

## 2005 CQWW SSB Contest Trip Report as VK9XD Christmas Island, Indian Ocean (David Burger VK2CZ).



VK9XD / VK9XG, 15m yagi on right, 20m Force12 40XK(modified) vertical on left, and 160m inverted vee midway between the two. Photo taken from the Ethel beach 'boat ramp'.

Christmas Island is a unique island located in the Indian Ocean around 360km due south of Jakarta. Home to unique critters like the Golden Bosun bird, frigate birds, red crabs and the amazingly prehistoric robber crab. Discovered in 1648 the island pre-dates the formal discovery of mainland Australia. Christmas Island is an external territory of Australia and is a GST free zone, and the only Australian territory that recognises both Muslim and Christian holidays.

The 2005 ham radio trip preparations were probably the lightest in the 3 trips conducted so far for the CQWW SSB<sup>1</sup> radio contest. A combination of a major job change which encompassed some major responsibilities consumed a lot of my energy. Charlie Summers W0YG from Colorado transited Sydney for a couple days staying in the tourist enclave of Bondi Beach. Due to work commitments, we only caught up with Charlie for a pleasurable dinner in the Rocks precinct. It was frustrating not being able to spend more time with him.

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<sup>1</sup> The CQWW SSB Contest is a ham radio contest that is considered the #1 ham radio on-air event globally. The contest is run by the CQ Magazine based in the USA.

Coordinating with Charlie W0YG again, we are actually coordinating our travels in 2005 so we are in fact arriving and departing Christmas Island (VK9X) on the same aircraft. In 2003, we had a 1 week overlap, and in 2004 Charlie arrived 3 weeks after I had departed. There are just 2 flights a week through Perth.

While our travels and our operating mode (SOAB) had been posted on Announced DX Operations (ADXO) pretty clearly since March 2005, it was obvious that so many people jumped to weird conclusions about our operation... 6m EME<sup>2</sup>, multi-single entrant in the CQWW and probably others in addition to believing we were operating on all the WARC bands. Charlie and I always intended to cooperate in the station assembly and dismantle. Charlie did provide some morse code (CW) contacts on the 30m band – and I may do some phone (SSB) contacts after the contest finishes. I was only ever going to do a Single Operator All Band (SOAB) contest<sup>3</sup> entry, and to be honest, Charlie was ambivalent in operating SSB at all.

Arriving in Perth on the 23<sup>rd</sup> October late morning, it was a great pleasure to catch up with Mirek VK6DXI for dinner in a Northbridge Dai-Pai-Dong (Hawker centre). While I spent the bulk of the day in Perth watching the Gold Coast Indy car races on TV, I would probably been better served taking a much later flight to Perth. (sadly 99% of Perth was closed, but I guess I was too quick to believe requests that I should arrive early) Mirek and I visited the Northern Corridor Radio Clubrooms, VK6ANC, and was amazed to see the amount of effort many locals had brought to the fore in the new buildings. Many thanks to VK6HX (Steve I think) for showing us the detailed work in progress. In so many ways, their initiative mirrors that of both the Darwin Amateur Radio Club<sup>4</sup> and that of the Manly Warringah Radio Society.



This time of year is also marked by some major sporting events, the Gold Coast Indy Cars and the lead up to the Spring Racing Carnival in Melbourne.

Getting back to radio, it was also evident that the Icom IC756pro1 radio that I used in 2003 and



<sup>2</sup> EME – This is earth moon-earth communications where signals are literally bounced off the moon.

<sup>3</sup> The single operator all band (SOAB) category in the radio contest is the 'open' category for a single person operating the ham radio station. The SOAB category does not impact station assembly or dismantling.

<sup>4</sup> Located in Fannie Bay, Darwin.

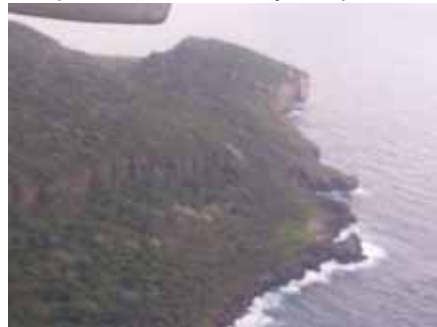
2004 need to be upgraded to the Icom IC756Pro3 radio. This came about after aborted attempts to run on 40m near 60dB/9<sup>5</sup> broadcast signals just 40kHz away (and that is with the 6dB RX attenuator in). Tests on the 40m band with the new Pro3 radio during the recent Oceania DX contest in Sydney showed the radio had a receiver more resistant to overload. Although the spectrum display did 'flood' a couple of times, receive signals were still behaving. Am curious to see how my 40m single band entry on the Oceania DX contest stands.

The flights to Christmas Island and internal to Australia were time-shifted a number of times since their bookings in March'05. This resulting in an extra day needed to get back to Sydney, and the need to spend midnight to 4am lounging in an airport between flights. Given I had just changed jobs, it means the whole trip was 'leave without pay' anyway. The photograph shows the aircraft being towed to the International Terminal in Perth.

The 2005 operation for me as VK9XD means I will also operate extensively outside the CQWW SSB contest for this first time. In past years, my personal gloom about handling the resultant QSL<sup>6</sup> cards literally kept me off air outside the contest. Getting around 900 QSL requests from the 'contest' operation in 2004 nearly made me cancel future ops.. Fortunately I now have a QSL manager with Neil VK6NE, and I cannot express my profound thanks to him for lifting this QSLing burden from me. [You guessed right, I have no interest in QSL cards].

Departing Perth, the flight to Christmas Island had been delayed a couple of times, eventually departing around 11:40am. I met Steve VK6VZ at the international terminal dropping Charlie off. Charlie & I positioned ourselves in row 15 and 14 respectively at the window seats to best position us for some out the window photography. Light rain in Perth, but clear in Learmonth for the fuel top up stop.

Arriving on Christmas Island just after 4pm, it was clear by the strong head winds, overcast weather and landing on runway 36 (or is that runway 0 ?) was a definite indication of the wet season arrival (monsoons). The magnitude of the red crabs who joined us on the roads was also evidence of early monsoon arrival. There were none visible in 2004, and in 2003, they were just peeking from their burrows. Charlie also identified turtle migration, and we will set up a



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<sup>5</sup> The means that radio signals received from the antenna are about 1 to 2 volts.

<sup>6</sup> QSL cards are historically exchanged between ham radio station operators to confirm that a radio contact occurred. There are recognised electronic equivalents these days, however many ham radio operators still persist with the physical cards.

dusk trip (apologies to the 80m and 160m fraternity<sup>7</sup>) to preserve them as jpegs.

Day 1 was the preserve of housekeeping and meet and greet, arriving too late to even discuss radio. Having dinner with Charlie, Michael and Mary from the CIResort, Ken, Debbie and James Mason who was past CI mining operator. We dined at the Jalan Ruma Tingi restaurant. Side note – the food quality there rates among the best I've had in Melbourne – and surpasses pretty much anything I've had in Sydney. If ever Christmas Island became known as a tourist spot, or dining 'voting the best' was extending to this territory, it will rank well!!

We are indeed fortunate to have our own bedrooms rooms, as well as access to a storeroom/workroom and another room to operate from. Logistically this is brilliant, with a minor down side of having to use 80m long coax cable runs on 160m, 80m and 40m. Still thinking about 20m, 15m and 10m.

Day 2 was welcomed by 100% humidity most of the time, and slowing us up by around 7:30am. We managed to get a number of antennas up, full size 160m inverted vee, and a full size NVIS<sup>8</sup> 160m antenna. Adding a heavily modified MFJ noise canceller unit to allow full 180 degree phase shifting (it has difficulty in this out of the box) as well as amplitude (using active preamps) to permit phasing the two 160m arrays so proper electronic beam steering becomes possible. We also got the Force 12 Sigma 40XK (courtesy of Force 12) functioning on 20m. We also got a 40m dipole near vertical directly at the top of the cliffs. A nervous note that the bottom guy point of the 40m sloper was cantilevered on a rock around 10m out over the ocean. While having 1 year of geology in my engineering degree, I made a point of not being out there for more than a minute.

Interesting, I retrieved the stored aluminium tubing that Rex VK7MO had used during his VK9XMO operation here – no problem, but rewarded to see pen marks where his 70cm yagi was 'taped' together on one of the 20m yagi elements. Although the sun never came out, I did cop a lot of sunburn from the high UV penetrating the clouds. Finally got to speak with my wife Susan too, the CIResort phone system (running hotel software) cannot be unblocked to allow guests to dial out. If does of course allow indial calls.

I did have a scheduled contact arranged with LX9AU on 30m CW, but we had no chance of getting antennas up on 30m in time, sorry about that.

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<sup>7</sup> The radio propagation on these two bands is arguably best at dawn and dusk – but the turtles don't know that !

<sup>8</sup> The NVIS antenna is an antenna that is ideal for local HF communications, illuminating the ionosphere directly overhead. It is ideal for radio signals arriving at a high angle.



The ubiquitous red crabs do show a lot of personality.

Day 3 saw Charlie start the day at 2:30am serving breakfast at 3:00am, I kindly deferred to 6:00am. We got the 15m yagi up literally above the water, looking below the yagi, the ocean is visible directly below through the rocks. The 80m 20% wavelength vertical was assembled and erected with 8 ground radials. This will tune the CW end of the band and the loading coil tap to the phone end.

Charlie explained that US radio hams listen around 3650kHz split into their phone band for Russian stations. that was news to me, as I've not encountered this in VK, but at least I may have a shot on 80m with this info, as it was sadly evident I was 'operationally' limited, not hardware limited in the past.<sup>9</sup>

Checked out the 20m vertical on air, and generated a pileup very quickly, not having my laptop handy had to get off air real quickly having to commit the station callsigns to memory. One station Nick VK1AA operating from VK4 I think made a contact, seeking e-QSL confirmation. Simple enough, but Nick is same guy who beats his chest each year wanting to kick my ass by going head to head in any contest any time. Also piled shyte on my 2003 and 2004 CQWW operations on Christmas Island as well, saying I could have easily been in the world top 10. It is hard to explain that this is a basic field day station, which none the less scored the DXpedition trophies in 2003 and 2004. In 2005 it is the first contest station to be assembled here by 2 people, Charlie (who is 69) and myself, and is easily the largest ever ham station assembled on the island.

Weird happenings, the Australian Navy patrol boat sails around to 'see' what is going on here on the east coast of the island, something out of the ordinary based on local knowledge. Lets hope I don't encounter other over-zealous defence staff who have a warped view of ham radio (I had been part of an incident in 1996 where defence radio monitoring staff, and recently departed

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<sup>9</sup> On the 80m band, many countries do not have common frequency bands, and that requires the operator to transit on one frequency and listen on another frequency to make the contact.

defence staff physically challenged me in Darwin over my ham radio activities there. I keep a copy of the letter I received from the then Minister of Defence clearly showing they have no formal interest in ham radio.)

I've also set a goal with my digital camera to shoot a gazillion photo's this year. I took 12 photo's in 2003 and about the same in 2004 with some disposable cameras.

Back to reality, I tore the ring pull off a vanilla Coke can during the hot afternoon.. easy to do. Progressing to open it with a screwdriver by pressing the tab inward, I had the top explode. Our ears were ringing for about 10 minutes, as it was guessing it was like firing a rifle indoors. Knock-knock mythbusters..

Day 4 got the 10m beam assembled and in the air. The little 1.2m ex-military mast sections proved a treat to elevate an otherwise impossible antenna. I also came to an idea to swap out the top "T" of the Force12 40XK, and place a quarter wave top for 20m on it. Having embarrassing amounts of tube here, a hacksaw cut and file 'made' them fit together – noting I did not mechanically alter the 40XK in any way :-} Awesome modification and worked a treat.



It looks one mean antenna now, and will add it as the 9XD 'optional' part of the Force 12 kit ! For those who want to replicate, it consists a length 4.0m of 22mm (7/8") and 19mm(3/4") tubing, sitting out the top of the 40XK half top by 3,865mm, shown on the right. The length of the 22mm(7/8") section was just 300mm to act as a reducer, with one end longitudinally cut and filed to jam fit into the top of the 40XK. I did not use any bolts here, as it only had to last a week. A 4mm stainless bolt (or that odd imperial bolt supplied with the 40XK) would work OK.

The 15m yagi is shown on the right.

Had a get together BBQ with other visitors and CI resort management in block 11, attracting maybe 20 prehistoric Robber Crabs. Local personality Ed Turner came along, and further discussions with the CI Tourism Authority are planned in the next few days. The CI Tourism Authority are certainly keen to promote and assist ham radio operations in whatever capacity they



can. Charlie and I have left considerable amounts of antenna material on the island which visiting hams would find quite attractive.

Adding a 30m half wave vertical, all the antennas are now complete, and fingers crossed, they all stay in the air. We have run out of coax, rope, PL259 barrel adapters and mojo. In summary, the antenna's comprise:

- 10m 5 ele yagi up at 7.5m
- 15m 4 ele yagi up at 7.5m right at the cliff face
- 20m vertical using full size top modified Force12 Sigma 40XK
- 30m dipole vertical
- 40m sloper right at the cliff face
- 80m vertical with 8 ground radials, maybe more to be added.
- 160m inverted vee and a Force12 6Y-160 TX antenna
- 160/80 pennant RX antenna.
- 160/80/40 RX antenna made from 160m dipole mounted just 3m above ground.



The 10m yagi and 80/75m vertical in the background is shown on the left.

The morning of the CQWW rolls in, starting at 0700 local time makes it just like going to work. Listening on the bands on Friday, it was clear conditions were again at variance to predictions and certainly to what was experienced in past years.

With a decent yagi on 15m, it was easy to hold pileups for hours on end, and filled all the far east zones in minutes. Many stations were clearly not focused on the contest, but wanted a VK9X in their log, and for that I am truly grateful.

During Saturday, I had the 10m beam aimed toward the sun, and was checking the 10m band every hour for activity. There was a neat 2 hour opening to EU on 10m, after finding a couple of S57 station wrag chewing ! Watching for stations in the Americas, they never did become audible here. In fact there was little or no propagation to the east from here on 10m for the whole weekend, just managing 1 QSO with mainland Australia. My target of 1200 QSO's on 10m fell to just 209 real ones this year – a devastating dent in the overall count.

Having some real decent antennas on the 40m, 80m and 160m bands this year, pileups were expected on 40m, but having pileups on 75m was very impressive.

Only short time windows on 75m were available between the surface wave radar operation, and still managed some QSO's with the radar on.

Charlie's regular CW operation on 160m (even during the CQWW) yielded how the top band breaths, and I purloined the 160m feedline a couple of times to snare [what I thought to be] my first US SSB contact on 160m. Other stations were audible here, but I was clearly below their QRM threshold. I also snared my first mainland VK contact on 160m as well. Checking with K5NA to verify the 160m QSO showed it was unsuccessful, albeit he had a easy workable signal on 160m SSB into VK9X – bye-bye zone 4 on 160m :-{ It was also clear from listening to some of the CW signal strengths being heard/worked by Charlie on 160m, that SSB into Europe should have been easy too.

Band	QSO's	Zones
10m	209	15
15m	1076	27
20m	292	22
40m	266	23
80m	99	14
160m	5	3
<b>Total</b>	<b>1947</b>	<b>104</b>

I use Microsoft Excel XP as the basis of a Contest station logger, and the results screens are included here. It is something developed over the past 4 years, and includes much lookup information, as well as allowing multiple (simultaneous) Contests to be managed – something I frequently get involved in. The spreadsheet includes just one macro to 'log and dupe check the station'.

As a sequel to the CQWW SSB operation, a check of the contest calendar showed the Ukrainian DX Contest was to be held on the 6 and 7<sup>th</sup> November. Dismantling the massive antennas on Sunday 7<sup>th</sup>, I did manage a handful of Ukrainian contacts, and clearly brought a smile to those chasing some DXCC countries in the process. I imagine this is probably the first time anyone has entered the Ukrainian DX contest from this remote island. I am however having a tough time getting my log to them, lets hope the snail mail system works.

I guess to sum up the contest this year, it would be classed as enhanced propagation and just odd conditions the higher bands.

The logistics of the operation caught up with us in the final few days, scrapping the massive ground radial systems<sup>10</sup> of both the 160m vertical and the 80m band vertical. The sheer magnitude of the length of the radials forced this issue, and besides there was

<sup>10</sup> Ground radials generally comprise 15 to 100 wires placed radial vertical antenna to behave as an artificial ground to improve the an

zone	160	80	40	20	15	10
1						1
2						
3		1	8	11	77	
4	1		3	3	11	
5				6		
6			1		2	
7				1	1	
8			5		2	
9			4		6	
10						
11					4	
12						
13						
14		1	3	3	23	27
15		3	18	13	41	38
16			19	8	46	11
17		1	8	3	18	7
18		1	4	1	20	6
19		1	1	10	12	1
20			3	2	6	5
21			1	1	3	1
22			1	1	1	
23		1			4	
24		3	8	12	26	5
25		60	133	161	719	100
26			2	5	8	2
27		3	6	7	16	3
28	1	8	14	10	10	
29	3	6	9	6	4	1
30		5	10	22	4	1
31			2		6	1
32		5	2	3	1	
33				1		
34						
35						
36						
37						
38						
39						
40						
zone	160	80	40	20	15	10

around 1.5km of wire on spare rolls. Charlie was headed to Cocos-Keeling Island, and while we managed to keep things to a minimum, Charlie did manage to check in 138kg of 'baggage' to Cocos Island with significant negotiations.

On Christmas, the logistics of storing items in a long term manner is still unresolved, with a lot of misleading information. Hopefully persistent question asking has arrived at a reality.

The level of salt water spray and corrosion at the CIResort complex was hard to believe. It looked like exposed steel, aluminium and copper aged around 20years in one week here. A close up of the Force12 40XK corrosion below shows 7 days of corrosion ! We washed the feedpoint<sup>11</sup> insulators daily.

While I am only considering a return visit in 2009, the future is completely open right now. Doing an operation from there for a decent international radio event outside the CQWW contest is now high on my agenda.

Spending an hour on Cocos-Keeling was quite amazing. The whole town is within walking distance of the airport terminal, and to put it into perspective, it would all fit in the car park of Sydney Domestic Airport.

Returning to Perth with the Shire CEO of Cocos Island, it was quite revealing to understand the Islands initiatives concerns and sensitivities. Cocos has no traffic lights, no bridges [ Christmas Island has just one set of traffic lights on a single lane road].



I strongly recommend Tim-Tams<sup>12</sup> and Crown Lager while on the islands, delicacies rarely found outside Australia as I have since found out :-}

Lets see where the future takes me next.

Regards to all,  
David Burger VK2CZ ([k3hz@ieee.org](mailto:k3hz@ieee.org))

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<sup>11</sup> The feedpoint insulators are the point where the transmitted signal on the coaxial cable connects to the antenna. With salt on this part, we have had sparks and carbon buildup affecting our radio like a misfiring engine.

<sup>12</sup> Trademark of Arnotts Biscuits USA, available in plain, caramel, chili, double choc and others.