

VK9LS LORD HOWE ISLAND DXPEDITION – VHF/UHF COMPONENT

By Rex Moncur VK7MO VHF/UHF operator of VK9LS

Trevor, VK7TS, planned this Dxpeditio n as a HF project. When Trevor talked about his project at the VK7 WIA Southern Branch Wednesday lunchtime get-together I said I would be interested in coming along and trying some 2-metre meteor scatter with FSK441. Lord Howe is around 780 km east of Sydney and in meteor scatter range of VK2/3/4/5/7 as well as ZL and FK8. The idea of activating VK9 on two metres had a special appeal.

Trevor readily agreed to my joining although at the time he had no idea how incompatible a side-by-side HF/VHF operation would be.

Lord Howe Island is roughly 10 km by 2 km, of saddle shape, with mountains of 800 metres at the South East end and hills of 200 metres at the North West end. It has a permanent population of around 350 and at peak times has up to 400 tourists. The town and accommodation is, as Murphy's Law predicts, at the low part of the saddle.

Aside from amateur radio Lord Howe is a magnificent place to visit with dense rain forests and steep mountains and a coral reef lagoon. A plaque at the Lord Howe Island airport records:

LORD HOWE ISLAND GROUP

This Island system of great natural beauty was formed from submarine volcanic activity and contains an enormous diversity of rare and endemic animals and plants. Enscribed on the UNESCO convention World Heritage List 14 December 1982.

EQUIPMENT

The key to an expedition of this type is to make sure you take every one of the dozens of critical items you need to be operational. At the same time we were told by QANTAS that the small aircraft limited us to 14 kg packages with a maximum length of 1.4 metres. Further only one package was guaranteed but up to a further two could be sent as excess baggage with the proviso that these might come on later aircraft. Another 4 kg could be carried as cabin luggage.

The prime item was an IC-910 H transceiver that provided 100 watts on two metres, 75 watts on 70 cm and 10 watts on 23 cm (5 kg). A Cosel 55 amp switchmode provided the DC for another 4 kg. An antenna feeder, digital interface, audio cables, DC cable, AC lead, mike and a few clothes and personal items to provide soft packing and the first 14 kg (in fact a little over) was gone.

For cabin luggage I took the Laptop and GPS for locking time.

The next priority package was reserved for antennas. These were all designed specifically for the project so they could be easily assembled. Two metres had 10 elements on a 4.6 metre boom (only 2.3 wavelengths), 70 cm, 17 elements on a 3.3 metre boom and 23 cm a choice of 22, 33 or 45 elements on up to a 4 metre boom. For simplicity and reliability I stuck to the proven split dipole and my normal half wave sleeve baluns for both 70 cm 23 cm. For two metres the half wave sleeve balun is too large for easy packing and a 3xferrite core sleeve balun was employed. A five-section mast made of 1.3 metre sections of 25 mm tube, coupling sections, guys, pegs and bottom locking unit completed this package.

The final package of 50 items included pre-amps for 70 and 23 cm, additional feeders, tools, AC power board and extension lead, compass, alarm clock, log book, telephone list, insulation tape and clothes. I reluctantly decided I could not take my Bird wattmeter or a multi-meter or soldering iron. Trevor did take a small multi-meter.

Trevor had advertised the Dxpediton and had mentioned the VHF capability and received a response asking for EME on JT44. I also checked my e-mail before leaving Sydney and had a request for EME. I had thought EME was beyond my small antenna and 100 watts and did not have a 2 metre pre-amp. Nevertheless I said I would give it a go.

When I arrived at Sydney airport I said I understood the limits on luggage and had allocated priorities and also understood there would be an excess baggage fee. The man behind the counter said most people do n't worry about all that and take more than you have so I will just put it all through at no extra charge! I met Trevor, who flew up from Hobart, and we arrived at Lord Howe late on the afternoon of Saturday 3 May.

LOCATION OF STATION

Trevor had selected accommodation at a place called "Ebb Tide" that has been used by previous HF Dxpeditons. It is on the North East side of the island and has a good take-off from the North West through the North and to the East. Its major advantage is that it has separate self-contained accommodation units so one can continue Ham activity throughout the evenings without waking other residents. A topographic map of the island did not have the resolution required to make a good assessment for VHF but it seemed to be as good a site as any other.

After arriving at the site I did a more careful reconnaissance and this showed a clear water take-off to FK8 and as far East as a little North of Brisbane. Unfortunately Brisbane was in line with a 200 metre Hill some 3 km away and this ruled out tropo propagation but should allow meteor scatter. Hills restricted tropo propagation further south dropping to an angle of around 5 degrees towards Sydney and two or three degrees towards Melbourne and Hobart. In effect this limited operations to meteor scatter. There was a clear take-off to the North Island of New Zealand but the South Island was restricted by 800 metre high mountains about 6 km away. While these mountains were too high to allow even meteor scatter it seemed just possible to get a meteor scatter signal

around the North side of these mountains to Bob ZL3TY by using the more northerly meteor-scatter "Hot spot".

The limitations of the site for meteor scatter to VK3/5/7 and tropo/ aircraft scatter were such that after the first week I moved to a place called "Capella" that had a water-take off to VK3. The disadvantage of this site is that it is Motel style accommodation with paper-thin walls so you cannot operate on voice while other residents are sleeping.

On our first night the winds increased and in the morning Trevor's HF mast was on the ground. I was pleased that my two-metre antenna was still up. I was a little premature in this assessment as the next night I woke at 2 am to the sound of my two-metre antenna banging on the roof. I got up and found the mast had bent and Trevor helped me pull it down and we went back to bed. Fortunately the antenna had survived and as I was using only four of the five mast sections the bent section could be replaced.

OPERATIONS

After restoring the antenna VHF operations commenced on Sunday 4 May on FSK441 with the following contacts:

Times and dates are in UTC, on 144 MHz unless otherwise stated

Date	Time	Station	Mode	Sent	Rxed
3 May 03	2012	VK4TZL	FSK441	37	26
	2043	VK4KZR	FSK441	36	26
	2124	VK2FZ	FSK441	36	26
	2228	VK2AKR	FSK441	26	26
	2109	VK2KU	FSK441	37	26
	2210	VK3KAI	FSK441	16	26

Other stations seen VK4ZR, VK2JJK, VK2FLR, VK2AWD, VK3FMD, VK3AFW

While I did work Peter VK3KAI, there were very few pings from the VK3s and nothing at all from the VK7s so it was clear that the hills were having a major impact on meteor scatter in these directions.

4 May 03	2040	VK3FMD	FSK441	16	26
	2230	VK2AWD	FSK441	16	26
	2310 -0015	W5UN	JT44	OOO	RORO best -21 dB

Other stations seen VK3CY, VK3AFW, VK3JJK, VK2FLR

5 May 03 beaming ZL

2000-2200

Lots of good pings from ZL3TY but he saw only one poor ping. Also saw VK2EI off the back of the beam.

6 May 03	0136	W5UN	JT44	OOO	RORO best -17 dB
	2013	VK2JKK	FSK441	26	16
	2147	VK2FLR	FSK441	26	26
	2206	VK2TK	FSK441	28	27

Also saw VK2EI, and useful pings from ZL3TY

7 May 03 Beaming FK8

Lots of pings from FK8CA and sent 16 report and received 26 report but no RRRs to complete contact.

8 May 03	0326	KB8RQ	JT44	RO	OOO best -23 dB
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Beamed FK8 2000 -2200 and saw useful pings from FK8CA but did not get a report.

9 May 03	0312	KJ9I	JT44	OOO	RORO best -22 dB
	0335	W5UN	JT44	OOO	RORO best -14 dB

Also saw N5CLZ or was it N5BLZ but could not complete. EME is much harder when you have no idea of the call sign of the station calling you.

Moved location to "Capella" on the South West of the Island.

Made attempts with VK4AFL on tropo on 432 and saw his signal in 0.3 Hz BW but could not detect each other on SSB. After careful checking it appears that he was still obscured by hills. I have to conclude there is no suitable place to operate tropo/aircraft scatter to Brisbane on the Island. Also saw VK2EI on JT44 and sent 2121 and Rxed 2424 but did not complete.

10 May	0335	VK2KU	JT44	0909	1414
	0452	VK2JKK	JT44	2020	0909
	1232	SM7BAE	JT44	RO	OOO best -23 dB
	2010	VK3AFW	FSK441	16	26
	2039	VK3CY	FSK441	27	26
	2054	VK3UM	FSK441	38	27
	2120	VK7JG	FSK441	16	26
	2210	VK7DM	FSK441	27	26
	2250	VK3AXH	FSK441	28	27
	2330	VK3HY	FSK441	16	26

Also saw on FSK441, VK3ANP and VK3HZ. Heard VK2KU on SSB sent 5-1 and Rxed 4-1 but did not complete.

11 May 03	0319	VK2KU	JT44	1717	1616
	2046	VK3AEF	FSK441	36	26
	2023	VK3HZ	FSK441	16	26
	2207	VK3BWT	FSK441	16	26
	2300	VK2ZAB	SSB	5-4	5-4

Also saw HB9Q at best -17 dB on JT44 but did not complete
 Also saw VK3ANP and VK3AUU on F SK441

12 May 03	0220	VK2KU	JT44	1212	1515
	0354	VK2KU	SSB	5-1	4-1
	0504	VK2KU	JT44	1515	1919 432 MHz
	0528	VK2ZAB	SSB	5-1	5-2 432 MHz
	2014	VK3AUU	FSK441	27	37
	2101	VK5DK	FSK441	36	26
	2204	VK2EI	FSK441	36	26

Also saw VK3ZYC

13 May

Had to move to another unit at "Ca pella" and did not pu t up the 2 metre or 70 cm antenna.

Made attempts on 1296 M Hz with VK2ZAB on SSB and VK2DVZ on JT44 without seeing any signals either way.

ACKNOWLEDGEMENTS

A big thank you to Trevor VK7TS, who not only invited me on his Dxpedition but found he had to cease transmission for many hours while I tri ed to make weak-signal contacts. In one case it took me two hours to complete with KB8RQ and Trevor could have completed 100 contacts in this period.

Thanks to all who spen t hours at the other end waiting while I worked other stations.

The persistence award goes to Neil VK2EI, who I saw something of nearly every day but did not complete until the final day of two-metre operations.

SUMMARY

A very pleasing result in making:

- 24 two metre FSK441 contacts covering VK2/3/4/5 and 7.
- 4 JT44 two metre EME contacts including USA a nd Sweden
- 2 SSB contacts on two metres to VK2

- 1 JT44 and 1 SSB contact on 432 to VK2

A little disappointed I could not complete with ZL3TY or FK8CA, but you cannot expect everything.

The most unexpected result was the EME contacts with just 100 watts and a small yagi. These were fortuitous as while I did not plan it the period 9/10 May was one of the best possible for EME in 2003.