The 144 MHz EME-NewsLetter

Issue 10/2005
9 Oct. 2005

VK9CMO/VK9XMO – A "Full Service" DXPedition

Rex, VK7MO, is well-known for his good EME signal from his home QTH in QE37PC, Tasmania. But not only from there he can be well copied…in August and September Rex invested some weeks time to bring two very rare DXCCs on the air - actually on the moon. The Cocos Keeling Islands (VK9C) and the Christmas Islands (VK9X), entities that are even rare from a HF DXers perspective.

At the end of the day there were 67 stations worked on 2 meters from VK9C and 86 stations from VK9X, with lots of "Firsts", not quite surprisingly. Rex writes "I do not count repeat contacts but do count contacts with the same equipment but different call signs. All contacts except one were on EME, with the only terrestrial contact being VK6KDD over 1767 km on tropo on JT65b. Even some EME-QSOs on 70 cm were completed.

The full story and the full list of decoded information at VK9C and VK9X are available at Joop, PA0JMV's website: http://home.planet.nl/~pa0jmv

Rex writes about some interesting observations he made during this weeks long trip:

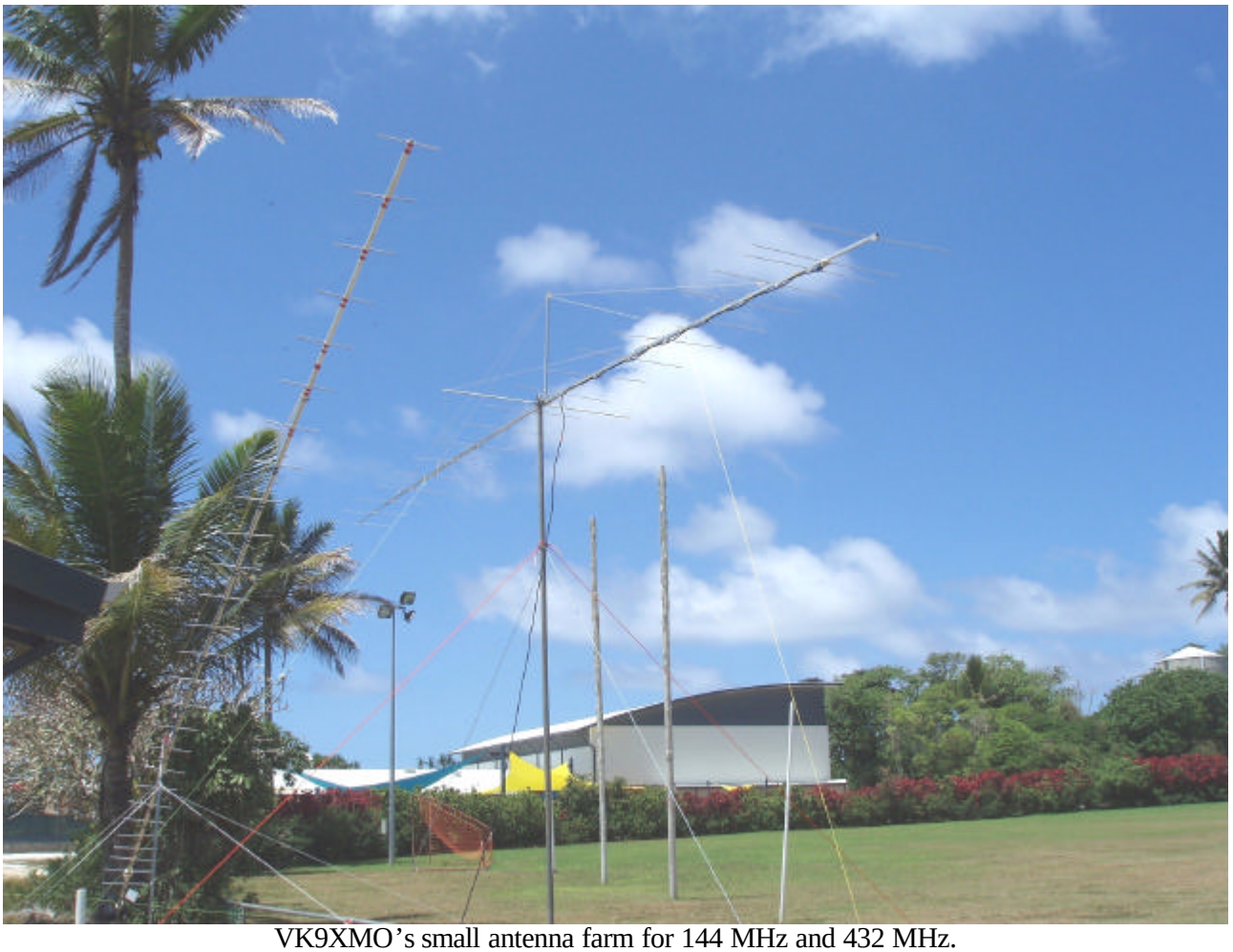
1. Predicted good moon conditions do make a significant difference in the number of stations worked and particularly small stations. I suspect this is partly moon conditions and partly the fact that more stations come on.
2. It is best for stations to keep calling even when I am working others as the normal sequence of a QSO when I am calling someone is that I am looking for an RO and then 73 as a short-hand message and these can be seen on Spectran in the presence of other signals. The advantage is that I can decode additional stations with the Freeze/Tolerance and be ready to go back to them immediately I see 73.
3. An important thing for me when tracking a number of stations is that stations do not retune once they have started calling me. I was confused on a few occasions when after calling a station they would come back with ROs on a different frequency.

4. The use of the standard, procedure in WSJT of alternating down the lines is the most efficient and helps me work more stations and is thus fairer to all. Those who respond to my RRR with RRR are taking time away from the potential contact of others. As I already have RO (the R is confirmation that you have both call signs and the report) all I need is 73 and I can go on to the next station.

5. While Dave, VK2AWD, reported that some people had birdies on 144.146 and wanted skeds on another frequency my belief is that staying on one frequency where people know you will always be, is by far the best for optimizing the number of stations worked.

6. While the majority of stations are stable to within a few Hz quite a few drift 20 Hz or more. While the AFC on WSJT can follow this on a strong signal - those who drift should be aware that they are giving up the last few dB of performance(signal reports are misleading in measuring performance as a drifting signal may decode at -30 dB when its real level is -20 dB). I suggest we all give more attention to checking our drift so we can all improve our performance and perhaps all run JT65a on 2 meters, which not only gives a further 1 dB improvement but would also allow three channels in an SSB passband which would be of assistance for Dxpeditions when multiple stations are calling.

Rex has already sent QSL cards to all stations worked for whom he had addresses and he will respond to the remainder on his return home. So many hams had their QSL already received while Rex was still on site...what more can one hope for? Sure it is no exaggeration and also it doesn't diminish other dxpeditioners' accomplishments but Rex' activity sure was one of the best dxpeditions of the past years: A huge success - and even without internet, telephone, dxcluster etc etc...just an experienced operator and optimum equipment.



VK9XMO's small antenna farm for 144 MHz and 432 MHz.

Activity Updates

Progress Report EME For Africa

Hal, ZS6WB, sent a progress report on the current "EME for Africa" Project: "My apologies for the long interval since the last project progress report sent in July of 2004. At that time we saw little response to the reports and we felt that the time spent writing them could be better utilized in promoting more local operation and introducing more African operators to VHF DX operation with an emphasis on the WSJT modes. As a result several talks and demonstrations have been done at club meetings within South Africa during the past few months and WSJT is now an accepted part of our local VHF contest operations. During this period we have also continued to promote and encourage operation in our neighbouring countries in Southern Africa.

The project took a huge leap forward in 2005 when we found two enthusiastic new recruits to the project who operate on occasion from other African countries. Although both are relatively new to VHF DXing and to WSJT they learned quickly and as a result of their efforts with a little help from our support team some rare callsigns including 9J2JD, 3DA0JR and 7P8/ZS5JR have started to appear in at least a few 144 MHz EME logs. At the same time we have all learned some valuable lessons about what is needed to improve signals and reliability from our stations operating in the field. The search for the best antenna system continues with different problems encountered on each trip. Some trips have used small fixed-elevation antennas that can be quickly assembled and installed by one person without guys for short periods of operation while other trips being planned stages are for several days allowing installation of a portable multi-Yagi array with elevation rotation.

A shortage of suitable equipment is still a problem and though Hannes, ZS6JDE now has a good basic 2m system for his trips to Malawi and Zambia (FT-857/TE Systems 300w amp) other problems plagued him on his last trip when a power supply and antennas failed to stand up to the jolting encountered on rough roads during the trip.

Daniel, ZS6JR used a 5WL yagi with elevation control on his last trip (7P8/ZS5JR) with some success but guy failure in high winds brought the antenna crashing to the ground after the first contact and it had to come back to Pretoria for repair before further contacts could be made and then only limited time was available before having to QRT. A typical problem Daniel encounters during his trips is operation from remote locations without internet access for scheduling and real-time updating of the computer clock. He also doesn't have a laptop computer of his own and the one he borrows for trips sometimes doesn't get updated with the latest WSJT software due to a lack of time before departure. The clock is updated manually on site using a GPS for reference but the computer used is unstable and drifting time has lost a number of contacts.

Accomplishment to date

Since the last newsletter initial efforts were concentrated on generating more activity locally with the WSJT modes and identifying operators who travelled to neighbouring countries and we were extremely fortunate in recruiting two well-qualified candidates.

Daniel, ZS6JR (also ZS5JR) is a self-employed electronicsechnician based near Johannesburg who specializes in repair of amateur radio equipment and also supports the DXpeditions organized by

Frosty, K5LBU to countries in Southern Africa. They have two trailer-mounted towers available and Daniel usually goes out ahead of the DXpedition to install HF antennas depending on the wishes of the client. With larger expeditions to remote sites he then normally stays in the event of equipment problems. During the waiting period he has time to operate as was the case during the 3DA0JR operation. Other times he may only be on site at the beginning and end to install and take down antennas as happened recently in his 7P8/ZS5JR operation when he also supported the 7P8/JH4RHF operation.

Recently ZS6JR was QRV from Lesotho using the callsign 7P8/ZS5JR

Hannes, ZS6JDE is a missionary based in Pretoria who travels frequently to countries such as Zambia and Malawi. On his first trip to Zambia he used a small 7 element fixed-elevation yagi and made a few 2m EME contacts although most of these were limited to large stations in the U.S. as the moonset window to Europe was poor at the time. His next trip included Malawi but power supply mechanical failure resulting from the rough roads early in the trip eliminated any chance of EME contacts. More trips are in the pipeline so watch this space.

Pine, ZS6OB also plays a very important part of the project keeping the antennas in tip-top shape when high winds and rough roads take their toll. He is based in Pretoria and is self-employed so the large amount of time he spends repairing antennas is time lost to his income-generating activities. When it comes to antennas he is a perfectionist so you can rest assured that at the start of one of our trips the antenna will be performing at its best.

Efforts are being made to recruit more local operators and to find operators in other African countries who have at least the basic equipment required for a WSJT station. An interface was recently supplied to 5Z4NU by the project in hopes that some interest might be generated in his part of Africa and he has since contacted W5UN & KB8RQ using his very small station. We are planning to get an improved antenna to him and at

that time will also plan to send up the TE Systems 300w amplifier donated by KJ9I for a period when it is not in use by expeditions further south.

Future plans
We are currently trying to assemble a complete small EME station that can be used by anyone travelling to nearby countries. At the present time our major needs to complete the station are a suitable exciter and a laptop computer with GPS interfaced to give real-time clock updates. The exciter is our biggest problem as multimode VHF equipment in Africa is in very short supply and as a result usually commands premium prices. As part of this system construction continues on a small portable multi-yagi array with elevation control.

Hannes has another trip to Malawi and Zambia in the pipeline and expects to leave on October 17th. Antennas are being refurbished after taking a beating on the rough roads encountered on the last trip and if space allows a larger 2m antenna will be going along. More information on this trip will be published shortly before departure.

Daniel will be going to Mozambique (C9) for a few days during the next two to three weeks on a brief scouting trip to locate a suitable location for a 10-day DXpedition planned for July of 2006. He may take a small station with him but operating time will be very limited on this trip. On the bright side he will be on site during the entire 10 days next year and should have plenty of time to operate. Experience gained during recent trips will also aid in selecting a site that is good for both HF and VHF operation, unlike the recent 3DA0JR location when HF operation was the prime concern.

Derek, ZS5Y is planning a fishing trip to Mozambique in November and is planning to take a small 2m EME station to use while there. We will also send out more information on this just prior to his departure.

Recently we used a 4-Yagi 432 MHz array built by ZS6OB and held an open day at his QTH to demonstrate WSJT operation on that band with excellent results. The day generated a lot of interest, both locally and internationally, and as a result we plan to include 432 MHz in planning for future operations. We would also like to have more 50 MHz operation but our main obstacle at the moment is the lack of a suitable portable high power amplifier for Six.

You can help
We are looking for a sponsor to have a quantity of QSLs printed for the project. As large numbers of contacts are seldom made on any individual expedition, it makes more sense to have a QSL printed that can be used by all expeditions and can be overprinted with callsign and operator information on a laser printer as I have done in the past with blank Icom QSLs. Perhaps someone with more talent than I could help with the design and artwork.

Daniel is looking for an HF amplifier but has a limited budget. An ICOM 1000 is the ideal amplifier as it has not only HF but also would add 50 MHz EME to our capabilities, but at the usual asking price is outside our budget. If anyone knows of one of these going at a bargain price please let me know.

We would like to start construction on a 432 MHz array similar to the one used for our recent tests as that one has now gone to the owner and some assistance with the cost of materials would be helpful. If you operate 432 MHz EME and would like to see more activity from Africa please let me know.

We occasionally need special parts or equipment from the U.S. Shipping costs are high and usually take some time. If you know of anyone that might be flying into Johannesburg on holiday or business please check with me to see if there is anything coming out this way. I promise it won't be anything illegal.

If any of your ham friends are thinking of an HF DXpedition in Southern Africa have them contact Frosty, K5LBU at frosty1@pdq.net or check the following sites for more information: www.k5lbu.com and www.dxsafari.com There are many interesting (and relatively rare) places in the region to operate from and

while they play on HF Daniel can spend his spare time on the moon. Of course, VHF operators are also more than welcome and they will enjoy seeing what the other end of the pileup sounds like.
Thanks to all who have supported the project and we are glad that we are now in a position to start putting a few rare callsigns in your EME logbook.

73 - Hal Lund ZS6WB, zs6wb@telkomsa.net"

N5KDA (EM41)

Gary will soon be QRV with more "thrust": He has ordered four m2 2m5wl's and will pick up an elevation rotor these days and also an "H" frame. The antennas will be fed with LDF-7 (1 5/8" heliax). That will give Gary just over 20 dBd gain with 700+ watts with full az-el. capability. It looks like Mississippi will become much easier to be worked…

DXPeditions

R1MV (Malyj Vysotsk Island)
From 15 until 20 November, 2005 Janne (OH5LID) will activate Malyj Vysotsk Island. Equipment will consist of 500 watts out to 2x9ele (4?) and 18ele (5?), no elevation. Though this expedition is mainly focussed on meteorscatter some eme operation at moonrise/set is quite likely.

The 144 MHz EME NewsLetter

is produced monthly.

QSO Reports

W5UWB (EL17)...
…reports his recent contacts. John is running with 1500 watts out to a 21 ele M2 2M8WL with no elevation:

5 Sept.		
W7IUV	DN07	
RA0FCA	QN16	
DK4TG	JO31	-27
PA3FPQ	JO22	-20
8 Sept.		
VK9XMO	OH29	-25 1Y to 1Y # 9 for me.
S54T	JN75	-22
PA3CMC	JO21	-18
OE3FVU	JN78	-21
9 Sept		
KR7O	DM07	-23
10 Sept.		
JH2COZ	PM49	
14 Sept.		
EB5EEO	IM98	-16
DL6BF	JO32	-27
PE1L	JO23	-24
17 Sept.		
RA0FW	QN16	-14 whew - what does he use?
18 Sept.		
EI4DQ	IO51	-25
SK6EI	JO68	-18 # 155 for me

PA3CMC (JO21)…

…sent a short report on his QRV status: "Here I have a short message and picture of the new array. After I moved in 2003 to my current QTH I finished my new array last May. The array consists of 4 x 16el. X-pole I0JXX."

With the new array Lins worked the following QSOs in September:

22.09.

KH6/W7EME	RO H	O H	-19	#100 DXCC

24.09

DK3SE	RO H	O H	-21	#101
9H1TX	RO V	O H	-22	#102

25.09.

OM3WBC	RO H	O H	-27	#103 DXCC
IK0BZY	O H	RO H	-23	#104
PY2BL	RO V	O H	-25	#105 DXCC
OK1YK	RO H	O H	-21	#106

01.10.

JM1GSH	RO H	O H	-18	
HI3TEJ	RO V	O V	-25	
KE7NR	RO V	O V	-19	
W8IUV	RO H	O H	-20	

Lins is QRV from JO21SE with FT1000d, LT2s, MGF1801 and a linear amp with the 8877.

DL7FF (JO62)...

...also supplied a list of recent contacts made:

31.08				
11:31	DK5EW	JN47	-25dB	# 172
09.09.				
15:30	EB5EEO	IM98	-20dB	# 173
16.09.				
20:51	UR5LX	KO70	-20dB	
21:13	RA6DA	KN96	-21dB	# 174
19:35	VK9XMO	OH29	-26dB	C??
18.09.				
21:06	SV8CS	KM07	-20dB	# 175
22:08	EA1YV	IN52	-16dB	# 176
19.09.				
21:11	GW3XYW	IO71	-20dB	# 177
26.09.				
10:39	N1KI	EM75	-25dB	# 178 grid #670
27.09.				
13:25	KM5PO	EM23	-16dB	# 179
28.09.				
11:40	W7GJ	DN27	-23dB	# 180

Time Table

- **22 – 23 October 2005** **ARRL EME Contest (Part 1)**
- **12 – 13 November 2005** **ARRL EME Contest (Part 2)**