

Cocos (Keeling) Islands DXpedition March 2021

I'm a member of the Northern Corridor Radio Group (VK6ANC) which is a very active and vibrant club in Perth, Western Australia. One of our club members, Wayne –VK6EH has been to Cocos Keeling Islands a number of times to visit friends there. We've often talked about Wayne taking some radio gear out there because a couple of us needed VK9C confirmed. This also led to a bit of a pipe dream about a few of us going there and doing it a bit more seriously, and giving a few more hams ATNO, but talk about it was as far as it went.

Late last year, Zeljko (VK6VY) and I had started talking about a DXpedition out to either Cocos or Christmas Island and so we caught up with Wayne so we could quiz him a bit more on the islands and facilities etc. Wayne got all excited about it and before we knew it, we had 10 candidates and accommodation and a group airfare booking was made. Zeljko and I decided to continue with our plans for a separate trip later in the year as we had a slightly different approach, but I decided I'd like to do both.

Participants were Steve VK6SJ, Wayne VK6EH, Stu VK6SSB, Gerald VK6XI, Chris VK6LOL, Brian VK6BMA, Tim VK6EI, Alex VK6KCC, John VK6NU and Brian VK6MIT. With ten of us going, we booked a 4 bedroom house called the "Manager's House" at Cocos Beach Motel. The house was about 50m from the ocean, had a large lounge room with two office desks and we scrounged up a bunch of extra beds (and one of the team booked their own accommodation). Luckily we are all good friends!

With 10 of us travelling, we got a great deal from Virgin for the airfares (around \$800 each return). Splitting the house between us all, had the trip costing just under \$1200 each. We added a few hundred each on top of that which paid for car hire and most of our meals. The house also had a bar fridge for the beer, and big chest freezer for all the fish Tim was going to catch! 😊

Our approach from the start was always going to be "vacation style" DXing. We didn't want to spend 4 days of the 7 putting up HF yagis etc. We also wanted to bring everything with us on the plane, and we didn't want the cost or the management of the trip to go through the roof. This meant that yagis and the like were all out of the question. In the end, we took an Ultrabeam Vertical (UB-V40), a Cushcraft R7 vertical and a bunch of squid poles to support an end fed wire antenna cut for 80m.

Most of the team really just wanted to go for a bit of fun and because we are all friends, just to enjoy the company of each other and work a few stations... So this was never going to be something that would make the Cordell guys shaking in their shoes and beating them to the next Bouvet Island gig. And no one would hear us with only verticals anyway right? 😊

Initially we had a fair amount of discussion on if we were going to do hard copy QSL cards or not. We didn't want to look like we were out to make a profit on what was essentially a holiday, and we also didn't want to feel obligated to do anything in particular. We also assumed that we wouldn't be able to do electronic confirmations until after 6 months or so to drive people towards the paper QSL, so we thought, "lets just do electronics confirmations only". This caused a big rucus, and three QSL managers

emailed us offering their services. We went with David EB7DX so we are now doing hard copy direct and bureau cards.

In the week or two leading up to the trip, we had a lot of requests for focus on different bands and modes. We did get asked if we were doing Fox and Hound on FT8 (never heard of it at that time). We had a ham in Portugal who wanted to send some EME 10GHz gear across, and a lot of requests for 6m capability. One of our team is into EME but the time frame left would not have been enough to do this. 6m, we figured we could use the Ultrabeam for.

So.. the day arrives and we head out to the airport in Perth. First question we are asked while in check in; "which bag is your priority bag that has to arrive with you sir?". I had 4 bags plus the radomes for the Ultrabeam vertical. So I said, "well that would be all my bags Ma'am". It is OK, explains the Check in lady; the rest should arrive on the Friday flight (3 days later). In the end all our gear arrived with us but we didn't know that until we landed on Cocos.

Tuesday night after stopping at the Cocos club for a few cold ones and dinner, we assembled the Cushcraft vertical and by about 9PM we were making contacts on 40m FT8.

Next morning we hooked into the rest of the station. We had 2 IC-7300s running, each with an SPE Solid State Amplifier (throttled down to 400W PEP of course). Each had a PC running, but only one submitting log entries to eQSL, Clublog and QRZ in real time. The other we copied into the FT8 station log manually each day and uploaded to eQSL etc. The Ultrabeam vertical worked well with about 7 radials of random length attached. The end fed was also erected and we were on all bands from 80 to 10m from two stations. One station was for FT8 and SSB, and the other for CW and SSB. Unfortunately the Ultrabeam didn't tune up on 6m in the end, and the 80m End Fed loop wasn't quite good enough for 160m operation.

So on to FT8 we go and immediately surprised by the response. Only a few of us use FT8 at home much so we had a few teething issues. Leaving the PC to its own devices was slow and frustrating so we stopped that pretty quickly (we did leave it on while we had dinner etc, which I thought was preferable to not operating at all). Then we moved to FT4 to get the run rate up a bit, and to get off the normal FT8 frequencies which I know we were completely submerging.

On SSB, also very surprised by the performance. We had a near 24/7 pileup to Japan (almost half our contacts were from Japan over the course of the week). I guess being 50m or so from the ocean on one side and less than a Km from the other side, on a flat island makes a big difference. The Japanese pileups were reasonably easy to manage. They are very polite and we were quickly working 3-4 stations a minute. Then we had openings to Europe on 40m-12m. I've had a reasonable amount of experience in contesting so have been on the receiving end of the EU zoo before, but this was on a different level again. Everyone just called constantly. Often we would answer a station and the called station would just keep calling. We'd respond to a station but the called station would be drowned out by the pileup and wouldn't get logged. Our run rate with EU was around 1-2 minutes per contact. We quickly worked out the reason for split frequency then. It doesn't help us, except that it helps the pileup here when we answer them. We could have got away with simplex for the JA pileups, but not EU. Even with listening 5-10 KHz up, we struggled. I think we needed 5-20KHz up instead. I did always wonder what the point of working split was and now I know! We did have to use a different strategy for the Zoo. Instead of ignoring the stations that call over the top of everyone, I figured it would be quicker to accept that no

one cares about the station I'm calling and just log any station I can hear a response from. That improved the run rate a bit but I have to say, it was the least pleasurable part of the operation. EU stations should really have a think about their conduct in a pileup.

So after about 3 days of working FT8 in normal mode, we start getting "wailing and gnashing of teeth" from the masses. (some constructive, some not so). Problem was, we were so busy working as many stations as we could, we didn't want to put the brakes on to work out what this "Fox and Hound" thing was. In the end Grant Willis, VK5GR messaged me and offered to help us get it sorted. He had done a similar thing in Tonga not long before so knew what we were going through. We stopped for about 20 minutes and got our heads around it. Had a quick video conference with Grant (thanks mate! 😊) and we were away. Now we were doing between 1 and 5 contacts a minute on FT8.

During the first day, we found that we could still only run one station at a time, even with band pass filters between the radio and amplifiers. We increased the spacing between the two vertical antennas by about 30m, and this gave us just enough isolation to work both stations at once most of the time. Next time we will definitely be putting more effort into better filtering, and earthing.

By day 4, we were in the groove and starting to think about how we might maximise coverage into the Americas which is traditionally a hard thing in VK6. We don't get much in South America from Perth, but we normally have good paths into North America at the start and end of each day. It was similar on Cocos but our openings into South America were actually much better than North America. Our SSB contacts into North America were pretty weak and didn't happen often. We had good runs early in the morning on 40m and 30m FT8 into the USA but that was about our only regular openings. It was great to be able to work all over South America though.

We also got to meet the only resident ham on the Islands, Abedin VK9FCAN. He had problems with an old TS-430 so we managed to get an FT-77 donated which we brought up to him, and I am in the process of assembling a small yagi and all the accessories for the FT-77 I was also given for him but didn't have the room to

So... in the end, we made 10,307 contacts from the evening of the 16th of March to just after 1300 local time on the 23rd March.

Some statistics that may interest you include;

- 4862 contacts with Japan
- 669 contacts with the USA
- 442 contacts with Australia
- 2956 contacts on SSB
- 451 contacts on CW
- 6900 contacts on digital modes (FT8 and FT4)
- 113 countries worked
- Two sharks caught
- a lot of beer and various whiskeys drank

What would we do better next time around (which I suspect there will be)?

- Better preparation of equipment prior to mobilisation.
- Ship gear in earlier rather than relying on excess baggage. That was a serious risk to the operation which luckily didn't happen but that was just luck.
- More planning of propagation paths for various regions. Maybe plan it out a bit like the CQWW so that our audience had a better idea on when we would be on various bands.
- Split 5-20KHz for SSB pile-ups (is that allowed or done?). I suspect a better receiver would be good for that as well as we had a lot of trouble separating stations spread across just 5KHz (or maybe we need to learn to drive the radios better).
- Verticals were good – particularly for the low bands, but I think a yagi for 20-10m is something I'd seriously consider next time.
- Better filtering solutions between the two stations.
- A common earth point for all gear may have assisted in isolation of the two stations.
- Better fishing gear needed.

Overall; we had a ball – which was aim #1. We learnt lots of things about running an operation like this, had fun on the radios so we consider this operation a complete success (despite being called "Dumbasses" etc (luckily, we have broad shoulders :)). We need to get better at fishing. We had to buy dinner too many times!

Photos;



The team left to right (front row); John VK6NU, Stu VK6SSB, Wayne VK6EH, Gerald VK6XI, Tim VK6EI, (rear row); Chris VK6LOL, Steve VK6SJ, Alex VK6KCC, Brian VK6BMA, Brian VK6MIT. Photo was taken 30m from the shack and about the same distance from the water.



Antennas and shack. To the left is the middle section of the end fed, middle is the shack and R7 vertical, just to the right of the R7 is the Ultrabeam vertical before we moved it further to the right for better separation.



Chris VK6LOL operating the FT-8/SSB station.



Ultrabeam vertical in its final location, with house (shack) behind it.



#2 reason for visiting the islands!