2015 Summer Field Day

10 January 2015

Things were looking promising for this event, some showers predicted (but not any thunderstorms), the gear seemed to be ready to go with the exception of the 10GHz PA which was found to be faulty the day before, and this time I was trying out a 'new' FD site at Beechmont. This new site was on a different farm some 2KM due west of the normal one, but with a better outlook towards the Brisbane stations at microwave frequencies.

The new site's grid locator is QG61OV25 and pre-FD checks indicated that the path was unobstructed to Mt Gravatt Lookout (Brisbane) and also to Howell's Knob (Maleny, Sunshine Coast) so I was really anticipating some good points-laden contacts to those two places, typically with the VK4WIE and VK4WIS club stations who normally operate from those venues respectively.

My arrival at the site was around 9AM and as soon as I opened the farm gate, parked the car and trailer, closed the gate, down came the rain. I waited out most of it and when it had reduced to a fine drizzle, I got down to work taking the masts and antennas off the trailer. The VHF/UHF antenna mast was assembled, cabled and finally erected about 10.15AM, followed by the microwave mast about 10.45AM. Finally the radio transit box was put into position in the FD trailer and all cables attached. By the time that was all completed, the time was 11.20AM, a bit late for the 0100UTC (11.00AM local time) FD starting time.

One of the first items to be attended to after all items are interconnected is to align the two masts to the correct directions and lock them off to the rotator pipes. I had predetermined that a large shed in the distance was at a bearing of 340 degrees (TN) via Google Earth so tried to set the rotators themselves to this bearing. Pushing either direction rotation button didn't energise the modified UPS that generates the AC for the rotator motors. This was strange as I had specifically tested all of the rotator arrangements as recently as two days beforehand. There weren't any loose leads or plugs found so I decided that I would need to revert back to the "Armstrong method" when it came to pointing the various antennas, even though pointing accuracy would be a lot poorer.

The second issue that I found was that the IC-706 used as the microwave IF would not power on yet it had been tested and working the day before. After several minutes, I recalled that there had been a clicking noise the previous day when I was unplugging the 2.4/3.4GHz transverter and the inside plastic bit of the 8pin DIN socket came out with the plug… A few minutes with a screwdriver and a replacement 3AG fuse solved the issue and the microwave gear was again operational. { I had a Kenwood TR751A 2M multimode plus an IC706MK2G as spares for the microwave and 6M/2M/70CM radios respectively so I was going to be operational regardless – even though they weren't really required this time around.} Note to self: replace the broken DIN socket on the transverter ASAP.

Everything else seemed to work as it should, no FM broadcasting effects being noted on the IC-7000 at this site, unlike the "normal"/previous one at Beechmont. I did notice that the tuning/SWR on the 6M yagi rose as it pointed towards the microwave mast with its 600mm prime focus dish and gridpack so will make sure that the trailer orientation is different next time around and this only occurs in a normally-unused direction (e.g. due East).

It turned out that Wayne VK4WS/John VK4JMC were set up some 8-9KM away (also in QG61) so we managed to make microwave contacts up to 5.7GHz over the period. Unfortunately the distance was short so didn't give a lot of points but given the low transmit power at their end on 5.7, it was great to achieve a contact on that band.

By turning off the power to currently-unused equipment (e.g. microwave transverters and IC-706 while operating only on 6M, 2M & 70CM), the two 80W solar panels were able to generate enough energy to maintain the initially fully-charged battery bank right through to my 7.30PM finish time even though the panels went into the shade and had stopped charging by about 4.30PM. An interesting side effect was noted on the solar charger: I used a 20A commercial one that I had fitted toroidal filters on the incoming and outgoing DC leads, a long toroid that had a both wires from the panels going through in parallel and a full one-turn loop through it and then two other cylindrical ones with at least a one-turn loop on the short-length DC leads out to the battery, two turns on the positive lead out. The effect noted was that the negative lead cylinder was a split-style clip-on and I could tell the rate of charge current by the clicking noises as the current pulses magnetized the core and it pulled together. I could quieten it by physically grasping the plastic clip-case but decided it was better to know that the batteries were being charged… When the batteries were getting hit fairly hard with lots of transmit cycles during the 6m DX

opening, the clicking noise disappeared as the charge current flow was continuous. I had taken a second solar charger unit in case the first one was electronically noisy but it was quiet on all bands 6M and up. Note to self: Test it on HF well before the 2015 JMFD to see if I can use it then too.

Maybe the most aggravating facet of this event was the lack of stations active in SE Qld. I counted only 15 distinct VK4 callsigns so the 'local' contacts on the various bands were few and far between. The busiest period overall was when 6M finally opened into my area and I worked VK1, VK2, VK3, VK5 and one VK6. Earlier in the day, I could hear VK4 stations 100KM+ north working these same call areas on 6M (plus some JA callsigns at a slightly different time) but their signal levels were all down around my noise floor. The only reason that I could hear them at all was because the local noise was non-existent. I didn't hear or work Grant VK2MAX this time and don't know if he participated but it is a long haul to him on 2M and 70CM, a bit like when I worked David VK4KSY at 302KM on both of these bands.

I had a couple of visits from the livestock during my time on site but, unlike at the dairy farm where cows come right up to the car and trailer, these bulls stayed a fair way away and appeared quite wary. Initially I thought my eyes were deceiving me but sure enough there was a mid-sized billygoat in with the herd.. No flies this time though – or maybe the herd just didn't get close enough for the transfer to happen !

Only 80 contacts were logged across all VHF/UHF and microwave bands, a poor result for the effort expended but if there aren't stations to contact or propagation is poor, there is little you can do about it. The absence of both VK4WIE from Mt Gravatt and VK4WIS from Maleny was well and truly noticed and affected the overall number of contacts that could be made across the bands. I did manage to work Doug VK4OE on the bands from 6M to 3.4GHz but his signal on 5.7 was in the noise and he couldn't hear me at all. We didn't even try 10GHz as my transmit output power was down at 10mW (+10dBm) after having bypassed the faulty PA stage plus we ran out of time before I had to shut the station down and pack up.

I had fewer technical issues this time around so the faults are being resolved and the overall setup techniques are improving, probably due to better pre-planning these days – and not leaving anything behind at home as I have done a few times in the past. I will need to improve both the transmit and receive performance on 10G, maybe on 5.7G too, if I can do so without it costing a fortune for only a minor improvement.

One can only hope that the WIA Contest Committee's decision as to grid square versus distance formats will encourage more participants in future events.

Provisional Division 1 log scoring:

Band	Locators Activated	Locators Worked	QSOs Made	Total	Band Mult	Band Total
50	10	220	40	270	1	270
144	10	40	17	67	3	201
420	10	40	10	60	5	300
1.2G	10	20	6	36	8	288
2.4G	10	20	2	32	10	320
3.3G	10	20	4	34	10	340
5.6G	10	10	1	21	10	210

10.G	0	0	0	0	10	0
24.G	0	0	0	0	10	0
47.G	0	0	0	0	10	0
Higher	0	0	0	0	10	0

Grand Total: 1929

Provisional Division 2 scoring:

Band	QSOs Made	B o n u s P n t s /P - /P	/P - /H /H - /P	Sub Total	Distance Score	Total
50	40	80	160	240	38128	38368
144	17	10	80	90	2140	2230
420	10	20	40	60	3454	3514
1.2G	6	30	15	45	1160	1205
2.4G	2	20	0	20	313	333
3.3G	4	20	10	30	1270	1300
5.6G	1	10	0	10	58	68
10.G	0	0	0	0	0	0
24.G	0	0	0	0	0	0
47.G	0	0	0	0	0	0
Higher	0	0	0	0	0	0

Grand Total: 47018

Notes:

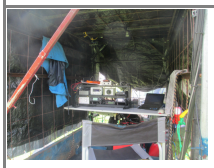
- The new 12V power connection to the radio transit box worked well using the 50A Anderson connectors. The power is now distributed from the back of the housing box rather than the front of the trailer cage so the individual power leads are shorter and neater. I still use polarised ‘blue’ bullet connectors to make the interconnections to the power distribution points from the individual items except for the radio which connect using spade lugs.
- The modified UPS used to generate the AC for the rotators has now (post-FD) been replaced by a different brand unit and is starting up quicker and initially appears to be better than the previous unit.
- My plans to have a replacement rotator controller using the two electronic compass modules still hasn’t made it beyond the PCB layout stage and needs to be completed ASAP.
- I had some doubts as to whether I had cross-connected the semi-rigid coaxes to the 5.7 and 10GHz feeds because of the poor sensitivity at 10GHz – unfortunately they weren’t swapped so I will need to delve deeper into why I was not able to hear the temporary Ocean View VK4OI beacon when I have been able to from Beechmont previously (unless it is actually off-air at the moment). To be tested further….
- I checked the actual microwave transmit powers the day before going out and found that 2.4G and 3.4G were both +29dBm, 5.7G was +26dBm and 10GHz was effectively zero. It was at that stage I determined that the 10G PA was faulty so bypassed it and achieved around +10dBm transmit power – not much, but possible to work with if over a good path.
- The next FD event is the John Moyle Field Day on 21/22 March 2015 so any remedial work now has a predetermined to-be-done-by date.
- Now all we need is more stations active in the JMFD and then the Winter FD in June 2015….

Mouse-over any image to see in more detail....

Solar panels, generator, battery bank and 5L of fuel. Note that the cable to the rotator is already in place to reduce setup time

A view into the back seat area of the wagon shwing the microwave gridpack (2.4 and 3.4G) plus the 600mm prime focus dish (5.7 and 10G).

VHF/UHF antennas almost ready to go up. Note how lush the grash is since the recent rains.



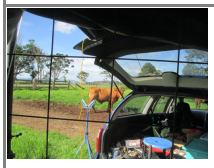
The radio transit box in place inside the trailer and after the full weather cover was put into place. Almost ready to start working up some contacts.

Antennas for all bands 50MHz to 10GHz in place.

It may not look pretty but does keep the rain out of the trailer....

View towards Mt Tamborine. The main path to Brisbane is at the LHS and parts north is to the RHS.

The view of the setup from just inside the gate from the roadway. BinnaBurra is the rise in the background.



At one stage this one caught my eye so I thought I would snap off a pic, but since I recognised it as the male of the species, I didn't want to jump out of the trailer...

Then I looked out the side and spotted more. I was even now less inclined to get out.

The sun was going down and the solar panels had be set to provide maximum charge - at least until the shade from a nearby large tree diminished that.

It looks serene doesn't it - now add the noise of a couple of radios blurting voices and noise and somehow it seems to spoil the effect..

The 'cheapex' 12V solar charger I used for the event. Note the clip-on ferrite on the black negative lead, the one that made an effective aural determination of chargeing current.

Rear view showing the model code.