
VHF/UHF – An Expanding World

David Smith VK3HZ
Leigh Rainbird VK2KRR

Weak Signal

The generally poor band conditions on 2 m were brightened by an opening from Melbourne to the west on the evening of July 18th. Richard VK5USB to the north of Adelaide, Bill VK5ACY on Kangaroo Island and Roger VK5NY in Adelaide were worked by a number of stations in Melbourne and further east. This opening was exactly as predicted by the Hepburn VHF/UHF Tropospheric Ducting Forecast site (www.iprimus.ca/~hepburnw/tropo_aus.html) so it's worth keeping an eye on things even in the colder months.

Speaking of propagation predictors, a presentation given at the recent GippsTech conference sparked the interest in this area. Jim VK3ZYC spoke of using weather radar anomalous propagation as an indicator of band conditions. The web site www.weatherzone.com.au provides almost realtime weather radar information from around Australia (you do have to register first). When conditions are good, the radars can receive anomalous returns from long distances displayed as activity on the Lightning Tracker screen. However, there is no corresponding cloud cover shown on the Current Weather screen. These anomalous returns are due to reflections from much more distant objects being returned to the radar during the following pulse period. We need some good conditions so that this can be examined in more detail.

Robbie VK3EK with his Wednesday evening Net on 144.150 is still attracting a crowd and it is good to see some newcomers appearing on the SSB end of the band including David VK3ZDR in Geelong and Mike VK3UBM in Hawthorn. Mike initially came up with his FT-817 into a vertical whip in his flat and was able to work the Melbourne stations but no further. The next week, encouraged by the results, he'd built a 3 element beam and managed to work down to Moe. Who knows - before long he might have 4 x 13 el and an AM17 – we can only hope!

Rex VK7MO has also joined in on the Wednesday evening activity, although in a different way. He will be active most Wednesdays from 2030 AEST beaming towards Melbourne using JT44 on 144.225 or 432.225. He has already managed to consistently work Chas VK3BRZ, David VK3XLD and Charlie VK3FMD on 70 cm.

EME

Following Guy VK2KU's words on EME and digital modes, there have been a number of people enquiring about EME operation. There is an excellent article called "Getting Started on 2 Meter EME" written by Bob Kocisko K6PF and available on the net at www.gm4jjj.co.uk/K6PF/k6pf.pdf. The references in the article also point to a number of other excellent EME web sites from the likes of W5UN, N1BUG, GM4JJJ and others.

One thing to consider before diving into building and erecting an EME-capable station is the band on which you will operate. While 2 m seems to be the most popular band, at least in terms of active operators, 70 cm should be given careful consideration. Whether you are building or buying equipment, 2m and 70 cm are probably on par. However, on 70 cm, antenna arrays are smaller and less visually dominating (important in an urban environment), TVI is less of an issue (again important with the neighbours) and the sky is much quieter. It's worth considering.

Microwave

There seem to be lots of construction projects happening at the moment – possibly something to do with winter. A number of 10 GHz operators in Melbourne and Gippsland are following the lead from the Western Districts and are building gear for 24 GHz. This was helped along by the appearance recently on the US EBay site of a number of 1 W 24 GHz amplifier modules. A bulk lot of these amplifiers has found its way to VK3 and will be put to good use. All have now gone unfortunately.

Stations in North America are exploiting a different form of propagation enhancement to extend their operating distances. VE4MA in Winnipeg recently worked W0ZQ/0 in Minneapolis on 10 GHz rain scatter over a distance of 635 km. Severe thunderstorms were occurring at the time in northern Minnesota in a direct line between the two stations. Signal reports varied between S7 and S9 with the typical rain scatter (aurora like) tone. This contact appears to be a new US to Canada 10 GHz record. The Australian 10 GHz record currently stands at 1912 km for a contact between VK5NY/5 and VK6KZ/6 in 1994.

2 m & 70 cm FM DX

What an adrenalin rush it is to come home in the evening, switch the transceiver on to find repeaters, many hundreds of kilometres away, being received full scale on the meter.

This is what happened when I arrived home on Friday evening, the 18th July. This is one duct opening I won't forget, and being the middle of winter, it was most exceptional. As soon as the radio was switched on there was a signal from the Ararat 2 m repeater (410 km) which was full scale. After the scan resumed the radio stopped on 146.900, Mt Gambier (630km) which was S9+20dB, just magic. More on this opening later in this month's report.

It was reasonably quiet during July in the southeast and I have had no reports from other corners of the country.

In the evening on Wednesday the 9th July there was slight enhancement around central VK3 and a duct showing in eastern VK5 areas. Brian, VK5ZMB in Gawler reports good 70 cm conditions across the two Gulfs to Port Lincoln and into Berri on 2 m. David, VK5HDW in Millicent was able to get to Ararat on 2m and also reported good 70 cm conditions.

The big one for the month began building up from around Monday the 14th with good high pressure cells dominating the weather charts, and clear sky's with relatively calm days. A front moved through around Tuesday night but was kept relatively confined to the south and luckily dissipated quite quickly. Conditions were slightly enhanced most of the week and things remained calm enough so the duct was able to reach a workable level on the afternoon of Friday the 18th. Some great signals were passed between a number of stations taking advantage of the rare conditions.

VK5ZMB Brian reports that from his QTH near Adelaide he was able to work a number of 2 m repeaters across Victoria, including Mt.Macedon, Ararat and a few other Melbourne repeaters. These work out at around the 600 km mark for Brian, who has just recently got his 8 element vertical yagi in the air, which already seems to be paying dividends. Brian was also able to work simplex on 2 m to VK2KRR near Wagga at 764 km and reported hearing the Wagga 2 m repeater but being unable to work it.

Contact was made simplex from John VK5NJ in Mt. Gambier to VK2KRR near Wagga on both 2 m and 70 cm (632 km), with received signals from VK5NJ peaking at 5/6 on 70 cm and 5/7 on 2 m. A great effort from John who I believe was running only an omni directional antenna on 70 cm, where as I was running a 27 element ATN yagi.

The only other significant simplex contact I heard of was between Greg VK5THA and VK2KRR. Greg is located in Northfield, near Adelaide; this was 771 km and the furthest simplex contact noted.

Most distant repeaters worked on 2 m from here at VK2KRR were VK5REP at Cowell on 146.800. At 961 km this was rather difficult to access and only lasted about 5 minutes. Aside from this, Port Augusta VK5RAE was relatively easy to get with 5 watts at 910 km. VK5RAH was quite good at 747 km using only 6 watts. Mt. Gambier at one stage was easy on only 2.7 watts at 630 km.

A good run on 70 cm repeaters using only a single ATN antenna produced great results. VK5RAD in Adelaide on 438.575 (764 km), VK5RSB in Summertown on 438.125 (760 km) and VK5ROH in Mt. Gambier on 438.575 (630 km) could all be accessed.

A path to at least one area of VK5 was present all through the night and most of Saturday, weakening significantly at 11am. Weak signals persisted from the likes of Murray Bridge, Lobethal and Port Augusta most of the afternoon until, at 7.30 pm, they were gone.

Its great to hear of a growing number of stations getting the DX bug and organising new antenna set up's and experiments to further improve their station ability; including VK2PDW in Wagga, VK3EME in Bendigo, VK7HDM Gagebrook, VK1TB in Canberra and VK3HGC in Wangaratta.

FM DX Season Tally Competition Logs are being accepted during the first week of each month. If you are just starting out or updating your existing tally, please send it by email to vkvhffmdx@bigpond.com. You can also view the updated tally table at www.users.bigpond.com/vkvhffmdx. With enough log submissions we will print some results every few months in AR mag.