In the news from Amateur Radio New South Wales for this week;

We would like to thank those members that have responded to our recent calls to volunteer. We still need further volunteers for the VK2WI roster, and are also seeking expressions of interest from members interested in remote roles. Contact the office, or email news@arnsw.org.au for more information about the positions available.

General enquires can be directed to the ARNSW office via email, to office@arnsw.org.au, or by leaving a phone message on 02 9444 0123.

Tonight, we welcome listeners on the EchoLink "HAM" conference, and the Australian & New Zealand EchoLink Network. Callbacks will also be taken after tonight's bulletin; our thanks to John VK3HJQ, and the Australian & New Zealand EchoLink Network team, for making this relay available.

[Play File: 14-E-ID1.wav]

HF Antenna Day

Starting our presentation program for 2024, members are invited to the first of a two-part HF antenna presentation. Its starts at 10am on Sunday the 25th of February 2024 – that's next weekend – here at VK2WI Dural.

This event will feature presentations of interest for all levels of expertise, and a range of specialist presenters. It's an opportunity to;

Gain insights into portable operation;
Learn techniques and strategies to enhance you home station;
And connect with specialists, eager to assist and guide others.

The event is catered, and RSVP are essential for seating and catering purposes – we are not able to admit 'walk-ins' on the day.

There are still a few seats left, so reserve your spot now by emailing events@arnsw.org.au, including your name, callsign and contact information.

Part two of the HF antenna presentation will be on Sunday the 28th of April, with further topics and presenters sharing their experiences.

That's events@arnsw.org.au for a day of practical learning about the world of HF antennas, from 10am on Sunday the 25th of February.

Advised by Al VK2OK
Event Co-ordinator for ARNSW.

ARNSW 2024 AGM

The 2024 AGM of Amateur Radio New South Wales will be a hybrid meeting, both online and here at VK2WI Dural, on Saturday the 13th of April.

At each AGM, either four or five board members stand down and are eligible for re-election, depending on the year.

To be eligible to be a board member, the constitution requires that you have been a member of ARNSW for a minimum of the past three consecutive years, as must your proposer and seconder. As you are standing to become a board member of a registered company, you will be required to obtain a director ID upon election, if you don't already have one.

This year, we have five board members standing down. While all are eligible for re-election, some may choose not to renominate. So, if you are an eligible member, please consider nominating for the board - bring your skills and passion for Amateur Radio, to help ARNSW continue to evolve and grow into the future. There's a link to a nomination form on the home page of the ARNSW website.

Nominations close 42 days prior to the AGM, at 10am on Saturday the 2nd of March 2024. This is also the closing date for notification of any Special Resolutions to be put to the members at the AGM. Note that if you are sending an item or nomination by mail, please post them in time to arrive by Friday the 1st of March.

73 Eric VK2VE
Secretary, Amateur Radio NSW

Weekly Solar and Geophysical Report

For the period of the 9th to the 15th of February.
First, the summary of activity;

Dates across the columns are	9th	10th	11th	12th	13th	14th	15th
10cm Flux	183	194	180	208	195	184	178
Fredericksburg A-Index	4	4	12	4	8	6	3
Australian A-Index	4	4	16	2	10	3	3 estimated
T index	138	139	157	134	144	140	143

Solar activity was at R3 levels on the 9th, with 2 M-class flare and one X3.3 at 1314UTC. Activity was at R2 on the 10th, with 3 M-class flares, and R1 on the 11th with one M1.0. The 12th returned to R2 with five M-class flares; the 14th was at R1 with two flares, and the 15th reached R1 with an M1.8.

Geomagnetic activity reached G1 on the 11th; other days saw activity remaining below warning threshold. A weak geomagnetic impulse of 27nanoTesla, was observed at 0209UTC on the 11th.

F2 critical frequencies in Southern Australia were mostly near predicted monthly values, with some periods of enhancement; 25% after local down on the 9th, 20% during local night on the 10th and 11th, and 20% during local day on the 13th.

The forecast, issued on the 16th of February, through until the 22nd;

Solar activity is expected to be at R1 to R2, especially early in the week.

Geomagnetic should be at low to moderate levels.

Maximum usable frequencies should be near predicted, with possible enhancements of up to 20%.

Data courtesy of the Australian Space Weather Forecasting Centre.

Solar Flux Index update

Here are the updated Solar Flux Index (SFI) figures for this week.

Having finished January, we had a;

Minimum of 126, Average of 167, and a Maximum of 196
With peak dates from the 9th to the 18th, and the 23rd to the 25th.

So far for February, we are expecting a;

Minimum of 136, Average of 171, and a Maximum of 208
With peak dates from the 6th to the 22nd

And looking ahead to March, we are expecting a;

Minimum of 150, Average of 162, and a Maximum of 170
With peak dates from the 3rd to the 15th.

Update with thanks to Noel, VK2FUL.

[using daily data updates from :
http://www.swpc.noaa.gov/products/usaf-45-day-ap-and-f107cm-flux-forecast]

[Play File: 15-E-ID2.wav]

Technical Feature

We now continue with our first Technical Feature Series for 2024 – an introduction to DMR. Last week gave an overview of how DMR signals are put together. Key to making DMR work, is the "codec" - Matt VK2FLY, has more;

[Play File: 16-TF-DMR2.wav]

Duration: 3m35s
In: Codecs are wonderful things…
Out:….The coverage and range of DMR.

[Transcript]

Codecs are a wonderful things. But before we delve into that, let's take a detour through AM, FM, and SSB modulation. In these modes, the loudness of your voice directly influences how you sound on the receiver's set. In cases like SSB, the received signal may even increase. As radio amateurs, we're familiar with this. You might even notice people on the street yelling into their mobile phones, blissfully unaware of their automatic gain control and noise cancellation. This is where DMR, much like your mobile phone, comes into play. And this brings us back to codecs.

In the early days of digital voice, such as with ISDN telephones, a codec's task was straightforward. It sampled the incoming voice, converted the exact frequency and amplitude into numbers, and sent it over the wire. On the receiving end, it was converted back to analog, allowing people to communicate. These systems used a voice bandwidth of 0.3 to 3.4 kHz, and with this type of codec and sampling rate, a good quality voice call required a bandwidth of 64 Kbit/sec.

However, today's codecs operate differently. They listen to the sounds of the human voice and recreate them. Human speech, from an auditory standpoint, is quite repetitive. Most words and sounds we make are derived from a small subset of other sounds. Advanced codecs break down our speech into these typical sounds, assign a value to them, called symbols, along with a pitch and amplitude, and transmit them over the air. At the receiving end, these numbers are converted back into sounds and played through the speaker.

Many say DMR and other digital modes sound robotic – and they're not wrong! Early synthesized voices, like Stephen Hawking's famous DECtalk, used pre-recorded sounds to form words. Computers arranged these sounds to mimic speech. In a similar fashion, advanced codecs, like the one used in DMR (specifically AMBE+2), do the same, but they're better at mimicking the original speaker's voice. This is why music sounds terrible over DMR. The codec is designed for voice, not other sounds. It also explains why background noise isn't transmitted. The codec is engineered to send voice and nothing else.

So, what's the key takeaway? It's all about the level. The codec recreates your voice; it doesn't transmit it. Yelling into the mic will result in a loud output at the other end. Turning the mic gain to maximum means the receiving radio will be loud, too. But this doesn't improve transmission quality. Instead, it might startle the receiving operator, who will likely turn the volume down. What goes in comes out. On DMR and almost all digital modes, a poor signal doesn't mean low volume. It relates to packet loss, which is information sent but not received. The receiving radio can only reconstruct the sounds it successfully receives. Lost data is either replaced with silence or by repeating the last valid sound. Your dont report R2D2 you report packet loss.

So, the next time you give a signal report on DMR, it's essentially an audio report. Rate readability from 0 to 5, and if necessary, suggest they turn down the mic gain.

Next time, I'll discuss the coverage and range of DMR.

Foundations of Amateur Radio

This series, written and produced by Onno VK6FLAB, continues a weekly examination, of the building blocks of Amateur Radio.

[Play File: 17-FOAR125.wav]
Duration: 2m32s
In: The other day…
Out: …I'm Onno VK6FLAB

For more information about this series, including audio, transcripts and other useful amateur radio resources, Onno's website is; vk6flab.com; and you can contact Onno by email, to cq@vk6flab.com.

[WICEN News]

And now with this week's WICEN News, here's Richard VK2SKY;

[Play File: 18-E-WNS0218.wav]
Duration: 2m15s
In: WICEN is supporting…
Out: … at wicen.org.au

[Transcript]

WICEN is supporting Dementia Australia's "Memory Walk and Jog" events throughout 2024. Yesterday we supported the event near Jervis Bay. Operators are now being sought for the following event in the ACT on next Sunday the 25th, and next month in Cronulla and Penrith.

The Memory Walks are great "starter" events for new or rusty WICEN members, as they take only a couple of hours. WICEN also provides the radios for these events, so you don't even need to bring your own gear. Why not give one a go? You'll find a link to the events list in the text edition of this news.

WICEN has a meetup here at Dural on the first Sunday of every month. For the next one on 3 March, several Rural Fire Service units have been invited to bring their Operational Comms Vehicles, so we can see how they stack up against our own VRA 62. We're also looking for inspiration for VRA 62's successor, currently in early planning.

To participate in any WICEN event, or just find out more about how you can use your Amateur Radio skills to benefit the community, you can email wicen.ops@vrarescue.org.

WICEN nets take place every Sunday evening, using FM voice, DMR, P25, or HF voice, depending on the week. All WICEN members and other Amateurs are welcome to call in.

Tonight, the 6pm net will be on the Kurrajong 70cm FM repeater, 439.825MHz and a 91.5Hz tone, with net controller VK2WIB; and the 6.30pm net will be on HF, on or near 7110kHz LSB. Net controller VK2WIZ will announce the call-in sequence and other information.

WICEN NSW is a support squad of VRA Rescue NSW, specialising in tactical radio communications. In between activations, WICEN supports local community events: these provide practical training for members, and help raise the public profile of Amateur Radio.

To find out more, check out the WICEN NSW web site, at nsw.wicen.org.au

WICEN is also on Facebook, and on X; there, you can find photos and information about recent and upcoming WICEN activities. Links are in the text edition of this news.

For information about other WICEN groups around Australia, visit the web at wicen.org.au.

[Memory Walk and Jog Events: https://www.memorywalk.com.au/find-an-event]
[WICEN NSW web site: https://nsw.wicen.org.au/]
["National" WICEN on Facebook: https://www.facebook.com/groups/124735400158]
[WICEN NSW facebook at https://www.facebook.com/WICENNSW]
[WICEN NSW X at https://twitter.com/wicennsw]

Club News

We start this week with news from the Westlakes Amateur Radio Club.

This year is the 60th anniversary of Westlakes; and their first regular car boot sale for 2024, is next weekend, on Saturday the 24th of February. Its at the Club grounds, 6a York Street Teralba, starting at 8am.

You can set up a stall at no charge; but bring your own table. There will also be a BBQ and hot and cold drinks available, and a raffle as well. All are welcome.

Westlakes has several on air nets each week, details are a little later on in this bulletin.

Advised by Barrie VK2QG
For the Westlakes Amateur Radio Club

[Play File: 19-E-ID3.wav]

Oxley Region Amateur Radio Club

The Club's next meeting is the March General meeting, 2pm on Saturday the 2nd of March at the SES Building in Port Macquarie.

The club's very popular 2024 calendar will be available at all upcoming Club gatherings.

The next Foundation Licence training and assessment weekend will be held once the new arrangements with ACMA are in place. Candidates for the Foundation Licence and for assessments for all grades of licence can register their interest via the contact form on the ORARC website.

There are two club nets each week; the mid-week net from 7:30pm on Thursday nights, and the weekend net at 9am Sunday mornings. Both are on the VK2RPM 2 metre repeater, 146.7MHz with a 91.5Hz sub-audible tone for access, and on EchoLink as VK2RPM-R. Members and visitors are encouraged to participate in the club on air nets as often as possible.

For more information about the Oxley Region Amateur Radio Club, visit the website at orarc.org. The site contains a wealth of Amateur Radio items in addition to club information. The January 2024 issue of the club's bimonthly newsletter "Oxtales" is now online, and past issues are on the website as well. The club is also on Facebook; just search for Oxley Region Amateur Radio Club.

From Henry VK2ZHE
For the Oxley Region Amateur Radio Club.

Central Coast Amateur Radio Club

The club rooms at Kariong are open on Saturdays from 10:30am, and as always, members and visitors are most welcome. The monthly "show and tell" will be held next Saturday – bring something interesting along to share with other members, or instead bring some pictures we can display.

The Wyong Field Day will be on the 5th of May, at The Wyong Musical Theatre Company premises, on the corner of the Pacific Highway and North Road, Wyong. More information as it comes to hand.

At the VK2RAG Somersby repeater site, the 6-metre repeater, D-Star, Rad-Net DMR and 2m EchoLink, 70cm and 23cm, are all fully functional. The WICEN UHF MMDVM is still having problems.

The Somersby WebSDR is online at websdr.ccarc.org.au; its configured to listen on 6 metres, 2 metres, 70 centimetres and 23cm.

The Club's Regular Morning Tea Net wound up this week – it was started by Bob VK2AOR during the start of the Covid pandemic, as a way for people to keep in touch. The Club wishes to express its deep gratitude to Bob, and the efforts he has put in to keep the net running.

The Club's Weekly net continues on Thursday Nights at 8pm. It's on the VK2RAG 2 metre repeater – 146.725MHz with a 91.5Hz sub-audible tone, and on the CCARCNSW and HAM EchoLink conferences. It is also live video-streamed on the club's Facebook page.

You can find out more about the CCARC, including information on upcoming social events and all the details we can't tell you about here; on the web at ccarc.org.au – by phone, 02 43402500 – or social media, search Central Coast Amateur Radio Club; remember to "like" to follow for updates.

73 Alan VK2MG
Publicity Officer, Central Coast Amateur Radio Club.

Blue Mountains Amateur Radio Club

The Club's regular monthly meetings are on the first Friday of the month at 7:30pm. The next meeting is on the 1st of March at the clubrooms, 4 Moore Street Glenbrook, in the Blue Mountains – doors open from 7pm.

The clubrooms are also open twice a month from about 10am, on the morning of the first and third Saturdays – unless otherwise noted on the Club's Facebook page.

Visitors and prospective new members are always welcome.

The Clubs has several weekly nets – we have details in "Activities on the air" later in this bulletin – and a new net time, Sunday nights at 8pm. On the 1st and 3rd Sunday of the month, the net is on the Club's 6 metre repeater, and on the 70cm repeater on the second and fourth Sunday.

The Club's Foundation Classes resume in April, and Upgrade classes start on the 21st of February and continue on Wednesday nights, both on Zoom and in-person at the Glenbrook clubrooms.

With a 98% pass rate, the Club's courses and exam days do fill-up quickly; please contact Club secretary, Irene VK2VAN via email to; secretary@bmarc.org for class dates, to register, or for more information.

More information about the club can be found on the website, at www.bmarc.org.

Steven VK2TSG
President, Blue Mountains Amateur Radio Club.

[Manly-Warringah Radio Society]

And now with news from the Manly-Warringah Radio Society, here's Richard VK2SKY;

[Play File: 20-B-MRS0218.wav]

Duration: 1m29s
In: This Wednesday is…
Out: Manly-Warringah Radio Society.

[Transcript]

This Wednesday is lecture night at the Society, when Colin VK2JCC will talk about radio operations on board HMAS Vampire. As many of you will know, Colin leads a team of Amateurs who operate VK2VMP from the Vampire's HF Communication Centre, and who talk to visitors about the ship and about Amateur Radio. Vampire is moored at the Australian National Maritime Museum at Darling Harbour in Sydney. If you'd like to join the fun and operate from a Royal Australian Navy warship, come along on Wednesday to find out more out it.

Last months lecture, "Using LTSpice to Simulate Oscillators and Filters", is now up the club's YouTube channel, VK2MB-TV. A link is in the text edition of this news.

The club's "centennial year" wraps up next Sunday, so it's your last chance to work the special event callsign VI100MB. Keep an ear out!

The Manly-Warringah Radio Society meets every Wednesday evening at the First Terrey Hills Guides Hall, Beltana Avenue, Terrey Hills. Doors open at 7.30pm for an 8pm start, and visitors are always welcome. If you need directions, call in on the club's 2 metre repeater on 146.875, or check the club web site for details. The web site address is mwrs.org.au. The club is also on Facebook, X, and YouTube: just search for the club callsign, Victor Kilo 2 Mike Bravo.

73 Richard VK2SKY,
Publicity Officer for the Manly-Warringah Radio Society

[Lecture: Simulating Oscillators and Filters using LTSpice:
https://www.youtube.com/playlist?list=PLH84NJ1xBNgitBvH2U4yuhlvWasvFl7qP]

[MWRS Fire Season Toolkit: https://www.mwrs.org.au/2019/12/14/your-fire-season-toolkit/]
[MWRS on the web: https://www.mwrs.org.au/]
[MWRS on Facebook: https://www.facebook.com/ManlyWarringahRadioSociety]
[MWRS on X: https://twitter.com/VK2MB]
[MWRS on YouTube: https://www.youtube.com/@VK2MB]

Waverley Amateur Radio Society

The February Project Day saw about a dozen people in attendance, with Skip VK2ALR leading the assembly of a simple frequency source using a Si5351A module, controlled by an Arduino with a small OLED screen. With that working well, the next project day on the 2nd of March, will focus on the addition of a digital encoder so that the frequency can be easily changed – and will be led by Fred VK2WS.

This coming Wednesday the 21st of February is the Society's monthly meeting, where Tony VK2KZ will talk on "Propagation and the influence of published space weather factors", which promises to be another interesting presentation.

Regular Monday evening nets are at 8pm on VK2RBV, 438.1125 MHz with a -5.4 MHz offset and 91.5Hz tone for access. Net control is usually Richard VK2XRC or Bob VK2NRC.

The new email reflector for members is hosted on the groups.io platform, with about 70% of members registered so far. Any members who haven't yet found it yet, can go to groups.io and search for the Society's name.

Wednesday lunchtime get togethers, continue from Midday in the RSL bistro; these now adjourn after lunch to the ANZAC room for some practical activities.

Other activities are continuing either in person and on Zoom. See the society's website for details.

You can keep up to date with the Waverley Amateur Radio Society on the web, at vk2bv.org. On the site you can also find out more about kits available, update your membership details, and use the contact form to send in any enquiries.

73 from Eric VK2VE
Broadcast Publicity Officer

[ID4 and Activities on the air]

[Transcript]
I'm Mathew VK2YAP…. And I'm Stuart VK2BMX.

It's time for your quick trip around the bands for this week, with; activities on the air.

Daily;

Manly-Warringah "early bird" net, 6:30am on or near 3690kHz LSB; if that's too early, the "morning" net is from 8am on or near 7189kHz.

Amateur Radio Central West Group lunchtime net; 1pm on VK2RCW.

Mondays;

Westlakes ARC net 9:30am on 40 metres, 7115kHz, VK2ATZ Portable.

Great Lakes Radio Club net 7pm on VK2RGL; 147.1MHz with 91.5Hz tone, EchoLink VK2RGL-R.

Hunter Radio Group VK2AWX News 7:30pm, on 146.975MHz.

The **Blue Mountains ARC** D MR Net at 7:30pm on Brandmeister 50520, hosted by Ben VK2AFK.

Amateur Radio Central West Group net at 8pm on VK2RCW.

Lightning Net 8pm on 1860kHz, net control Steve VK2STG.

HADARC net 8pm on VK2RNS, 147.25MHz

Waverley ARS net 8pm on VK2RBV, 438.1125MHz with 91.5Hz tone. Activities online and on air; see website.

Tuesdays;

National VKDMR Net: starts at 8pm on Talkgroup 505.

Blue Mountains ARC net from 8pm, 3543kHz.

St George ARS digital net, 8pm on 146.8MHz

Illawarra ARS 80m net at 8:30pm, 3666kHz.

[…continues]

Wednesdays;

Westlakes ARC net 9:30am on 7115kHz. 2 Metre nets throughout the week, see website for details.

Hunter Radio Group net 7:30pm, on 146.975MHz and EchoLink node 1474.

HADARC 8pm on 3608.5kHz

Blue Mountains ARC 8pm on VK2RBM, 147.05MHz, 123Hz tone.

Amateur Radio Central West Group from 8pm on 3653kHz.

Armidale District ARC net 8:30pm on 3633kHz.

Thursdays;

Illawarra ARS net 12pm; VK2RMP 146.850 and VK2RUW on 146.675.

Fishers Ghost ARC net 7:30pm on VK2RFG, 438.65MHz with -7MHz offset and 91.5Hz tone; also, on EchoLink.

Oxley Region ARC 7:30pm on VK2RPM 146.7Mhz with 91.5Hz tone.

St George ARS 8pm, VK2RLE 146.8MHz.

The **CCARC weekly net** from 8pm on VK2RAG, 146.725MHz with 91.5Hz tone, and EchoLink.

Fridays;

Morning tea with HADARC 9am on 7106kHz.

Westlakes 9:30am on 7115kHz.

Amateur Radio Central West Group at 8pm, VK2RCW.

Saturdays;

Westlakes Stone the Crows net; 6am on 3588kHz.

Illawarra ARS net 9:30am on VK2RMP and VK2RUW.

Snowy Mountains ARC net 7:30pm on Southeast network; VK2RFS 146.75MHz, VK2RSE 147.375, VK3RDH 146.625, and EchoLink.

Sundays;

Westlakes DMR Net from 8:00am, usually on Talkgroup 3802.

Oxley Region ARC from 9am, VK2RPM.

WICEN NSW nets; 6pm on Chatswood 2m or Kurrajong 70cm repeater, 6:30pm on DMR or HF, and 6:45pm on P25. Check website for details.

Don't forget to get your activities on the air here… send us through the details of your activity!
Email the details, to news@arnsw.org.au... or leave a message on the office phone, 02 9444 0123.