
VHF/UHF – An Expanding World

David Smith VK3HZ

Weak Signal

David Smith - VK3HZ

January has been another spectacular month for propagation. We even had some good E's openings on 2 m right up to the end of the month.

On January 8th, another strong E's opening occurred with VK4 and later VK2 working into VK3, VK5 and VK7. On the Tropo front, VK5AKK worked across the Bight to VK6JRC on 2 m.

The evening of the 11th, another Tropo opening across the Bight saw Wally VK6WG working into Adelaide on both 2 m and 70 cm.

On the evening of the 12th, conditions were particularly good between Melbourne and Mt Gambier, with Colin VK5DK working Mike VK3KH at S9+ on 23 cm. Colin was also hearing the 23 cm beacon in Gippsland at S4.

The following day – the 13th – conditions were again good across to ZL with Bob ZL3TY in the thick of things. He worked many VK2s and VK4s and into VK3 as far as central Gippsland. The opening continued into the 14th, although signals were down somewhat.

On the 15th, the VK2 to ZL path was stronger than ever with VK2s working across to ZL1, 2 and 3 on both 2 m and 70 cm. At 2022Z, Ross VK2DVZ worked Bob ZL3TY on 1296.1 MHz achieving what is believed to be the first VK to ZL South Island contact on 23 cm. Just to prove it wasn't a fluke, they again worked at 0643Z.

The 16th produced good Tropo conditions from VK3 to VK5 and VK5 to VK6, although it didn't quite stretch across enough at the right time to produce any VK3 to VK6 contacts. Nevertheless, it was looking good for the Summer VHF/UHF Field Day, commencing the next day.

And so it was. There were excellent conditions across the south of the country and many good contacts were had on bands from 50 MHz to 24 GHz. On the evening of the 17th, VK5SR in Mt Gambier was well over S9 into Melbourne on 1296 MHz.

The good conditions continued for Sunday 18th. At one stage during the morning, I listened on 2 m to VK5SR working station after station around Perth. The conditions unfortunately failed to stretch to Melbourne though, but many stations on the hilltops (and there were many in this region) achieved some excellent contacts. Norm VK7AC on the north coast of Tasmania was also in the thick of the action and at about 2130Z, he worked Peter VK6KXW - who is about 90 km east of Perth – on 2 m for his first VK6 on that band. Norm also worked VK6ZWZ and Don VK6HK – it was Don's first 2 m VK7 contact after many years of trying. Signals from Peter rose to S8 and so he and Norm QSYed up to 70 cm. At about 2300Z, they made contact over a distance of 2862.5 km, breaking the VK National 70 cm record.

On the afternoon of the 20th, there was yet another E's opening across to ZL. At 0400Z, Nick ZL1IU worked across to Norm VK7AC. Then things shifted, and ZL3 was being worked in eastern VK3. At the time, I was talking to Mike VK3KH on the telephone and he mentioned that things were happening, according to the VK Logger. I promptly went to the shack and immediately heard a mini ZL3 dogpile on 144.1. Over the next half hour, I worked 6 ZL3 stations – 5 of them within 20 km of Christchurch. Whether this concentration was due to conditions or just available stations, I don't know. Alan VK3XPD also joined the action. ZL3AAU worked as far across as Garry VK5ZK in Goolwa.

The following evening (21st), in a similar manner, Bob ZL3TY suddenly appeared on 144.1 calling CQ on CW. We managed a quick contact before he disappeared. Bob also worked VK3DUT, VK3ZYC, VK2DVZ and VK2ZT.

The afternoon of the 24th saw another E's opening from VK4 to VK3 and VK5. At the same time, a Tropo opening occurred between VK5 and VK6. The Tropo opening continued for the next few days, with VK7 to VK5 contacts also happening.

Then a high-pressure cell settled over the Tasman Sea. It produced extreme temperatures in Melbourne (43, 44 and 45 on consecutive days) but also produced excellent Tropo conditions from VK to ZL for several days. ZI1, 2 and 3 were worked by VK2 and VK3. Of note, Nick ZL1IU was a good signal into eastern Victoria, but his signal was attenuated somewhat (read "totally") in Melbourne by Mt Baw Baw, which is directly in the path. Nevertheless, Nick was kept busy and on 2 m, he managed to work Gippsland stations VK3DUT, VK3DMW, VK3VHF, VK3BBB, VK3VFO, VK3ZYC, VK3UCQ, VK3WRE/P (Mt Tassie – also on 70 cm), VK3BQJ and VK3EK. VK3BBB. VK3ALZ and VK3ZQV. Jim VK3II who is further south and would have a clearer shot over the hills also worked Nick. Further west, Nick worked Andrew VK3OE on Mt Dandenong fairly regularly, possibly via knife-edge refraction off Mt Baw Baw into the duct, which was apparently very high – some 3000 m.

Towards the end of the opening, on February 1st, some interesting contacts were made. In Melbourne, Ron VK3AFW was busy compensating for his decades without a ZL on 2 m. He writes: *I became a bit frustrated at only being able to hear a sniff of audio so I asked Andrew VK3OE to ask Nick ZL1IU to listen for someone calling on CW. The result - Nick gave me 559 and I gave him 529. RR and 73s completed a QSO that would not have been possible without much more than 400 w on SSB. I guess it was the heat that made my hands sweaty and my CW even worse than usual. I'm too old to get excited about a QSO!* We'll obviously have to find another challenge for Ron now!

A little later Mike VK3BDL in the bayside suburbs of Melbourne, not to be outdone, worked Nick on 2 m. Then, in a very optimistic move, Mike asked Nick to QSY to 70 cm. Just as they QSYed, signals came up on 70 cm and they exchanged 5x2/5x3 reports. Then Nick's signal on 70 cm vanished before any of the other stations hearing him had a chance to work him. It was almost like there was an aircraft giving lift into the duct briefly before flying on. Although the distance of 2579 km fell several hundred kilometres short of the new 70 cm record, it was probably a more difficult contact considering the mountainous terrain at the VK3 end of the path.

Going back to January 30th, starting at about 0030Z, we had another E's opening between VK4 and VK3 & 5 – very late in the season. The opening lasted for about 1½ hours and was jumping all over the place from Brisbane to FNQ.

Finally, on the morning of January 7th, a Tropo opening formed between VK2 and ZL3, reaching across to Christchurch on the far side of NZ over some very substantial mountains. It began with VK2 stations working Bob ZL3TY on the west coast. Then, at 2014Z, Steve VK2ZT worked John ZL3AAU in Christchurch. VK2DVZ, VK2IDM and VK2IJM joined the fray, together with ZL3NW and ZL3CU, both also in Christchurch. Ross VK2DVZ worked Bob ZL3TY on 70 cm, supporting the claim that it was a Tropo opening.

As I said at the top, January has been a bumper month for VHF/UHF operators. About the only thing that this season has not yet produced is a VK3 to VK6 Tropo opening – something that normally occurs each year. That's to come, no doubt.

Spring VHF/UHF Field Day

Alan VK3XPD and Michael VK3KH submitted the following report on their activity during the Spring VHF/UHF Field Day in which they were placed first in the 8-hour Multi-Operator section. My apologies to Alan and Michael that this wasn't included in the January issue.

Once again, Michael and I decided to team up and tackle the ever-popular 2008 Spring Field Day on Saturday, November 15, 2008.

As usual, the first decision that had to be made was the choice of an Operating location(s). The proximity of John's Hill Reserve near Olinda in QF22RC and the Old Coach Road north of Berwick in QF21QX presented an opportunity to "multiply" our Points score for the Multi Operator, 8-Hour Category by operating from two Grid Squares.

We both arrived at John's Hill Reserve at circa 1300 EDST. Although it was bright and sunny, it became immediately obvious that the gusty winds were going to be a problem for us.

Additionally, since our previous visit to this site, the Council has installed barriers to prevent vehicles from entering the grassed areas. This restriction made things a little difficult in that we were compromised in choosing the best "vantage" point for best/maximum Contest activity.

Over the next hour or so we progressively set our gear up with the aim of a proposed start at 1400.



VK3XPD / VK3KH Field Day Setup

During this time, Rob – VK3ESE who lives nearby dropped in with his "very" portable station...an FT-817 on 6, 2 & 70 cm. After a bit of "banter", Rob left us and set himself up on a nearby Picnic table.



Rob VK3ESE during the Spring VHF Field Day

Finally after a quick look around the bands, Michael was the first to start the contest with 6 metres through to 23 cm. To Michael's great surprise, one of the early contacts was Joe – VK7JG on 2 and 6 metres from Launceston. The Geelong crew (VK3UHF) in the Barabool Hills west of Geelong seemed to be everywhere all at once! Along with the EMDRC team of VK3ER in the Wombat State Forest, the Frankston club of VK3FRC, at Mt Martha, the Ballarat Crew VK3AIG, things were looking pretty good. Noticeably quiet were several of the usual Latrobe Valley portable operators.

As usual the Microwave Bands were taking a little longer to set up - mostly due the high winds. Finally at about 1500, the Geelong crew of VK3UHF was rapidly worked on all Bands from 2.4 GHz up to 10 GHz. However, with the poor Propagation, Microwave Stations further afield were quite difficult to find and work because the gusty winds made "pointing" the dishes a difficult process.

Similarly, we had planned for longer distance QSO's on 2, 70, and 23 cm into VK1, VK2 and eastern VK3 but again we were to be disappointed due to the poor propagation on the day.

As the afternoon progressed and the initial urgency of as many QSO's on as many bands as possible abated, Rob - VK3ESE, visited us again after he had packed away his gear. Next in for a chat was Rob VK3LOL and later Peter VK3TPR dropped by.

Since John's Hill is a relatively popular vantage point with great views - there was

also the usual tourist traffic walking the dogs or just out for a bit of a drive. Some would drop by for a chat so Michael, ever the diplomat, would explain what all the paraphernalia was. One unfortunate sole with "lady friend" in tow drove into the car park, turned towards us to get a better look but failed to notice a large red gum post. "Kerunch" was heard as he clipped the post and bits of a blinker assembly were scattered all around. Needless to say they departed soon after and we didn't get the opportunity to explain what we were doing.

As the afternoon progressed, the temperature cooled significantly, the sky was threatening and the wind became even gustier. Charlie VK3NX was keen to try for a 24 Ghz QSO. Not long after setting it up however, my 24 Ghz transverter was blown onto the ground. Only minor damage was incurred but was it still on frequency?

So we tried again but unsuccessfully. A few minutes later, disaster struck. The tripod, dish and transverter was blown over again and this time the damage was terminal. The flexible waveguide was crushed.

Later in the afternoon and during a time of "repeat" 3 Hour QSO's, the wind blew over the 1200 mm Dish and Tripod with the 3.4 and 5.7 GHz transverter hardware attached. Amazingly, no damage was done.

The cold windy weather was taking its toll on both us and the gear. So with the failing light and with Michael complaining of numb fingers we decided it was time to pack up and relocate to the second Grid Square in Berwick. I was however not really looking forward to setting up all the Microwave gear all over again.

On arrival at Berwick, Michael was able to park his car such that the now-tethered Antennas mounted on a roof rack structure were pointing directly at Geelong. He then quickly worked the VK3UHF team on 2, 70 and 23cm from inside the car. Easy!

Similarly, I had been thinking about the easiest way of getting these "repeat" Microwave QSO's with the minimum of effort. So, instead of the tripods and dishes, we set up the little card table for the transverters to sit on.. The 2.4 GHz band was first off the rank. David - VK3QM already had an "Ident" running so I simply connected the 2.4 Ghz feedhorn via a short length of coaxial cable to the transverter. Although it was pointing vertically up, I found the "Ident" immediately with S8 signal strength. Quite amazing - and this is Microwaves! The identical process was then repeated for the other microwave bands with great success.

With these "repeat" QSO's completed, we packed up and headed home for some well deserved creature comforts...

So, a very successful day, but we did come away with one definite plan for improvement. As on previous occasions, the gusty winds once again caused us considerable problems - more so on the Microwave bands with their vulnerable, tripod-mounted "wind catching" dishes. Multiple dishes for multiple transverters also means more effort and time is needed for setup and packup. So, a rotatable dish securely mounted to the vehicle with a switchable multiband feed will be constructed.

2.4 GHz Activity

Several new stations are now set up to operate from home on the 2.4 GHz band. Ross VK3MY in Olinda, with an excellent takeoff to the west, is currently running 1 watt with plans for more power. Colin VK5DK in Mt Gambier has sorted out his antenna setup and is now also QRV on the band. During a recent opening, at 1307Z on February 3rd, they successfully worked each other with 5x1 reports over a distance of 400 km.

Alan VK3XPD reports that the VK3RXX Beacon at Camberwell on 2403.530 MHz

has been repaired and returned to service. It is running 10 watts into an Alford Slot at about 10 metres. He would be interested in any signal reports.

10 GHz Activity

Chas VK3PY reports on an impromptu 10 GHz Field Day of sorts. *Sunday January 11th was a big day on 10 GHz in VK3. Prompted by a visit from Jack VK2TRF who was in VK3 on a work assignment and had brought his 10GHz gear with him, a number of us obliged him by taking our 10GHz equipment into the field to try to work him. And work him we did.*

Jack set up his station at Loch in South Gippsland (near Korumburra). A number of VK3s, including a first-time operation led by Lou VK3ALB and Nik VK3NJP, took the opportunity of getting out into the field to welcome Jack on 10 GHz. Other operators who took part in activities were Charlie VK3NX, Alan VK3XPD, Ken VK3NW, Ralph VK3WRE, Russel VK3ZQB and Colin VK5DK and myself, VK3PY, with David VK3QM who had lent his gear out in anticipation of next weekend's contest and had to ride shotgun on my equipment. In all we had 9 separate 10GHz stations set up. Jack managed to work everyone other than VK3ZQB and VK5DK, both of whom were a little out of reach in the late afternoon heat. Had it been possible to continue into the evening, things might have been different.

Being somewhere near the middle of the geography, I was fortunate to work everybody. Seven QSOs (I won't count Charlie who was only about 500 wavelengths away...) and five grids on 10 GHz in one outing. Not a bad afternoon's haul. Most satisfyingly, Lou and Co. received a good introduction to microwave operation pending next weekend's Summer VHF Field Day.

From Wally VK6KZ - a check in November has confirmed that the VK6RST 10 GHz beacon at Mt Barker near Albany is operating but has drifted in frequency. Instead of the target frequency of 10368.564 MHz it was found on 10368.633 MHz. The beacon was heard over a 46 km path to Albany (well off the main lobe) at the QTH of Wally Green VK6WG. Please look for it when conditions are promising. The Bight has been bridged once - why not again?

Work is proceeding on corner reflector antennas to allow a 1296 beacon to be placed on Mt Barker with major lobes towards the Eastern states and Perth.

Technology Convention 2009

For anyone who might be in New Zealand in April, Technology Convention 2009 is being held in Hamilton over the weekend of April 11-12.

The convention is about Amateur Radio related technology and is somewhat like our GippsTech event.

Registration Forms can be requested by email at techcon09@nzart.org.nz

They are looking for speakers / presentations / demonstrations for durations of up to 45 minutes. Please contact Kevin Murphy ZL1UJG at rfman@xtra.co.nz if you can help in this way.

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

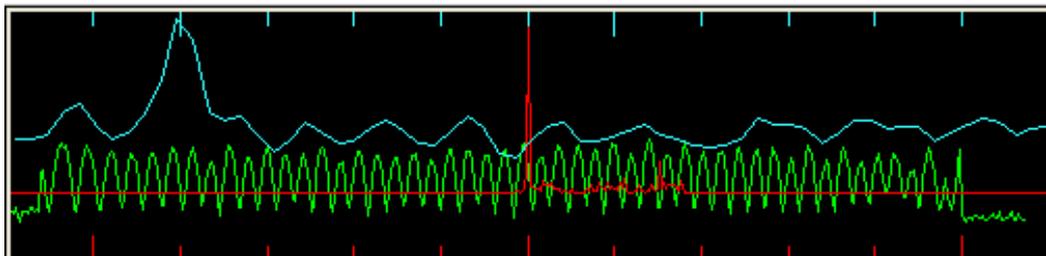
Digital DX Modes

Rex Moncur – VK7MO

Welcome to Michael VK3KH, Nigel VK3GY, Tim VK3JJM and Rob VK3ESE who have all been trying out WSJT.

David VK2JDS provides an update on his activities with his solar powered EME station on 1296 MHz. *"In December I worked Sergei RW3BP who was using 4 yagis at -17 dB from Moscow, then again the next day using Sergie's 2.8m dish with -13. JT65c. The DXpedition to Namibia has stimulated a lot of activity on 23 cm EME with many stations active. 1296.065 has been the main frequency in use, 1296.090 was used by the DXpedition. So far I have worked stations from Russia, Switzerland, Czech Republic, Canada, Netherlands, Estonia, Austria and the Ukraine on JT65c. We need more operators on 1296. The world is looking for us. As an example the contact with Christoph HB9HAL. He had gone on a mission to get a 'Worked All Continents' on 1296 digital JT65c and was keen for a VK station, I was it on 13 Jan 09 and he has now completed his WAC in less than a week! OK1DFC had me as his 60th digital contact on the 8 Jan. He designed the Septum circular feed many of us use on our dishes for EME."*

It is possible to take advantage Aircraft Enhancement using JT65a as the Doppler shift is usually sufficiently low on two metres. The effect a tropo-scatter signal adding or subtracting in phase with the Aircraft Enhancement signals produces a characteristic ripple on the green signal strength line of the WSJT display such as shown in the screen shot below of Jim VK3II's signal in Hobart.



This variation does not affect the ability of WSJT to decode the signals correctly and Aircraft Enhanced signals can be decoded on two meters with transmitter powers of around one watt on a 500 to 600 km path.

Please send any Digital DX Modes reports to Rex VK7MO at ...

The Magic Band – 6 m DX

Brian Cleland – VK5BC

January has proved to be another great month on 6 m with the band open somewhere in VK/ZL on all days of the month. During the month, Paul A35RK continued to make regular contacts into all states of VK & ZL and Willem DU7/PA0HIP had a good opening into the eastern States of VK.

VK6 enjoyed an excellent month with many openings to the eastern states and ZL, Paul A35RK again working into VK6 (over 7000 km) on 1st, 3rd & 4th, January. Many days produced good ZL openings with some of the better openings occurring on the 2nd January when Kerry ZL2TPY worked VK6 ADI, ARA, AKT, OX & JR and on 22nd January when Rod ZL3NW worked the VK6 ADI, ZWZ, RO, RZ & JJ. On the 13th January Norm VK7AC worked VK6 JR, GL, JJ, HX, ADI & OX and the 24th January was also an excellent day with many VK6's working all eastern states & ZL.

Openings in the eastern states occurred on most days and are too numerous to report with some short skip openings on the 1st, 2nd & 4th January with many VK3 to

VK5 contacts being completed. ZL contacts were also regularly completed from all states with the band often open from VK5 to ZL as well as VK7 & VK2, the 1st January being particularly good.

Following the marginal opening on December 14th reported in last month's notes, a much better opening to Willem DU7/PA0HIP occurred on January 8th. Willem reports the opening started about 0425 UTC and lasted until about 0700 UTC with signals much stronger. QSB was very deep and quick; sometimes signals came out of the noise, rose to S9, to be back in the noise after 20 seconds or so. Signals from VK7 were the strongest - 59++ at times. 31 different VK stations were worked (some twice) as follows:

VK1DJA, VK1ZQR (QF44);

VK2KIT (QF43), VK2BTS (QG60), VK2BA (QF69), VK2IF (QF68), VK2PB (QF49)

VK3AKK, VK3AMK, VK3GJW, (all in QF21), VK3DUT (QF33), VK3EK (QF32), VK3XQ, VK3JWZ, VK3CAT, VK3OP (all in QF22);

VK4SIX, VK4SDD, VK4AFC, VK4BEG (all in QH22), VK4ZDP (QH32), VK4CAG (QG62), VK4ABW (QH30);

VK5ZK, VK5NY (both PF94);

VK7AC, VK7XX, VK7BBW (all in QE38), VK7ZIF (QE37);

VK8RR, VK8MS (both PH57).

All stations (except VK7BBW) were worked on SSB.

Then on January 13, Willem heard VK8RR calling CQ and heard some other weak stations on SSB, but no QSO's resulted. Willem also reports that back in November (24th) he heard ZL2AAA weakly, but also no QSO and is still waiting his first ZL and will probably have to wait until next season.

Good work Willem and thanks for keeping an ear out VK way, I'm sure all VK & ZL stations eagerly look forward to working you next season.

Willem's runs 100 w from an IC 746 into 2 x 5element yagis spaced 5 m apart. Picture below:



I received the following Email from Andrew 9V1TT

Have been reading your articles in AR for some time now. Keep up the good work.

I just wanted to touch base with you and let you know that I have commenced operation on 6 m in Singapore as 9V1TT. It has taken quite some time for the establishment of my station, and the approval for 6 m operation. As you will know Selva 9V1UV has been active for some time now, and I even worked him under my old call VK8AH from Darwin.

Like Selva, I have very limited conditions attached to my approval from the InfoComm Development Agency (Ida) that is the regulatory body in Singapore. I am only permitted 65 W ERP and operation between 50.0-50.2 Mhz. This is quite a limitation, particularly in these poor conditions. Years ago (at the last sunspot peak) I was able to work 5H1HK with 10 W and a dipole so I guess things will get better when conditions improve!

Although this limitation is significant, I guess it puts me in the same league as some beacons, so my commitment (as a dedicated 6 M operator) is to have the gear on when I am in the shack. Actually 6 M is my only real interest so this will not be too hard. I am currently running an IC7800, into a Cushcraft AR-6. I have a 3-EI M2 that I will put up in due course.

I have a lot of work to do now. As VK8AH I had a 2WL M2 (9-EI) and 400 W. It took me a lot of years to get 6 M DXCC. I think it's going to be an even greater challenge now trying to get it with 65 W ERP! Currently there are only two operators (that I am aware of), Selva and me that have privileges for 6 M. I am re-learning CW. Trying to build the speed up and will be operable on both SSB and CW. I will look out for you guys and I am in a position to QSL direct. Address is VBOX 882019, Singapore

919191.

Let's hope we can get some good conditions so that I can make Singapore a reality for those that have not worked here yet.

73, Andrew 9V1TT (VK8AH)

Thanks Andrew, great news for all VK 6 m operators. It's great to have stations from near neighbouring countries looking out for VK contacts which have proved to be very feasible in the bottom of the sunspot cycle.

Please send any 6 m information to Brian VK5BC at ...