

John Moyle Field Day 2013

16/17 March 2013

What is one of the most important things to do when setting up antennas and radio gear ?? Screw the coax connectors on properly !! More on that later..

And, by the way, what a change in the weather from most previous (recent) field days. Blue sky, reasonable temperatures (up to around 27 degrees C), light wind, who could ask for more – at least up South East Queensland way. The weather was great, the location at Beechmont in the Gold Coast Hinterland was brilliant (again), no power line noise, no annoying swarms/clouds of flies etc. so what else could one ask for ? More activity on VHF/UHF and microwave frequencies !!!.

Why the complaint ? – quite simply, at these frequencies, the scoring is distance based and if you don't have stations to work, you don't score points. Mind you, I made plenty of contacts on HF on all of the bands 3.5, 7, 14, 21 and 28 MHz – but not many on 21 and 28. There were a few stations around on 50.150, 52.150 SSB and/or 52.525FM and I worked all of those that I could hear. Mostly those same callsigns were on either 146.500 FM or 144.150 SSB, and again on 432.150 SSB. I managed a few stations on 1296.150 SSB and just one on 2403.150 SSB. No contacts were made on 3400, 5760 or 10368 MHz even though the gear was running – powered-on on demand. Jumping ahead too far for now, let's get back to what happened.

I arrived on site at Beechmont, QG61OV55NN, just before 9AM, disconnected the trailer from the car and started the setup work. Together went the yagis for 6M SSB, 2M SSB, 70CM SSB, 70CM FM plus the two vertical whips on the rotator on the back of my field day trailer. The 'tilt' rope was added to the 2M yagi for this event so that I had the option of using/trying it on 2M FM too. Next up were the front rotator's antennas : the 23CM yagi, the dual band 2.4/3.4 GHz gridpack and its associated transverter and finally the 5.7 and 10GHz horns and the associated transverter box. This was where I came unstuck a little : I failed to screw on the feeder to the 23CM yagi properly. Sure I started it on the thread but didn't follow through after I shaped the LMR400 feeder. As such, I suspect that the centre pin on the plug didn't mate with the female pin on the corresponding socket. The result was that all received signals on 23CM were well down in strength – as was my transmitted signal level. What the SWR to the PA was is really unknown but I hope it wasn't damaged permanently by the 'experience'. (The sad part is that I discovered the situation with the connector only when I was disassembling the antennas at the end of the 6 hours of operating in the contest.)

The final step in the setup was to set up the HF antenna. This is a home-made trap-style inverted-V fed at the centre with a 1:1 balun and supported by a 7M fibreglass squid pole. The pole has quite a droop under the load of the balun, the coax feeder and the wire & traps so is certainly not providing a 7M height at the centre. The photos below will show you what I mean by 'droop'. The ends are held about 2M above ground by the PVC end supports, which were then tied off, at one end to a tent peg and the other to a pipe on the nearby water tank. The sideways 'pull' on the centre support – this time my old B&D Workmate – was such that the Workmate fell over a few times during the setup – at least until I placed a spare concrete-filled 'pole-end bucket' on it to provide some extra weight. In some ways it was quite comical trying to get the end supports near the right distance spacing then seeing the centre 'flop' over. It would be easy with 2 or 3 people but, as a single operator station – and the only person on site – it gets hard to put one of these things up without something going awry.....

As a last step, I then took the radio gear's transit box from the back of the car and set it onto the tabletop. Connecting all of the cables (correct power lead polarity this time !), coaxes plus the rotator control cables still takes a few minutes even though all of the other interconnections are already made within the transit box.

A critical step was next – orientating the yagi and gridpack (& horn) antennas to an accurate compass direction. Prior to going to the site, I had used Google Earth (GE) to determine the direction to a visual landmark some 750M away – a radio tower easy to spot – as 39.x degrees, let's say 40 degrees close enough. I pre-set both rotators (back and front) to 40 degrees then rotated the two separate masting pipes until the antenna arrays pointed directly at the radio mast. I locked each of the two mast pipes off with the bottom "T-bar" bolt and the lining-up was all done. No compass work or worrying about magnetic deviation either, just prior homework utilizing GE.

Finally it was time to power up the radios. The HF/VHF/UHF band's IC-706Mk2G came up fine on 7100KHz and I could hear signals there. The FT1802 was working fine on 2M FM, as preset to 146.500 FM. When I pressed the power button on the IC-706 that is used as the microwave transverter IF, it simply wouldn't power on. I could hear internal clicks but it powered straight back off again without the LCD display even showing anything.. { At that point it looked then like it was only going to be 3.5 to 432MHz for this event. } I unplugged the 13-pin-DIN control cable from the accessory socket – no change. For some reason, I unplugged the microphone connector from the underside of the control head and tried again – yes, it powered on. I cycled the power a few times and it responded

as it should have. I plugged the mic plug back in, still working properly. I plugged the 13-pin-DIN accessory plug back in, still ok. I selected the 1296 transverter and couldn't hear the beacon on 1296.4385 – strange, since I have heard it before from there. Much later, the partially screwed-on connector explained it to/for me.

I made my first JMFD contact just after 11AM local time, or 0100UTC, on 40M SSB. That was followed by a multitude of contacts spread across HF, VHF, UHF and even some difficult contacts on 23CM – plus one on 13CM (2403.150). I was using VKCL to electronically log my contacts plus read the frequency and emission mode from the IC-706MK2G for quite a while during this then the dreaded occurrence – a Blue Screen Of Death (BSOD) - happened. I was in the middle of a contact with VK2LAW on 40M and was just putting in his number to me then nothing but blue... What was my serial number to give to him??? I simply didn't know. I guessed it was around 19 but I wasn't sure. That was the number I gave him. Eventually I got the computer back up running and opened VKCL, no entry for VK2LAW but the next serial number was 15. I then logged his call in VKCL, went back and changed the time to the correct value (from what I had written down on a scrap of paper at the time of the crash). What could I do about re-sequencing the numbers so that 15 to 18 were missing ? VKCL's Help was no help at all! In all, I spent about 15 minutes trying to 'fix' the problem with the serial number (and found you can only change these final entry details in "Post-Contest Mode !") before giving up and just continuing with serial number 16 for the next contact. A while later, another BSOD and this time it showed SER2PL.SYS as the cause before it rebooted. I have found previously that SER2PL.SYS is related to the USB to serial adapter driver used to gain access to the Icom CIV data for frequency and mode. After getting the computer up yet again, I opened VKCL (but did not activate/start OmniRig so that I could avoid any serial I/O) and then continued to log electronically.

From then on, VKCL and the computer worked properly right through the balance of the 6 hour section. I might have some emission modes wrong in the log, SSB Vs FM, but all of the bands were correct. I might also add that I am using an Asus EEEPC with a 10.1" screen, Windows 7 Starter, for FD work and it has a screen resolution on 1024 x 600 pixels (not 1024x768) so I had difficulty selecting the Mode when the VHF+ segment was selected. The bottom half of the Mode box vanishes below the bottom of the screen because of the massive number of 'band' options – and no scroll bars are available to move the display window down!! It gets hard to select FM when you can't see the button... I might try asking Mike VK3AVV if it is possible to re-position the Mode box in VKCL just a little, or have optional scroll bars..

The trapped inverted-V worked well on 80, 40 and 20M, and reasonably well on 15M but there must have been some detuning effect on 10M because the LDG Z100 tuner spent a long time trying to establish a match. I will have to re-check it before it gets packed away for next year's JMFD event. I was also asked to try 160M but the 'V' didn't want to match there and I have doubts as to its efficiency even if it did match. Following that, I did roll out a length of wire along the ground/long grass and connected it to a homebrew toroidal impedance transformer with multiple taps (against the trailer as the 'counterpoise') and tried to set it to provide maximum band noise at 1845KHz by changing the tap point. It did tune via the Z100 but did not work well – reasonable considering that the wire was lying along the ground... The band noise from it on 80M was similar to the inverted-V so it wasn't all bad.

I made my final contacts just before 5PM local time (0700UTC) and started to pull down the antennas, basically reversing the sequence that was followed during setup. The HF antennas first, the microwave next, the VHF/UHF yagis last. The masting pipes were stowed back at the top of the trailer with the PVC end pipes, likewise the 6M yagi parts... The 2M yagi and the two 70CM yagis went straight on the top of the trailer cage and held down with occy straps. The gridpack and horn went back in the car then finally the radio transit box was disconnected and stowed back into the rear No neatness involved, just get it back in before it got dark. The car was re-attached to the trailer and I was ready to leave the site just a few minutes after 6.15PM. Next stop, home.

The power on HF would have been close to 100W PEP (according to the Po scale on the 706) and it stayed right up there even without running the generator at all during the 6 hours of the event. The 360AH (approx new) capacity of the 4 x 92AH batteries in parallel was enough to keep the radio gear up, the occasional UPS operation to run the rotators, the power to the EEEPC etc. for the entire duration.

In retrospect, I should have dropped the microwave pipe down and re-checked the 23CM feeder because I suspected that I had an aerial/feeder fault. I didn't allow myself the time, and particularly since I had fitted a 270Kg 3:1 winch to this fixture, it would only have taken me 2-3 minutes, at most, to do.

I really can't complain about the portable site though, it was really quiet on HF such that I was hearing weak stations that could not hear me well. It made some of the contest exchanges tough but perseverance usually paid off.

My mind is virtually made up that I will try to fit an alternate operating system to the EEEPC and make it dual-boot so that I can run Windows 2000 or Windows XP as an alternative to Windows 7 Starter. I just have to figure out the best way to achieve that. That should (hopefully) get rid of BSODs in future events and caused by the SER2PL.SYS driver.

The log statistics show the following :

Band (MHz)	QSO	Points
3.5	4	8
7.0	40	80

14	13	26
21	5	10
28	2	4
50/52	10	100
144/146	20	226
432	8	83
1296	6	72
2403	1	72

Total	109	616
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Mouse-over the images for greater detail...



8:53AM : Just after arriving on site at Beechmont.



A minute or so later, showing how the FD trailer is packed to go.



Putting the VHF & UHF antennas on the rear rotator pole..



Part way up.. It's easy because it is pulled up with a hand winch..



9:31AM : Spot the difference between this photo and the one at right..



9:32AM : You spotted it didn't you - the 2M yagi is now horizontally polarised, it was vertical before.



I did mention a 'droop' in the 7M squid pole.. The real feed point height above ground would have been quite a bit less than 6 metres. A white PVC end-pole is visible at left.



10:25AM : A view back the other way so that the proximity to the FD trailer is shown, plus the other end pole is visible in this view.



A closer view of the VHF & UHF antennas. There are 2 whips at top for 2M & 52.525FM, 432 horizontal yagi, 2M yagi (horiz or vertical), 439MHz vertical yagi and finally the 50MHz/6M yagi. The 23CM yagi on the front trailer mounting is at LHS.



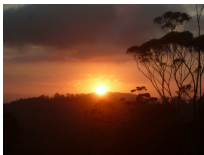
Then the microwave antennas at the left of the previous picture.. The 23CM (1296 MHz) yagi at top, below that is the 5.7 & 10GHz gear and below that again is the 2.4 & 3.4 GHz gear.



The radio gear as set up on the table top. The radios are transported in the box/frame and only the 12V power and antenna connections to the 'outside world' are required.



RHS side showing the little Asus EEEPC - plus the mandatory FD clipboard (in case things go wrong !).



6:09PM : The sun was going down as I was packing up. This was too good a shot not to take the time out for a photo (or two).



Nearly all packed. The 'buckets' at the bottom are the weights for the end poles. A few minutes later I was ready to make the return journey.