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# VHF/UHF – An Expanding World

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David Smith VK3HZ  
Leigh Rainbird VK2KRR

## Weak Signal

David Smith - VK3HZ

There's been a bit of action across the Bight during March – possibly the last for the season. On the evening of March 22<sup>nd</sup>, Wally VK6WG worked VK5ZBK, VK5DK, VK3ZQB, VK3II and VK3AUU on 2 m. He also worked VK5ZBK, VK5DK and VK3ZQB on 70 cm. The following morning, Wally again appeared and worked VK3II, VK3HZ, VK3ZUX, VK5DK, VK5ZPS and VK5NY on 2 m. He also worked VK3HZ and VK3ZUX on 70 cm – a distance of around 2,600 km. At the time, the VK6RST Mt Barker 70 cm beacon and the VK6REP Esperance 2 m beacon were both audible at good strength in Melbourne. To add to the action, VK6EWI, a DXpedition station on Woody Island off the coast of WA near Esperance (and, needless to say, a very rare gridsquare on 2 m), popped up and worked VK5NY, VK5KNB, VK3AUU, VK3II and VK3ZUX. The DXpedition guys couldn't believe their luck in having a good opening on 2 m while out on the island (Murphy usually strikes and the bands all close down). Meanwhile, Wally VK6WG spent over an hour on 70 cm ragchewing with VK5NY, VK5ZPS and VK5DK with signals consistently S8 to 9 before the band closed down at around 0400Z. That evening, VK6EWI worked VK5AKK, VK5DK and VK5NY but nothing heard of them in VK3.

Then on the morning of March 26<sup>th</sup>, Leigh VK2KRR, near Wagga Wagga, heard the Mt Barker 2 m beacon at about S2. He telephoned Wally VK6WG who came up on 2 m and contact was made at S8 to 9. An attempt was made on 70 cm but, with antennas cross-polarised, nothing was heard. The path remained for about an hour before Wally had the call to breakfast. The distance between them is 2645 km, but with a difficult path over land. It was interesting to note reports from VK5NY and VK5ZK in Adelaide, in the same line to Albany as Leigh, both hearing the Esperance beacon but not Mt Barker, whereas Leigh could hear Mt Barker but not Esperance.

Barry VK3BJM reports that he has been travelling again, from Kyneton, Vic, to Fowlers Gap, NSW, to continue exploring Aircraft Enhanced Propagation (AEP) possibilities in far western NSW, and to activate QF08uv over the weekend of 3-4th of April. Whilst there, he had contacts with VK2KRR (684 km), VK2EMA (on 2 m and 70 cm) (551 km), VK5ZK (560 km), VK1DO (860 km), VK3AFW (813 km), VK2ZAB (923 km), VK3II (882 m), and VK5UBC (474 km). Some of these contacts were via troposcatter, some via AEP. Mobile 2 m contacts were also had with VK3GOM, VK2KRR, VK3CY, and VK5ZK, whilst enroute to Fowlers Gap.

Fowlers Gap is located 114 km north of Broken Hill, on the Silver City Highway. Equipment used was an IC706MkIIg to (on 2 m) a 150W PA, with inbuilt 21 dB pre-amp, then 6 m LDF4-50 to a 10 element DL6WU yagi. On 70 cm, a 100W PA, with inbuilt 12 dB pre-amp, via 6 m of LDF4-50 to a 15 element DL6WU yagi. Thanks to John VK2TK and Ron VK3AFW for extended assistance via the HF liaison frequencies, and to all who listened and attempted contacts.

Jim VK3II reports some success in the reduction of interference at his QTH. When conditions are reasonable to the west, he has been suffering from "crud" between 144.295 MHz and 145.300 MHz, effectively wiping out the beacon segment. The source of the interference was narrowed down to the Colac ABC TV translator on channel 5A (sound carrier 143.724 MHz). He contacted the ABC about the problem who then passed the complaint on to Broadcast Australia (they operate the ABC

transmitters). They called back to say that they know about the problem and are waiting on a bandpass filter which will be fitted to the translator in the near future.

## **EME**

Doug VK3UM has been busy on the PC, working on some of his software that is widely used throughout the EME world. Significant upgrades have been made to the EME Calculator and the Site and Radiation Calculator, while new programs include the Transmission Line Calculator and Four Pole Interdigital Filter designer. The programs and details of the changes can be found at [www.qsl.net/sm2cew/download.htm](http://www.qsl.net/sm2cew/download.htm).

## **Beacons**

The Melbourne 2 m beacon, VK3RTG on 144.430 MHz, is currently off air. Building renovations at the site have resulted in the power being removed. This will be the situation for many weeks. The beacon may be temporarily relocated, pending an upgrade.

The Auckland 6 m beacon, ZL1VHF on 50.0433 MHz has been QRT since the start of April after the antenna pole was felled by chainsaw, cut off at ground level. The beacon will be recommissioned once several paperwork issues have been taken care of, and a replacement antenna pole has been installed. In the meantime, all equipment has been removed from the site.

Finally, congratulations to our "Digital Modes" man, Rex VK7MO, who has been awarded the WIA Ron Wilkinson Achievement Award in recognition of his achievements and contributions to the knowledge of other radio amateurs in relation to weak signal working on VHF/UHF and microwave bands.

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

## **Digital Modes**

Rex Moncur – VK7MO

Joe Taylor, K1JT, continues to improve WSJT with version 4.6.3 including AFC for JT65 to allow it to cope with less stable rigs. He has also joined up with Alberto, I2PHD, to combine WSJT with Spectran. From some initial tests it is particularly useful to identify a very weak signal on Spectran and then lock down the band in which WSJT looks to just a few Hz and sort out the desired signal from birdies.

Since JT44 came out with the ability to give perfect decodes at around -19 dB in a single line and around -22 dB with an average over 4 cycles, Joe has advanced things such that JT65A will produce perfect decodes at around -24 dB and perfect averages over 4 cycles at -26 or -27 dB (all with reference to the noise in a 2.5 kHz passband). A note of caution about WSJT signal reports is that they are based on the average in the channel with the maximum level and if the signal drifts outside the channel (just a few Hz) during a cycle then WSJT signal reports can be quite misleading. For example Ian, VK3AXH, has had problems with a wonkie crystal in his FT-847 that resulted in signal reports being up to 10 dB less than on a second more stable rig.

Rex, VK7MO, will be on a DXpedition to VK6 in early May during the Eta Aquarids meteor shower and initially intends to operate from around Eucla on the WA/SA border. Rex will TX on 144.330, FSK441B in the first period and use the DXpedition procedures outlined on the NSW VHF Group DX site - <http://www.vhfdx.oz-hams.org>. He will work to the East Coast from 0630 to 0830 EAST. He will beam half way between Melbourne and Sydney so VK2/4 should use the Southerly hot spot and

VK3/7 the Northerly hot spot. Operations will commence on 1 May for a few days at Eucla and depending on progress a number of grid squares should be available on the way back up to mid May. Skeds to other areas will be possible at other times if you can catch his mobile within range on 0408 147 808.

## 2 m & 70 cm FM DX

Leigh Rainbird - VK2KRR

The month of March has really pulled up the FM DX scene down south, with the change of seasons coming on and the shortening of daylight hours, things are really taking a dive, still some interesting contacts are being made though. Nice to see conditions returning to the Queensland coast after a wet and windy few months.

John VK2FAD has been able to repeat his interesting path into the Canberra 146.950 repeater again. This is an approximate 350 km trip across the mountains to Mt Ginini from Budgewoi. Good clean signal from John.

A freak change in conditions occurred along the VK4 coastal areas beginning around the 6<sup>th</sup> of March and finishing about the 10<sup>th</sup> of March and saw some great conditions down the coast from up north as indicated by the Hepburn charts.

Felix VK4FUQ, located at Ingham reports that the Mackay repeater was accessible most evenings and mornings. On Monday the 8<sup>th</sup> the Mackay repeater was almost full scale at Felix's QTH and he was able to contact VK4LH, 4OG and 4DJC. Felix reports he was also able to work the Hayman Island repeater.

Later Felix made it to VK4RGA, Gladstone area repeater, and made contact with VK4JIN at Maryborough and VK4KKN in Gladstone. The distance to this repeater for Felix is 797 Km and this contact just knocked Mike VK4MIK off top spot in the VK4 Division Repeater Distance Records by a mere 4 Km. Well done to Felix for grabbing the top spot.

Later that evening Mike VK4MIK was able to work to the Townsville repeater and also made a good simplex contact with VK4FNQ at Charters Towers on 146.500.

On Wednesday the 10<sup>th</sup> Felix was able to work back to the Gladstone repeater again @ 797 Km and also to the Springsure repeater @ 639 Km and to the Hodgson Range repeater @ 491 Km, which gave Felix 3<sup>rd</sup> and 4<sup>th</sup> spots in the VK4 Repeater Distance Records.

Felix also reports that while the Gladstone repeater was coming through, he copied VK4LC from Mt. Tamborine and amazingly VK2MHB at Murwillumbah. Distance was 461 and 504 km respectively to the repeater.

Sat 13<sup>th</sup> March, small opening to Melbourne from sth VK2. Colin in Melbourne worked VK2KRR twice simplex on 146.500, once in the morning once in the evening. Colin was a good signal up here at a 5/8 @ 334 Km. Ian VK3ZZG also put in a very nice signal up here from Bendigo on both 2 & 70. Distance is around 300 Km and Ian was 20dB over on 2 m and a 5/5 on 70 cm.

The John Moyle Field day was held on the 20<sup>th</sup> and 21<sup>st</sup> of March. I was a little disappointed in the FM roll up. For a change, there appeared to be more SSB stations on air in comparison to FM stations. Admittedly the conditions were quite poor. The only DX FM stations worked here were VK3SAA near Ballarat @ 359 Km and VK3CNE on Mt Macedon @ 320 Km. Gavin VK3VTX was also heard in the noise at one stage, along with a number of other stations.

We welcome a new member to the FM DX ranks, that is Karl VK3HDX in the Launceston area. Karl recently passed his exams and is very keen on the VHF DX

scene. With only a limited set up Karl has already managed to work right across Bass Strait into the Mt Macedon repeater @ 504 Km.

While were on the subject of VK7, one of the top FM DX stations out of northern Tasmania right now would have to be Dion VK7YBI near Burnie. Dion gets out very well with his new twin yagi array, and is heard at locations you would not believe. On Monday evening the 22<sup>nd</sup> March, Dion reports that the conditions were quite exceptional, all stations heard on repeaters were also being copied on simplex and many repeaters were 60dB+ with no pre-amp! Dion worked simplex on 146.500 with VK5HAY and VK5HCF mobile (Mt Gambier ?). Dion continued to work VK3 stations and then, upon turning the antenna back to VK5 he worked John VK5DJ on Mt Gambier repeater, then John VK5NJ on the same repeater, as well as on simplex 146.500 where John gave Dion a 5/7 report and Dion was running only 2 watts over 573 Km.

The following morning Dion VK7YBI found Shane VK5NRV on an Adelaide repeater and they both tried 146.500 simplex and made it through! Shane is at Woodside and signal reports were 5/3 both ways over the big 921 Km path.

Interestingly on Sat 27<sup>th</sup> of March, Dion VK7YBI made a rare trip into the Cooma repeater 147.375 VK2RSE @ 630 Km. Dion was able to contact VK2DE and VK2HFM.

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