

2012 Winter Field Day

23 June 2012

Beechmont, Gold Coast hinterland

QG61OU, 540m ASL.

As far as field days go, this one went without many of the hitches that I have experienced in previous outings. There weren't any mechanical problems with getting antennas up in the air, the rotators worked as they should, and the on-site set-up time was short.

Murphy did come along though. The two 12V car batteries did not maintain enough power to allow me to keep everything powered on all of the time – even with the generator running. I now need to power up all of the equipment again and see exactly what the quiescent current drain is, then check again in transmit mode. I have a LCD voltmeter visible from the operating position and it dipped down below 12.6V a number of times. I took to turning off the equipment not being used purely to save power - even if I then missed out on some contacts on those bands. My power configuration is the 2 12V batteries in parallel in a battery box and a long-ish heavy duty figure-8 power lead off to the generator. The two-stroke generator specs says 8.4A at 12V but is it still producing that ? (To be measured) I probably have a volt or so voltage drop across that figure-8 lead so that won't help keep the batteries topped up so for next time (Spring FD in November), I propose to use the 240VAC output and run a heavy duty power transformer into a bridge rectifier & regulator right near the batteries – so no voltage drop at the 240V level means I can keep the batteries topped up. Why a transformer-based supply ? Simply, the waveform out of these generators is terrible and a switch-mode supply will quickly disappear in a cloud of smoke !!

One of the things that was disappointing was that I did not make even one contact on 2403, 3400 or 5760 MHz . I tried with a few stations, but my location some 60-100KM south of the other microwave stations just didn't work out with the low transmit power levels. I hope to have new transverters running on 5.7 and 10 GHz for subsequent field days so making some contacts on the more-popular 10GHz band may be possible then, hopefully coupled with more stations activating these bands too.

The 23cm transverter obviously does not like the low volts as it distorts on transmit. Maybe it will improve if I re-bias the RF power block and only workshop testing will provide insight on that.

One thing that was obvious was that very few operators actually knew what frequency their equipment was on. The frequency errors on SSB were up to about 1.5KHz on 23cm, even on 2m they were the major part of 1KHz away from the 'nominal' calling/working frequencies. Obviously, these stations did not take the time in their pre-setups to re-net their equipment to frequency. My microwave gear locks from a single 10MHz TCXO that was pre-checked and found to be within 0.1HZ at 10MHz = 134Hz on 23cm, 240Hz on 2.4, 340Hz on 3.4GHz etc. In reality, the error is probably somewhat smaller. My SSB transceivers have also been pre-netted so frequency error from my end is really quite small. How about you FD-ers add that task to your FD checklist too !

My original plan to return to QG61OX was varied because of the large number of people already at the spot. Not amateurs, but simply lots of visitors probably there for the day. I looked at a couple of spots nearby but they weren't suitable for my style of setup. Great for just a vehicle set up on the side of the road with some omni-directional antennas but not for my trailer setup. I returned to a previously activated spot in QG61OU but was (again) subjected to high-tension power line noise, particularly on 50MHz. If a signal wasn't strong on 6, I simply could not hear it. I didn't hear any others make any sporadic E contacts so maybe I didn't miss out there. I did manage to work both VK4BG in QG64iq at 319KM and VK2MAX/P in QF68jv at 331KM twice each on 144.150 SSB from this spot so it's a great spot, just electrically noisy. That one will definitely have to be avoided in the future.

The weather was kinder than some previous FD events – it didn't actually rain until I was on my way homeward however the temperature plummeted late in the afternoon with a brisk wind appearing. My plan to stay to 8PM local was changed in view of the drop in temperature (plus the wind) so that I packed up shortly after some third-block contacts just after 6PM.

The trailer-based field day station concept is working well. It makes it easy to get the antennas up quickly – with good mechanical stability, provides a reasonable level of protection from the elements, can be pre-wired with many of the cables to save time on-site. In fact, for the main VHF/UHF array, I only had to attach the masting pipes, add the antennas, uncurl the coax feeder forms and screw them onto the respective colour-coded connectors for each antenna and winch it up. Done. The microwave mast pipe wasn't much harder but a little slower to do. Add the 23cm yagi on the top, the gridpack for 2.4/3.4 a little below it, then add the actual transverter housing and run the pre-formed cables up to it. Add the LMR400 feed for the 23cm yagi plus some double-sided Velcro wraps around the pipe and up it went. Please note that everything connects, or is attached, with wingnuts – no spanners are used at all in the setup phase.

The radio gear travelled up in it's frame in the back of the vehicle and was pre-wired to the point that there were only two heavy-duty DC connections to be attached, plus 6 BNC coaxes to the VHF/UHF masting pipe, the plugs into the rotator box, the form into the transverter setup (2 x DINs and 2 x BNC) plus the 23cm N connector and it was all connected. About 5 minutes (or less) and all connections were made.

The station pull-down went without a problem. Nothing dropped or lost, quick too, and the cables and antenna pieces were simply shoved in the trailer and the back mesh section attached to hold them in for the return trip. The radio gear (in it's frame) was placed back in the vehicle and off I went.

My log breakdown revealed the following

Band	Locators Activated	Locators Worked	QSOs Made	Total	Band Mult	Band Total
50	10	20	13	43	1	43
144	10	50	35	95	3	285
420	10	30	17	57	5	285
1.2G	10	20	6	36	8	288
TOTAL						901

I had a few hiccups with VKCL but they were of my own making - forgetting to press the Enter key enough times or the using the Log Entry button. That meant that the entry did not save to the log with the correct time, so a few contacts may be shown logged a few minutes late....

The photos below will enlarge with the mouse moved over them.....



Angled view of the loaded trailer. Not much wind resistance with it set up like this. Masting pipes and VHF yagi booms up top, 70cm and 23cm yagis inside.



If you had been following me along the road, this is what you would have seen !



Inside the bottom of the trailer : The generator box (covered by the silver polytarp), two stroke fuel at centre and battery box at right. The table top was covered by a polytarp offcut so that it stayed dry if it should rain while travelling as it has the modified UPS screwed up underneath : the on-demand 50Hz AC power to the rotators.



The VHF/UHF coaxes ready to unfurl to the back masting pipe plus the LMR400 feeder for the 23cm yagi (the larger diameter loop).



The radio gear itself is all set up in this transit frame and is simply lifted out via the handles at each end of the top and carried to the desired position. Minimal setup as only a single DC connection is required plus the assorted coaxes etc..



Once on site, the trailer was disconnected so that it could be levelled. Given that it is a stand-alone facility, that's one of the benefits of this style of operation.



Assembling the VHF/UHF yagis on their masting pipe, supported by the winch cable at a convenient work height. Once everything is in place, the mast is raised by winding the winch handle and then a retaining pin holds it vertical in a yoke



And they are up in the air...



The microwave masting pipe from the front of the trailer supports the 23cm yagi plus the 2.4/3.4Ghz transverter box and gridpack.



The day looked like it would be chilly so the polytarp cover was fitted over the trailer. A bit of unfolding and then it was roped down to the sidebars - about 5-10 minutes work.



The two-stroke generator is placed at the front of the vehicle so that it acts as an audible noise suppressor, not that this generator is particularly loud. The 12V DC charging lead is fed back to the battery box from the DC socket on the front of the genny.

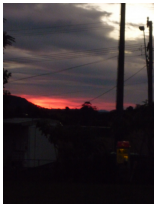


The operating position with the radio frame placed on the table top. From top left : 23cm transverter, rotator controller, 2m/70cm coax antenna switch, Yaseu FT1802M 2m transceiver & on top of it is the LDG Z100 tuner used for 6m. The lower level from left : the transverter IF/PTT switching panel, the IC-706Mk1 microwave IF transceiver and the IC706MK2G used for 6m, 2m and 70cm. The notebook computer is an Asus R100D 10" netbook running Windows 7 Starter with CIV and mouse connections via USB.

I was wearing a Yaesu cap at the time so the water bottle is appropriate as an advert for Icom...



The overall setup from afar.



Sunset : 5.22PM. That intense pink corresponds to the extreme chill up on the site. Shepherd's delight etc...