
VHF/UHF – An Expanding World

David Smith VK3HZ
Leigh Rainbird VK2KRR

Weak Signal

David Smith - VK3HZ

It seems that most of the weak signal activity at present is happening during the morning aircraft nets. Peter VK2BIT has been operating portable from a hilltop near Young on 2 m on several weekends recently, putting a good signal into Melbourne. Also, Graham VK3XDK, located in the noisy inner Melbourne suburb of Brunswick, is gradually improving his station and working further each week.

It's good to hear Jim VK3II back on after an extended European holiday. Jim, at Coronet Bay near Phillip Island, puts out an outstanding signal on 2 m and seemingly has the aircraft lined up on his QTH – his is by far the best signal from VK3 into Canberra and Sydney.

Mark VK2EMA in Tottenham in central NSW is being worked regularly by a number of stations in Melbourne on both 2 m and 70 cm. It appears that flights from Melbourne to Brisbane pass along the ideal path for aircraft enhancement between these two locations. Recently, VK2WWV at Trangie, northwest of Dubbo, was also heard in Melbourne.

Peter VK5ZLX has recently moved to the eastern side of the range near the Barossa Valley. With only a small yagi on a pole off the side of the shed on 144 MHz, he has already been able to work VK3II, VK3BG and VK2KRR. Look out when Peter gets the tower up.

For those of you interested in chasing gridsquares, the gridsquare league table has just been updated. To see the latest, go to the NSW VHF DX Group web site at: <http://www.vhfdx.oz-hams.org> and click on Gridsquares. Most of the changes this time will be found in the 144MHz tables (terrestrial and EME), and the 432MHz terrestrial table. Thanks go to Guy VK2KU for managing these tables.

Since returning home from a successful Meteor Scatter Dxpediton, Rex VK7MO has quickly racked up an extra 10 grid squares on 144 MHz EME bringing his current total to 31 squares.

ACA changes

By now, you should all have received a letter from the ACA regarding the outcomes of the review of amateur service regulation. There are obviously a significant number of changes that will affect us all, but much has already been said about that. However, what changes are of specific importance to the VHF/UHF weak signal operator?

The most significant change is that all classes of licence will be given access to all of the 2 m and 70 cm bands. The Standard licence class (formerly Novice) will also be able to use the 6 m, 23 cm, 13 cm and 6 cm bands. (In what appears to be an anomaly, Foundation licensees will be able to use all "Voice" modes – including SSB – but Standard will be limited to the current Novice modes – not including SSB). Thus we should look forward to an increased number of active stations on the low ends of those bands.

The ACA did back away from proposals to allow us parity with our US brethren regarding maximum power limits, arguing that EMR problems were highly likely in the

urban environment. However, for the Advanced licence class, they are proposing a maximum power of 400W PEP for ALL modes, not just SSB.

Beacons

Paul VK2YVG in Broken Hill reports that new beacons have been installed on Mt Darling, about 20 km east of Broken Hill in far western NSW. They are on 52.525, 144.525 and 432.525 MHz. The beacons are on a time cycle, running through all 3 bands in about 50 seconds. Each beacon is active for about 14 seconds and transmits in CW "VK2RBH Broken Hill". On 2 m & 70 cm the beacons run 10 watts to a pair of crossed folded dipoles. There is a catch though. Only the 2 m beacon is running at the moment. The 70 cm beacon is suffering from RF feedback, but should be fixed soon. The 6 m beacon has been held up waiting for the licence to be issued. The 2 m beacon is getting out quite well and has been heard several times in Melbourne.

The VK3RGL 70 cm beacon's frequency has been reset and now appears to have stabilised somewhat. It is now approximately 300 Hz lower than its assigned frequency of 432.530 MHz.

Please send any Weak Signal reports to David VK3HZ at ...

Digital Modes

Rex Moncur – VK7MO

The new version of WSJT (v 4.7.0), which includes Spectran, is a winner for small station EME as one can detect stations on Spectran that are well below the level that can be decoded and wait for them to come out of the noise (set Spectran to 1.3 or even 0.67 Hz bandwidth). While contacts might take an hour or more, it is amazing to see the occasional peaks in signal give a perfect decode in the average. Possibly the prime advantage of Spectran is psychological, in that if you can see a signal you are more inclined to wait around for it to peak sufficiently to decode. The technical advantage is that once you see a signal you can narrow the tolerance to 25 or even 10 Hz and avoid birdies and stronger noise peaks on adjacent frequencies. The use of Spectran makes it practical for single yagi stations to work other small or medium stations and greatly increases the numbers of possible contacts. To work the smaller stations it is best to use JT65A and this in turn requires very good stability at both ends (better than 2 Hz over a minute). JT65A is 1 dB better than JT65B and while 1 dB does not sound much it is equivalent to reducing the time to make a contact from say three hours to two. For those with limited patience this can be the difference between making a contact or not. Before trying JT65A, do some test transmissions with single tone R27 on FSK441A set to 60 second TX period with a local station who has good stability and can watch for you on Spectran in a bandwidth of around 0.2 Hz.

It is good to see the ACA will allow the Digital modes the same power limit as SSB (400 watts PEP), subject to EMR assessment.

Garry VK5ZK and Leigh VK2KRR have regularly been working 754 km on JT44 using less than 10 watts and single yagis. Gavin VK3HY was excited to get perfect copy from a Czech station on EME using JT65. Rod VK2TWR has sorted out his computer and is working into Hobart on JT44. Cec VK6AO is going to the North of the state and will run some meteor scatter tests with Don VK6HK.

Something not mentioned in last month's report is that VK2KRR was able to copy VK7MO/6 on a 1731 km direct tropo path while Rex was on his DXpedition from Eucla in May. Rex's 144 MHz FSK441 signal was weak but audible at times.

2 m & 70 cm FM DX

Leigh Rainbird - VK2KRR

Welcome to winter everyone, and we're now in the thick of it. But don't be put off by the cold weather in the south; there is still DX to be had for those who happen to be in the right place at the right time. For people up north, things should be coming along OK with the more settled weather of the dry season, so be alert for those international tropo openings and let's hope some contacts are made similar to those from last year which included Papua New Guinea and New Caledonia, perhaps another location will pop in out of the blue, you just never know.

The month of May produced a reasonable amount of openings for duct hunters, predominantly in the south, but things flared up for a few days in north Queensland also.

May gave us an early warning of things to come in the south, when on the 3rd of May there was a good early morning duct workable from around 3 am. At around 3.15 am I found Greg VK5THA on Adelaide's Crafers repeater. Later, at around 7 am most of the higher repeaters were heard, including Murray Bridge and Barossa Valley. The 146.950 repeater at Canberra became well occupied when Brian VK5UBC at Gawler was able to call in @ 917 Km. There Brian found VK1ZQR, VK1AU and VK1NPW. Brian was also able to get to Ararat, Shepparton, Mt William, Bendigo and worked VK3LY at Nhill on 146.500 simplex.

On the 5th of May, finally, after months of unsuccessful attempts, VK5UBC and VK2KRR made the 917 km simplex contact on 146.500 from Brian's portable QTH at Corny Point, Yorke Peninsula to The Rock Hill. Signals up to 5/4 and did not hold for to long.

Morning of the 10th, Les VK3TJ from Mildura was able to work Paul VK2YVG in Broken Hill via the Broken Hill repeater. Les found he could also access the Mt. Macedon and the Bendigo 2 m repeaters, but no one would answer the calls. Les is only using a double Jpole at 20 ft.

Along the north Queensland coast, the guys have not had much of a taste of real DX for a while now. But from the 12th to around the 16th of May the duct gods gave them a little taste just to keep them going. Initially it was Mike VK4MIK on the Atherton Tablelands who noticed the conditions were up, and he was able to access the Townsville 2 m repeater which is around 250 Km for Mike. Contacts via the repeater were completed with the following VK4's – FUQ, ABW, HSV, IGM, FVC and TJS. At times Mike was able to run as low as 5 watts to complete the contacts. On the 15th Mike was also able to make it to the Mackay 2 m repeater which is around 550 Km, and there he found VK4LH and VK4AIV. A few 2 m simplex contacts for Mike included VK4FNQ near Charters Towers at 310 Km; also to VK4TJS at Townsville at 250 Km. Mike heard the Hayman Island repeater but could not get to it, he also tried for New Caledonia with no luck.

Back down in the south east of the country on Friday the 21st of May we got a winter time special. Around an hour before midday, surprisingly, conditions seemed up from normal. I noted quite strong signals from Mt. Macedon and Otway Ranges repeaters. Signals were in the vicinity of S9+20. Not really thinking much of this, I pressed scan on the radio and heard a weak signal on 146.900. Not much else this can be in the SW besides Mount Gambier, and upon turning the antenna that way the signal

picked up to about S7. VK5WCC and VK5OA were on the repeater, but with the repeater having RX problems I could only get through when it was about S9. In fact Kevin VK5OA could hear me on reverse so we went for a 630 Km simplex contact, Kevin was weak on FM, and we went to SSB. The repeater was copyable for most of the afternoon. Fingers were crossed that this would build up even stronger after sundown, which is characteristic of winter conditions from here. With antenna's still aimed Mt. Gambier way, at sundown things were looking disappointingly poor with weak or non-existent signals. Just when the evening was declared to be a fizzer, at 7.30 pm a weak signal was heard on 146.800. On turning the antenna west, this ended up being a good S9 from Mildura and quite a surprise out at 466 Km. Using the repeater at the time was VK3TJ and VK3FPJ. Upon looking further out at about 8 pm in the same direction I was even more surprised to find a strong S9 signal from Port Augusta at 913 Km, and being the very sensitive repeater that it is, I was able to get in on 2 watts, but unable to raise anyone for a QSO. The Adelaide area was shut out of the duct at this stage and nothing was copied from in there, but interestingly I copied VK5UBC at Gawler on 146.500 simplex where he was up to 5/3 at 764 Km. Gradually other locations came in, but were all north of Adelaide. Port Pirie repeater was there at 867 Km. VK5HBG and VK5NEX came back to the call, VK5UBC also made it through. Central North repeater was there at 833 Km. After 9 pm I was just able to get to the Broken Hill repeater and raised Steve VK2SRN. Around midnight, signals began to drop off from the north and signals from Adelaide started coming through. Only weaker signals from the higher repeaters were noted, such as Crafers, Murray Bridge and Lobethal. Was all but gone at around 2 am.

The following Friday the 28th conditions were running again but not as good as the previous Friday. The higher repeaters were there again, but with slow QSB. Found Steve VK5SFA between QSB fade outs on Crafers. On Lobethal Steve VK5HBE came up, as did Peter VK5ZLX. Peter is out near the Barossa Valley but on the western side of the range and consequently we worked on simplex up to 5/3 from Peter's vertical antenna at a good 735 Km.

That's about it for this month. Please remember to send through any 2 & 70 FM DX reports to Leigh VK2KRR at ...