 'play radio'. This April, Wilfred VK3DWA and the author Johnno VK3FMPB, found a better place to play radio.

We headed off to Ballarat where we had an elevation of 457 metres to throw up a dipole. It's the ANZAC Day activation where amateurs like us get out into the country and, you guessed it, talk. This event is to commemorate the ANZACs and what our soldiers, sailors and airmen have done for us, not only in WWI, but in all subsequent wars. Ballarat has one of the best avenues of honour. There are 3771 trees planted in the order that the soldiers of the region enlisted. It goes for 22 km. The avenue was planted by the girls from E. Lucas & Co. and they were known as Lucas girls who not only planted but raised the money needed for the avenue in their spare time on weekends. The then Prince of Wales opened the avenue in 1920 - *http://www.ballarat.com/avenue.htm*

In recognition of the importance of ANZAC Day to our country, the ACMA has approved the use of the AX prefix for all Australian amateurs. Stations exchanged VK3 for AX3 on the day. Wilfred was AX3DWA and I, AX3FMPB.

I even got an ad on the ARV website (see Figure 1) and a couple of enquiries from that, Allen VK3HRA being the first. I know Allen from the Keith Roget Memorial National Parks Award, which encourages portable activity in our great national parks, which I am completing at the moment. I notified the local paper and the local RSL. The RSL wrote back and said there are a few amateurs in the sub branch, so you never know who may turn up on the day.

ARV promotion ANZAC Day 2014 volunteers wanted

The Ballarat Showgrounds will become a focal point for radio amateurs to commemorate **ANZAC Day 2014**, with a call for volunteers and planning of the event started. The popular venue on the corner of Creswick Road and Howitt Street, Ballarat already hosts an agricultural show, trash 'n trivia markets, dog trials, alpaca and sheep events, wine days and a rural lifestyle expo.

Organiser of the new event Johnno Karr VK3FMPB wants to hear from volunteers with portable stations to operate on the afternoon of Friday 25 April.

The event will honour our heroes through a show of mateship and enjoyment.

To volunteer or for more details contact Johnno VK3FMPB on air, usually 146.450 MHz, or on email to *johnkarr@bigpond.net.au*

Figure 1: The ad placed on the ARV website.

I also wrote to the BARG, hoping that members might bolster our numbers.

Some background

During World War II, an expanded Ballarat airport was the base of the RAAF Wireless Air Gunners' School as well as the base for USAAF Liberator bomber squadrons - *http://en.wikipedia.org/wiki/Ballarat*

Ballarat even has a history of service that goes back to WWI. For a picture, see *http://museumvictoria.com.au/collections/items/765913/negative-soldiers-gathered-on-an-oval-ballarat-victoria-1915?startType=ItemTimeline&start=19*

http://museumvictoria.com.au/collections/items/768830/negative-soldiers-of-the-39th-battalion-standing-at-ease-during-a-parade-ballarat-victoria-circa-1915

I made sure that I marched in the parade they had in Ballarat – being ex-navy, I just love marching. Ballarat sure turned out for the day. Thousands of locals lined the parade route and it sure made you proud to be an ex-service man.

In addition to Wilfred VK3DWA and myself, Craig VK3NCR turned up after a long ride on his bike from Somerville. Other stations worked on the day included VK3UP Terry at Williamstown on the HMAS Castlemaine, with whom we managed to make contact once; but not with too many other stations. I think we logged about six or seven for the whole day, the conditions were just that bad.

It was a cold and quiet day. If only it was as good for the ANZACs as they were faced with steep cliffs and ridges instead of the open beaches.

At least for us, next year will be better I am sure. Johnno VK3FMPB.

A proposal to implement GPS locking of VK beacons

Alan Devlin VK3XPD

The Wireless Institute of Australia (WIA) and the writer Alan VK3XPD have joined in a collaborative financial arrangement to implement GPS locking into the VK beacon network.

So, if you are beacon owner, would you like to improve amateur radio and receive $200 for your efforts? Then read on...

In recent years, GPS technology has been adopted by numerous commercial service providers and RF networks around the world. However, for amateur radio, the early implementation costs of GPS locking remained high and the technology options limited. Several enterprising amateurs found they could make use of an alternate GPS locked source. The old analogue TV sound carriers from the commercial TV providers like 2, 7, 9, 10 and so on were often GPS locked. I know of several amateurs who built equipment to extract this 'sub' reference and use it to 'lock' an external shack based source – usually on 10 MHz.

With the passing of time and technological advances, we now have much improved GPS locking systems available. The on-going rapid penetration of GPS locking has resulted in significant cost reductions in the use of this technology. More importantly, there are now a myriad of options available to amateur radio enthusiasts to achieve GPS locking of frequency dependent applications. GPS locked 10 MHz sources are now common and quite cheap on eBay and elsewhere. The development of PLL hardware from inventive amateurs like Graham Byrnes VK3XDK means that GPS locking is now a cheap cost effective solution available to all amateurs.

Amateur radio enthusiasts are renowned for their efforts in 'pushing the boundaries' of RF propagation. Consequently, many of us have already implemented GPS locking of their radio equipment. Several privately owned and WIA supported beacons are already GPS locked. The most obvious benefit to amateur operators of a GPS locked beacon is the total elimination of the frequency uncertainty issue of a non-locked beacon.

The original beacon concept was developed many decades ago for the sole purposes of propagation monitoring. However, this mostly non-GPS locked beacon hardware is now of limited use to many of us because of its frequency instability. With the passage of time and technology, it's become obvious that our beacon functionality needs to be upgraded to eliminate this frequency uncertainty issue.

Today, the vast majority of VK beacons around Australia, regardless of their ownership heritage, either privately owned or WIA supported, still remain crystal/PLL locked and therefore they have inferior frequency stability. These beacons can and usually do 'wander' all over the place due to daily thermal cycles. Consequently, they are rarely on their nominally 'listed' frequency as per any WIA *Callbook*.

As an active narrowband enthusiast, I would like to see this situation change for the benefit of amateur radio in Australia and hence I have initiated this funding proposal: To upgrade our VK beacons to GPS locking!

In recent years I have watched and actively participated in the exponential growth in the number of amateurs experimenting in the narrowband modes, on microwave frequencies up to 78 GHz and beyond, aircraft enhancement, earth moon earth (EME) up to 24 GHz and the exciting digital modes under the WSJT package. The beacon is a critical indicator of long distance propagation but for the most part, these beacons are often inaudible. However, with WSJT, we can now 'see' these low level signals more than 20 dB below the normal audible threshold. This opens up a whole new world of monitoring and achieving long distance QSOs within the digital domain.

The majority of these modes cited above are critically dependent on GPS locking for their absolute frequency stability. Consequently, many amateurs have chosen to upgrade their equipment with GPS locking capabilities at their own personal cost.

Aside from their original intent of being 'only' a propagation indicator, a GPS locked beacon can also provide a definitive frequency reference for any amateur operator to 'check/calibrate' their home brew gear. These stable beacons also allow us to develop and enhance our operating skills with the WSJT package and plan for more complex long distance record attempts. We can now monitor weak signal beacon propagation but with the knowledge that we will now know exactly where to look in the frequency spectrum. So, no more guessing!

As an example, the development of a very small GPS locked PLL by Graham VK3XDK has simplified the approach to GPS locking immensely. Graham's

PLL synthesises a wide range of popular frequencies through the use of PICAXE programming and DIP Switches. In conjunction with his multiplier modules, a myriad of GPS locked injection LOs can be generated to suit his range of transverter products up to 10 GHz.

While there are many other providers of GPS locking solutions available, this is where it things get a whole lot more interesting!

With a bit of lateral thinking, David VK3HZ has developed PICAXE software to enable Graham's PLL to perform a complete beacon function. So, with a few exceptions, a single PLL board can now synthesise a GPS locked beacon frequency on 144 and 432 MHz, with CW identification (ident) for any unique call sign and grid locator.

For beacons 1296 MHz and above, it gets a little complicated. For example, the three GPS locked VK3RXX beacons at my QTH require a mixer arrangement because the PLL must synthesise two different frequencies that are mixed. The first is 432.530 MHz. This is the base identification frequency which when mixed with an LO delivers the 1296.530 or 2403.530 MHz beacon output. Similarly, for the VK3RXX 10 GHz beacon, the PLL generates two frequencies; the second frequency can be 1242 or 1656 MHz to feed an XDK multiplier board to give 9936 MHz. The identification and 9936 MHz feed a 10 GHz transverter board to deliver a 10 milliwatt beacon on 10368.530 MHz.

So, how easy is that?

Now, almost anyone can modify/update their existing beacon hardware with this extremely simple GPS locked beacon exciter on 144.xx0 MHz or 432.xx0 MHz with just one PLL board, programmed for your chosen beacon frequency. Feed the circa 10 milliwatt output to your own PA and antenna and wait for the positive feedback to roll in.

By upgrading our national beacon network to GPS locking, Australian amateur radio operators can continue to push the boundaries of propagation, building ever more complex RF and digital equipment to achieve what was previously impossible under a regime without GPS locking.

This proposal benefits all amateur radio enthusiasts and I urge you to take advantage of the $200 funding offer to offset your upgrade costs. The eligibility criteria for receiving these funds can be found elsewhere/below.

Conditions

In making this donation available, we have stipulated the following conditions:

1. Alan VK3XPD and the WIA in a co-contribution arrangement will donate a maximum of $5000 for the exclusive purposes of financing GPS locking upgrades to the VK beacon network. This means we will fund up to 25 beacon upgrades.
2. Alan VK3XPD will co-ordinate all financial matters regarding this proposal.
3. Any beacon, regardless of ownership heritage (private or WIA) is eligible to receive this funding.
4. Eligible beacons are only those that are actively radiating RF now as of the proposal date (1 June 2014), are not currently GPS locked and are operating on two metres (144 MHz) and higher in frequency.
5. A maximum of $200 per beacon will be paid to the beacon owner on project completion. That is, a proven fully functional GPS locked beacon.
6. To assist with the coordination of this proposal, a/any beacon owner will be required to pre-register their intention to upgrade a/any beacon with the co-ordinator, Alan VK3XPD.
7. All beacon funding ceases 12 months from the date of issue of this proposal (that is, 1 June, 2015, or when all funds have been committed).
8. There are no restrictions on the hardware used to achieve GPS locking.
9. There will be no obligation for the provision of on-going technical support for any updated beacon.

To pre-register your intention to upgrade an eligible beacon or to discuss this proposal further, I can be contacted by an email to alandevlin AT bigpond DOT com or telephone me on 03 9889 6101.

WWII Tidbits

Recognition for VK2AJI

Amongst those Mentioned in Despatches has been Vince Eagan VK2AJI, F/Sgt. In the RAAF, who was a member of a patrol which went up through Dutch New Guinea, all through unexplored territory, and maintained communications throughout the journey. So says the citation, and, as you know these citations are pretty bald kind of things. Vince is now somewhere up around the Phillippines.

[AR October 1945, p12, Hams on Service by Jim VK2YC]

The Oceania DX contest – 2013 results

Brian Miller VK3MI/ZL1AZE – Chair OCDX contest committee

Photo 1: Dave NH2T used this simple set of antennas to win the Oceania Single Operator ALL Band High Power category in both the PHONE and CW sections, as well as setting a new Oceania CW record. You can see Dave's spider beam in the foreground and his low band vertical in the background.

Editor's note: This is a very truncated summary report of the contest. The full report appears on the contest website at http://www.oceaniadxcontest.com/ and is recommended reading for all VK/ZL contesters.

Congratulations to all the winners in the 2013 Oceania DX (OCDX) contest and thank you to everyone who participated, even if only to make one or two QSOs.

Conditions were generally good although reduced solar flux on the PHONE weekend meant that there was less phone activity on 10 metres. The total number of logs received was 1244 which is 15 less than the record of 1259 logs received in the 2011 contest. There was a notable increase in the number of logs from Australia in the CW section, and from Indonesia, New Zealand and other countries in Oceania in both the PHONE and CW sections. This increased activity from Oceania stations is encouraging, as growing Oceania participation is critical for attracting more participation from stations outside Oceania.

The OCDX Contest Committee has created a database to identify all of the continent and country records in the contest since the current scoring was introduced in 2001. A list of the new continent records set in 2013 is provided in Table 8 of this report. The full list of records is available on the contest web site at *http://www.oceaniadxcontest.com/*

The terrific effort of Dave Mueller at **NH2T** deserves special mention. Dave has won the prestigious Oceania SO ALL HP category in both the phone and CW sections, as well as setting a new Oceania CW record. This was Dave's last entry from KH2 as he is now in the process of relocating QTH from Guam to Hawaii. Dave has indicated that he looks forward to continuing to participate in the future with a KH6 call sign.

Some of the other notable performances include:

- **HS0ZIA** for setting new Asia records in both the PHONE M1 and CW M1 categories.
- **JA7BEW** for setting a new Asia record in the PHONE SO ALL LP category.
- **JA7NVF** for setting a new Asia record in the PHONE SO ALL HP category and achieving the highest score outside Oceania in the PHONE section of the contest.
- **JH4CES** for setting a new Asia record in the CW SO ALL LP category.
- **N5AW** for setting a new North America record in the PHONE SO ALL LP category.
- **RS3A** for setting a new Europe record in the PHONE SO ALL HP category.
- **RT0F** for setting a new Asia record in the CW SO ALL HP category and achieving the highest score outside Oceania in the CW section of the contest.
- **UA5C** for setting a new Europe record in the CW SO ALL HP category.

Photo 2: The ZM4G QTH – it can only be described as magnificent.

- **UT7QF** for setting a new Europe record in the CW SO ALL LP category.
- **V51YJ** for setting a new Africa record in the CW SO ALL LP category.
- **VK2BJ** for setting a new Oceania record in the CW SO ALL LP category.
- **YV5EPM** for setting a new South America record in the PHONE category.
- **ZM4G** for winning the Oceania SO 40M HP category in both the PHONE and CW sections, and setting a new Oceania record in the PHONE section.

An overview of the results is provided in the remainder of this section. An analysis of the activity in the 2013 contest and historical trends is provided in section 2, below and available on the website. The detailed scores, along with soapbox comments and information about the equipment and antennas used, are provided in sections 3 to 8, also on the website.

The following abbreviations are used to describe the various entry categories: **ALL** = All Bands, **CK** = Check Log, **HP** = High Power (total output power greater than 100 watts), **LP** = Low Power (total output power no more than 100 watts), **M1** = Multiple Operators and Single Transmitter, **M2** = Multiple Operators and Two Transmitters, **MM** = Multiple Operators and Multiple Transmitters, **SO** = Single Operator, and **SWL** = Shortwave Listener.

The Australia Club Plaque is awarded to the local club from Australia with the greatest number of member stations participating in the contest. The Geelong Amateur Radio Club won this plaque in 2012 and has won it again in 2013 with six eligible logs from members VK3ALB, VK3NCC, VK3NW, VK3NRW, VK3WK, and VK3ZIB. The runner up was Eastern and Mountain District Radio Club with its members submitting five eligible logs.

Photo 3: The station of Andrew V51YJ.

The New Zealand Club Plaque was a new plaque in the 2013 contest. It is awarded to the local New Zealand NZART Branch, DX club, or contest group with the greatest number of single operator entries from its members. The inaugural awarding of this plaque goes to the East Coast Contesters group with 13 eligible entries from ZL2AL, ZL2GQ, ZL2LF, ZL2ST, ZL2WG, ZL2YL, ZM2IO, ZM4G and ZM90DX.

There were no Asian entrants in the PHONE or CW M2 categories so the ASIA M2 PHONE and M2 CW plaques have not been awarded.

The on-going sponsorship of plaques is important for maintaining and growing interest in the contest. New sponsorship offers are always welcome and anyone who is interested in becoming a sponsor should contact the committee. The cost of sponsoring a plaque is AUD 50.00 per annum, to cover the expenses associated with the manufacture and delivery of the plaques.

Certificates have been awarded to the top scoring station in each category for each continent and country. Additionally, a participation certificate identifying the number of successful QSOs has been awarded to each station that participated in the contest. The certificates are available online for downloading and printing by individual entrants at their convenience. The web link to the certificates is published on the OCDX contest web site at *www.oceaniadxcontest.com*

Printed certificates will only be delivered via the postal service in response to written requests from entrants who won a category in their country and made more than 10 QSOs in that category. Such requests can be emailed to the contest committee at *info@oceaniadxcontest.com* and must be lodged by 31 July, 2014.

Log Checking

Approximately 2% of the logs are still being submitted in paper format. The contest committee converts each of these paper logs to Cabrillo format so that they can be cross checked and scored using the same process as the other electronic logs. Although somewhat time consuming, the committee considers that this additional effort is reasonable in order to avoid discriminating against operators who only make a few QSOs and are unable to use, or do not have access to, an electronic logging capability.

A log checking report is available for each entry in the contest. This report provides detailed information about any QSOs that have been removed from the score calculation, along with the reasons for their removal. Entrants can request a copy of their log checking report by sending an email to the contest committee at *info@oceaniadxcontest.com*

Approximately 39% of the logs had no score reduction, 31% incurred a reduction of up to 10%, and 30% incurred a reduction greater than 10%.

Entrants are reminded that **WA7BNM** provides an on-line web

form that can be used by entrants to manually enter log data to produce a Cabrillo file and then submit it to the email robot. This form is intended for entrants who are using paper logging, or logging software that doesn't produce a Cabrillo file. The form is available at *http://www.b4h.net/cabforms/*

Analysis of 2013 results

Band Conditions

Chart 1 below shows the annual trend in the total number of QSOs logged by Oceania entrants (excluding SWL logs) while Charts 2 and 3 show the trend broken down by band for the PHONE and CW sections respectively.

A total of 65,948 QSOs were logged in 2013 and this is the highest number ever recorded in the contest. PHONE activity was similar to that in 2012 but the CW activity increased by approximately 31%. The latter can be largely attributed to the return to normal conditions in 2013, after a geomagnetic storm severely disrupted conditions during the 2012 CW weekend. 15 m was the most popular band for making QSOs in both the PHONE and CW sections.

Chart 4 shows the annual trend in 10.7 cm solar flux and planetary geomagnetic activity (as measured by the A index) on the Oceania DX Contest weekends since 2001. The low values of A index on both the PHONE and CW weekends in 2013 meant that conditions were relatively quiet and settled. The level of solar flux was higher on the CW weekend than the PHONE weekend – 128.5 compared to 106.5 – which likely explains why 23% of CW QSOs were made on 10 m but only 10% of PHONE QSOs were made on 10 m.

Activity on the lower bands is still well down on that recorded in years during the last solar minimum. It seems that entrants are spending more time taking advantage of the improved conditions on the higher bands at this higher point in the solar cycle. Only a handful of QSOs were logged on 160M m, and mainly between Oceania stations, although NH2T did manage to work a string of Asian stations in the CW section.

Participation

Charts 5 to 11 below summarise the participation in the OCDX Contest. Chart 5 shows the trend in the number of logs submitted (including check logs) since 2000, while charts 6 and 7 provide a breakdown of this trend by continent for the PHONE and CW sections respectively. Charts 8 and 9 provide a breakdown of the trend by country within Oceania. Chart 10 identifies and compares the top 20 countries that submitted the most logs in the 2013 contest. Chart 11 compares the number of logs submitted for each entry category in the 2013 contest.

The total number of logs received for the 2013 contest is 1244 – 39 more logs than the number received for the 2011 contest, but 15 less than the record of 1259 logs received in the 2011 contest. The number of CW logs increased dramatically from 545 in 2012 to 617 in 2013 but, as explained earlier, this can be largely attributed to the poor CW conditions in 2012 which resulted in fewer logs being submitted.

It is pleasing to see new records set for the number of PHONE and CW logs submitted by Oceania stations. Although the number of VK phone logs dropped in 2013 this was offset by a significant increase in the number of VK CW logs. There was also a notable increase in the number of logs from Indonesia, New Zealand and other countries in Oceania. This increasing interest from Oceania stations is very encouraging, noting that Oceania participation is critical for attracting more participation from stations outside Oceania and continuing to grow the contest.

It also pleasing to see a new record being set for the number for the number of logs received from South American stations - up from a total of 12 logs in 2012 to 21 logs in 2013. The majority of the increased activity is from stations in Brazil.

The number of logs from North America continues to be relatively low compared to Asia and Europe. North America entrants often comment about the difficulty in competing with the California QSO Party so this may be one explanation for reduced activity from North America on the PHONE weekend.

The actual participation in the contest is always much greater than that indicated by the number of logs submitted. There were at least 626 stations in the PHONE section and 334 stations in the CW section that made ten or more QSOs but did not bother submitting a log.

The low power categories continue to be the most popular. Approximately 60% of the 2013 participants entered in low power categories rather than the equivalent high power categories. Overall, the SO ALL LP category was the most popular category in the 2013 contest, followed by the SO ALL HP category and then the SO 15M LP category.

2014 Contest

The 2014 Oceania DX contest will be held on the first two full weekends of October 2014 as follows on table on page 22.

More information about the contest, including the rules, is available from the Oceania DX Contest web site at *www.oceaniadxcontest.com* Email inquiries should be addressed to *info@oceaniadxcontest.com*

Acknowledgments

The successful running of the Oceania DX Contest is a large team effort involving contributions from around the globe.

Although the log reception, log checking and certificate production processes are largely automated, committee members are still required to contribute many hours of effort per annum to manage these processes, and to administer and promote the contest.

The support of the following people and organisations is

PHONE:	0800 UTC Saturday, 4 October to 0800 UTC Sunday, 5 October.
CW:	0800 UTC Saturday, 11 October to 0800 UTC Sunday, 12 October.

also acknowledged and greatly appreciated:

- **NZART, WIA** and the *other sponsors of awards*.
- **K1EA** for the provision of the log checking software.
- **N5KO** for hosting the email robot.
- **K5TM** for publishing the on-line certificates.
- **WA7BNM** for the provision of the on-line Cabrillo web form.
- **ZL1AXG** for the hosting of the *www.oceaniadxcontest.com* web pages.

Finally, and most importantly, thank you to everyone who participated in the 2013 contest and made it such a success. We look forward to seeing you all again, along with new entrants, in the 2014 event. Let's make it the biggest and best Oceania DX Contest party yet!

Oceania DX Contest Committee

Brian VK3MI/ZL1AZE, Tony VK3TZ, Martin VK7GN, Geoff ZL3GA, Philip VK2HN and Mirek VK6DXI.

Boat anchors with a bite

Frank Grimshaw VK1VK

I recently purchased a Yaesu FL-2100B linear. As expected given its age it needed some tender loving care and a 'few' repairs to get it to a state in which I even felt confident to plug it in and apply power. No tubes fitted though as I was still waiting for replacement HV capacitors.

After a couple of minor sparks and a few blown fuses I continued on with the repairs; I did disconnect the HV AC from the transformer as I am very wary (read scared when it comes to 2400 volts). I also needed the top cover off the RF area and didn't want to blow the protection resistor that I had recently replaced. I happened to leave the power plug in the mains, but the amplifier was turned off and I needed to do some more soldering.

While holding the soldering iron in one hand I rested the other hand, holding the solder in it, on the chassis to steady it – and I got bitten. I thought it was a sharp edge on the chassis the first time, but repeating the action convinced me it was not! I had received a good bite from the chassis even though the amplifier power switch was off. That was pretty strange since I was nowhere near the power switch or the other mains wiring. Pulling the mains plug solved the immediate problem obviously, but I was puzzled and a bit concerned about what had happened. I was also kicking myself for not following the old adage – once bitten twice shy – I shouldn't have had a second go.

After finishing the soldering, I thought more about the bite I had received and pursued the problem. I found that the FL-2100B (and probably other versions) only had a two wire mains lead, no earth. Interesting! The more so because there is no way that you could suggest the amplifier was double insulated.

Reference to the circuit diagram revealed that the wiring connection for 100 volts AC mains supply showed two 0.01 microfarad capacitors (marked as rated for 1500 volts DC but 150 volts AC), one connected from active to earth, the other from neutral to earth (earth in this case being the chassis). My amplifier had both connected as per the circuit diagram.

You can probably guess what had happened. One of the capacitors had broken down and was connecting the 240 V mains active lead to the chassis then to my hand. I guess I am only here because the breakdown did not result in a dead short! Dead short - probably dead me!

So what – well, I consider my (and other FL-2100 amplifiers wired in the fashion mentioned without an earth connection and with the two 0.01 microfarad capacitors installed) are a death trap. I cannot understand how these things could ever have been imported wired the way mine was as they could not have met the Australian regulations for electrical appliances. Perhaps it wasn't considered necessary because we as amateurs should know. Whatever the reason, I strongly recommend that all owners of Yaesu FL-2100 series amplifiers, and for that matter other brands, check the safety of their mains wiring.

And check the value of the mains fuse – my unit came with a 20 A fuse which, upon discovery, I replaced with a ten A 250 V rated fuse.

As an aside and again interestingly, the wiring diagrams for the FL-2100 B transformer connections for both 200 VAC and 220 VAC do not show the capacitors. Equally interesting was the fact that the most appropriate connections to the transformer for the Australian 230 VAC mains supply were not shown – basically connect the two 117 volt primaries in series. Running the FL-2100B with 230 volts connected to the 220 tapping's will put the nominal secondary voltages around five percent higher than intended. The 234 volt settings are just about ideal these days since the nominal Australian mains voltage is now 230 volts (Australian Standard AS 60038 refers). The same goes for other brands, so transformer tap settings might be worth checking too!

A weak signal source for 1296 MHz

Dale Hughes VK1DSH

During a recent field day I had some trouble with my 23 cm transverter and it would have been very nice to know if the system was receiving properly and on the correct frequency. After some reading, digging around in the junk-box, a few hours playing around with EagleCAD and an afternoon's construction this device was created: a weak signal source that generates an easily recognizable low level signal on a well-defined frequency that can be used to quickly assess receiver operation.

The circuit of the signal source is shown in Figure 1 and it consists of a 14.400 MHz temperature compensated crystal oscillator (U4) followed by a multiplier chain and band pass filter. The TXCO output is turned into a square wave by a high gain linear amplifier fashioned from 74HC04 inverters[1] (U5). The harmonic rich square wave signal then drives a MAR-3 MMIC amplifier (U6), the output of which is filtered by a simple microstrip band pass filter. While the TXCO frequency of the prototype was 14.400 MHz, other commonly available frequencies might be considered: 12 MHz, 16 MHz, 24 MHz and 27 MHz could be used as they all produce harmonics on the desired frequency of 1296 MHz. There is some advantage in using higher frequency oscillators as it means it is easier to filter out the unwanted frequency components from the final output.

The output filer consists of three short sections of printed circuit track which are capacitively coupled and tuned to maximise the wanted signal, the basic design is shown in Figure 2. This type of filter[2] is easy to construct and offers reasonable performance.

Modulation of the output signal on 1296 MHz is achieved by pulsing on and off the MMIC amplifier via a NE555 timer IC (U1) at a rate of approximately 2 Hz. The duty cycle of the NE555

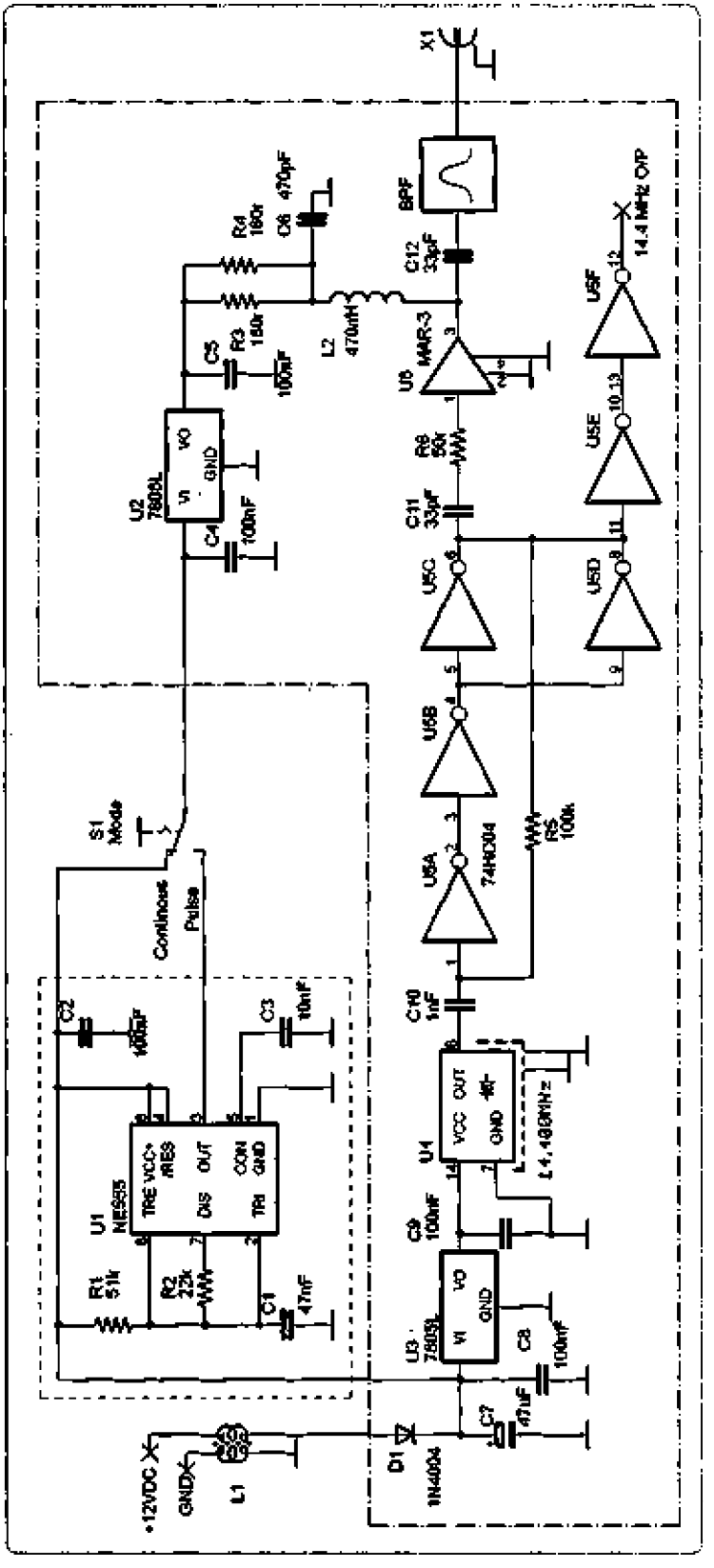


Figure 1: Schematic diagram of the weak signal source. The common mode choke, L1, is 10 bifilar turns on a T50-43 ferrite toroid, and it is mounted between the circuit board and power connector. The components inside the dot-dash line are mounted on the signal source PCB, while those inside the dotted line are mounted on a small piece of Vero board.

oscillator[3] is very close to 50 % and the modulation makes it very easy to distinguish the wanted signal from other signals. Output from the signal source can be switched between continuous and pulsed by switch S1 which passes power to the MMIC.

A buffered square wave output from the TXCO is also available if required. This signal contains many harmonics, including those at 144 MHz and 432 MHz (unless a 27 MHz oscillator has been used) which can be easily heard on nearby receivers, however these harmonics are not modulated by the NE555 timer.

Construction and components

The oscillator, harmonic generator and filter are built on a small 1.6 mm thick double sided printed circuit board and the NE555 timer was built on a small piece of 'Vero board' (modulation was a useful afterthought...). Both boards are mounted in a small die-cast box which provides mechanical protection and a significant level of screening so that only the wanted frequency component is available at a useful level via the output connector. Power to the circuit is fed through a common mode choke (L1) to reduce signal radiation by the power cable. The general layout of the unit is shown in Figure 3.

Except for the voltage regulator (U2) and TXCO, most of the components on the signal source board are surface mount devices, while the modulation oscillator can use either through-hole or SMD style components. The MMIC used in the prototype was a Minicircuits MAR-3 device and a Minicircuits ERA-1 could also be used if a MAR-3 device is not available.

The variable capacitors used in the output filter need to have a minimum capacitance of approximately 1 pF and these might be difficult to obtain. The prototype unit used small ceramic capacitors made by Murata which are colour-coded; the blue or black versions are suitable for use in the filter. Suitable alternatives would be small value surface mount variable capacitors. An alternative to the microstrip filter would be pre-tuned helical resonators or interdigital filters[4].

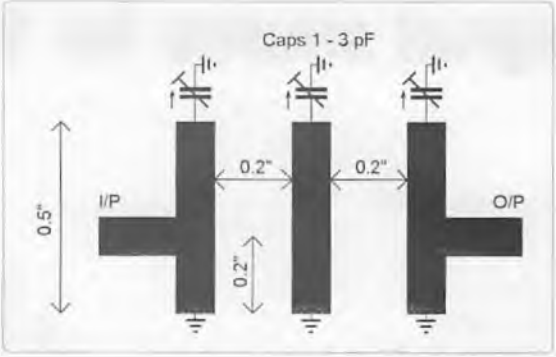


Figure 2: General details of the microstrip band pass filter reproduced from the original Ham Radio article[2]. For standard 1.6 mm thick FR4 fibre-glass printed circuit board material the track width for a 50 Ohm characteristic impedance is reasonably close to 2.54 mm (or 0.1 inch) assuming 35 micron copper which is the usually supplied as '1 oz per square foot' PCB laminate. The underside of the filter is unetched copper which makes up a ground plane which is essential for correct operation of the filter.

Output signal measurements and adjustment

Measurements made with a Boonton model 42B power meter indicate that the signal power at the output of the filter is approximately 0.1 microwatts, but as the output is likely to contain a number of frequency components spaced at the oscillator frequency around 1296.0 MHz, the power in the component at 1296.0 MHz will be less than this level.

The tuning of the output filter is quite sharp and it can be tuned by connecting the oscillator output to the 1296 MHz receiver input and adjusting the filter tuning capacitors for maximum signal.

Conclusion

The design of a simple and useful weak signal source for 1296 MHz has been presented. The unit has proven to be useful and reliable. None of the components should

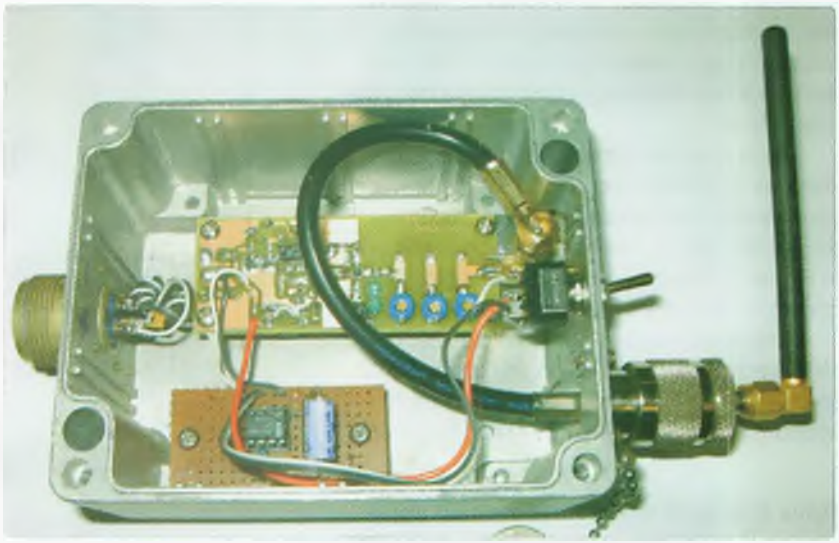


Figure 3: General layout of the weak signal source. The oscillator module is mounted directly underneath the 74HC04 IC on the underside of the signal source board. The microstrip band-pass filter and trimmer capacitors can be clearly seen. The modulator assembly is at the lower left. The square wave output from the 74HC inverter is not currently connected, but is available from a test pin on the PCB.

be especially difficult to locate and there are various options for design changes to suit available components and user needs. The EagleCAD file for the PCB layout is available to interested readers.

While the output signal contains a number of frequency components spaced at the oscillator frequency no confusion should result when using the signal source for testing narrow band systems that use down conversion as the unwanted components will be filtered out by the transverter or the front end of the intermediate frequency transceiver. For the intended use, simplicity and ease of construction were the main requirement.

References

1 See *'CMOS Linear Applications'* at *http://www.fairchildsemi.com/an/AN/AN-88.pdf* for a description of these useful amplifiers.

2 *'Microstripline bandpass filters for 1296 MHz'*, H. Paul Shuch, Ham Radio Magazine, December 1975. Available from *http://www.setileague.org/articles/hps_ham.htm*

3 LM555 Timer datasheet *http://www.ti.com/lit/ds/symlink/lm555.pdf*

4 See *'An interdigital bandpass filter for 1.3 GHz'* P 264 of the RSGB/ARRL International Microwave Handbook, 2002, for one example.

Over to you

OTY 630 m band plan

G'day Peter,

The urgent need for a bandplan for 630 m is an issue amateurs interested in this part of the spectrum are concerned with on a world-wide basis. While users of the various digital modes are beginning to tread on each other's toes on 630 m in Australia, just imagine what the situation is like in Europe with its huge population!

As European countries have had low frequency allocations (73, 137, 500 and 472 kHz) longer than anywhere else and have the highest levels of activity, they have had much more time and incentive to think about this issue (and resolve it) than anywhere else in the world.

On 21 – 27 September 2014, the International Amateur Radio Union (IARU) Region 1 is holding a conference in Varna-Albena, Bulgaria to discuss issues including a proposed international 630 m bandplan, based on current usage and the ideas from widely respected LF pioneer Mike Dennison, G3XDV. The proposed bandplan can be viewed and downloaded as a PDF from: *http://www.r-e-f.org//images/Documents/IARU/VA14_C4_06.pdf*

If you look at Annexe 1, you can see an illustration of the bandplan, along with some very important 'comments/observations' by Mike about the current frequencies used in Europe (and wider afield) for the various digital modes, including WSPR, QRSS, WSJT etc. These frequencies are likely to be formally adopted as they are based on established usage. Let's use them.

Readers will notice that SSB doesn't have a place at all in this bandplan, as its relatively large bandwidth doesn't suit being in a band only 7 kHz wide.

This bandplan needs to be understood and used by us in the southern hemisphere, so we can live side-by-side with our fellow amateurs on LF in the rest of the world – and make two-way contacts/get our signals heard on the other side of the world.

Education about the proposed bandplan is the key – hopefully the WIA can give some publicity to it on its website and in Amateur Radio magazine?

Vy 73,

Steve Ireland VK6VZ/G3ZZD/VY2LF

Editor's Note:

I have advised Steve that the VK bandplans are currently under review. John Martin VK3KM advises that he has added a draft bandplan for 630 m and will be watching developments overseas with great interest.

Peter VK3PF

Steve responded with some further thoughts:

It is great that 630 m is in the WIA bandplan but there is no detail yet as to where different modes can be used – which the IARU Region 1 bandplan that is recommended/up for ratification in September does.

The IARU plan basically puts aural CW between 472 and 475 kHz and the other digital modes between 475 kHz and 479 kHz. It also has suggested frequencies based on usage for each of the most popular digital modes – WSPR, ROS, QRSS and WSJT (all types). What is currently happening in Australia is that a war is in danger of breaking out between WSPR and JT65 users because of using the same areas of the band. If the WIA adopted G3XDV's observations in the IARU bandplan now about the separate frequencies to use as the centre of activity for each of these modes, then we may avert open hostilities between the two groups.

To explain, some Australian JT65 users view WSPR simply as a beacon mode (which it is) and not proper two-way communication and have little respect for those that use it. Similarly, those Australians who use WSPR on 630 m were among the earliest pioneers of the band and are thus not particularly respectful of the JT65 users who are coming onto the frequencies the WSPR users have previously used.

Now if, as G3XDV details in the IARU bandplan 'comments' as currently happens in Europe, if WSPR activity was centred around 472.2 kHz (USB) and JT activity was centred around 477 kHz (USB) there would be plenty of space between the two groups. Also, if they are both operating in the same parts of the band as their European counterparts, we might get some reports/QSOs between the two continents.

Let's act now, rather than waiting for the IARU bandplan to be ratified – which is a 99 per cent certainty anyway, as it is built upon the strong foundations of existing usage that have evolved over several years.

Vy 73

Steve VK6VZ.

The YL juggernaut rolls on - A special report

Jean Fisher VK3VIP – President ALARA

The second of the special ALARA sponsored Foundation courses was held over the weekend of 31 May/1 June and it's my pleasure to inform you that it has been a great success with all five candidates obtaining their licences.

7.30 am on Saturday morning 31 May found my OM John VK3DQ and I mobile along EastLink heading towards the home of Lino VK3EI, which was to be the venue for this course.

The ladies of ALARA had accepted the generous offer of the RadioActives group in running these courses and actively promoting amateur radio to women who are, as we all know, more that 50% of the population of Australia and whom are significantly underrepresented in amateur radio.

We arrived at VK3EI's QTH just before 8 am and it was not long before the aroma of good coffee filled the air. As part of the concept of these courses is to pamper the ladies taking part, my OM VK3DQ was placed on kitchen duties and it was not long before the pork and apple sausage rolls were looking and smelling real good.

I was able to meet and greet the candidates as they arrived and show them into 'The Cantina.'

And shortly after 9 am when all the introductions had been completed the course began.

Steady progress was made using the new training materials developed by the RadioActives and at our mid-morning break Donna VK3FRET and her OM Steve VK3VM popped in and we posed for photographs. After the break I left with Steve and Donna and the course continued in the capable hands of Lino and John.

At 12.30 pm lunch was provided for the ladies and the coffee machine given a real work out. Then back to study until about 2.30 pm where all enjoyed a short break and some interesting YL amateur radio videos were shown.

The ALARA sponsored Foundation licence course folks: Back row, L to R – Jean VK3VIP, Donna VK3FRET, Lino VK3EI and John VK3DQ. Front row, L to R – Susan, Kaye, Monika, Sue and Christine.

The final hour of study soon passed and the first day of the course came to an end with a nice glass of red or a rather nice sauvignon blanc.

Day two - those exams

The day in contrast to Saturday was grey and raining but we arrived early and set up the room for the exams. To make light work of this process we had four assessors in attendance Keith VK3FT, Steve VK3VM, Lino VK3EI and John VK3DQ.

Soon our candidates began to arrive and it was straight into the paperwork - it was decided that Steve VK3VM would be in charge of all paperwork in the day's session and this seemed to work quite well. The 30 minutes time allotted for the written exam flew by and we knew we had a good result with all candidates getting a pass. So it was straight on to the practical exam.

After the 'flash card' portion of the exam was finished and the ladies had demonstrated their skills with the multimeter and winding an RF choke, an Icom IC-718 HF transceiver was brought into the room with an antenna tuner dummy load and battery power supply where the ladies demonstrated various skills to the satisfaction of the assessors.

Last but not least was the on-air portion of the assessment in which two Yaesu hand held radios were used and the strong clear voices were on the air. This rather fun portion of the morning brought the assessments to a close and all that remained was to complete the paperwork including licence applications for five new YL amateurs! So please welcome Susan, Kaye, Monika, Sue and Christine to amateur radio and listen out for them on the air in the not too distant future.

Keep your callsign in sight – at all times!

Ernie Walls VK3FM

Society is steadily moving into new times. Not necessarily better times, but new in that they are different than what we have experienced before. So too is the management of amateur radio callsigns. These new times always seem to involve computers, and those two other ubiquitous elements that make up the mix of 'computerisation' that surrounds all of us most every day, namely software programs and humans.

What is this all about?

On Friday morning, 16 May last, I got out of bed at around 6.00 am, having slept soundly through the night. I was ready to start the day. Being retired, the time really didn't matter much, but start the day I did. Go out to the shack, turn the radio and computer on, open the cluster, check the emails, organise a cup of tea, rescue the paper from somewhere in the front garden and, eventually, take a tour around several of my favourite websites (reflectors) was all part of the well-worn morning routine. Nothing new with that.

I was aware of the WIA annual general meeting being held in NSW the coming weekend, and having read the various WIA activity reports with interest a few days earlier, I thought I would have a scan of the WIA financial reports, which I knew had been put on the website.

My very first inkling of the possibility of trouble came and passed almost without thought. I could not register myself with the WIA Memnet system. I should have done this much earlier of course, months earlier, but had consistently put it off. Anyway, now in trying to register, I could not do so - because data that I entered, that is my name, WIA member number and callsign, did not match data that was being received by the WIA from the ACMA. Or words to that effect. I thought no more about it in that instant, wrote a note to ring Mal Brooks VK3FDSL at the WIA National office the following Tuesday, and moved on – fortunately not far.

Whilst in the WIA website and only on a whim I decided to check what calls were currently available in VK3 with a two letter suffix. I had done this regularly, if not often, for some time, for my own enjoyment and information. It was something I enjoyed keeping an eye on. And there they were, two calls available, VK3SO and...VK3FM.

My XYL has never seen me caught short for a word or two (hundred) in the forty nine years she has known me – had she been in the shack at that instant, she would have seen me absolutely speechless, aghast even, staring blankly at the monitor screen and wondering 'why me!' I looked again, and 'FM' was still there!

What to do – first.

I quickly found my ACMA 'Apparatus licence' and noted that it expired on 10 January, 2018. That's what I thought too. A check with my bank records (on-line banking, I really do recommend it) confirmed that I had paid ACMA $356.00 for a five year registration on or about 4 January, 2013. Yep, ACMA certainly appeared to have made a mistake.

I thought I would check my personal information on the ACMA database using their standard 'search' facility. A quick look confirmed that the call VK3FM was indeed vacant! Wow! Again on a whim, my second for the day, I decided to check out VK3CEW, my original callsign but these days, my back up one. Well, the good news was that it was still valid but hello...I had been issued a new call, VK2BBE, only the day prior! Things got interesting when I noticed that VK2BBE had been matched with my ACMA licence number 213266, the one which had always been matched with my VK3FM call! Interesting. And yes, ACMA obviously had made a mistake.

I emailed Mal at the National office, informing him of the 'issue'. Then went for my one hour morning walk, but that day really to fill in time until I thought the ACMA office in Canberra would be open.

Back from the walk, I phoned ACMA, only to be told that their customer department was unavailable but that I should leave a message and they would get back to me in no more than 24 hours. But after leaving my telephone message with them, I decided to email them with all the details, basically with the view that the sooner I got things moving, the sooner this matter would be addressed, fixed even. And I wanted my issue detailed in writing. Somehow, this always seems better to me. So my email told the whole story, and at about 9.30 am I left the matter pending ACMA contacting me.

Now, a bit of balance to my story, and some credit to ACMA. They phoned just after 11.00 am and listened as I told my story. The young lass involved was most polite, quite businesslike, did not waste time denying an error may have been made, and said she would personally get back to me as soon as possible. She did – about 15 minutes later, noting what had happened and informing me that the matter would be fixed within the hour. And she apologised. And we parted friends, something I probably would not have thought possible a couple of hours earlier.

ACMA was good to their word too – an hour later, my database details had been corrected – and I knew life would continue happily ever after. Well done ACMA.

My only real concern is that this could have happened in the first place. I understand and accept that mistakes will always be a part of life – but that my callsign could be put on the market, without me knowing, through no fault of my own, surely shows that the system might need tweaking.

As it is, DX is, FM still tries for it, and life is good. Or at least, OK.

Road to Kazakhstan

Jack Bramham VK3WWW - WIA ARDF Coordinator

During September 2014 ARDF (Amateur Radio Direction Finding) enthusiasts from around the world representing many radio societies from all IARU Regions will be heading to the Burabay area of Kazakhstan to compete in the IARU 17th World ARDF Championships. This championship event will be hosted by KFRR (Kazakhstan Federation of Radiosport and Radio Amateur).

At this stage our WIA team will consist of five. Accommodation during the event will be at the Rixos Borovoe Sports Complex, a ski resort in the Burabay area about 220 km north of Astana, the capital of Kazakhstan.

Competitors will be hunting transmitters on the 2 m and 80 m bands. For the competition they are separated into age and sex categories from Junior under 19 to Supervet 70 years plus. Other age groups for male and female categories are 20 (open, all ages), 30 plus, (Women 35 plus) 40 plus, 50 plus, 60 plus and 70 plus.

Most of the WIA team will be arriving early and spending some time touring the neighbouring Republic of Kyrgyzstan. Following the event they will head to Baikonur Kazakhstan and tour the Russian Kosmodrome Space Facility.

More information about the event can be found on the official event website: *http://ardf2014.kz/*

If you are interested in finding more about ARDF this can be found here: *www.ardf.org.au*

VK3news Geelong Radio and Electronic Society

Rod Green VK3AYQ

Over the years the method of presentation of talks and lectures has undergone significant change. When our society first formed presenters used only a blackboard and chalk to explain pertinent points, or possibly a slide projector. Next followed the overhead projector using transparencies. But the biggest presentation aid has, of course, been the computer coupled with a video projector, and the internet contains a wealth of information that can be effectively used to enhance these presentations.

Our society is making more use of information found on the internet as has been apparent over the past few months. President Barry has given a number of presentations where information was sourced from the internet in the form of video clips. One topic covered was HF propagation and included a video of the sun and solar activity. Barry explained how solar activity affected HF propagation. He also connected to various internet sites and explained how the information contained in them could be used by amateurs to make more effective use of our amateur frequencies. Another interesting presentation again sourced from the internet was on soldering of surface mount devices. The correct methods for soldering ICs and the like were shown, as well as how to remove faulty SMD components from a PCB.

Though a lot of our presentations have been sourced from the internet, not all of them were movies. Other members have given presentations on the use of software which can be freely downloaded. One night was spent instructing us in the use of the program 'Fldigi' which is used for digital communication. Instruction was given on how to configure and use this program. As a follow up to this, files of recorded PSK31 signals were included in our monthly newsletter for members to become familiar with what to listen for, and to make certain they can decode the signal correctly. Another evening was spent looking at computer modelling. There we saw how the output waveform of a 555 timer could be observed, and how the waveform would change as component values were changed. This was all done by entering values into a computer, no soldering iron or breadboard required. We were also shown how computer modelling could be used for research into how naturally occurring materials are formed. This is done by looking at the forces between atoms on a molecular scale.

Recently four of our members who held Foundation licences sat for and passed upgrade assessments. Three members now hold a Standard licence and one is now an Advanced licensee. Information about our society can be found on the internet at *vk3anr.org* If you are restoring an old valve radio, there is a list of valves we have for sale. Visitors are most welcome to attend club meetings. Meetings are held every Thursday evening at 8 pm local time, or for a more informal session visit us on a Wednesday morning around 9.30 am.

The rebirth of a repeater – the Drouin 70 cm repeater VK3RWD

Albert Hubbard VK3BQO – GGREC Repeater Officer

Several years ago during firestorms that ravaged Victoria one of several amateur repeaters that suffered damage or total destruction was VK3RWD, a UHF repeater based in Drouin, west Gippsland. The device was being tested for relocation to a new site but was destroyed before this was finalised. Unfortunately nothing was left to recover and so the task of collecting the necessary equipment had to be started from scratch. The licence for the repeater was held by the Eastern Zone Amateur Radio Club but due to time constraints on members, the project fell behind. Members of GGREC heard of the dilemma and asked if they could lend a hand. A deal was made whereby GGREC would take over the licensing of the repeater and perform the rebuild.

Photo 1: Some of the GGREC people responsible for getting the repeater back 'on air.'

That was January 2013. By February we had prepared a brief on what we needed and after a trip to the Kyneton Hamfest, we obtained the gear to do the job. Purchased at a modest cost due to the project's importance, we obtained two TX815 Mk3 U band transmitters and two RX815 Mk1 U band receivers. This combination makes up the Philips FM815 UHF repeater. The job was then to locate documentation for the Philips equipment which took some internet searching and sifting through many PDF files to find the correct circuits for the radios. It seems that Philips liked to mix and match the boards within these radios but they are very easy to work on and repair if necessary. This job ended up in my lap and since never having looked inside the FM815 series of repeater equipment before, meant I was starting from the beginning. I now have a very good understanding of the circuits and can say that I like the way they are built. Philips had designed the U band versions to work between 440 and 470 MHz. I was told that the FM815 series were basically boards from the FM828 mobile mounted in a bigger box but as there have been several versions built by Philips, this is not strictly the rule. The Mk1 receivers have their own receiver board (marked RX815) which required several small changes to allow them to work at 433.575 MHz. The transmitters also required small modifications to get the RF out at 438.575 MHz.

Controlling the repeater was going to be easy as a couple of us had recently spent two years rebuilding our club's six metre repeater VK3RDD which included designing a new processor driven controller. The controller is made up of two modules, the CPU and the interface, with both plugging into a backplane and connecting to the front panel for control and display functions. The processor used is the ATMEL (AVR) - PWM3. Voice identification and other playback messages are recorded on to a 'chipcorder' and DTMF tones can be used to remotely program the controller.

Once we knew the equipment that was to be used, it was time to source a strong cabinet to house the repeater. Luckily, even though the installation site was outside, it was under cover, so the cabinet required only moderate weatherproofing but good security. After several sessions on the 'net looking for suitable enclosures, a brochure arrived

in my PO Box advertising steel tool boxes such as those used by tradesmen on building sites and in backs of utilities. This demanded a look-see and sure enough one was purchased for several hundred dollars, whereas a fully weatherproof commercial exterior cabinet was asking upwards of the thousand dollar mark. Fitting out of the cabinet took many hours as there were cooling fans, power distribution and 48.3 cm (19") mounting rails to install along with locks and an alarm. You start to wonder whether the money for the readymade cabinet would have been better spent, but at least we got exactly what we wanted.

The repeater was to be reinstalled at its original site albeit a few metres away from where it started. A 'farmer's' log saw driven by an old Holden engine had to be removed first and much discussion took place regarding OH&S of the saw which obviously would not meet today's safety standards, but looked as though it had cut many a log in its heyday. A mast base was also concreted into the ground and the site was then ready for the cabinet to be installed another day.

A duplexer was handed to us for evaluation but fell short of the requirements needed. Luckily another one fell into our hands and it was stripped and cleaned prior to retuning, as this one had been through the wars and a couple of spiders had taken up residence inside. Also lucky was the fact that within the membership we had the right equipment to tune the duplexer and the results we obtained were nothing short of excellent.

While this was happening, a small group were working on a suitable antenna system. It was decided at a working group meeting that we should try making our own stacked dipole array. These antennas seem to be the choice for many repeaters because of their resistance to static build-up and as they are electrically earthed, their ability to bleed off lightning surges. A phasing harness was designed and four antennas built after trying several matching methods.

As the area of coverage was not fully omnidirectional from the repeater site, several antenna types were mounted on the repeater mast and signal tests performed from a dozen or so locations around the repeater site at distances up to 80 km. This gave us some figures to make comparisons with. One member had printed several predicted coverage maps based on the site and after reviewing the

Photo 2: Inside the 'tool box.'

Photo 3: The 'almost finished' antenna system.

Photo 4: That's where it's going.

Photo 5: Close the lid and let's go home.

figures measured, were found to be close to actual results. Although the desired coverage area would not be fully realised, we at least had a starting point. Three antenna types were evaluated; a broadside dipole array, a collinear and the folded dipole array which had been configured as a cross beam array to test its performance. We then changed the folded dipole array into the vertical stacked configuration and tested it again. This time we received figures that were indicative of published radiation patterns. Being happy with a better overall set of figures, we proceeded with a final version of the stacked vertical array and installed it on the mast.

By August 2013 the 'tool box' repeater cabinet had been mounted and all was ready for commissioning of the system. While the antenna testing was taking place, the transmitters and receivers were getting their final adjustments and interface circuits installed. The completed system was temporarily run from my QTH at Nyora for a week or two to 'run it in'. Both sets of transmitters and receivers were tested with good results. A digital power/SWR meter was added to protect the system in the event of an antenna failure and all was ready to go. On a nice day early in September 2013, the system was installed at Drouin and has operated faultlessly since.

On behalf of GGREC, I would like to thank those who either parted with their time, cash, equipment, materials or expertise to help get this repeater back on air.

VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak Signal

In June, there has been a bit of winter propagation – the sort that it often overlooked. The weather chart for June 26th was showing a high over central NSW, and the Hepburn Tropo Index chart was showing some enhancement from Adelaide up to Brisbane.

Alerted to the possibility, Peter VK5PJ had his system running a WSPR beacon while at the other end, Eddie VK4EDD and Wayne VK2XN were doing likewise. Overnight, Peter and Eddie did receive signals from each other, over a distance of 1521 km, but not at a level where an SSB contact would have been possible. However, next morning at 2155Z, Peter had an SSB contact, peaking to 5x3, with Wayne for a distance of 1137 km.

So, it pays to keep an eye on the Hepburn charts, even in the middle of winter.

New 3.4 GHz equipment tests

Ian VK3AXH reports on some 3.4 GHz band activity:

On Thursday 19th June, Rob VK3MQ and I braved the elements to both try out our recently completed transverters both using the VK3XDK transverter PCBs. Rob set up at the Mt Dandenong lookout whilst I was at Mt Buninyong. Rob was running 1.5 watts into a modified gridpack, while I had 20 watts into an offset dish, both with homemade feeds. Rob called on 3400.150 MHz and the signals both ways were well over S9 at a distance of 132 km. After about 20 minutes due to the cold we were both headed for the warmth. We both look forward to getting our 5.7 GHz systems completed in the near future.

Photo 1: Rob VM3MQ's gridpack with homebrew 3.4 GHz feed.

There seems to be a bit of a surge of interest in 3.4 GHz with several amateurs in the Geelong area building gear and in Ballarat we have five transverters either finished or under construction.

Photos 1 and 2 show antenna setups used for the contacts.

3.5 GHz spectrum under review

In a somewhat ironic twist, just as activity on 3.4 GHz seems to be on the increase, the ACMA has announced a review of the 3.5 GHz band (3400 MHz to 3600 MHz). Amateurs have a secondary allocation of 300 MHz from 3.3 GHz to 3.6 GHz, although there are a number of geographically-restricted frequency blocks between 3.4 GHz and 3.6 GHz.

The ACMA has released a 'Consultation Paper', but the impression gained after reading it is that a decision has already been made. It seems there is a lot of interest internationally for the use of the 3.5 GHz band to provide localised mobile phone coverage. If you've ever tried to use your mobile at, say, the MCG at half time in a match, you'll appreciate that things get very slow as others scramble

Photo 2: Ian VK3AXH's 3.4 GHz system on location at Mt Buninyong.

to check their latest Facebook trivialities…

The ACMA has invited submissions from 'interested stakeholders' and if you are active, or have invested in equipment for that band, then you are definitely an 'interested stakeholder.' Unfortunately, the closing date for submissions is July 30th, so you may be reading this all too late. The WIA is compiling a submission to respond to the ACMA's consultation paper.

As per usual, one convincing argument for retaining use of the band is – to use it. So hopefully we can organise some activity days for just that purpose.

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Digital DX Modes

Rex Moncur VK7MO

WSPR – Part 3: Software and Website by Leigh Rainbird VK2KRR

All that you need can be found on K1JT's WSPR download pages at *http://physics.princeton.edu/pulsar/K1JT/wspr.html* Download the WSPR 2.0 User Guide and have a good read of it. If you plan on using WSPR-X there is a supplement guide there also.

There are a few different versions of WSPR that are available on the site, some are not actually advertised on there, but are more like beta, experimental versions. Try searching through the WSPRnet forums if you're interested in finding some of these others. For the purpose of this article I'll stick with what's officially available on the website, which is WSPR 2.0, WSPR 2.12 and WSPR-X. While I personally used to use WSPR 2.0 and 2.11, I now use WSPR-X and have done for at least a year.

WSPR 2.0 is the basic program, newer versions will have some other handy features. WSPR-X has a somewhat different looking interface and also includes its own waterfall display which can be toggled on or off and runs in real time so that you can watch the signals as they happen, whereas on WSPR 2.0 you do still get a waterfall display which scrolls right to left, but the signal information is only displayed after the two minute period has passed.

For the beginner, I'd suggest starting off with WSPR 2.0 and getting used to how everything works (read the user guide), and make sure your set up is working well with timing and frequency stability, and then once you're comfortable, you could perhaps give WSPR-X a run. It's really personal choice as to which you settle on and like the most. If you have questions about the set up and feel you're getting nowhere, I'm happy to try answer any questions. Simply email me at *vk2krr@bigpond.com* or alternatively post a question to the VK Logger forums or chat.

A question I get asked a lot is, what is the correct frequency the radio should be on for two metre WSPR? The answer is 144.489 MHz radio dial frequency in USB mode. Some versions of the software state a different frequency for two metres but the correct one I've mentioned above.

The WSPRnet website *http://wsprnet.org/drupal/* is where your received signal information is sent to and will appear in the database and maps pages. I'd suggest logging in and creating an account using your stations callsign. SWL stations can also create an account, most use something like VKSWL1 or VKSWL2 or the like.

There are a few links at the top of the WSPRnet pages, the first is Chat, which is obviously a place where you can post instant messages up.

The second is Activity, this shows stations active in the last 10 minutes for each band.

The third is Map, which takes you to a Map screen. Below the map you will find you can make a few personal adjustments. You can select which band you want, you can view all spots or enter a callsign to view those individual paths. You can adjust the latitude and longitude you wish the map to be initially positioned at. Finally you can select the time period to view.

The next link is for the Database. Again the database parameters you wish to view can be customised. Below where it says 'Spot Database', click on 'Specify Query Parameters' then go through and select the options that you would like to view, from Band, Callsigns, Number of Spots, Time period and Sort By value. Click Update and the results will be displayed.

If waiting for improved propagation at your station, a tip is to type your callsign in both the Call and Reporter boxes. The database will then show you all reports to and from your station. The database page will also automatically refresh every 10 minutes.

Again, there are many people who are only too happy to help and answer any questions you may have, don't be afraid to ask and learn. Next month, I may outline characteristics of monitoring propagation with WSPR on the six metre and two metre bands.

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

Meteor Scatter

Dr Kevin Johnston VK4UH

Last month this column included reports of enhanced meteor scatter propagation and activity associated with two meteor showers which occurred during May. Firstly the Eta Aquarids which peaked on 5-6 May and then the Linear p209 shower which peaked on 24 May. Stepping back a little this month, particularly with operators new to meteor scatter operation in mind, let's look at the differences in operating during predicted meteor showers when compared to the more usual

'random' meteor propagation. There are now several web-based facilities and even iPhone apps which can aid with prediction and reporting of meteor showers as they occur.

Recapping some background information, meteors are particles of extra-terrestrial matter picked up by the Earth's gravitational field during our orbit around the sun. The tiny particles of interest to us are mostly the size of a grain of sand up to a grain of rice which are accelerated by gravity to hypersonic velocities as they are drawn into our upper atmosphere. At about 100 km in altitude, where the density and resistance of the air begins to rise, the majority of these meteors 'burn up' due to friction and compression of the air molecules ahead of the meteor. The visual meteor trail is caused by the superheated air molecules becoming incandescent as the meteor itself is vaporised. Although the visual trail is very transient, ionisation occurring along those paths persists sometimes for tens of seconds and it is these ionised trails that refract and scatter radio signals over long distances.

Random meteor scatter events like this occur at every hour of the day and night and through all seasons of the year. Although visual sightings of 'shooting stars' (that is, meteors) are rare during the daytime this is mostly because, like starlight, they are too faint to be seen over the much brighter sunlight, not because they are not there.

What we do see with 'random' meteor propagation however, due to the earth's rotation on its own axis and the tilt of that axis relative to our orbit around the sun, is a marked peak in 'returns' (that is, radio reflections) occurring just before dawn, with a corresponding dip in the afternoon period superimposed on a further peak during the Spring season with a corresponding dip in Autumn in each hemisphere. The normal early-morning weekend activity sessions, run in VK and ZL each Saturday and Sunday, make use of these phenomena to enhance the chances of making contacts during that pre-dawn peak period.

It is estimated that 100,000 tonnes of extra-terrestrial material enters the atmosphere every year – do the math by dividing this by the mass of a grain of sand to see just how common meteors really are.

Arguably the most amazing feature of meteor scatter propagation is the phenomenon of Geospecificity. For each meteor trail the scatter path opened is very narrow and occurs predominantly at right angles to the trajectory of the meteor. Consequently two stations operating just a few tens of kilometres apart, on the same frequency and at the same time may not both appear at a distant receiving location. Rather they become separated either at each end of a 'ping' or on separate pings altogether. Were this not so then you would expect all stations to appear superimposed on each other and so be un-decodable.

Meteor scatter operating during showers is a little different. Meteor showers occur when the orbit of the earth around the sun takes us through dense tracks of debris remaining after the passage of a comet through our solar system. Although those comets are long gone, their static trails of dust and debris persist for hundreds of years and we pass through them time and time again on the same date each year. During a major shower, of which there are at least 11 per year, there is often a massive increase in the number of visual meteor trails and in their radio equivalents. There are historical reports over two centuries of visual showers with thousands of shooting stars per hour and fear that 'the sky was falling.' Unlike random meteors, during showers the meteors 'appear' to be originating from the same point in the sky termed the radiant. Early astronomers named the showers by the constellations of stars from where they appear to originate, for instance, Orionids from Orion and Aquarids from Aquarius,

Figure 1a: Meteor Shower Guide iPhone App.

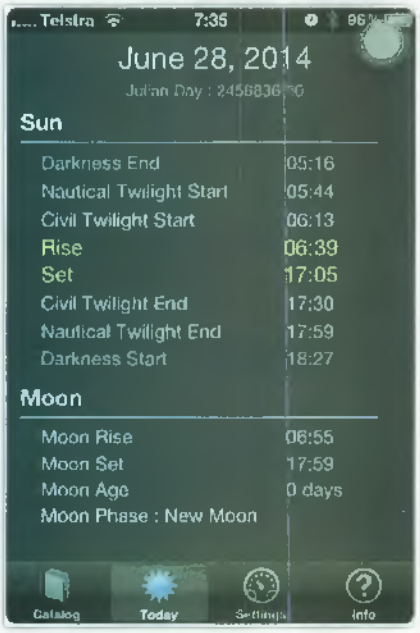


Figure 1b: Meteor Shower Guide iPhone App.

and so on. Clearly the meteors are not actually coming from those star collections; this is just the effect of the position of the stars on the date when the earth passes through a comet tail, this being the same each year.

Meteor shower activity may not be subject to the same pre-dawn peak as expected from

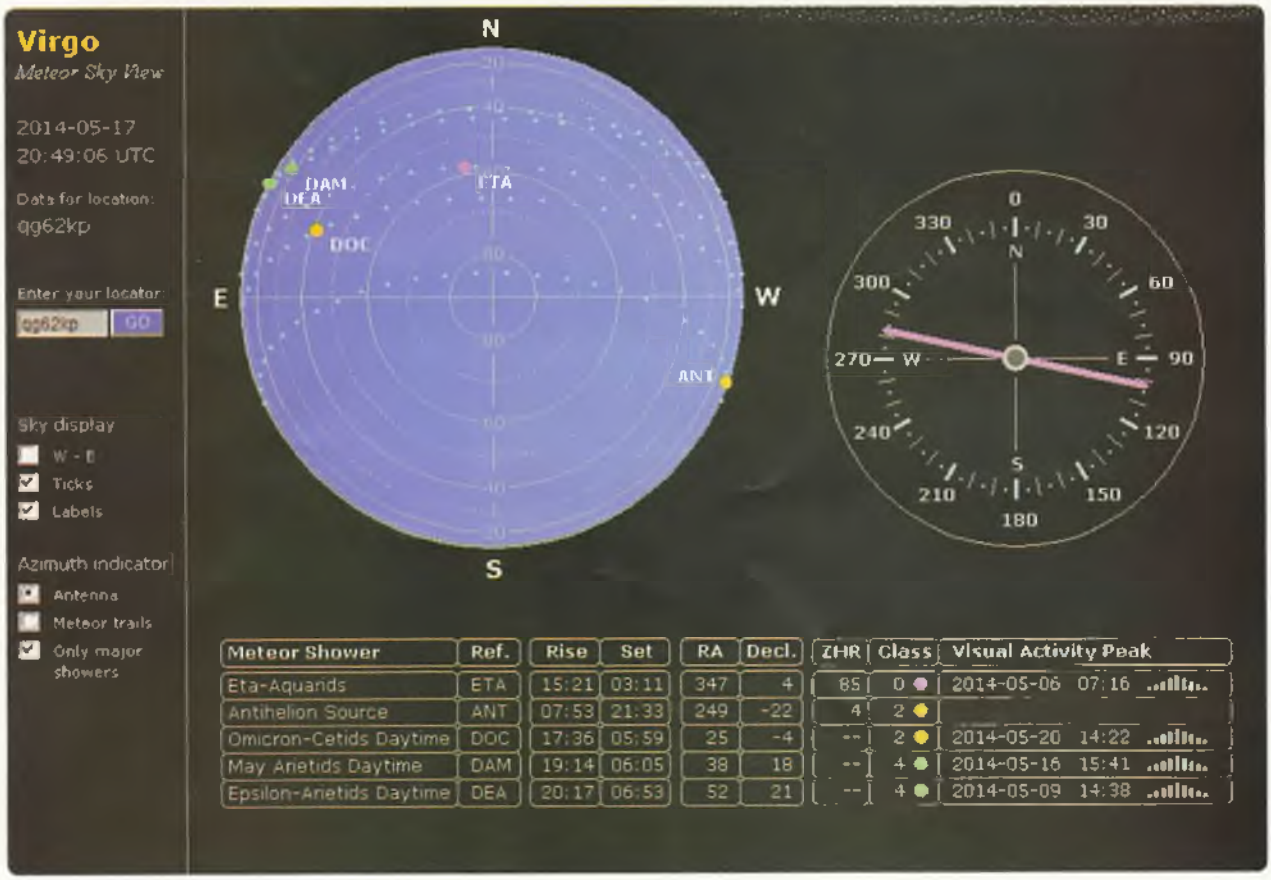


Figure 2: Virgo – meteor sky view.

'randoms.' The optimum time may occur at any hour of the day and so operating times and skeds will have to be organised accordingly. The result may be a spectacular increase in ping rates, sometimes with hundreds of returns per hour. Many of these meteors are large and produce hyper-dense 'burns' lasting for 30 seconds or more on 144 MHz and often supporting contacts up to 70 cm and even using SSB. What is required is for the radiant of the shower (that is, its naming constellation) to be low on the horizon where the meteor trails are predominantly at right angles to the path to be worked.

Prediction of the optimum times for shower propagation requires knowledge of three basic factors. Firstly, the expected date of the shower. Some showers are known to have a wide peak extending over many days, others only a few hours. Secondly the bearing of the target station from your location, and thirdly position of the shower radiant in the sky. Successful returns are most likely when the shower radiant is low on either horizon and at roughly 90 degrees to the path between the two stations.

There are many astronomical calendars and web-based services that can provide the dates, likely duration and likely intensity of most major and minor meteor showers. The relative intensity of showers is commonly indicated by the Zenith Hourly Rate (ZHR) which is a prediction of the maximum number of visual trails expected, under ideal conditions, at the zenith or peak of each shower. I currently use an iPhone based app called 'Meteor Shower Guide' (Figure 1) which provides data from the International Meteor Organisation and the American Meteor Society. Although predominantly intended for visual meteor enthusiasts this app provides the dates, times, ZHR and useful information on all major showers as calculated from your own location.

The position of shower radiants can be estimated using web-based facilities such as Virgo – Meteor Sky View (Figure 2) written by DL1DBC specifically of MS operation. *(http://www.dl1dbc.net/Meteorscatter/)* I strongly recommend this application for all those interested in Meteor shower operation. It is a JAVA based application and requires the latest version to run properly. Once installed it is necessary to enter your own Maidenhead six digit grid square and press GO. The application then provides a sky map and listing showing current meteor showers, ZHR, visual activity peak, rise and set times and celestial coordinates.

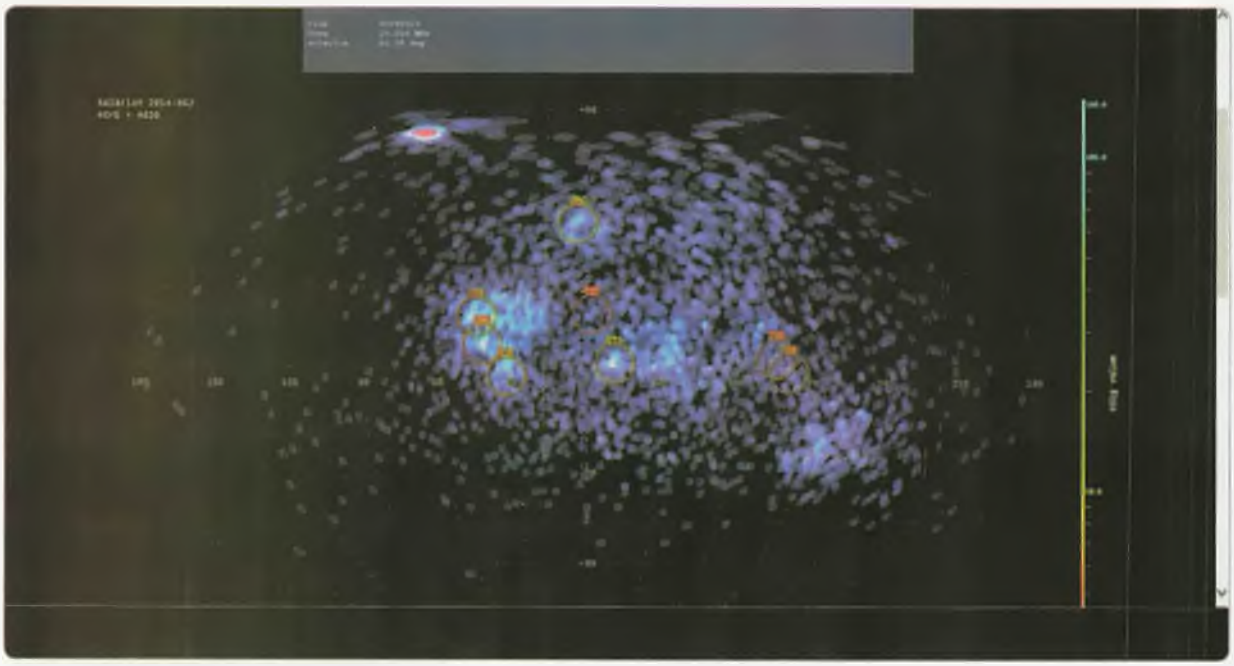


Figure 3: Canadian meteor radar (CMOR).

The sky map also shows a dotted path for each shower constellation, in azimuth and elevation, with 30 minute or 7.5 degree intervals as they move from the eastern horizon to the west. Be aware that east and west can be swapped over in the programme to provide a 'map orientated' view or the 'looking upwards' view as used by astronomers. There are also useful help files available on the Virgo site giving valuable information on its use. Alongside the sky map is a compass rose which can be set up to show either the azimuth of the shower radiant of interest or, more usefully for us, the antenna azimuth which is at 90 degrees to the shower.

Successful propagation is most likely when the antenna azimuth arrow for the shower of interest is pointing towards the target station while the radiant of the shower is as low as possible on the horizon. Clearly, using VK4 as an example, the optimum times for contacts to New Zealand do not occur at the same times as for contacts to the southern states.

Bear in mind that these two applications are forecasts only. Actual meteor activity information is also available on the net from a number of sources. Using real-time radar data the current meteor return rate from a number of locations, for example, Canadian Meteor Radar (CMOR) (Figure 3) can be viewed. This site can be found at *http://fireballs.ndc.nasa.gov/cmor-radiants/*

The best resource at our disposal remains the VKLogger and its associated Forum pages for dissemination of information and planning and following of meteor shower activity.

Please send any reports, questions or enquiries about meteor scatter in general or the digital modes used to Kevin VK4UH at *vk4uh@wia.org.au*

Plan Ahead

SUNFest Sunshine Coast Amateur Radio Club Hamfest	13 September
Shepparton and District ARC HAMFEST	14 September
MWRS Flagpole Contest	20 - 21 September
The Townsville Amateur Radio Club Cardwell Gathering	3 October
JOTA/JOTI	18 - 19 October

DX-News & Views

Luke Steele VK3HJ
vk3hj@wia.org.au

June on the bands

June started off quietly, with very low solar activity. People started predicting the end of the peak of the cycle. Then, towards the end of the second week things started to happen. On the 13th, the daily sunspot number reached 276, about as high as it has been this cycle! However, a few days later, the sunspot number was back below 100, and remained low for the rest of the month. At the beginning of July, it has picked up again with indices over 200, so there is still some steam left in the cycle.

The higher bands have been very quiet, but 20 metres still offers plenty of good DX. Most of the activity noted has been the W1AW portable stations rotating around the various states. These have been worked on 40 - 15 metres, with almost no propagation on low bands or high bands.

There have been a couple of amateurs visiting Timor Leste, with part time activity on air. Don't worry if you missed these, as Adhi YB3MM will be there in the beginning of August, and a larger group will be on air in October.

Activity on the low bands has been limited, with few DX operators on air, however South America has been workable on 80 metres, and a few contacts have been made on 160 metres. Most northern hemisphere low band operators have given up over their summer time, but as we head toward our spring time and the equinox, activity should increase markedly. Still, there has been some DX worked on 160 metres including HC2AO, YV2IF, DU7ET and JH1ADT. One evening, W5XZ and W5LUA from Texas were very strong, KK6ZM in California, and 5W1SA Samoa have been on regularly, and W1AW/KL7 Alaska the best of the signals from any of the W1AW portable operations on 160 metres. JN2AMD and RT0F were worked in the All Asia Contest.

There has been some activity in the Caribbean including W6IZT and K9EL in Saint Martin, VK6LC in San Andres, J68HZ in St Lucia. Another nice DX worked was VA1AXC in Sable Island. There is a brief activation of Sable Island planned in September.

4W/NB3MM, **East Timor**. Adhi YB3MM will be operating 30 - 12 m, mainly SSB, with some CW and PSK31. QSL via IZ8CCW direct or bureau or YB3MM direct only. For more information see *http://www.mdxc.org/timorleste2014/*

CE0YNTT, **Easter Island.** Manuel CE2NTT and Cristian CE2WTF will be on air for just a weekend on 40 - 6 m, SSB only. QSL via CE2NTT direct. For more information see *http://www.ce2ntt.blogspot.com.au/*

VK9EC, **Christmas Island**. A group of five Japanese operators plan activity on 160 - 6 m, multiple modes, in a holiday-style operation. QSL via LOTW, or for a paper card, ensure your card reaches them via bureau or direct within one year. For more information see *http://vk9.nobody.jp/*

VP2MPX, **Montserrat.** Giovanni IZ2DPX plans operations on 160 - 6 m, SSB, from the Caribbean island of Montserrat. QSL via IK2DUW direct or bureau. For more

Some upcoming DX operations

The following table summarises some of the DX activations that may be of interest to VK operators.

Date	Call	QSL via	Information
31 July – 5 August	4W/NB3MM	IZ8CCW	Timor Leste (OC-148). YB3MM, 30 – 12 m, mainly SSB, some CW and PSK31.
2 – 4 August	XR0YNTT	CE2NTT	Easter I (SA-001). CE2NTT, CE2WTF, 40 – 6 m, SSB.
2 – 8 August	VK9EX	LOTW	Christmas I (OC-002). Five Japanese operators, 160 – 6 m, SSB, FM, CW, RTTY, PSK31.
10 – 28 August	VP2MPX	IK2DUW	Montserrat (NA-103). IZ2DPX, 160 – 6 m, SSB.
16 – 24 August	A35	TBA	Tonga, Tongatapu I (OC-049). Four American operators, 160 – 10 m, SSB, CW, RTTY, PSK.
25 August –	3D2	TBA	Fiji, Taveruni I (OC-016). Four American operators, 160 – 10 m, SSB, CW, RTTY, PSK.
26 August – 2 September	KH0	OZ0J	Saipan I (OC-086). OZ0J, 80 – 6 m, CW, SSB, RTTY, PSK.

information see *http://iz2dpx.jimdo.com/dx-pedition/vp2mpx/*

A35 **Tonga**, 3D2 **Fiji**. Stan AC8W, Theodore K8AQM, Brian KG8CO, Charles KN8R, and Lee N8LJ will be operating for a week in Tonga, and then for a week in Fiji. Callsigns to be announced. They will be active on 160 - 10 m, on SSB, CW, RTTY, and PSK.

KH0/OZ0J, **Mariana I**. Joergen OZ0J plans operations from the Saipan Rental Shack, 80 - 6 m, CW, SSB and digital modes. He will be in Saipan in the last week in August, after which he will be heading to Palau to operate for a week there. QSL OZ0J direct or bureau. For more information see **http://oz0j.dk/DXpedition2014/tabid/69/language/da-DK/Default.aspx**

Special thanks to the authors of The Daily DX, 425 DX News, DX World, NG3K's Announced DX Operations, and QRZ.DX for information appearing in this month's column. Interested readers can obtain a free two week trial of The Daily DX from *www.dailydx.com/trial.htm*

Spotlight on **SWLing**

Robin L Harwood VK7RH
vk7rh@icqmail.com

Winter is here with a vengeance as I sit here inside in some warmth. There is a gale blowing outside and it looks as if there is snow on the nearby mountains. Also, propagation lately has been very poor, compounded by lack of activity. Monitors are still concentrating on the Russian-Ukraine impasse and apparently there is quite a deal of on-air activity heard in Europe. 10543 is a reliable channel around the clock it seems. The station here is RCV is Sevastopol in the Crimean Peninsula, still claimed by Ukraine but annexed by Russia. There is a continuing friction in the eastern half of Ukraine, especially around Donetsk. RCV is mainly on CW and is operated by the navy. I have heard weather bulletins around 0503 and 0905 on that channel, naturally in Russian. Sometimes there is traffic passed and ships call and work on a different channel, much like the coastal stations did only a few decades back.

Throughout June and July, the eyes of the world were turned to Brazil for the World Cup. There were live descriptions over shortwave over many domestic and international stations. Monitors were pleased as many Brazilian broadcasters carried programming on shortwave. I did notice the BBC broadcast live reports in Hausa and other languages but did not find any English language output on HF.

Radio Australia is still broadcasting over shortwave and there is still no word on its future. The station formerly known as HCJB Australia at Kununurra in WA is now known as Reachout Australia and is broadcasting in 27 languages. It has a very strong signal in south Asia as well as eastern Asia. Radio Australia is believed to be now concentrating on the Pacific region. There used to be two separate streams and now there is one. At times I have heard the audio component of Australian Network TV, particularly the news. Programming now seems to come from Sydney instead of Melbourne and mostly relaying Radio National.

In mid-June the situation within Iraq quickly degenerated into internecine warfare between the Sunni and Shia Muslims. Some of the fighting spilled over from nearby Syria, with the emergence of an Al-Qaeda backed terrorist movement, quickly capturing the northern half of Iraq. The Army just melted away, leaving the southern half in Shia hands and the Kurds in the mountainous north. Millions of refugees fled the fighting and the terror that followed. Once again shortwave stepped into the breach. Radio Sawa re-appeared on shortwave. This American-backed network had largely gone over to FM and MW and I believe that transmitters particularly in the north were hastily scuttled either by retreating Iraqis or by revengeful ISIS terrorist groups. Nearby Iran has also increased its shortwave output as have other HF broadcasters.

In case you were wondering, July also happened to be the Muslim holy month of Ramadan. This meant many domestic stations stayed on all night when there was no fasting.

I have now been joined by another amateur in this retirement village and he only is a few houses away. Looks as if we could form our own radio club!

SOTA News

Bernard Petherbridge VK3AMB and Allen Harvie VK3HRA

/q, /p or /m?

Amateurs love a competition or award scheme. The collection of certificates to use as wallpaper is universal. The presence of SOTA peaks in national parks allows activators and chasers alike to gain points in multiple award schemes with the singe contact and maximise their award chasing.

VK3 and VK5 have defined schemes for national park activations. The other states are covered under the international scheme World Wide Flora and Fauna (WWFF). WWFF has over 730 national parks recorded on the Australian (VKFF) list within all regions of Australia.

Current schemes for National park activation:

KRMNPA: *http://www.amateurradio.com.au/awards*

SANPCPA: *http://www.vk5parks.com/*

WWFF – VKFF: *http://www.wwffaustralia.com/index.html*

The majority of national parks in Australia qualify under the WWFF scheme and thus earn points to an international award. As many SOTA summits are within the boundaries of a national park, activators can structure the activation to ensure it's a valid operation for multiple awards. Take for example a SOTA activation of VK3/VC-025 Mt Dandenong. There are suitable operating positions within 25 metres vertically of the summit, and away from the crowds, that qualify as a valid SOTA activation that is also within the NP boundary. Such an activation would qualify for SOTA (VK3/VC-025 Mt Dandenong), KRMNPA (Dandenong Ranges NP) and WWFF (VKFF-132 Dandenong Ranges NP).

Photo 2: The Keith Roget Memorial National Parks Award (KRMNPA) certificate for Peter VK3ZPF. Peter was the first to claim KRMNPA for activating all 45 Victorian National Parks.

Photo 1: Rod VK2TWR operating on Mt Nungar VK2/SM-027, a 10 point summit located in the Kosciuszko National Park (VKFF-269).

The core skill set is the same thus allowing activators to participate to their level of access and comfort. There are differences in operation position, access and power for the different schemes. SOTA activations have to be in a 25 metre vertical range of the summit with independent powered equipment (/p) whilst a NP activation has to be within the defined boundaries of the park and can be from a mobile station (/m). Usually such operations are low powered so qualify for QRP (/q). The onus is on the activator to ensure that the location is correct and that the rules for the programs are met, for example, no petrol driven generators for SOTA, so a valid contact can be logged for both the activator and chaser.

Valid contacts are important. Astute chasers are very aware of the opportunities and will often verify

the location including which national park. You also have to ensure enough contacts are made as they vary between the different schemes. A SOTA activation requires four contacts to qualify, whilst a KRMNPA activation qualifies with only one. A VKFF activation requires 10 contacts over at least 30 minutes whilst a WWFF activation requires 44 contacts over two hours minimum. This means that a valid SOTA activation of VK2/SM-059 Big Badja Hill with 10 contacts in 30 minutes (easily achievable) would also qualify for VKFF points as the summit is in Deua NP which has a WWFF ID of VKFF-138.

These award schemes can help to entice active hams into getting out of the shack and also provide a new challenge for those who do get out and operate portable. A QRP station calling on 40 metres on Saturday afternoon will gain contacts but the same station offering points towards a SOTA or WWFF chasing score will create a pile up.

Editor's Note: Also consider the Victorian Local Government Award (check the Amateur Radio Victoria website) and the Worked All VK Shires Award (you will find it quickly with a Google search). The activator may not know the shire/city, but with a little care, the information can be quickly found. The VK Portable Amateur Radio Spots website is slowly adding data as individuals contribute the work that they have researched *(http://parksnpeaks.org/index.php)* – look under Data Tables.

Currently, operators in VK6 are activating national parks under the VKFF WWFF scheme. They will be well positioned when SOTA in VK6 commences, as they will have polished their portable operations as well as gained experience navigating in the national parks.

The MTR v2 builds are finishing in VK. There are a couple of devices that have been on the air and several in the alignment and testing stage. Whilst there are radios from Steve KD1JV currently in use, we are still waiting on the first SOTA activation using a MTR v2 device. Whilst the build stage provided challenges, the greatest obstacle now appears to be the CW skills of the operators.

Photo 3: The image received from VK3ASC/p on VK3/VE-129 via Slow Scan TV by Adam VK2YK.

VK5 activation day

Paul VK5PAS and John VK5BJE, with Nigel VK5NIG, organised and hosted an introduction day to operating portable. The day was targeting amateurs who have an interest in SOTA and parks activations, but for whatever reason had not previously attempted an activation, and those who wanted to pick up a few more operating tips.

The day started with a SOTA activation of Mount Lofty, followed by a parks activation at Belair National Park. The site chosen (Belair National Park) qualified for both the VK5 National and Conservation Parks award, and the World Wide Flora Fauna (WWFF) program.

Thirteen operators took the opportunity to be introduced to portable operations with Tony VK5FTVR, Mark VK5FMRK, Victor VK5KAB, Chris VK4FR/5, Graham VK5GW, David VK5NQP, Patrick VK5MPJ and his dad Bob VK5FO, Ray VK5RR, Steve VK5AIM, Keith VK5OQ and Nigel VK5NIG all having a go. Most walked away from the day amazed with what five watts and a simple little antenna can achieve.

VK3 dinner

Again VK3 hosted a SOTA dinner at the Leighoak in Oakleigh. This was well attended with new and older players. David VK3IL brought his recently completed MTR v2 radio. Active discussions were had around future plans and recent DX contacts. Attendees were Andrew VK3JBL, Andrew VK3BQ, Julie VK3FOWL, Joe VK3YSP, Wayne VK3WAM, Ron VK3AFW, Marshall VK3MRG, Glenn VK3YY, David VK3IL and Allen VK3HRA.

General

Mark VK3ASC has been trying SSTV on both 40 and 30 metres, including from VK3/VE-129. Check out what Adam VK2YK and Matt VK2DAG received from a summit: *http://vk2dag.com/blog/?e=24*

In VK3 there are 629 active summits of which 321 have been activated at least once, so we are over half way through. It's going to get harder for those wanting to be first to activate a VK3 summits, but there are still gems around to find.

New Shack Sloths: Andrew VK1MBE and John VK5BJE. Andrew VK1NAM passed 500 activator points. Notably, Peter VK3PF crossed 8000 chaser points.

Keep an ear out for the VK1 SOTA Party mass activations scheduled for Sunday 27 July 2014 with 12 summits currently scheduled for activation. Contact Andrew VK1NAM for more information.

In August, *Practical Wireless* magazine is promoting a VHF/UHF SOTA activity weekend for August 23-25 (a bank holiday weekend in the UK). Details are in the July issue of *Practical Wireless* magazine.

73 for now.

ALARA

Margaret Blight VK3FMAB – Publicity Officer

As the year moves on at what may seem a frighteningly rapid rate, one highlight for ALARA members to look forward to is the ALARAMEET taking place in Nelson Bay NSW which will run from 24-27 October. I hope by now that all those thinking of attending have been finalising their arrangements. It is a wonderful opportunity to meet with other women operators and I believe the OMs who attend will find much to discuss and enjoy among like company.

On a sad note we learn that Bev Osborne ZL1OS lost her battle after a long illness, having spent time in hospice care, to become a Silent Key. Bev was the editor of the WARO Bulletin. Cathy Purdie ZL2ADK the President of New Zealand Women Amateur Radio Operators has written an obituary which was published in the latest edition of WARO.

'First may I send to the family and friends of Bev our deepest sympathy - she was a wonderful woman with a heart of gold who did her best to help anyone that she saw needed it. Operators both here in New Zealand and the many overseas that Bev came in contact with will miss her.

Bev passed her amateur radio license in 1992, following a lot of encouragement from her OM Graeme. From then until very recent times she served WARO with distinction and enthusiasm in everything that she undertook. She served on the committee of our New Zealand Women Amateur Radio Operators organization, as secretary and vice-President and then took her experience into serving as President in 2002 and 2003. From then until early this year she served as our Contest Manager, as one of our monthly radio net controllers, and did an outstanding task as our Bulletin Editor, the latter being a task she continued to undertake until March this year. As if this had not kept her busy enough, she was one of five YLs responsible for the organizing and running of the very successful International Gathering in Hamilton for YL2000, perhaps doing more than most because of her closer proximity than others to the event. She, with others, hosted over 190 YLs and their partners from 16 different countries who attended this occasion.

Bev undertook to set up the WARO website which became one of the first YL websites in the world, a site that still runs to-day. Over the years, she and Graeme attended YL get-togethers, junk sales, branch meetings and activities, and took part in providing communications for sporting events in and around the Kawerau district. Since Graeme's passing, Bev has continued to carry out the activities that she was committed to, and although health, and needing help to keep equipment going, had frustrated her, she continued to work for the betterment of our hobby and service.

In appreciation for outstanding service to NZ WARO, we had much pleasure in awarding Bev a plaque and certificate for Outstanding Service late last year. So Bev it is time to say 33 and 73. You put up a good fight and now it is time to rest. You have earned your peace. You will never be forgotten'.

News from VK2 – Dot VK2DB

I took the ALARA table to the Port Macquarie Field Day over the June long weekend. Diane VK2FDNE sat with me most of the time while we let our two OMs potter and talk. The Meet was held at the Tacking Point Surf Club with a good view to the sea with the whales evident and Port Macquarie had turned on warm sunny weather although it forgot to switch off the cold wind.

The trash and treasure tables were set up in the middle of the room, and quite a lot of the treasure went but it seems all the really old bits stayed. The men from VK4-ICE Communications at the table beside us always bring a good show of antennas and other bits and pieces and Diane and I were interested, but didn't really need anything.

We were pleased to meet up with Des VK9FLHI and Betty from Lord Howe Island. I hear him on OM John's net every week night. We love to hear their tales of life on the island – their latest tale was that Telstra offered to put in a mobile phone network but the residents said 'what for' and visitors said 'no thank you, we came here to get away from it'.

Des VK9FLHI, Betty, Dot VK2DB and Dianne VK2FDNE.

Contests

James Fleming VK4TJF

Time flies when we are having fun and this time in the cold month of August we are getting ready for that very quirky Aussie contest. Yes you guessed it, the Remembrance Day Contest. This year it happens to fall on the same weekend as the International Lighthouse Weekend. Even with two events happening in the same weekend I still think that there is enough space on the bands for us Australians, especially with today's filtering capabilities in many radios. In this contest the aim is to contact only VK ZL and P2 stations. What, I hear you saying! Yes, that is correct, strictly no DX.

The contest starts at Saturday 16th August at 0300 UTC and ends at 0259 UTC on Sunday 17th August, a 24 hour long contest. Entry categories are single operator, and single operator QRP, multi operator single transmitter, and multi-multi. Modes for single operators are phone (AM, FM, SSB) CW (CW and RTTY) and mixed. Bands available are all except the WARC bands. You can even compete as a team of three operators without even being together. In the first example a station and two friends operate in the contest from their respective home QTH and participate in the contest and submit their logs in the normal manner. They are eligible for any awards in the category they entered as single operators. The contest manager was notified that these three stations want to form a team. Their scores are tallied together and that is the team score. A second example is when a multi-single club has two operators who wish to work from their home QTH. The two single operators and the multi-single club compete in the contest and submit logs in the normal manner. They are eligible for any awards in the category they entered. The contest manager was notified that these three stations want to form a team. The two single operators and the club multi-single station scores are tallied together and that is the team score.

The exchange is RST plus how long you have been an amateur radio operator, in full years. There is also a section for those using WW2 ex-military equipment. Just to spice things up you can work everyone again every three hours. Scoring is fairly simple, 160 metres and 23 cm and above contacts are two points and all other bands are one point. Triple your score for contacts between 0100 and 0600 local time. Also double points for working CW. I suppose if you wanted to make the most of it you would work CW on 160 metres in the early morning hours. This would get you 12 points per contact. The logging program to go with is the VKCL logging program.

So, with all these rules how is it best to compete in a contest like this? Well if you only wanted to do HF I suggest doing CW only, which I think would almost eliminate the VHF and UHF bands as I have not heard of many doing CW or RTTY on these bands. It also makes sense to use either full legal power or QRP. QRP should be fun for setting up portable in the bush. Thus if I was going out bush I would do CW on a doublet and QRP, this I think would be real fun. Or perhaps you could sit at home with your doublet and 100 watts, which might be enough to get one around Australia and work 80, 40, and 20 metres. Then perhaps team up with one of the guys in your radio club who is keen to do some VHF and UHF. It depends on what tickles your fancy. This promises to be a real good weekend for radio. So I don't know about you but I will be packing up the sniffle gear and heading out bush to lie on some brass.

Contest Calendar for August 2014 - October 2014

Month	Date	Starts at	Spans	Name	Mode
August	2nd	0000 UTC	24 hours	TARA Grid Dip Shindig contest	RTTY/PSK63
	2nd - 3rd	0001 UTC	48 hours	10-10 International Summer contest	SSB
	9th - 10th	0000 UTC	48 hours	Worked All Europe contest	CW
	16th - 17th	0300 UTC	24 hours	Remembrance Day contest	CW/Phone/ RTTY/Mixed
	30th - 31st	0400 UTC	20 hours	ALARA contest (10 hours each day)	CW/SSB
September	6th - 7th	0000 UTC	48 hours	All Asian DX contest	SSB
	13th - 14th	0000 UTC	48 hours	Worked All Europe DX contest	SSB
	20th - 21st	1200 UTC	24 hours	Scandanavian Activity contest	CW
	27th - 28th	0000 UTC	48 hours	CQ WW DX contest	RTTY
October	4th - 5th	0800 UTC	24 hours	Oceania DX contest	SSB
	11th - 12th	0800 UTC	24 hours	Oceania DX contest	CW
	18th - 19th	1500 UTC	24 hours	Worked All Germany contest	CW/SSB
	25th - 26th	0000 UTC	48 hours	CQ WW DX contest	SSB

Rules for most contests may be found at *www.hornucopia.com*, courtesy of WA7BNM.

34th ALARA contest – Rules

Lesley Smit VK5LOL – ALARA Contest Manager

Eligibility

All licensed operators throughout the world are invited to participate. Also open to SWLs.

Object

Participation: YL works everyone, OMs and clubs work YLs only. One contest (combined phone and CW) run over 20 hours.

Starts

Saturday 30th August 2014, 0400 UTC to 1359 UTC.
Sunday 31st August 2014, 0400 UTC to 1359 UTC.

Frequencies

Bands to be used are 3.5, 7, 14, 21 and 28 MHz only.

The following are suggested frequencies for easier location of contacts: 28.380 to 28.410, 21.170 to 21.200 and 21.380 to 21.410, 14.250 to 14.280, 7.070 to 7.100, and 3.560 to 3.590. Contacts made on EchoLink and two metres will also be accepted.

Operation

As a 2nd operator her husband/partner *cannot* participate in the contest. Every individual phone or CW contact may be counted. There must be an interval of greater than one hour between contacts with any one station on any one band and in the same mode. No net or list operations. No cross-mode operations. No cross-band operations. All contacts must be made in accordance with operator and station licence regulations.

Procedure

Phone: Call 'CQ ALARA contest'. CW: YLs call 'CQ test ALARA'. OMs call 'CQ YL'.

Exchanges

ALARA member: RS or RST, serial number starting at 001, ALARA member, name. YL non-member, OM or club: RS or RST, serial number starting at 001, name and whether YL, OM or a club station. OMs, clubs and SWLs work YLs only.

Scoring

Phone: 5 points for ALARA member contacted. 4 points for YL non-member contacted. 3 points for OM or club station contacted.

CW: All contacts made on CW count for double points. OM, SWL and club: 5 points for ALARA member logged. 4 points for YL non-member logged.

Logs

Single log entry. Logs must show date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked, whether it is a club station, and points claimed.

Paper logs or electronic logs both welcome.

Logs Must Be Signed

Logs must show full name, call sign and address of operator, and show the final score (points) claimed. Logs must be legible. No logs will be returned. The decision of the Contest Manager will be final, and no correspondence will be entered into.

Logs must be received by the Contest Manager by 30th September, 2014.

Contest Manager

Lesley Smit VK5LOL, 4 Perry Barr Road, Hallett Cove. SA. 5158, Australia or *alaracontest@wia.org.au*

Certificates

Will be awarded for the following:
Top score YL overall.
Top score YL phone only.
Top score YL EchoLink.
Top score Australian YL CW.
Top score DX YL.
Top score ALARA member in each country and VK call area.
Top score OM in each continent.
Top score VK YL Foundation licence holder.
Top score overseas YL CW.
Top score VK Club station

Trophy

A trophy will be awarded for the following:
Top scoring Australian YL.
Top scoring Foundation licence ALARA member.
The Top scoring VK non-ALARA member will be awarded one year's membership to ALARA.

Club Stations

Operators of Club stations may use the Club call only for contacts, and must identify each contact as with a Club station. Use of personal call signs while operating as a club member is not permitted. A Club station will be recognized as such whether operators are YL or OM. If the Club call is used, the score will be as a Club station.

Please Note

This Contest is always held on the last complete weekend of August.

Sample Log

Date UTC	Time UTC	Band MHz	Mode	Callsign	RS(T) S/N No sent	RS(T) S/N No received	Name	Points
25/2012	0401	28	SSB	VK6DE	59001	58001	Bev	5
	0503	21	CW	VK3KS	599002	599045	Mavis	10
	0600	14	SSB	FK8FA	59025	59011	Aimee	4
	1350	3.5	SSB	VK3BSP	59130	59006	Joe (Club)	3

Harry Angel Memorial 80m Sprint 2014 - Results

Presented by Dr Kevin Johnston VK4UH

The 16th annual Harry Angel Memorial 80 m sprint was held this year on the evening of Saturday May 3rd 2014. The contest was established in 1999 to commemorate the life of Harry Angel VK4HA who, at the time he became a "Silent Key", was the oldest licensed amateur in Australia. The duration of the contest since its inception is 106 minutes, one minute for each year of Harry's life.

The contest is open to all grades of operator, using phone or CW and its short duration, simple rule structure and "friendly" feel makes it suitable for all amateurs particularly those new to contesting.

The contest has been managed on behalf of the Redcliffe and District Radio Club and the WIA for the last three years.

The contest is run in three sections, Phone, CW and mixed (CW and Phone). One point is awarded for Phone contacts and two points for CW contacts. The aim is work as many stations as possible in the allotted time. Certificates are awarded to the three highest scoring entries in each section. Points from the Harry Angel may also be used for entry into the WIA Peter Brown Contest Champion Trophy.

71 log entries were received this year, the highest number for many years. One log was not received until after the closing date and has been used as a check-log only. This made no difference to the order of the certificate winners or position holders.

There were 52 entries in the Phone section, 10 in the CW only and 10 in the Mixed section. The scores claimed ranged from 1 point to 104 points. This year there were six entries from "F call" stations and it was apparent, from the logs received, that many more F-calls were active and giving out points during the contest.

As in earlier years the majority of entries came from the eastern call areas VK2 16 (23%), VK3 12 (17%), VK4 37 (52%), VK5 3 (4%), VK6 1 (1%), VK7 1 (1%). There were no entries received from VK1 or VK8. There were no entrants from ZL even though there were a few operators on the air and despite the contest being open to all.

Three log entries were received by post; the majority however were received electronically via the Redcliffe Club's website portal. Congratulations to all the place holders and certificate winners and thanks to all who entered and participated in this iconic Australian Contest. It is clear that interest in the Harry Angel Sprint is still high and its future is guaranteed by the outstanding level of participation this year.

Plans are already in place for HA 2015. The date will be Saturday 2nd May 2015. Make a mark in your diary for that evening.

Dr Kevin Johnston VK4UH
HA Contest Manager

Winners/Certificate holders 2014

Phone Section			
1st	VK2PR	98 points	Certificate
2nd	VK4YB	93	Certificate
3rd	VK4HF/p2	90	Certificate
4th	VK4GH	83	
4th	VK4GMH	83	
Mixed Section			
1st	VK4SN	104 points	Certificate
2nd	VK4TS	70	Certificate
2nd	VK4WM	70	Certificate
4th	VK2IUW	63	
5th	VK4NP	61	
CW Section			
1st	VK7CW	50 points	Certificate
2nd	VK2KJJ	42	Certificate
3rd	VK5LJ	38	Certificate
4th	VK2ONZ	36	
4th	VK2IG	36	
4th	VK2CTL	36	

Gridsquare Standings at 13 June 2014

Guy Fletcher VK2KU

144 MHz	Terrestrial	
VK2FLR	Mike	120
VK3NX	Charlie	107
VK2KU	Guy	102
VK3HZ	David	93
VK3PF	Peter	90
VK2ZT	Steve	88 SSB
VK5AKK	Phil	86 SSB
VK3PY	Chas	82 SSB
VK2DVZ	Ross	80 SSB
VK2ZAB	Gordon	78 SSB
VK3BDL	Mike	77 SSB
VK2AMS	Mark	74
VK3BJM	Barry	70 SSB
VK3QM	David	69 SSB
VK7MO	Rex	69
VK3AKK	Ken	64 SSB
VK2TK	John	62
VK3WRE	Ralph	60 SSB
VK3PF	Peter	56 SSB
VK3KH	Michael	55 SSB
VK3HY	Gavin	54
VK4CDI	Phil	53
VK2MER	Kirk	52 SSB
VK3ZLS	Les	51 SSB
VK7MO	Rex	49 SSB
VK4CDI	Phil	48 SSB
VK7MO	Rex	48 Digi
ZL3TY	Bob	46
VK2TG	Bob	40 SSB
VK3EJ	Gordon	40 SSB
VK3PF	Peter	40 Digi
VK3UH	Ken	40
VK2TK	John	35 SSB
VK3ZUX	Denis	33 SSB
VK3DXE	Alan	32
VK1DA/p	Andrew	31
VK3DXE	Alan	31 SSB
VK1WJ	Waldis	29
VK4KSY	David	28 SSB
VK2TK	John	27 Digi
VK3KH	Michael	26 Digi
VK4CDI	Phil	26 Digi
VK1WJ	Waldis	25 Digi
VK4EME	Allan	23
VK3ALB/p	GARC Team	22 SSB
VK6KZ	Wally	20
VK2ZT	Steve	19 Digi
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK2AMS	Mark	16 Digi
VK6KZ/p	Wally	16
VK2DVZ	Ross	15 Digi
ZL3TY	Bob	15 Digi
VK4EME	Allan	13 Digi
VK5APN	Wayne	13
ZL1UJG	Kevin	10 Digi
VK1WJ	Waldis	7 SSB
VK5APN	Wayne	7 Digi
VK5APN	Wayne	7 SSB
ZL3TY	Bob	7 CW
VK1WJ	Waldis	5 CW
VK3DXE	Alan	5 Digi
VK4KSY	David	5 Digi
ZL1UJG	Kevin	5 SSB
VK3DXE	Alan	4 CW
VK3QM	David	1 Digi

144 MHz	EME	
VK2KU	Guy	493
VK2KU	Guy	479 Digi
ZL3TY	Bob	424
VK3AXH	Ian	390 Digi
VK4CDI	Phil	319 Digi
VK5APN	Wayne	253
VK5APN	Wayne	248 Digi
VK7MO	Rex	157 Digi
VK2DVZ	Ross	123 Digi
VK2FLR	Mike	120
VK3BJM	Barry	95 Digi
VK3KH	Michael	62 Digi
VK2KU	Guy	44 CW
VK2ZT	Steve	28 Digi
VK3HZ	David	19
VK5APN	Wayne	17 CW
VK3DXE	Alan	16 Digi
VK3NX	Charlie	5 CW
VK4EME	Allan	5 Digi
VK3AXH	Ian	4 CW
VK2DVZ	Ross	2 CW
VK3AXH	Ian	1 SSB

432 MHz	Terrestrial	
VK2ZAB	Gordon	57 SSB
VK3PY	Chas	53 SSB
VK3QM	David	52 SSB
VK3NX	Charlie	50 SSB
VK3HZ	David	42
VK3ZLS	Les	40 SSB
VK3BJM	Barry	39 SSB
VK5AKK	Phil	39 SSB
VK2KU	Guy	38
VK2ZT	Steve	37 SSB
VK3BDL	Mike	37 SSB
VK2DVZ	Ross	35 SSB
VK3AKK	Ken	34 SSB
VK3WRE	Ralph	34 SSB
VK3PF	Peter	32
VK3PF	Peter	30 SSB
VK1DA/p	Andrew	24
VK3KH	Michael	22 SSB
VK7MO	Rex	22
VK7MO	Rex	21 SSB
VK2AMS	Mark	20
VK2TK	John	18
VK3ALB/p	GARC Team	18 SSB
VK4CDI	Phil	18
VK2TK	John	17 SSB
VK4CDI	Phil	17 SSB
VK3HY	Gavin	16
VK3ZUX	Denis	15 SSB
VK2MER	Kirk	13 SSB
VK6KZ	Wally	13
VK2TG	Bob	12 SSB
VK3AL	Alan	10 SSB
VK3KH	Michael	8 Digi
VK3UH	Ken	8
VK4CDI	Phil	8 Digi
VK6KZ/p	Wally	8
VK7MO	Rex	8 Digi
ZL3TY	Bob	8
VK2DVZ	Ross	6 Digi
VK4EME	Allan	6 SSB
VK1WJ	Waldis	5 SSB
VK2ZT	Steve	4 Digi
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK2AMS	Mark	3 Digi

VK3DXE	Alan	3 SSB
VK2TK	John	1 Digi

432 MHz	EME	
VK4EME	Allan	83
VK4EME	Allan	78 Digi
VK4CDI	Phil	55
VK4CDI	Phil	55 Digi
VK4EME	Allan	13 CW
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK3KH	Michael	3 Digi
VK3NX	Charlie	3 Digi
VK2ZT	Steve	2 Digi
ZL3TY	Bob	2 Digi
VK4CDI	Phil	1 CW

1296 MHz	Terrestrial	
VK3PY	Chas	42 SSB
VK3QM	David	42 SSB
VK3NX	Charlie	40 SSB
VK2ZAB	Gordon	29 SSB
VK3AKK	Ken	28 SSB
VK2DVZ	Ross	27 SSB
VK3ZLS	Les	26 SSB
VK5AKK	Phil	26 SSB
VK2KU	Guy	25
VK3BJM	Barry	22 SSB
VK3PF	Peter	22
VK3BDL	Mike	21 SSB
VK3WRE	Ralph	21 SSB
VK3PF	Peter	20 SSB
VK3HZ	David	19
VK3KWA	John	19
VK3KH	Michael	17 SSB
VK2ZT	Steve	16 SSB
VK3ALB/p	GARC Team	16 SSB
VK7MO	Rex	12 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK2AMS	Mark	9
VK3HY	Gavin	8
VK3AL	Alan	7 SSB
VK3UH	Ken	7
VK2MER	Kirk	6 SSB
VK3ZUX	Denis	5 SSB
VK4CDI	Phil	5
VK4CDI	Phil	5 SSB
VK6KZ/p	Wally	5
VK2DVZ	Ross	4 Digi
VK3KH	Michael	4 Digi
VK6KZ	Wally	4
VK2TG	Bob	3 SSB
VK4EME	Allan	3 SSB
VK7MO	Rex	3 Digi
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4CDI	Phil	2 Digi
VK2ZT	Steve	1 Digi
ZL3TY	Bob	1 SSB

1296 MHz	EME	
VK4CDI	Phil	111
VK4CDI	Phil	94 Digi
VK3NX	Charlie	66 CW
VK7MO	Rex	41
VK2AMS	Mark	40 Digi
VK3AXH	Ian	39 Digi
VK4CDI	Phil	39 CW
VK2DVZ	Ross	37 Digi
VK7MO	Rex	36 Digi
VK3NX	Charlie	4 SSB
VK4CDI	Phil	4 SSB
VK2MER	Kirk	3 Digi
VK3AXH	Ian	3 CW
VK2AMS	Mark	1 SSB
VK2DVZ	Ross	1 SSB
VK3AXH	Ian	1 SSB

2.4 GHz	Terrestrial	
VK3NX	Charlie	28 SSB
VK3PY	Chas	28 SSB
VK3QM	David	28 SSB
VK3AKK	Ken	25 SSB
VK3WRE	Ralph	12 SSB
VK3ALB/p	GARC Team	7 SSB
VK3BJM	Barry	7 SSB
VK3PF	Peter	7 SSB
VK3KH	Michael	6 SSB
VK3HZ	David	5
VK6KZ	Wally	4
VK3KH	Michael	3 Digi
VK3ZUX	Denis	3 SSB
VK1DA/p	Andrew	2
VK2AMS	Mark	2
VK3PF	Peter	2 Digi
VK2DVZ	Ross	1 SSB
VK4EME	Allan	1 SSB

2.4 GHz	EME	
VK3NX	Charlie	49 CW
VK7MO	Rex	14
VK7MO	Rex	10 Digi
VK3NX	Charlie	8 SSB

3.4 GHz	Terrestrial	
VK3NX	Charlie	26 SSB
VK3QM	David	26 SSB
VK3AKK	Ken	22 SSB
VK3PY	Chas	22 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4
VK2AMS	Mark	3
VK4CDI	Phil	3 SSB
VK2AMS	Mark	1 Digi
VK2EM	Bruce	1 SSB

3.4 GHz	EME	
VK3NX	Charlie	30 CW
VK4CDI	Phil	8
VK4CDI	Phil	7 CW
VK3NX	Charlie	5 SSB
VK3NX	Charlie	2 Digi
VK4CDI	Phil	1 Digi

5.7 GHz	Terrestrial	
VK3NX	Charlie	25 SSB
VK3QM	David	25 SSB
VK3AKK	Ken	23SSB
VK3PY	Chas	23 SSB
VK3WRE	Ralph	9 SSB
VK3PF	Peter	7 SSB
VK3ALB/p	GARC Team	6 SSB
VK3KH	Michael	4 SSB
VK6KZ	Wally	4
VK2AMS	Mark	2
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK3ZUX	Denis	1 SSB

5.7 GHz	EME	
VK3NX	Charlie	42 CW
VK3NX	Charlie	5 SSB
VK3NX	Charlie	1 Digi

10 GHz	Terrestrial	
VK3HZ	David	74
VK3HZ	David	36 SSB
VK3NX	Charlie	31 SSB
VK3PY	Chas	28 SSB
VK3QM	David	28 SSB
VK3AKK	Ken	26 SSB
VK6DZ	Derek	25 Digi
VK3PF	Peter	13 SSB
VK3HY	Gavin	12
VK3WRE	Ralph	12 SSB
VK6DZ	Derek	12 SSB
VK3ALB/p	GARC Team	7 SSB
VK7MO	Rex	7
VK3KH	Michael	6 SSB
VK7MO	Rex	6 SSB
VK6KZ	Wally	5
VK2AMS	Mark	3
VK2EM	Bruce	3 SSB
VK3KH	Michael	3 Digi
VK1DA/p	Andrew	2
VK3BJM	Barry	2 SSB
VK3UH	Ken	2
VK3ZUX	Denis	2 SSB
VK7MO	Rex	2 Digi
VK3NX	Charlie	1 Digi

10 GHz	EME	
VK3NX	Charlie	37
VK3NX	Charlie	32 CW
VK3NX	Charlie	5 Digi
VK7MO	Rex	5 Digi
VK3NX	Charlie	2 SSB

24 GHz	Terrestrial	
VK3HZ	David	21
VK3HZ	David	12 SSB
VK3QM	David	6 SSB
VK3AKK	Ken	5 SSB
VK3NX	Charlie	5 SSB
VK7MO	Rex	3 SSB
VK6KZ	Wally	2
VK3WRE	Ralph	1 SSB

24 GHz	EME	
VK3NX	Charlie	6
VK3NX	Charlie	4 Digi
VK3NX	Charlie	3 CW
VK7MO	Rex	3 Digi

47 GHz	Terrestrial	
VK3AKK	Ken	4 SSB
VK3NX	Charlie	4 SSB
VK3QM	David	4 SSB

76 GHz	Terrestrial	
VK3HZ	David	3 SSB
VK3KH	Michael	1 SSB

122 GHz	Terrestrial	
VK3KH	Michael	1 SSB

474 THz		
VK3WRE	Ralph	3 AM
VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at *http://vhfdx.radiocorner.net* - click on Gridsquares.

Next update of this table will close on or about 17 October 2014.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email: *coordinator@amsat-vk.org*

Group Moderator
Judy Williams VK2TJU
email: *secretary@amsat-vk.org*

Website:
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net

Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RBM Blue Mountains repeater on 147.050 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.175 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 399996

In Tasmania
VK7RTV Gawler 6 metre repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 metre repeater 146.775 MHz IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Currently only SO-50 is available.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The June meeting was another interesting one, not a lot of radio involved but interesting because the speaker had been on the spot at the time. Byran Hearn had been a lowly police constable in 1963 when a group of crooks stopped the Royal Mail train and robbed it of about 2,500,000 GBP.

We have all heard of the Great Train Robbery but probably don't realise that the train that was robbed had been running through the hours of the night, from Glasgow to London, for years. It regularly carried mail, and had men on board sorting the mail as the train travelled. It collected some bags of mail from the trackside automatically so it could be all sorted by the time the train arrived in London.

In addition to ordinary mail this train regularly carried large quantities of used banknotes. Once in London these would be either cleaned and returned to circulation or taken out of circulation and burned in a furnace. This money, and any registered mail collected, was managed in a High Value Carriage, just behind the engine. This carriage would be the target of the robbery.

The crooks who stopped the train were not big time crooks. There was no 'Mastermind', just a group gathered together by someone who knew the routine on the Royal Mail trains and suggested the idea of stopping and robbing it one night.

There was a certain amount of pre-planning, such as choosing a suitable place to stop the train where it would be possible to unload it fairly easily. They also rented a farmhouse where they would be able to stay, reasonably undetected, and where they could sort any money they collected. They did realise they would have to move the train a short way along the track to a spot where they could access the HVC carriage.

On the night everything went perfectly except for the fact that the man they had chosen to drive the engine a short way was a steam engine driver. The Royal Mail train was pulled by a diesel engine, so the original engine driver was 'persuaded' to undertake this manoeuvre! The fact that they left seven bags of banknotes was probably because someone suddenly panicked because things were going too well.

Either way it was some time before anyone knew there had been a robbery at all and with a little more care these very small time crooks could have 'pulled it off completely'.

The crooks had divided up the loot and left the farm before the authorities started investigating the strange comings and goings there. They had even had the forethought to wear gloves most of the time and to have someone tidy up after them. Nevertheless one fingerprint and one handprint were found there and the manhunt began.

There were 17 people involved in the robbery and, although most of them were eventually caught, three got away completely because their names were not known to the rest. Most got heavy prison sentences, and very little of the money was even found!

Yes it was an interesting talk, especially to us because of the escape to Adelaide, Melbourne and finally Brazil of Ronald Biggs. We were told in fact that, despite the publicity, Biggs played a very small part in the robbery.

The next meeting will be a Members' Show and Tell. These are always very good and show just how ingenious some of us are.

All monthly meetings are held in the Blackwood Community Hall on Main Road, Blackwood and start at 7.30 pm. Everyone is welcome, just contact one of the committee for more information if you need it. As well AHARS run regular Saturday morning meetings at our Shack, also in Blackwood. For the next few sessions we will be going 'Back to Basics.' Come along to learn something or just to have a chat or just come to be sociable.

Attend

Northern Corridor RG Hamfest | 3 August

VK2news

Tim Mills VK2ZTM
e vk2ztm@wia.org.au

News from the Amateur Radio Central West Group, from John Martin VK2EJM - Secretary

Earlier in the year the ARCWG discussed the merits of meeting with other clubs. It was subsequently decided that there was much to be gained by introducing our Group to ARCs throughout the central west. Not by radio, not by e-mail but face to face, that is, 'get to know them.'

Following this initiative, correspondence with the Orana Region ARC culminated in an invitation to meet with the Orana Region ARC at their PR4AR event site in Dubbo on 12th April 2014. The aim of this meeting was to meet person to person, get to know each other in a convivial atmosphere and to explore matters of mutual interest. As a first step this meeting was successful and a reciprocal invitation was extended to ORARC members to attend our June 2014 meeting in Orange NSW. Accordingly Ross Fraser VK2WN, President ORARC, was warmly welcomed to the meeting. His post meeting comments indicated that he found the experience enjoyable and informative. We look forward to further association with the Orana Region ARC.

It is hoped that over coming months further opportunities will be taken to meet with ARCs throughout the central west to share experiences and expertise for common benefit. ARC's can accomplish much with dedicated efforts of members; in collaboration with one another clubs can achieve much more.

ARCWG nets are convened on repeater VK2RCW, 439.300 MHz Mondays and Fridays at 0930 UTC for travellers and HF net VK2ACW, 3.653 MHz Wednesdays at 1000 UTC. All stations are welcome to join us on air.

Correspondence with like-minded clubs is welcome. See also our webpage on the WIA website for further details. 73 John VK2EJM.

Photo 1: Mark Blackmore VK2XOF instructs the ARNSW lecture group on balun theory and construction techniques.

In late June **ARNSW** held a lecture and construction day on fabricating baluns from a kit. The demand for kits was great and stock ran out on the day. More have been ordered and are available for members to collect from the Dural site. Order via *balun@arnsw.org.au* Also available is Kevlar wire for antennas and insulators. The next event will be on Sunday 9th November and the theme may be CW.

The next ARNSW Foundation course is over the weekend of Saturday 20th and Sunday 21st September at the VK2WI site.

Photo 2: Part of the group hard at work putting their balun together.

On the Sunday all grade license assessments are available. Bookings required for all activities at *education@arnsw.org.au* The next Trash and Treasure at the VK2WI site will be on Sunday 28th September from 0930 hours followed at 1200 by the Radio Homebrew and Experimenters Group gathering.

The renovations of the VK2WI site has taken longer than planned – nothing unusual in the building game. The final roof had not been fitted by the end of June and this prevented the return of coaxial cables for the higher HF bands and the 3699 kHz Morse transmission. Antenna faults had developed with the 10, 2 and 70 beacons and they have been off air pending repairs. It is interesting that the service most missed has been the 3699 Morse practice transmission. We did not know that so many were making use of it. There has been a request to include speeds higher than 15 wpm in the transmissions and this is being looked at to see if it is possible with the present system. A reminder that the operator of the Morse sessions is Ross VK2ER on behalf of ARNSW on Thursday at 2000 hours on 3550 kHz – VK2BWI.

This is a busy month on air for some with both the RD contest and Lighthouse operation on the same weekend in overlapping time slots. If you are operating on this weekend take time to give a contact to both events.

Jamie VK2YCJ on behalf of the **Hunter Radio Group** is working on developing a whisper HF beacon for operation in the Hunter Valley region. One of its features will be its operation from solar cells.

WICEN NSW has the Trek for Timor on 20th September in the Blue Mountains. During August September and October there are Alzheimer's Australia Memory Walk and Jog events in Port Macquarie, the Hunter, inner western Sydney and North Wollongong. These are fairly short events. Details for all events are to be found at *www.nsw.wicen.org.au* The annual Hawkesbury Canoe Classic is over Saturday night 25th October.

The WICEN AGM voted in Steven Heimann VK2BOS as President; John Harper VK2LJ Vice President; Steve Diekman VK2MCA Secretary and Doug Rosser VK2DCR Treasurer. Committee members are Crompton Allen VK2HRX, Jan van Ekris VK2FEB, Irene van Ekris and Al Hirschel VK2KAM.

The Oxley Region ARC have their AGM on 2nd August at the SES meeting location.

73 – Tim VK2ZTM.

Silent Key

Tim Armstrong VK4LZE

It is with much sadness that the members of the Gold Coast Amateur Radio Society Inc. announce the sudden death at home of Tim Armstrong VK4LZE, on 4 April, 2014, at the young age of 45.

Tim was born in Narrabri, NSW, on 9 November 1968. He grew up on the northern beaches of Sydney in the suburb of Cromer. Tim was interested in just about anything that had a motor, used electricity or that one could eat. He was the most talented person one could ever meet, being one of those people who could master anything he chose to do. He could even play musical instruments. Tim could do all this and much, much more.

He loved fishing, boating, cooking, motor bikes, computers, cars and electronics just to name the main interests he had. All through his many interests flowed a strong love of radio.

He started using CB radio around 1983-84, although it wasn't till later on that he obtained his amateur licence. Like in all his interests he was 100% into it so that he could be the very best he could be. It was not at all surprising that he was the President of the Gold Coast Amateur Radio Society.

Tim never married or had any children, but he had many loves. And he will leave behind many sad people who nonetheless had been enriched by having known him and for what he added to their lives on his journey through life.

Tim was President of GCARSI at the time of his passing. Although a newcomer to the club he was a very active and enthusiastic member, and was always to be found right in the middle of any work or improvements to the radio equipment or antennas at the club.

Our thoughts go out to Tim's family and friends at this time. RIP Tim VK4LZE.

Submitted by Bryn Taylor VK4GF, Secretary GCARSI, on behalf of all members.

VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

Extract from the WIA 2013 Oceania Plaque and Trophy Winners

Australia Club Plaque: Geelong Amateur Radio Club

The plaque is awarded to the local club from Australia with the greatest number of entries from its members and is sponsored by the VK Contest Club.

The Oceania Club contest requirement is that at least two clubs in Australia must participate, and that each club operator must submit at least 50 valid entries in their log. The GARC won this plaque in the 2012 Oceania Club contest.

The club members that participated in the 2013 Oceania Club contest were: Ken VK3NW scoring 29,736 points from 153 contacts; John VK3NRW scoring 12,042 points from 80 contacts; Lou VK3ALB scoring 8,372 points from 74 contacts; Peter VK3WK scoring 7,500 points from 60 contacts on 40 m LP only; Ian VK3ZIB scoring 6,560 points from 55 contact; Dallas VK3DJ scoring 5,705 points from 60 contacts and Colin VK3NCC scoring 5,424 points from 50 contacts.

On 19 September, two weekends before the next Oceania contest, Lou VK3ALB will give a talk to the club on computer logging using VKCL. The talk is intended to show entrants how to install and configure VKCL for the Oceania contest and notes will be available for download at the club web site, *www.vk3atl.org* so they can set up their own computer at home.

Communication issues at Dereel

The Dereel shack, owned by VK3DJ and located west of Melbourne, is occasionally used by members of the GARC as a weekend getaway; it is pretty remote and whilst it has a tower with HF antennas, internet social communications have proved difficult, until now.

The picture shows a portable Wi Fi device provided by David VK3QM, with battery backup, hoisted in a white plastic bag on the lanyard used for raising wire dipoles up the tower, adjacent to the shack. This proved very effective for internet access.

Visit to Mount Gambier

In recognition of the 50th anniversary convention of the South Eastern Radio Group, two members of the GARC executive committee Lou VK3ALB and Jenni VK3FJEN along with Bert VK3TU visited their club to participate in the celebrations.

Adapting auction and hamfest items

Following on from the highly successful *'It came from the junk box'* session featured in the GARC July article, a further evening session was promoted featuring the adaptation of ad hoc equipment purchases to

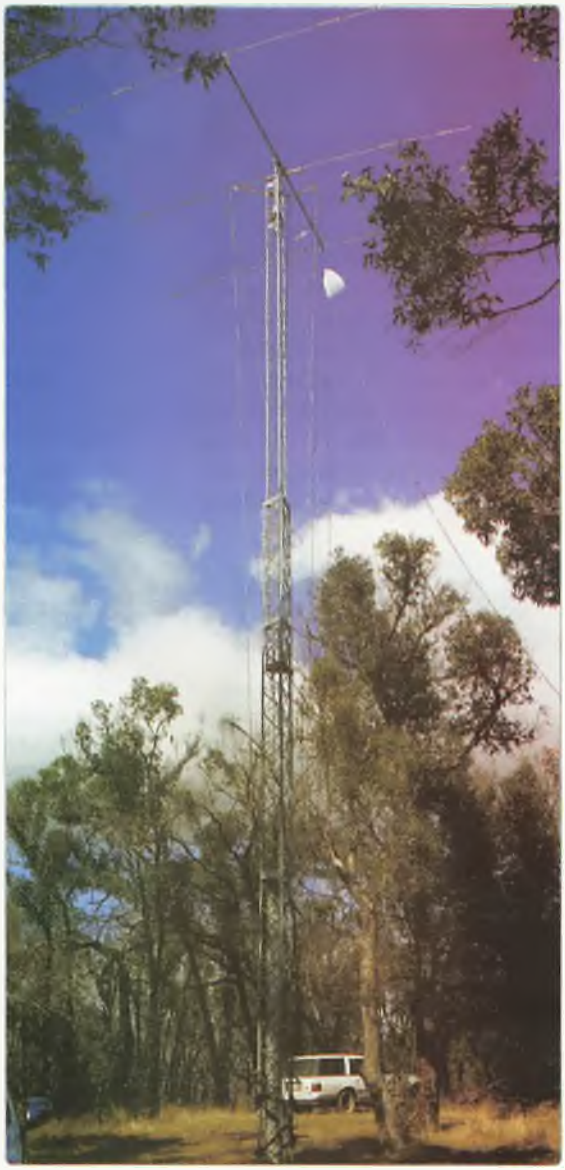


Photo 1: Enabling internet communication.

build what would otherwise have cost significant amounts of cash; assuming that the desired end products were actually commercially available.

Of the several examples produced of how club members have used/adapted items purchased at auctions and hamfests was the 50 watt PA for 70 cm built by Chas VK3PY some 10 years ago. At the outset Chas had been looking for a 70 cm power amplifier design to build, but could not find one. Over the years he had collected a number of PA stages from various commercial mobiles and tried to make them work as linear amplifiers without a great deal of success so he decided to design his own 50 W amplifier using an MRF-646; this proved to be a very successful project. The next stage was to combine two mirror image amplifiers on the one board to generate 100 W and that also worked perfectly. During the course of writing a review on eHam on a Kenwood TR-851A multi- mode 70 cm transceiver, which was used on field days, he mentioned that it was coupled to his 100 W linear amplifier. This review then resulted in a small avalanche of queries about the design of the amplifier; one, from Eugenio IT9VKY in Italy requested information on the amplifier as he had a lot of friends that were into satellite communications and they would like to build a copy of it. Subsequently Chas wrote an article, when his call sign was VK3BRZ, on his design which was posted on IT9VKY's web site *www.emartin.it/it9vky/Risorse/uhfpa.htm* This is still available for viewing. Feedback to date has indicated that over 40 of these units have been built that Chas knows about. Following the success of the 100 W module, he then coupled two together to provide 200 W, which also worked well.

Photo 2: Chas VK3PY with his homebrew 70 cm high power PA.

Silent Key

Albert Stevens VK3EFO

Our long serving member Albert passed away in April this year. He was a very quietly spoken man, and could aptly be described as a 'quiet achiever.' He lived by himself in the small hamlet of Ceres on the outskirts of the city of Geelong. His working life was spent with the Ford Motor Co. where he had been hired as an apprentice and spent all his working life employed in the tool room.

He was a member of a caravan club and would often go away for a weekend with them. Or would spend the time to take out his boat and do a bit of fishing. He had enjoyed operating on the CB bands, but then decided to join the Geelong Radio and Electronics Society and obtain an amateur licence, first as a Novice and later upgrading to Advanced status. Albert enjoyed working CW on HF, and he concentrated on correct operating procedure rather than striving for speed. He also enjoyed contesting, either as a home station or on field days, in particular the John Moyle Field Day. As a member of the GRES contest team he would set up a ground plane antenna on 20 metres and happily work away all day. He also enjoyed his regular skeds on two metres with his friends on a Monday evening.

Albert spent many years serving on the committee of our society, and served four terms as president. Unfortunately he contracted terminal cancer which cut short his working life. Being retired he joined a Men's Shed and was actively involved in the activities there. During his last weeks his thoughts were still for our society. He asked that the society take care of all his radio equipment. He also wrote an open letter to the members urging them to be actively involved and saying 'you will only get out what you put into the society.'

We have lost a valued member, a person who contributed so much in an unobtrusive way, and never drew attention to his own achievements.

Submitted by Rod Green VK3AYQ on behalf of the GRES.

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
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VK3RAN QSL cards

All QSL cards generated by the ANZAC Day AM/CW event on 25 April, 2014, by Luke Steele VK3HJ and Tony Hambling VK3VTH on board HMAS Castlemaine at Gem Pier Williamstown, are now in the bureau system.

In the lead-up to ANZAC Day 100 next year a lot of thought is being given on how best Amateur Radio Victoria can commemorate the century, including the use of a special callsign. We will be in further talks with the volunteers who run the HMAS Castlemaine museum ship and many others involved in ANZAC 100, before finalising a plan. This occasion commemorates the formation of the Australian and New Zealand Army Corp which fought at Gallipoli Cove. In coming months, the media, including this magazine, will cover war-time events and personalities. It will gain momentum either side of the Tasman Sea, in Britain, former British countries and throughout the world.

ILLW at Gellibrand Point

The time-ball tower and lighthouse at Gellibrand Point in Williamstown will again be on the air. Among the highlights of the 48 hour fun event is VK3WI working others registered in the 17th International Lighthouse and Lightship Weekend on 16-17 August.

Also sharing the bands for 12 hours that weekend is the WIA Remembrance Day contest. In past years when the two occurred on the same weekend, harmony on air was and is encouraged.

Spare a thought for those venturing out to lighthouses, some in remote areas, operating portable with QRP operation and antennas that are less than ideal. The contesters will be justifiably busy trying to gather numbers toward their score and using high power stations. They are mindful of others, including non-contesters, digital modes and lighthouses on the band.

All can observe the respectful silent period leading up to the Remembrance Day Contest, before either entering it or resuming other activities.

Among those in the ILLW is the old square bluestone structure at Williamstown. We thank Parks Victoria for allowing this annual event. Occasionally those involved also have the chance to explain amateur radio to inquisitive members of the public. The history of the time-ball was to set the time on ships anchored on Hobson Bay.

It will be interesting if a few would-be portable operators from the recently held Master Class - Portable arrange to visit VK3WI at Williamstown to help fill its logbook and enjoy themselves.

Training is available

Many radio amateurs have graduated over the years from ARV classes. The next quality Foundation licence training and assessment to be held at 40G Victory Boulevard, Ashburton is on 23-24 August.

The study and operational practice guide book is available through our bookshop, costing $26, including delivery Australia wide. The secure online bookshop also includes logbooks and callbooks, at *http://shop.amateurradio.com.au* To enrol or for more information please contact our Education Team Leader Barry Robinson VK3PV on 0428 516 001 or *vk3pv@amateurradio.com.au*

Also nearing completion is the Standard Bridging course that was run by Kevin Luxford VK3DAP/ZL2DAP. As a result we confidently expect some new callsigns to be issued soon.

Homebrew meetings welcome all

Each month the Homebrew Construction Group meets to exchange ideas between radio amateurs who are enthusiastic equipment builders, or those wanting to start out in the do-it-yourself world.

The meetings are on the first Saturday of each month (excluding January), at 2.00 pm, in the Amateur Radio Victoria rooms at 40g Victory Boulevard, Ashburton. Homebrewing covers almost every aspect of our hobby and you will find something of interest in this group. Provided to the group is a soldering station, some tools, a power supply and test equipment. More information can be obtained by emailing *homebew@amateurradio.com.au*

Plan Ahead

RAOTC QSO Party | 13 September

VK4news QTC

Mike Charteris VK4QS
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G'day fellow amateurs, and welcome to this bumper August edition of 'QTC' radio club news from Queensland. I would like to express my thanks to all those that were kind enough to send me a few snippets of news from their clubs. Know that the rest of Queensland, if not Australia eagerly awaits the news of what is going on in the heartland of amateur radio. The clubs are the grass roots of the WIA and the backbone of the hobby. Do not underestimate your contribution to your community as a radio club. Education and enlightenment are key goals when it comes to the propagation of our unique pastime. Might well the public converse locally and worldwide by way of the computer and mobile phone, but very few indeed are privy to the pathway undertaken by the amateur radio operator. Indeed we are the beacons of light when it comes to embracing electronics and radio, let alone computer adaptation for communications to the rest of the world. So, well done to all clubs.

Photo 1: Mike VK4MIK, on the left, and Peter Clark from the Coen Heritage House, at the presentation of the vintage equipment.

Tableland Radio and Electronics Group

The group has been busy of late with trips, public displays and repeater updates.

In mid-May Wilf VK4ZNZ and Mike VK4MIK continued with the annual Cape York history trips. We left Lake Eacham early and stopped at Lakeland for fuel and coffee thence to Coen. We presented the Coen Heritage Museum with a telegraph key/sounder, pyramid telephone exchange, technician's field phone and a dial phone plus laminated explanations. Peter and Gail Clark, who do most of the museum work, gratefully accepted same and offered us afternoon tea plus further assistance with historical and local information.

We then headed north, with a brief stop at Archer River Roadhouse, then on to the Moreton Telegraph Station where we were given a warm welcome by manager Pete and the staff there. We were amazed by the efforts in having nice camping areas and green grass areas plus a museum with photos, historical information and displays of items. Pete gave us a personal tour of the historical telegraph and telephony areas of the station – the amount of old items still there came as a surprise to us. Wilf was able to view some telephony equipment he had worked on 30 years previously. We set up both our tents and radio gear in a scenic spot looking over the station where we operated on our usual radio nets. That night we decided to have dinner at the restaurant and were joined by Pete and a tour guide who was after more technical information from Wilf. We noticed that a 4WD tour bus party was also having dinner and we were given approval to put on a telegraph display and answer many questions about telegraphy, Morse and amateur radio. Our visit and displays were much appreciated and we were given an invite to return. We can recommend the Moreton Telegraph Station for a visit and stop over if you are visiting Cape York Peninsula as it has friendly staff and is full of history at every turn, plus has good fishing, and crocodiles, nearby in the Wenlock River! The next day

we drove to Weipa and enjoyed the hospitality of Wilf's daughter and extended family. We set up an inverted V antenna and operated into the afternoon nets much to the surprise of a lot of onlookers who couldn't believe we were working into the southern stations and NZ so easily – they said they would investigate about getting a licence. We enjoyed indulging in prawns and barramundi that night and left early the next morning for Laura where we arrived later that afternoon and managed to operate on a few nets again. We had a few issues with soil conductivity, which is a fact of life in these soil types throughout the world, but really enjoyed our trip which combined amateur radio and history.

On 30/31 May the TRG ran a display of over 60 Morse keys, telegraph sounders plus military radios – an ATR4A and USA walkie talkie – at the Cardwell Telegraph Museum. It came after an offer by us and was quickly accepted by the Museum staff. We had many visiting hams visit plus group members Bill VK4WL, Dennis VK4JDJ, Wilf VK4ZNZ and XYL Helen, Pat VK4MUY and Dave VK4FUY. Hams from Ingham, Townsville, Cardwell, Mission Beach and north visited. The Cassowary Coast Council gave the event publicity in local newspapers and on local commercial radio stations plus the ABC Far North did a live to air interview with Mike on Friday afternoon and they were very well researched and supportive of our event and amateur radio in general. We had several people who are interested in gaining amateur radio licences and will contact the Townsville Amateur Radio Club in this regard, as well as a former NZ amateur interested in getting his licence again - we directed him to NZART for assistance. We have been given an open invitation to do it again anytime we wish.

Recently Wilf VK4ZNZ expended a lot of effort in changing our repeater to a frequency which is free from RF interference plus re-engineering our TX/RX stages to be more resilient to the ingress of RF interference – which is seemingly being emitted from multiple sources and which many other repeaters around Australia seem to be having similar issue. We now have the TRG VK4RBP two metre repeater operating on 146.875 negative offset, so if you are visiting the Atherton Tablelands call in for a yarn or any assistance or advice we can offer.

73's de Mike VK4MIK – for the Tableland Radio Group.

Photo 2: Patto's (Mike VK4MIK) key collection at Cardwell.

Darling Downs Radio Club

By the time you read this the DDRC will have conducted its AGM on Monday, July 28th 2014. For those wishing to come along to club meetings, perhaps for the first time, then the place to be is the Drayton Bowls Club, Drayton with kick off at 7.00 pm sharp. Further details and contacts are available on the club website. The next management meeting will be held on August 11th and the next social later in the month on August 25th. The club often has interesting lectures and demonstrations for both the social and technical evenings. Details as to the venue, speaker and subject of the lecture will be announced in the newsbreak on two metres on Sunday mornings as well as the Saturday night 80 metre net on 3.587 MHz +/- QRM at 7.30 pm. The net is convened by Theo VK4ESK, and while you're there, don't forget to ask about the Garden City Award, a very nice award indeed, as I have one. Earlier in the year the Darling Downs club hooked up with members of the Bunya Mountains club for the John Moyle Field Day. The team ventured off to Bowenville Reserve where despite being hot and dry the contest was successful with the team scoring a well-deserved 876 points to finish overall in 5th position, so well done those people. Neil VK4NF was most handy with the camera on the day and a good few photos were taken of the operators and surrounds.

Caboolture Amateur Radio Club

In news from Peter Hewitson VK4QC this month we hear that the Caboolture club took part in the International Museums Weekend recently. Members set up a portable station at the Caboolture Historical Village consisting of a Kenwood TS-590, IC-718 and an FT-8800

running with a Par end fed antenna for 40 metres, plus a 15 metre dipole and a random wire for other bands. Conditions were not that great but we managed to work into the US as well as New Zealand, plus contacts throughout VK2, VK3, VK4 and VK5. Overall it was a pretty good day for everyone, and special thanks to Owen VK4FADW who kept us supplied with coffee and toasted sandwiches. In other news Roger VK4YB has been busy experimenting with some large bi-square antennas for 40 metres, as well as an even larger one on the books for the 160 metre band. Recently John VK4JR ran a project at the club to build some dummy loads. Andrew VK4FNZL and Brendan VK4MAC did the soldering with the result being some neat accessories for home.

Brisbane Amateur Radio Club

This month Kevin Dibble VK4ZR tells us that BARC are getting serious about assisting prospective 'F' calls with achieving their dreams of a licence. Club members have decided to tutor the aspirants on a couple of Saturday afternoons at the clubhouse, before the actual sitting of the exam a week or so later. The club has been in discussions with the local Scoutmaster to find ways to create a greater involvement with the scout groups in the area. BARC is also looking to program more Tait Radios to the amateur bands with a view to loaning them out to members. If you'd like to catch up with the BARC members on air, you can find them on their Monday night HF Net, on 28.450 MHz with an additional net further up the band on 29.230 MHz FM.

Bunya Mountains and District Am Com

Neil Holmes VK4NF informs us that the boys from the Bunya Mountains have been busy raising some funds for their club recently. This saw a few members undertake a morning of running the BBQ out at the local Home Hardware store in Dalby. It was all hands on deck for a day of sausages and public relations. Neil said they managed to raise $150.00 that will be put towards the on-going upgrades to the club's repeater network.

Gladstone Amateur Radio Club

This month we welcome back the Gladstone club to the pages of VK4news after an absence of some time.

President Paul Beales VK4HN tells us that the club is undertaking the repair of the local 70 cm repeater. Also that the two metre antenna that has been out of action for the past year after being struck by lightning will now be replaced. It's fair to say that by the time you read these announcements, that both the 70 cm and two metre repeaters will be fully operational in the Gladstone area.

RADAR Club

This month Clive VK4ACC tells us that at the last general meeting of the RADAR Club a special Smoko was held in honour of Gordon VK4GM, who celebrated his 88th birthday. The club chipped in for a nice cake on this occasion and a great time was had by all. An anniversary of a different kind was witnessed at the same meeting, as Ray VK4BLK celebrated being a licensed amateur radio operator for 60 years. Congratulations Ray as that is quite an achievement in anyone's books. Also from RADAR, a new antenna was installed on VK4RAR, the 70 cm repeater at Mount Archer, on 438.225 MHz. Thanks to Shaun VK4NSP for his much valued assistance. The range of the repeater has now been increased by about 300%. This same repeater is now connected to the Central Highlands Amateur Radio Club repeater system of central Queensland, giving an overall coverage of an area the size of Tasmania.

Ipswich and District Radio Club

News from Graham VK4GRA tells us that members of the Ipswich club recently organized a foxhunt out at 'Harding Paddock', on the Boonah-Ipswich Road. They kicked off at 11 am, Sunday July 13th with activities designed to introduce members to basic direction finding techniques. Peter VK4SIR and Graham VK4GRA had a few tricks up their combined sleeves to keep the participants guessing when it came to the 'fox on the run.'

In other news we hear that through the efforts of the club training officers Graham and Peter, that there are now six new Foundation licence operators on air as of May 2014. Currently there is an on-going course to assist those already licensed to study so they can upgrade their ticket. This course will continue till November 2014.

Townsville Amateur Radio Club

Well, now we hear from Gavin VK4ZZ who is a member of perhaps the busiest radio club in Queensland. The list of activities for TARC in the past month reads like an Errol Flynn adventure novel. Gavin tells us that the club has started an AM transceiver restoration project, perhaps for the ANZAC Day AM/CW activity leading up to the centenary of the Gallipoli Landings in April 2015. Members were involved with providing communications for the following events, Cardwell Forestry Rally, King of the Hill Hill-Climb in Townsville, The Magnetic Island to Townsville Swim, and finally the Kennedy Region Scouts Nighthawk Event. (Well done Townsville Amateur Radio Club on your extensive community program, as it is truly a credit to you - Mike VK4QS).

Central Highlands Amateur Radio Club

President Steve Wood VK4SM has posted in a few items from central Queensland this month, take it away Steve.

Well, the Central Highlands have applied for a few new repeater licences. Namely VK4REP, Middlemount has a repeater on test on two metres, the proposed frequency being 147.075 MHz

transmit and 147.675 MHz receive. The club also has an application in the works for a D-STAR and P25 VHF repeaters for Blackdown Tableland, call sign VK4RBD. Carbouragh Range also has a VHF analogue frequency being allocated to this repeater, and when completed, it would cover the Moranbah area. The Central highlands AGM will be run next month at Fairbairn Dam over the weekend of 26-28 September at Camp Fairbairn in Emerald, with the main day being September 27th.

Bayside Amateur Radio Society Inc

In news from the President Eddie VK4TJE he tells us that Bayside had a big day out at BARCFEST with the sale of a stack of donated UHF equipment in the form of commercial hand-held and mobile equipment. Amongst this equipment was a 70 cm repeater which found a new home at a regional Queensland club. A good example of interclub co-operation was evident in the exchange of programming and technical advice to other amateurs. Still on a fundraising theme, BDARS conducted two sausage sizzles at a major local hardware store which resulted in over one thousand dollars for club funds. The club's monthly meetings have seen a good few lectures on digital modes. The June meeting saw one on Easypal software, and the program is available from *www.vk4aes.com*

Other subjects discussed included building an interface with a transceiver, with demonstrations of JT65, APRS and Uiview to open up new area modes to our members. Our Members helped in the OXFAM Trail Walks providing communications at the events control centre and the trail checkpoints where mobile phone coverage was difficult or non-existent. Community participation is an important part of the club's program. If you would like to catch up with us, the club holds social coffee meets every fortnight at the Harmony Cafe, King County, 58 Dinwoodie Road, Thornlands, on the 2nd and 4th Wednesdays from 10.00 am, with visitors most welcome.

VK7news

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ILLW in VK7

Did you know that there are 25 lighthouses around mainland Tasmania and its surrounding islands? At the time of writing this column there were six registered for the International Lighthouse and Lightship weekend on 16/17 August 2014. These were VK7EK at Table Cape Lighthouse (AU0039), VK7HKN and VK7FROG at Cape Tourville (AU0115), VK7LDK at Round Hill Point, Burnie (AU0111), VK7LH at Low Head (AU0048), VK7NWT at Rocky Cape (AU0066) and VK7NW Mersey Bluff, Devonport (AU0040). This is a fantastic opportunity to operate portable in a friendly event usually in a picturesque location and to promote this great hobby and lighthouses and their history as well. It also falls on the same weekend as the Remembrance Day Contest so you can also do some contesting!

Photo 1: Dion VK7DB tensioning bolts, with Steve VK7VHF and Winston VK7EM on the top of Mt Duncan. Photo courtesy of Winston VK7EM and Meisha Beaumont.

Beacon and IRLP node news

The Mount Duncan repeater VK7RMD has been the subject of much work by Dion VK7DB, David

VK7FDAB, Lucas VK7FLSB and Steve VK7VHF who carried a two stroke powered drilling machine up the mountain to bore mounting holes for the new tower.

After much sweat there are three 900 mm holes bored into the rock and bolts secured in place ready for the new tower. Winston VK7EM then bush walked up Mount Montgomery about five km away from Mt Duncan and, following a call on the handheld, Lucas yelled a cooee and Winston reported hearing it 16 seconds later – audio speed of sound delay mode…Hi.

Cradle Coast Amateur Radio Club

The WIA and VK7 Regional News broadcasts on a Sunday morning and rebroadcasts on Tuesday evening via VK7RMD (146.625 MHz) are now almost fully automated thanks to Dion VK7DB. Broadcasts are downloaded, audio levels equalised, DTMF tones sent at the appropriate times and broadcasts played via a Raspberry-Pi computer with consistently good audio quality. Good on you Dion.

North West Tasmanian Amateur TV Group

The NWT-ATVG rebroadcast the monthly Australian National Satellite Net AMSAT-VK on the second Tuesday of each month at 1030Z. The rebroadcast takes place on VK7RTV, on 53.775 MHz and 146.775 MHz, EchoLink VK7AX - R Node 152375, Allstar Node 27328, 70cm analogue ATV repeater VK7RTV and the VK7RTV video stream courtesy BATC.TV.

Tony VK7AX let me know that the FBB Packet BBS and JNOS Gateway are continuing to run well and contain broadcasts, bulletins and personal mail from forwarding partners around the world. The JNOS Gateway has full email, ftp and pop mail facilities. You can subscribe by leaving a message for the sysop by 'telnet' to 203.24.120.5 port 6300 for BBS access or 203.24.120.6 port 25 for access to the JNOS BBS/Gateway. Or emailing Tony at *vk7ax@vk7ax.id.au*

Northern Tasmania Amateur Radio Club

The June long weekend saw members of both CCARC and NTARC assist with safety checkpoint communications for the Tasmania Equine Endurance Ride Association event at Sassafras. I mentioned the RFID tracking system that NTARC members have developed in the June *AR* edition and this was deployed on this ride and worked well. The 40 km ride started with 46 riders, the 80 km ride with 26 riders and the all-night 160 km ride with 21 riders. This made for a huge amount of radio and equine traffic around the course. A rider on the 120 km ride suffered an injury and was attended to by Rick VK7RI and Andrew VK7AAB. A huge thank you to all who participated including Norm VK7KTN and XYL Lorraine, Wayne and XYL Meg, Rick VK7RI, Idris VK7ZIR, Andre VK7ZAB, Peter VK7KPC, Andrew VK7AAB, Rosco VK7RC, Mal VK7XS, Yvonne VK7FYMX, David VK7DC, Ross VK7RW and XYL Daphne, Dave VK7FDEB and Roger VK7ARN.

The NTARC June presentation was given by Hayden VK7HA on repeaters. Hayden took the audience through the establishment of VK7RTC, VKRML and VK7RCH and by all reports it was an informative and entertaining talk. Hayden started with VK7RTC on Mt Wellington at 1270 metres, then moved to VK7RML on Mt. Lloyd at 932 metres and finished off with VK7RCH on Grey Mountain at 821 metres. Thanks Hayden.

Radio and Electronics Association of Southern Tasmania

Roger Latham VK7ER and Tom Macha VK7TL presented an entertaining look at the life of a professional Maritime Radio Officer. Roger trained in England and Tom in Australia and they took us through with pictures and videos the history, training, protocols, watches, logs, communications, equipment and emergency procedures. Roger was involved with ships of the British Empire including the sea trials of the QE2 and its maiden voyage and Tom was involved with AWA and BHP iron ore and oil tankers. There were certainly some amusing and interesting stories of life at sea and travelling around the world. Roger and Tom finished up with the GMDSS or the Global Maritime Distress and Safety System which is a satellite based system that basically replaced Radio Officers after 90 years on ships. Both Roger and Tom lamented this and regret that youngsters of today, who have an interest in radio, will no longer have the opportunity to go to sea as they did. The audience was very impressed that Roger and Tom were wearing their Radio Officers uniforms and could still fit into

Photo 2: Tom Macha VK7TL and Roger Latham VK7ER in their Maritime Radio Officer's uniforms. Photo courtesy of Warren VK7FEET.

them…Hi. Thanks to Roger and Tom.

The REAST DATV Experimenter's nights have been packed full of interesting material including: pressure zone microphones, VK7 SOTA progress, 630 WSPR, Rex VK7MO and his revised 24 GHz transmitting rig coupling two amplifiers together using magic tee plumbing and the results and the bath tub curve! Rex also took us through a great path profiling website called 'hey what's that path' - *http://www.heywhatsthat.com* Geoff VK7HAL with his rubber powered Wakefield gliders and his Windom and G5RV tests and the author has been taking the audience through an Arduino design from the hardware and software design, programming, testing and the development environment. Our videos have included Amateur. Logic.TV, Aricebo and Hubble telescope, LED/robotic art installations and life in Hobart in the late 1960s and 1970s.

Silent Key

Allen O'Halloran VK7OH/ VK5OH

Allen John O'Halloran was VK7OH when he lived in Tasmania. He returned to South Australia when he retired, recovering his earlier call of VK5OH.

Allen passed away in Adelaide on 21 May, 2014. Husband of Betty and father of David, Steven and Paul.

Vale Allen.

Contributed by Ric Rogers VK7RO.

VK6news

Keith Bainbridge VK6RK
vk6rk@wia.org.au

Last month saw a landmark edition of *AR* magazine, the first digital one available to members. Well except for this member - I still cannot get my password to work on the WIA website, oh well.

To business.

First up this month is a new contributor, Steve VK6SJ for the **West Australian Repeater Group** (WARG).

This is the first of WARG's ongoing articles for *AR* to keep all hams abreast of the activities of the West Australian Repeater Group (WARG). The WARG is the largest amateur radio club in Western Australia. We meet on the first Monday night of each month (second if the first is a public holiday). The majority of club members are also members of other clubs as WARG is focused on fixed infrastructure, that is, repeaters and access nodes, for the use of all amateurs and purposefully not trying to be a club in the traditional sense. WARG is an incorporated, not-for-profit group which provides and maintains a network of digital and voice radio repeaters serving the amateur radio community. The club hosts a high frequency (HF) propagation beacon and VHF Morse code (CW) practice beacon. WARG also explores and experiments with modern technologies such as voice over internet protocol (VOIP) linking of repeaters through systems such as IRLP, EchoLink and WiRES. WARG is presently engaged in some planning work for changes and upgrades to our metropolitan-area sites at Roleystone, which is our premier site and houses the very popular channel 2 repeater VK6RAP (two metres). Work is under way to refurbish our site at Cataby, north of Perth. The repeater has been temporarily taken off line, while redundant antennas are removed from the mast prior to the main antenna being replaced. Thanks to Joe VK6ZTN work is progressing to restore the VK6RWN D-STAR server and get the system properly back on line.

The trial of AllStar on VK6RLM was successful, thanks to the work of Bob VK6ZGN, and work is planned to permanently establish this node. Another discussion at the June meeting revolved around an audit of all WARG's repeater assets with a view to producing an upgrade plan. This will be discussed more at the next meeting.

Thanks Steve, we look forward to the future instalments.

Now our regular contribution from **HARG** - over to Bill VK6WJ.

Our next activity will be the International Lighthouse Lightship Weekend (ILLW) for which we will operate one day on Saturday 16th August from the Red Lighthouse on the North Mole at Fremantle Harbour. We will be starting at 8.00 am local time and everyone is welcome to drop by and say hello. This will give us an opportunity to try out our new 180 Ah battery (which requires two people to carry it) plus our new folding solar panel array. Some interesting antennas will also make the trip from Lesmurdie to Fremantle. We will be operating in the RD contest at the same time and giving out RD numbers as well as Lighthouse exchanges.

If the weather is really bad we may retreat to the club shack at Lesmurdie and concentrate on the RD contest. Our next meeting is our Annual General Meeting on Saturday 26th July at which we will elect our committee for next year. As I have to write this on 29th June I won't be able to report the results until the September issue of *AR* magazine but I can tell you that we have already received nominations for all the important positions from some very experienced and dedicated members of HARG. At the moment we are all participating in very enjoyable meetings and the enthusiasm for the new club year is building rapidly. In the future we hope to have more interesting projects on our social/practical days on the second Saturday of each month and we intend to survey members to find out what projects will be of most interest. As a starting point we have had a preliminary contact with an antenna manufacturer to source materials for club members to build antennas on those days.

HARG meetings are held twice a month at our club rooms near the corner of Brady and Sanderson Roads, Lesmurdie. Our social and practical meeting is held on the second Saturday of the month and our general meeting, often with a technical talk, on the last Saturday of the month. Doors open at 1.00 pm for a barbecue lunch and the meeting starts at 2.00 pm. More information at *www.harg.org.au* Cheers and 73 until next time from Bill VK6WJ - Publicity Officer HARG.

Thanks Bill, maybe catch you on air in the ILLW.

The **Bunbury Radio Club** has been busy lately with exams among other things - this month's report from Norm VK6GOM

Hello from Bunbury again. The major activity this month was preparing a number of potential new members for the Foundation licence and a couple of current members wishing to upgrade to the Standard level. The training was carried out at the Western Power Training Centre in Bunbury, for which the club is very grateful. The day consisted of revision of both theory and regulations for the Foundation and Standard levels under the skilful tutelage of Alek VK6AP, Brian VK6TGQ and Norm VK6GOM. Rather than just lecturing to the participants, the revision was based on the old military style question and answer technique, making sure that all students were actively involved. The feedback from the participants was that the day was very useful. In particular, it helped students identify areas that they would need to study further. Most interestingly, the tutors all agreed that they also learned a lot from the process and perhaps it could be used as an interest item for our meetings. At the June monthly meeting, it was discussed that since its recent revitalisation, the club is growing in both size and activity and that it is time to review the aims and aspirations of the organisation. This proposal will be discussed in detail at the July AGM. Welcome to our latest member Michael Mackay-Blair from Manjimup. Michael served in the RAN for 16 years as a sonar, radar and navigation technician, before retiring from the navy in 1998. Michael is also involved with SES as the Manjimup Local Manager.

Any south-west based amateur is more than welcome to join and participate in our activities. The annual fee is only $25.00. Hams wishing to join can contact the club via our Secretary, Brian Andrews, on 0403 975 953 or *vk6brc@wia.org.au* Also if passing through put out a call on our repeaters, 146.650 or 438.650.

Thanks Norm and glad to see the exam service is doing well down south.

I've been spared the job of writing the **NCRG** report this month, thanks to Wayne VK6EH. so here are his words of wisdom.

Greetings from NCRG, these colder months have slowed activity a bit however some housekeeping projects are well under way.

Now that we have started some antenna rearrangements at the club site, starting with a new duct line from the new building entry point, through two access pits to the 'Carine Tower' and on to what is at present our 15 metre

The Bunbury Radio Club licence students, from left, Neil VK6FNKS, Michael Mackay-Blair, Shaun VK6FSAP, Steve Boak, Darren Vial and Allan Browne.

monoband tower. This will ease the difficulty we had in getting cables to the various mast positions which snaked through the building and out to a pit that was forever filling with rainwater and silt. The new pipeline is mainly 100 mm PVC with the outer sections being 50 mm pipe, and this arrangement should ensure ease of access for maintenance and replacement.

The Carine Tower mentioned above is going to become home to a Stepplr antenna and a new Spid rotator, both these items are remote controllable and will form the antenna system used for our proposed remote HF station giving members access via the internet from their home computer, tablet, phone, whatever! Perfect for members who have no space for antennas at home. This project has been on the books for some time and is slowly coming together.

There is also a new 30 metre mast being set up for the new 15 metre antenna system comprising 3 x 5 element TET Emtron monobanders. There is a lot of engineering required to support a 30 metre tower and understandably work is progressing slowly.

Meanwhile, Arthur VK6CY is soldiering on with his masterpiece, an 80 metre four square array; the extensive elevated radial system, at six metres, makes erecting the four x ¼ wave verticals a challenge but each week shows steady progress; we are thankful to the many local WA hams who donated the mountains of porcelain 'Egg' insulators needed for this beast.

Hamfest 2014 is approaching fast on August 3rd and we look forward to seeing as many of you as possible. We have a great line up of raffle prizes this year thanks to some very substantial support from interested parties and traders and at the time of writing (end of June) we have nearly 30 tables booked. The usual good food and good company will be in plentiful supply. If you would like to book at table you can email us at *hamfest@ncrg.info* or contact Keith VK6RK on 0488 228 088.

That's all for this month, 73 to all from Wayne VK6EH for the NCRG.

Also on the subject of Hamfest, Phil VK6IP has offered to represent Icom at the show and has asked me to include this in the notes this month

Icom are once again supporting this year's Hamfest. Why not come and discuss your requirements with Phil Jamieson VK6IP at the Icom display. We cannot give you an actual rig but would enjoy your thoughts on the expanded range. Digital modes are at roll out stage. An impressive suite of modes await your discovery. A repeater network will allow you to converse with other stations in Europe and the USA. The clarity of signals on VHF and above will blow you away! Now you can talk to those overseas amateurs with armchair wall to wall speech that's even better than HF. Icom naturally have the radio for you to experience this freedom. Not to be outdone, DSP processing is now available in the HF range. From entry level transceivers such as the IC-718 with the optional DSP board add on right up to the serious contester's IC-7800, the DSP capability is included. Icom have all of these radios available right now. A catalogue with all of the radios included is available for your perusal. Come and discuss where Icom can assist you at our booth. Have a chat with Phil on the day.

Finally I'm personally delighted with the support received from traders and other supporters this year, especially the excellent prizes donated for the raffle. And if you need an Altronics catalogue there will be hundreds of them available on their stand!

A full report on the day's activities will be in the September edition of VK6news, catch you all then.

Temporary changes in use of the 440 - 450 MHz band

WIA

The ACMA has advised the WIA of temporary changes in the use of the 440 - 450 MHz band arising from 400 MHz band replanning activities.

As identified in an ACMA public discussion paper in 2010, an interim solution for users in meeting the 400 MHz transition milestones involves the ACMA making 442.5 - 444 MHz and 446.5 - 448 MHz temporarily available to land mobile services.

Any new temporary services in this frequency range will be assigned on a secondary basis (i.e. equal status with the amateur service) and only after frequency co-ordination with existing services.

It is anticipated that 440 - 450 MHz will be required for this use from August 2014 through to the end of 2015.

Hamads

WANTED - NATIONAL

Seeking information about Amateurs who served

The official badge of the RAAF Wireless Reserve authorised in 1935.

On behalf of the History and Archive Committee, I wish to thank all who have made contact and/or passed on information about amateurs who were involved during the various conflicts. I also wish to thank those who have prepared material and articles for possible publication in AR or on our website. So far articles have been received from Deane VK3TX, Lloyd VK5BR and Jim VK3PC and not to forget the contributions from members of the committee. A great range of topics is currently in the pipe-line but we still have many gaps, particularly relating to the more recent conflicts.

We are also lacking information about amateurs who were involved with the Coast Watchers although they are often referred to in books and stories about the coast watching activities in the New Guinea area during WWII. To date only a few involved can be confirmed as licenced amateurs prior to the war however, it could also be that some held licences in countries other than Australia. We only have Australian records to work with, so if you do have any leads in this area, the committee would be pleased to hear from you.

Another area of interest is that of amateurs performing specialist tasks during the wars. For example, during WWII some form of Civil Defence communications network seems to have existed in VK2, VK5 and VK6. Presumably similar groups existed in other states. Can anyone help with information relating to these sorts of activities?

We would also like to know how many amateurs operated their station as an official monitoring station during the war. A 1951 South Australian newspaper cutting was recently received from Helen Burt (Daughter of Ron Burt VK5NON (later VK5ON) and Grand Daughter of Chas. Othen VK5ON). The newspaper report stated that: "G.B. Ragless VK5GR and I. Thomas VK5IT gave outstanding service on important observation duties for the security services in connection with monitoring illicit transmissions and other signals of enemy origin". Can anyone help out with more information about this sort of "amateur" activity during the war?

Keith VK4MMC, QTHR was with the RAF in Aden and would very much like to hear from others who served there, particularly if they were in the RAF.

Please forward comments or material for this project to the History and Archive Committee c/o the WIA Office or contact the WIA Historian, Peter Wolfenden VK3RV via email *vk3rv@wia.org.au*

WANTED – VIC

I am restoring an FT7 and am in need of the printed circuit board for the AF unit. The board number is PCB No 1648. I would appreciate hearing from anyone who is willing to part with one for a negotiable price.

Contact Laurie VK3BV on email *shirlau@netbay.com.au* or phone 03 5975 0306.

FOR SALE – VIC

A Tet-Emtron three element 14, 21, 28 MHz beam antenna. Price is negotiable. This is a big antenna, so local pickup only.

Contact Fred VK3JM, QTHR, phone 03 9801 4972 or *vk3jm@bigpond.com*

FOR SALE – SA

The VK5JST Aerial Analyser (*AR* May 2006). Over 10,000 built, and still available from the Adelaide Hills Amateur Radio Society. For full details see *www.ahars.com.au*

WANTED – QLD

A cheap rig to get on 10 metres SSB. Preferable coverage from 28 MHz beacons up to 29 MHz. Contact Gareth VK4AGD at *vk4agd@wia.org.au*

FOR SALE – WA

A 16 metre Hills lattice guyed mast (rotating within guy wire attachments) including all guy wires, fittings, coax cables, mast rotating drive and controls.

Plus a 10 metre four element monobander beam with gamma match, and a 15 metre two element monobander beam with gamma match. All in very good condition. $600 the lot.

Buyer would have to dismantle.

Contact Milan VK6ZH on 08 9293 4107 or email *milan.udall@gmail.com*

ADVERTISERS INDEX

Contributions to *Amateur Radio*

AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at *http://www.wia.org.au/members/armag/contributing/*

Email the Editor:
editor@wia.org.au

About Hamads

- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
- Deceased estates Hamads will be published in full, even if some items are not radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from those who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising on these pages Contact admanager@wia.org.au
- Copy to be received by the deadlines on page 1 of each issue of Amateur Radio.
- Separate forms for For Sale and Wanted items. Include name, address STD telephone number and WIA membership number.

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VICTORIAN CONSUMER AFFAIRS ACT
Advertisements with only a PO Box number address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

WIA Functional Committees

The WIA is a membership organisation with a very wide range of complex functions and member services. Core functions and services are administrative in nature (general administrative functions, membership services, examination and callsign management, financial etc…) and are performed by salaried staff.

Volunteers perform a diverse range of highly specialist functions (ACMA liaison, Frequency Co-ordination, Standards liaison, Interference issues, technical support and training and assessment etc.). These volunteers provide the majority of member services, however they have been loosely organised and often overstretched.

The new committee system attempts to structure the WIA's non-core activities into 10 broad functional areas, each comprising a team of volunteers under the direction of the WIA Board. This structure is intended to spread the workload on our volunteers, improve communications between members and the WIA Board, improve services to members, and encourage more people to become involved in the WIA.

WIA Committee Charters

Spectrum Committee

(Regulatory, ACMA, ITU, IARU, Repeaters & Beacons, Standards, Interference & EME, Monitoring Service)
Geoff VK3AFA, Phil VK2ASD (Director), Peter VK3MV, Roger VK2ZRH (Director), Brian VK3MI, Dale VK1DSH, Peter VK3APO, Richard VK2AAH, Gilbert VK1GH, Rob VK1KRM, Noel VK3NH, Doug VK3UM

- Perform all ITU and IARU liaison activities.
- Liaise with, and act as the 1st point of contact for, the ACMA.
- Advise the Board, and enact Board policy in relation to all radio communications regulatory issues and the LCD.
- Represent the WIA to State and Local Government
- Represent the WIA to Standards Australia
- Provide specialist technical advice and coordinate repeater and beacon licence applications and frequency allocation.
- Develop responses to significant and prolonged harmful interference issues affecting amateur radio operations.
- Provide an information resource for EMC/EMR issues.
- Administer the IARU Monitoring Service in Australia
- Provide a technical resource to other committees and the WIA Office.

Technical Advisory sub-Committee (Tech support, Band plans etc.)

John VK3KM, Doug VK3UM, Rex VK7MO, Paul VK5BX, Walter VK6KZ, Barry VK2AAB, Bill VK4XZ, Peter VK3PF, Paul VK2TXT, Peter VK1NPW, John VK1ET, Peter VK3BFG, Eddie VK6ZSE, Peter VK3APO

Administrative Committee

John VK3PZ (Treasurer), Greg VK2GRJ (Assistant Treasurer), David VK3RU (Secretary), Mal VK3FDSL (Office Manager), Phil VK2ASD (President), Chris VK5CP (Vice President)

- Responsible for the efficient and correct operation of the WIA office.
- Responsible for staffing and workplace safety.
- Provide a specialist administrative resource to the WIA office as required.
- Manage contractual agreements.
- Manage business relationships.
- Ensure compliance with the ACMA Business Rules
- Prepare yearly budgets
- Prepare quarterly financial reports for the Board
- Prepare independently reviewed YE financial reports and balance sheets for circulation to the membership prior to each Annual General Meeting.
- Manage insurances and to be responsible for currency of insurance policies.
- Maintain a complaints register.
- Ensure complaints are handled in accordance with WIA policy and any contractual agreements.

Affiliated Clubs Committee

Ted VK2ARA, Mal VK3FDSL (Office Manager), John VK3PZ (Treasurer), Phil VK2ASD (Director)

Communications, Marketing, Publications and AGM Committee

Robert VK3DN (Director), Phil VK2ASD (Director), Jim VK3PC, Graham VK3BB (Broadcast), Roger VK2ZRH (Director) Publications sub-Committee (AR Magazine, Callbook etc): Peter VK3PF (Editor AR), Peter VK3PH (Editor Callbook), John VK3PZ (Treasurer), Ernie VK3FM, Peter VK3AZL, Evan VK3ANI, Ewan VK3OW, Bill VK3BR

- Communication with members and the public:
- Communicate with the membership.
- Publicise WIA activities and initiatives.
- Develop strategies and resources for the promotion of Amateur radio to the public.
- Develop strategies and resources for the promotion of WIA membership to the Amateur community.
- Supervise and/or perform promotional activities.
- Co-ordinate the yearly AGM activities

Education Committee

Fred VK3DAC (Director), Owen VK2AEJ, Ron VK2DQ, Mal VK3FDSL (Office Manager)

- In association with the WIA's RTO and affiliated clubs offering training services, develop and administer the WIA's training and assessment systems.
- In association with the Spectrum Strategy Committee, develop and maintain the various licence syllabi and associated question banks.
- In association with the Community Support Committee and the RTO, develop and maintain the Emergency Communications Operator scheme.
- Ensure the confidentiality and security of all personal information, question banks and examination papers.

Radio Activities Committee

Chris VK5CP (Director), Geoff VK3TL

Contests sub-Committee

Alan VK4SN, Denis VK4AE/3ZUX, John VK3KM, Tony VK3TZ, Kevin VK4UH, Colin VK5DK, James Fleming VK4TJF

Awards sub-Committee

Bob VK3SX, Marc VK3OHM, Laurie VK7ZE, Alan VK2CA, Alek VK6APK, David VK3EW, Paul VK5PAS, ARDF sub-Committee: Jack VK3WWW, ARISS sub-Committee: Tony VK5ZA

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARISS, AMSAT, ARDF etc.

QSL Card sub-Committee

Geoff VK3TL, Alex VK2ZM, John VK1CJ, Max VK3WT, Ray VK4NH, Stephan VK5RZ, Steve VK6IR, John VK7RT, Craig VK8AS

Historical and Archive Committee

Peter VK3RV, WIA Historian, (Leader), Drew VK3XU, Linda VK7QP, Martin VK7GN, Ian VK3IFM, Will VK6UU, David VK3ADW, Jennifer VK3WQ/VK5ANW, Roger VK2ZRH (Director)

- Develop, maintain and preserve the WIA's historical and archive collection
- Encourage access to the collection by WIA members and those seeking historical material for publication.

IT Services

Robert VK3DU (Director), Tim VK3KTB

- Provide an IT resource to other committees and the WIA Board.
- Be responsible for the off-site data back-up of all IT systems information.
- To update and maintain the WIA website as required.
- Advise the Administrative / Financial committee in relation to the MEMNET Cloud Service contract.

Community Service Committee

Fred VK3DAC (Director), Greg VK2GRJ (Assistant Treasurer), Ewan VK4ERM (Director), Paul VK5PH

- Develop, promote and co-ordinate all WIA community support activities

New Initiatives

Phil VK2ASD (Director), Robert VK3DN (Director), Roger VK2ZRH (Director), David VK3RU (Company Secretary)

- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
- On approval by the Board, run proof of concept trials.

Club Grants sub-Committee

Reg VK7KK, Peter VK3KCD, Bill VK4ZD

- Manage all arrangements between the WIA and WIA Affiliated Clubs
- In cooperation with the Administrative / Financial committee, manage the Club Insurance Scheme
- Encourage stronger relationships and communications flow between the WIA and WIA Affiliated Clubs
- Encourage increasing WIA membership ratios in Affiliated Clubs
- Manage the Club Grants Scheme
- Identify and bring regional Affiliated Club issues to the attention of the WIA Board.

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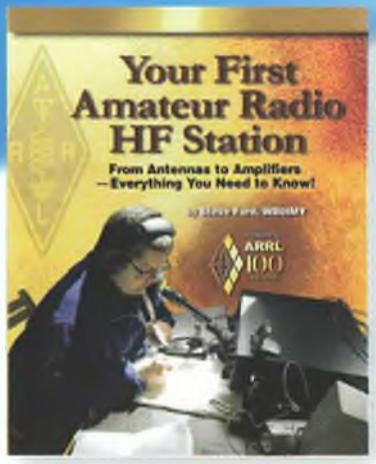


Your First Amateur Radio HF Station

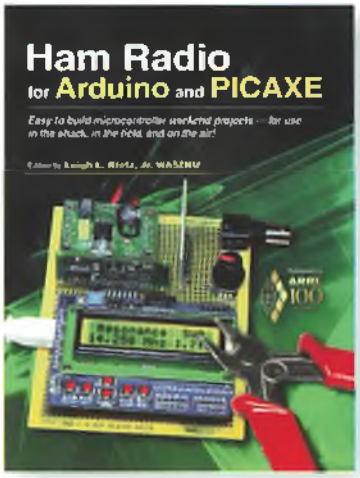
Setting up your first HF amateur radio station can be a complicated task. From selecting your first radio to putting up your first antenna, there are a number of important choices you'll need to make.

Your First Amateur Radio HF Station is the most complete guide to setting up your station and getting started in HF communications. It's filled with practical advice you can put to use right away. Whether you're new to amateur radio or HF operating, live on acres of open property or in a tiny apartment, this book will show you how to get on the air and enjoy all that amateur radio has to offer.

176 pages, published by The American Radio Relay League, Inc.

First Edition/First Printing (January 2014)

Members: $35.00 * Retail: $42.00 *



Ham Radio for Arduino and PICAXE

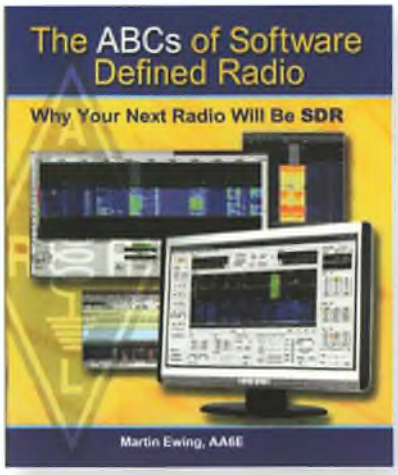
Where Ham Radio Meets Open-Source Electronics

Microcontroller technology has exploded in popularity among amateur radio operators. The new generation of single-board microcontrollers is easier than ever to use, bringing together hardware and software for project-building radio amateurs can easily dive into. With inexpensive microcontroller platforms—such as the popular open-source Arduino board—readily available parts, components and accessory boards, the possibilities are limitless: beacon transmitters, keyers, antenna position control, RTTY and digital mode decoders, waterfall displays, and more.

352 pages, published by The American Radio Relay League, Inc.

First Edition/First Printing (February 2013)

Members: $30.00 * Retail: $38.00 *



The ABCs of Software Defined Radio

Why Your Next Radio Will Be SDR

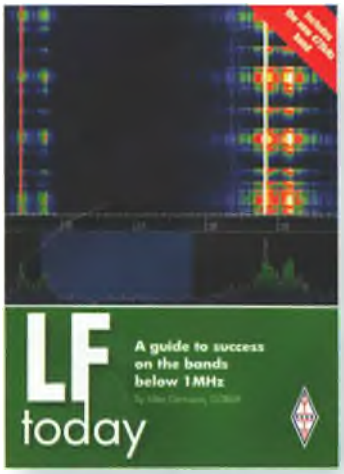
Amateur Radio operators are finding themselves incorporating Software Defined Radio –the latest big step in radio communications – into their operational activities. From low-end QRP rigs to the most powerful radios, they're all using SDR technology.

The ABC's of Software Defined Radio is an introductory guide to SDR and Digital Signal Processing (DSP) technologies. Written in a friendly style, it offers a straightforward look inside SDR and provides a foundation for those who want to understand the subject on a more fundamental level. As you read, you'll discover the basic principles of SDR, advantages to SDR technology, and ways to utilize it in Amateur Radio operations…*all with a minimum of mathematics!*

64 pages, published by The American Radio Relay League, Inc.

First Edition/First Printing (February 2012)

Members: $35.00 * Retail: $40.00 *



LF Today – Third Edition

A guide to success on the bands below 1MHz

Written by one of the leading LF experimenters, this third edition of *LF Today* provides readers with a firm knowledge of the low frequency bands. It includes practical information on antennas, transmitters, receivers and operating on these frequencies. With the introduction of 472 kHz, there are now two bands below 1 MHz, 472 kHz and 136 kHz. New to this edition are many projects for the 472 kHz band, an analysis of the various modes used, and how to receive and transmit on even lower frequencies. Also included is a chapter on predicting LF ionospheric conditions.

This book is a great resource for everyone interested in low frequency operating. There is advice and techniques for amateurs just starting out, and useful reference information for those with a more technical background or who already have some experience in LF. You're sure to get the most out of operating in this part of the amateur radio spectrum.

192 pages, published by Radio Society of Great Britain (RSGB).

Third Edition (2013)

Members: $45.00 * Retail: $53.00 *

**Plus Postage & Packaging*

Order your copy today! Visit our online bookshop for details. http://www.wia.org.au/members/bookshop/about/

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