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# VHF/UHF – An Expanding World

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## Weak Signal

David Smith VK3HZ

There has been a bit of resurgence on the bands with a slow moving high across the Bight producing some excellent conditions to the west from VK3. From Melbourne, I managed to work Colin VK5DK in Mt Gambier on 1296 MHz with signals 5/9+. Colin also heard Charlie VK3FMD in Melbourne on 2403 MHz – Colin using his 1296 MHz antenna! The Esperance beacon was also audible in Melbourne but, unfortunately, no stations could be raised at the other end.

Unfortunately, the numbers across the Bight have diminished, at least temporarily. Bill VK6AS from Esperance is currently spending an extended period in Perth and his large antenna array on 2 m (8 x 16 element yagis) has succumbed to wind damage, suffering a broken horizontal boom and requiring extensive repairs. This leaves 91 year old Wally VK6WG, in Albany, as the only resident serious weak signal operator on the south coast of Western Australia.

6 m has also been fairly lively of late. Stations reportedly worked from VK include JA, W6, W7, KH6, XE (Mexico), BG (China), EZ (Turkmenistan), BG9 (China) and HL (Korea).

Doug VK4OE has been active “hotel room portable” around the countryside on 144 MHz, 2.4 GHz and 10 GHz. Earlier in the year, he was active in inner Melbourne and managed a number of contacts. Then, in May, he worked Wally VK6KZ while in Perth.

Ian VK1BG reports working his 100<sup>th</sup> VK3 SSB station – VK3ESE – on 2m. It has taken him 20 years to achieve this but, after the initial rush, he has seen a steady build up of new VK3 stations in recent years. Ian is a regular on the morning aircraft net and is always a good signal into Melbourne, working stations on 2m, 70cm and, occasionally, 23cm.

Speaking of the aircraft net, Gordon VK2ZAB raises a good point. In general, most of the net operation occurs up the east coast of Australia, between Melbourne, Sydney and Brisbane. However, the upper limit for aircraft-enhanced contacts is generally accepted to be around 700 km – or about the distance from Melbourne to Sydney and Sydney to Brisbane. Thus the Sydney stations find themselves as the meat in the sandwich, needing to beam north and south. To overcome this, the net is divided into two for the Sydney stations, with 7am to 8am set for contacts to the north and 8am to 9:15am for contacts to the south. However, stations to the north and south of Sydney should not just operate within these time blocks. For a chance to work further than Sydney, southern stations should start before 8am and northern stations should continue operation after 8am. Hopefully they will find that the upper limit is greater than the currently accepted 700km.

## **VHF DX Net IRLP linkup**

Guy VK2KU reports that the weekly FM net of the NSW VHF DX Group is now accessible to anyone who has access to an IRLP linked FM Repeater. This net takes place each Sunday at 11 am EAST on the Blue Mountains Repeater on 147.050.

The net has provided an opportunity for VHF DXers to get together to discuss any issues of interest, technical or otherwise. But more importantly, it provides an opportunity for other stations not equipped for weak signal SSB to listen or join in the discussions.

The Blue Mountains Club has now arranged for their repeater to be connected (for the net) to their IRLP Reflector. Anyone that wants to join the net from a remote IRLP node will need to connect to reflector 9505. All you need to do is send DTMF tones 9505 in a single transmission to your node, and it should connect.

It is hoped that VHF DX friends from across Australia (and beyond) will join in the discussions each week.

## **GippsTech 2003 – July 5 & 6**

The 2003 Gippsland Technical Conference is just around the corner. For anyone interest in building and operating in the VHF, UHF and Microwave bands, this event is not to be missed. The venue is in Churchill, which is approximately 170 km east of Melbourne. Formal sessions will be held on Saturday followed by a Conference Dinner. Sunday will have some short talks, and demonstrations of equipment and techniques. Lunch is provided on both days and the cost is included in the (very modest) registration fee.

For more details and online registration, go to <http://www.qsl.net/vk3bez/>.

## **New VK4 24 GHz record of 90.5 km.**

Russell VK3ZQB reports on his microwave exploits up north in late April:

Colin VK5DK, Bill VK3AMH and I travelled up to VK4 to conduct some microwave contacts and have a holiday as well. We met up with Errol VK4ZHL and set up some contacts with Neil VK2EI. Our first contact was from Mt Matheson north of Lismore to Point Lookout in the New England ranges near Dorrigo, a distance of 230.7 km. We had good signals from Neil on 10 GHz, but could not hear anything on 24 GHz. We returned the next day but were driven off the hill by drizzly rain.

We moved to another location near Cape Byron and Neil VK2EI set up near his home QTH on a hill called North Brother. Contact was made on 10 GHz but signals were very poor. I used my transceiver with its 2 watts output and

Neil was able to hear me on SSB. Neil only has 250 mW and had to use CW to pass on his report.

We went back to Errol's QTH at Beachmere and planned our trip north. Our mission was not to break records but to look at some suitable microwave sites and be a tourist. Colin, Bill and Errol called in on VK4TZL at Hervey Bay and had some contacts with him on 10 GHz.

I met up with the group again at Rockhampton where we spent a couple of days looking at suitable microwave sites. There was little or no propagation and we had a few contacts on 10 GHz with average results. We tried 24 GHz from a few spots with distances of 100 - 130 Km but without success.

I was going to drive to Cairns and Colin, Bill and Errol were returning south. We had one last contact from Mt Archer near Rockhampton to lookout hill in Gladstone. I worked Colin, Bill and Errol at Gladstone on 10 GHz with 5-9 reports, then again on 24 GHz with 5-5 signal reports. The 24 GHz contact extended our previous VK4 record of 74 km to 90.5 km. The National 24 GHz record is owned by Colin VK5DK and myself, a distance of 200.8 km.

The equipment used in this latest expedition was a 10 GHz 1 watt Qualcomm transverter with 432 MHz IF owned by Colin VK5DK, a 2 watt 10 GHz DB6NT transverter with 144 MHz IF owned by VK3ZQB and 2 24 GHz 70 mw DB6NT transverters owned by Colin and myself.

## Digital Modes

Leigh Rainbird - VK2LRR

This month, the usual writer of this column, Rex VK7MO is out on a DX-expedition with VK7TS at Lord Howe Island, grid square QF98. The two are operating under the call sign of VK9LS and are activating the Island on many bands including 2 m, 70 cm and 23 cm using modes such as FSK441, JT44, VFSK CW, CW and SSB. Lord Howe Island is within meteor scatter range of VK2, VK3, VK7, southern VK4, eastern VK5, ZL and FK8.

Equipment being used is an IC-910H, running 100 W into a 10 element 2.3 wavelength Yagi on 2 m. 75 W into a 17 element Yagi on 70 cm. 10 W into a 45 element Yagi on 23 cm.

Unfortunately, so far, Rex has had a poorer than expected location for tropo paths using JT44 and SSB. Bad weather had also damaged some of the antenna's requiring urgent repairs, and so has been mainly making contacts using FSK441 meteor scatter, but has also had some success with JT44 via the Moon (EME).

At time of writing, Rex had completed FSK441 contacts with – VK4TZL, VK4KZR, VK2FZ, VK2AKR, VK2KU, VK2AWD, VK2JJK, VK2FLR, VK2TK, VK3KAI and VK3FMD.

Rex had copied signals but not completed contact on FSK441 with – VK4ZR, VK1BG, VK2EI, VK3UM, VK3CY, VK3DD(U?) and VK3AFW.

Rex had managed to work three stations on 144 MHz EME using JT44. These have mainly occurred at Moonrise or just after. First contact was with Dave W5UN, completed in just over an hour. Rex also completed JT44 EME with KB8RQ and KJ9I. Also VK2CZ reports that he was able to partially decode signals from VK9LS at moonrise.

Rex will be back with a full report next month.

## **2 & 70 FM DX**

Leigh Rainbird VK2LRR

I mentioned in last month's report that, as we get into the colder months, we will see less duct openings and only shorter distances workable. I must admit, the month of April hasn't gone too badly and it's still looking good at the time of writing.

Significant ducting conditions occurred around 4 times during April.

The morning of the 9th saw good conditions around VK3 and also into VK5RMG Mt. Gambier repeater at around 650 Km.

Saturday the 12th was an interesting one in that there appeared to be an Evaporation Duct, which formed after extensive rainfall on Friday night and early Saturday morning followed by a warm mid morning and afternoon. The duct itself began to appear just before midday and gave good enhancement down through central and western VK3 until some time in the evening. Some of the stations contacted were VK3ANW who at midday was 5/9+20dB, Ararat repeater was 5/9 at 410 Km.

On the 14th of April a duct occurred around midnight, which took in what I'd call the Murray River path. This takes in Swan Hill, Robinvale and Mildura. This only lasted about an hour.

The big one for the month lasted a number of days starting on Easter Sunday morning, the 20th of April, and was last noted Wednesday morning the 23rd, but much weaker. This developed after an intense HIGH pressure cell wound its way from the Bight, moved to the south of Tasmania, travelled north across the centre of Tassie and ended up in the Bass Strait. A LOW-pressure cell near NZ was blocking its easterly travel and so it moved west and steadied near Mt Gambier. It was at this point that the good conditions began. Very good signals were noted in the far south of VK3 and across to VK7, with stations east of Melbourne making effortless contacts to Mt Gambier and closer areas as well. Repeaters noted this way included Mt. Gambier 650 Km and Naracoorte 600 Km in VK5. In VK3 most distant were Otway Ranges 486 Km, Ararat 410 Km. Furthest simplex from here made to Geelong with VK3VSW 404 Km, 5/9; and VK3KOS at Sunshine, around 350 Km at a 5/7 signal. Chris VK3VSW also reported simplex contacts from Geelong to Penguin in Tasmania with VK7LCW Peter, on 2 m was 5/7, on 70 cm was 5/2 at 360 Km. Kevin VK5OA in Mt Gambier reports that simplex contacts were easy for him right across to the eastern side of Melbourne, which still saw S9+

signals at over 445 Km. No doubt there were many other interesting contacts made during the strong duct conditions.

Stations noted as working from hilltop portable during April were VK3VTX Gavin, on Mt. Tamanic near Glenrowan was 5/9; VK3KBF Bert, was up at Mt. Buffalo with a 500 mW handheld and was a 4/3 signal here; VK3FIQ Geoff, went to the Grampians and peaked at 5/5; VK5KCX/3 Barry was at a Hill top near Castlemaine, signal to 5/7; VK2LGB Lachlan, was on a hill at Batlow with a handheld and not copied here.

As the saying goes "Activity creates activity", this is what I have been trying to get happening lately by being more active and calling on the National FM Calling frequency of 146.500 more often. There have been some interesting times had with operators making contacts and watching the varying conditions from the bottom of VK3 up into southern VK2, with most stations able to hear each other seemingly around 50% of the time without strong ducting. Stations active for April included VK3ANW Noel, VK3HEN Darren, VK3TEX Les all at Kyabram; VK3XDP Peter, VK3GOM Graham, VK3JGL Graham all at Bendigo; VK3VSW Chris at Geelong (404 Km); VK3DSF Max at Shepparton.

I'd like to hear from other Amateur's around Australia who may have made long distance contacts on 2 m and 70 cm FM, on simplex, or to distant repeaters in the previous few months, for possible inclusion in future columns.