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# VHF/UHF – An Expanding World

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David Smith VK3HZ

## Weak Signal

David Smith - VK3HZ

There has been a bit of winter action during the last month. On the evening of 14<sup>th</sup> June, Brian VK5BC worked Mark VK2EMA on 2m – a distance of 840 km. Bill VK5ACY, who recently pulled up stumps from Kangaroo Island and is busily re-establishing his station in the suburbs of Adelaide, also worked Mark – an 880 km path. The following afternoon, the path from Adelaide to northern Tasmania was up with Phil VK5AKK working John VK7CEJ – 1014km.

On the morning of 23<sup>rd</sup> June, the Hepburn Tropo Prediction site was showing some interesting conditions. A high-pressure cell over the Bight brought a prediction of enhancement from southern WA into central NSW, moving to the northeast. Sure enough, Mark VK2EMA reported the VK5VF 2 m beacon at 5x9 and worked Brian VK5BC on both 2 m (5x9) and 70 cm (5x7). At 0115Z, Leigh VK2KRR worked Jeff VK5GF on 70 cm at 5x9 (768 km). Leigh then reported hearing the VK6REP 2 m beacon at Esperance – 2312 km away! A double check of the FSK frequency shift confirmed that it was indeed the Esperance beacon. Leigh quickly telephoned Bill VK6AS in Esperance to see if he could come up on 2 m. Unfortunately, Murphy had got in ahead of Leigh, and the power company had chosen this particular day to upgrade the power feed to Bill's area, so he was without power for the next 5 hours. Leigh continued to hear the beacon on and off for the next 2 hours, but could not raise any stations at the other end of the path.

However, that wasn't the end of the excitement for the day. Late in the evening, at 1300Z, Phil VK5AKK reported hearing the VK4RTT 2 m beacon at Toowoomba – 1525 km away. Brian VK5BC and Bill VK5ACY could also hear the beacon peaking to 5x1 with the callsign easily copied. The beacon continued to QSB in and out until about 1500Z by which time everyone had retired for the night. Unfortunately, it was again the case that nobody could be raised at the other end of the path, so no contacts were made.

## Winter VHF/UHF Field Day

The resurrected Winter Field Day was held on the weekend of 21/22 June. Participation was good despite the cold conditions in the south of the country, although it seemed that many chose to enter the 8-hour section, retreating to the warmth of the home QTH after operating on Saturday afternoon.

Rod VK4KZR dragged his 2.4 GHz system up to Maleny to provide a contact and gridsquare for Doug VK4OE (and to enjoy the good coffee at the Swiss Bakery / Café in the main street of Maleny). Rod's setup consists of an FT290RII driving a Minikits transverter and 300 mW PA with a HEMT LNA into a WA5VJB 2 - 6 GHz PCB Log Periodic antenna. He reports that signals were understandably excellent over the 85km (near LOS path).

Ron VK4KDD reports on the VK4WIE/3 operations at Byron Bay:

*Ron VK4CRO woke us up 3.15 am with loud music and lights, because he heard on the BBC world that it was 5 am ... It was about 9 degrees outside so it was sort of OK, but the real chill factor came from the wind. Eric VK4NEF was the real die hard of the group. He slept outside in his sleeping bag. The tower with the 23 cm antennas moved quite a bit because of the gusty winds, and we had a number of reports of*

*heavy QSB on the signal ... I think we knew where QSB was coming from.*

*Operators: Eric VK4NEF, Ron VK4CRO, John VK4MJF, Ron VK4KDD.*

*Total Contacts about 200.*

*Propagation was not real flash. But we could work any station any time in a 500 km range. Nothing in or beyond Sydney was heard or worked.*

*Our antenna farm consisted of a 2 m / 70 cm vertical, single 2 m yagi, 6m yagi and vertical, 2 x 23cm yagi with 70cm yagi above and 2 x 2 m yagi.*



### **VK4WIE/2 Antenna Farm**

*Below is a photo showing the interior of one of the van's used for 2 m, 70 cm and 23 cm. The 23cm IF (FT817) is behind the Bird wattmeter - the transverter and PA were all fitted on the mast and "waterproofed" by a plastic bag and tape. The box on the right under the table is the 2.5 kV power supply for the 70 cm amp. On the left is the 2 m amp with built-in HV supply. On top of the 2 m amp sits the 2 m transverter.*

*On the far left (not on the picture) the rotator controls. Because of the ice cold wind and possible rain we thought it would be more comfortable to operate inside one of the vans. And so it was. The temperature inside was still 19 degrees, while outside the temp had dropped to 9 degrees. The warm air from the tube amplifiers was more than welcome.*



### **VK4WIE/2 Operating Position**

Hugh VK1YYZ describes a more modest approach to the Field Day:

*I hadn't really planned on participating actually. Still, on a lovely clear if cool Sunday morning I thought I might as well at least give a few numbers out for the locals, and try a new QTH, which is about 810m ASL.*

*Radio-wise, the plan was to use the IC706 with a Gel Cell for a bit of grunt - Gel Cell which I meant to keep on float charge, but didn't and at 7.8V wasn't going to help anyone. Scratch radio option #1*

*I have a love hate relationship with my FT817 - love the rig, hate the fact that it never seems to keep charge. But, it had been connected to the PSU so ought be good, I thought. The Power button seemed to confirm this.*

*A Diamond X50 vertical (2x1/2 wave on 2, 3 5/8ths on 70 cm I think) is set aside for such occasions, so that was the antenna sorted. A length of LMR400 Ultraflex for feed is likewise on hand for such times.*

*Antenna mounting - hmm, isn't there a burnt out tree stump at the top of the hill? Sure is, and it turns out that it's conveniently rotted down the middle allowing easy insertion of a metre or so of the aluminium mast.*

*I grabbed a folding chair and a notepad and headed up to the top of the hill.*

*The antenna went together quickly and I heard Chris 2DO and Andrew 1DA pretty much straight away. Worked a couple of locals on 2 m but couldn't hear anything on 70 cm - just assumed it was antenna efficiency (or lack thereof)*

*Chris commented that I was very weak on 70 cm and the penny dropped that I still had the front antenna socket selected for 70 cm - I'd forgotten that the '817 selects per band. Chris being less than 300 m away was hearing me operating into the empty BNC socket on the front of the rig - an often-overlooked antenna option.*

*With 70 cm setup a little better, the rig immediately shutdown when I selected high (5W) power. The battery hadn't charged as much as I thought, it seems. Went to ultra low power and managed to give out a few more numbers on 2 m and 70 cm before calling it a day.*

*Seems to be a good location - very quiet. Next time I'll fashion a mount for the arrow*

portable beam to get around the vertical polarisation losses and have a bit of directivity.

Oh, and I'll make sure I have charged batteries...

Andrew VK1DA put in Saturday afternoon and Sunday morning on a mountain near Canberra in winter ... and survived to tell the tale:

*I made about 97 contacts on 4 bands. DX conditions did not seem too good. Red Hill was an adequate site but nothing special. The weather was so mild I may as well have gone to Ginini, where the forecast was for very similar temperatures to Canberra - about 2 to 14 max.*

*I operated from the car and several times started the engine and ran the heater on max to thaw my feet out - forgot to take the Ugg boots and beanie. It was only mild though compared with what I expected. In the morning there was no frost so I could carry the cold mast and antennas without much pain.*

*The nice surprise was some local interest with a number of people operating from hills using their multiband radios, or from mobile setups. In particular, Ian VK1FOTO borrowed a 3-el beam from me and then drove up to Mt Coree on Sunday morning, working several gridsquares for his first ever operation on 2 m SSB using a new FT817.*

*I had four licensed amateurs visit the site during the contest. They were interested to look at the setup, talk about why I had done things this way or that, and who were pleased to be able to look at a working portable station. They also provided some much-appreciated help in walking the antennas up and down, assembling the mast and moving the generator.*

Stjepan VK3TSN reports on the FAMPARC VK3FRC effort on Mt Donna Buang:

*The night before the contest we loaded everything into our vehicles – and even more, just in case, so that we didn't have to improvise at the Mountain.*

*The next morning, we departed around 7am, stopping along the way to fill the generator and extra 10 L canister. By that time Andrew had already arrived in Warburton so he took another 30 mins nap until we arrived.*

*When approaching the mountain, we couldn't see the whole mountain as it was hidden in the clouds. I was hoping that we might be lucky later during the day - from my past experience it can be sunny at the summit (above the clouds) and rainy in the valley. But this time it didn't happen - the clouds were much higher and there was rain and wind as well. In fact, we had rain for the whole day, from arrival to departure, with only a few short breaks. Plus we were inside the clouds all the time. The temperature hovered around 5 C and even my CFA waterproof boots somehow leaked.*

*At the summit we met two Park Rangers with whom I had an email correspondence. We exchanged a couple of courtesy words, thanking them for the use of the site.*

*Due to harsh weather conditions it took us double the time to set up everything compared to our trial run. We decided not to erect FM antennas due to cold fingers, running noses, wind and rain.*

*We finally completed setup of all equipment and antennas around noon and then started calling CQ Contest. The first hour was finished with 12 contacts on all three bands. Then BANG! Leigh VK2KRR was telling me that we've got a very strong signal near Wagga Wagga and that we should work many stations in NSW, but unfortunately it didn't happen.*

*2 hours later, it was very relieving when Andrew fired up his portable BBQ. Warm*

*pumpkin soup and hot sausages gave us plenty of energy to continue.*

*Five hours later, the enthusiasm was waning and stations thinning. My radio started playing up with high SWR - I suspect the coax or antenna connector became wet due to constant rain. We then packed everything within 1 hour and departed the site.*

*Total number of contacts: 72. The longest distance: 301 km (VK2KRR)*

*Equipment we used:*

*6m - IC706MKIIG, J-Pole Vertical Ant*

*2m - FT100d, Amp Dick Smith K-6313, 12el Yagi, Rotator*

*70cm - IC706MKIIG, 23el Yagi, Rotator*

*It will be interesting to see how we stack up on the score list.*



**The FAMPARC Team**



**FAMPARC on Mt Donna Buang**

### **First 10 GHz Contact**

Dave VK2TDN is happy to report his first 10 GHz QSO:

*Sunday 22<sup>nd</sup> June saw my first QSO on 10 GHz SSB. It has been a long time in the construction and planning.*

*The contact was over a 95 km line-of-sight path from the inner west suburbs of Sydney to Mt Gibraltar, southwest of Sydney.*

*Ted VK1BL at Mt Gibraltar was using a DEMI transverter with a 3W amp into a 650 mm offset dish. I was also using a DEMI transverter with no amp and initially, an offset dish, then moved to a pennyfed prime focus 1 m dish.*

*Ted's signal was extremely strong - whilst changing dishes, I could still receive Ted's signal easily with no antenna connected to the coax! A tribute to both the power Ted was transmitting and the hot receiver in the DEMI transverter.*

*With the prime focus dish, Ted gave me a 5x9+ signal and I gave him a 5x9+++ - off the end of the scale. A 20 dB attenuator inline brought Ted's signal down to 5x9+20 or so and my signal down to a 5x4 - and my Tx level down to 0.2 mW at the antenna.*

*Looking forward to increasing the path distance and improving my offset dish feed, which was far from optimum as demonstrated when we moved to the second dish.*

*At Ted's end of the link helping out was Owen VK1OD and at my end Jack VK2TRF, my regular "partner in crime" when it comes to microwave hilltopping activities.*

Please send any Weak Signal reports to David VK3HZ