

2016 Summer VHF/UHF Field Day

9 Jan 2016

Coming so close to Christmas and New Year and having a lot of family involvement in those activities, I wasn't very sure if I was going to enter the event this time. To add to that, I had not not been able to gain permission to access the cattle paddock on Beechmont Plateau so it looked like a bust. Then just two days before the event, I managed to touch base with the owners of the property (after trying for about 6 weeks) and was given the ok to go there. That also meant that this was one event where I hadn't started preparing several days beforehand.

I had been keeping an eye on the weather forecast for SE Qld earlier in the week beforehand and, just for a change, it looked like it was going to be good weather to FD in. I have to admit to forgetting to recheck it later in the week so was still working on the "good forecast".

Thursday afternoon was the start of getting all things antennas and masting out of the shed and placing it in a virtual pile to pack into the trailer. The radio transit box was grabbed and quickly refilled with the three Icom transceivers (early 706 as a microwave IF, 706MK2G as a spare, IC-7000 for 6/2/70cms) and the power inter-wiring re-established. There wasn't really time to do any equipment testing, particularly for 23cms and up. It was more a case of making sure everything was ready to pack for the FD trip.

On Friday morning, the trailer and car were loaded with the full setup: gear and antennas for 6m, 2m, 70cm, 23cm, 13cm, 9cm, 6cm and 3cm, the battery bank, solar panels and regulator, petrol generator, chair, lighting, polytarp covers for the trailer – but no kitchen sink ! Everything was ready by mid-afternoon so all that was needed then was to pack the food, water and the change of clothes (not always required but it is good to be able to put on some dry clothes after working in the rain), insect repellent and sunscreen to be added to the car on Saturday morning.

Saturday morning came so the balance of the items were loaded and I set off from home about 8.25AM, arriving 9.20AM at Beechmont, grid QG61OV25. I cautiously opened the paddock gate and thankfully noted the bulls in the distance. I drove the car and trailer in and quickly closed the gate afterward. I found a good clear spot to set up and parked the trailer and began the setup process, dodging "cow pats" as I worked..

The erection of the 2m whip, the 6m, 2m and dual 70cm yagis went quickly, coaxes screwed on and up to vertical easily due to the winch on the front RHS of the trailer. The next step was to fit the microwave gear to the front masting pipe and get it up. That is where things started going wrong. The microwave gear and antennas went on as normal but somehow I didn't tighten up the T-bar adjuster that holds the inner mast tube properly in place within the outer tube. When I stood the array of antennas vertical, the inner pipe slipped down inside and that also mean that it was loose enough not to lock the 23cm yagi and the 5.7/10GHz dish in the same direction as the 2.4/3.4 GHz grid-pack. It was going to have to come down to be tightened. Then came the second issue...

As I was lowering the masting tube, it started to shift sideways with the result that a steel flange welded on the front of the trailer (and holding the base of the rotator) broke away. The antennas seemed to come down in slow motion (although it was probably more like wishful thinking on my part) but the front of the 23cm yagi "bit the dust" front-on, probably saving the two microwave antennas from any actual physical damage. The result was that the 32mm aluminium inner masting tube bent about 30 degrees just below the 2.4/3.4 transverter box.

My immediate thinking was that my microwave activity just wasn't going to happen and I would operate just 6m, 2m and 70cm. Then the brain kicked in – what if I put the 23cm yagi up in place of the 2m/70cm vertical whip. That would work so I carefully positioned the 23cm yagi in the V-drawbar of the trailer and made it an "approximation of straight". Down came the VHF/UHF mast tube, off with the vertical and on with the 23cm yagi. Up went the mast again – I could only think that having a winch to take the load is great !

Then it was time to get the radio transit box out of the car and connect all of the cables, all going to plan with this at this stage. I started participating in the Field Day and started out on 144.150 USB. Good, that was working and I was asked to QSY to 50.150, yes – ok. The radio on 6 metres was quiet – no signals to be heard at all, no band noise. Uh-oh. Out with the DMM and I measured a short-circuit from inner to outer of the 6m coax fed – that's ok as the T-matched dipole presents that at DC. Down came the mast again. I undid the coax from the connector to the half-wave balun and measured back to the radios – open-circuit – so I knew that it wasn't in the coax cable itself. I measured back to the balun – short circuit, still ok at this stage. Next, I slid the two dipole sections out of their tubing sockets and measured again - still short-circuit when I was expecting an open-circuit result. I found the correct tube spanner in the tool kit and removed the balun from the yagi. Definitely a short-circuit inside the balun. Without a spare 6m balun on board, that was the end of 6 metres for me this time around.

After working a few other stations on 2m, 70cm and 23cm, it became very obvious that I had a transmit issue on 23cm. Report out = S9+20, report back = R4 & S1. I didn't persevere too much with that band after that report. It was a case of "to be investigated later".

The contacts on 2m and 70cm went into a lull so I set about setting up the 5.7/10 GHz dish and transverter near the top of the microwave mast with its base just resting on the ground. It was held sort-of vertical with a loop of rope at the trailer frame top. It all made for very rough manual rotation of the dish making it hard to set direction accurately but seemed to work well enough to work VK4IZ/P on 10G at one stage - at distance of 153KM, achieving the same on 5.7 GHz about ¼ hour later.

I also set up the 2.4/3.4 gridpack such that the bottom edge of the gridpack was resting on the ground and resting against trailer front. I tried to make a few contacts on both bands but none worked out, although I did hear a few stations on 2.4 at one stage..

The best distances noted on 2m: South – I heard Grant VK2MAX near Kempsey – and I know he heard me - but no two-way number exchange was achieved. I also heard David VK4KSY at River Heads while I was setting up but he had gone by the time I started making contest contacts.

Things were quiet with the reduced bands capability and with driving rain approaching, noted visually and accompanied by thunder, I decided to avoid the storm. A quick pack-up session later, I was just driving out of the paddock as the rain hit, leaving at 5.15PM.

I arrived home at 6.10PM. having driven through scattered rain throughout the return trip.

SFD Summary: 29 contacts achieved, well down from previous field days, with a total of only 13 callsigns in the log.

Believe it or not, I don't always have major issues when out on Field Days. Minor oversights, yes.

I mostly don't mention all of the good parts on these activities: the radios that work as they should, the antennas that work properly, the battery charging arrangements - be they solar or petrol generator. Add to that those difficult contacts where the signals start out in the noise but we manage an exchange regardless, working sometimes-vague acquaintances on multiple bands over long distances. Those things are all part of the field day activity too and very enjoyable..

These problems were of my own making in the "rush" process : not tightening the T-bar enough, not supporting the coax harness and thus placing too much weight on the 6m balun coax connectors, not welding all four faces of the mounting bracket, not checking out the 23cm transverter like I had planned to.

Sometimes I think my middle name must be "Murphy" or I have upset a "proverbial chinaman" to have some of the problems that I encounter, but I try to learn from it all and therefore try not to let it repeat. My postings here might just help you or one of your friends solve that issue that strikes either at home or in the field.

Doug

MOUSE-OVER the images for more detail.



Sat AM: The packed trailer ready to head off.



About 9.30AM:.,shortly after arriving on-site at Beechmont. I had started unpacking before I realised that I needed to take a setup photo.



VHF & UHF antennas going together



View from another point



VHF/UHF antennas up vertical - phase 1. Yagis for 6m, 2m, 70cm horiz, 70cm vertical plus a 2/70 whip on the very top.



The inner section of the microwave masting after the failure of the bracket on the trailer. The bend occurred just below the 2.4/3.4 GHz transverter mount. Trying to use it would have meant that the dish and gridpack would likely be pointing at the moon.



The bracket that broke off was on the LHS of the rotator mounting stub pipe. The rotator plus broken bracket was put more-or-less back in position for this photo.



VHF/UHF antennas - phase 2 - with the 23cm yagi on the top.



And up in the air.. At this stage, the 6m yagi was still in its place at the bottom of the 'tree'.



The weather was such that I only required the top cover polytarp for the event. The two 80w solar panels in the foreground helped keep the battery bank up but the overcast conditions certainly limited the available charging current.

Post FD outcomes:

- The 6m balun was replaced and the yagi checks ok. The cause was revealed as a short-circuit on the inner of the N-female coax connector to the body. The balance of the balun was ok so I re-terminated the connector and will leave it in the FD box as a spare.
- I removed broken weld material with an angle grinder and re-welded the steel bracket onto the front of trailer, adding welds along faces previously missed. I also checked the other welds on the back of the trailer and it seems that all edges were welded on that one while the front bracket didn't get the same attention.
- I replaced the bent section of the inner microwave mast pipe and the reset the bracket positions to suit the grid-pack and 2.4/3.4 transverter mount.. It is now a thick-wall square 25mm length of tube so should make the alignment of the 23cm yagi above the 5.7/10 dish a lot closer.
- The problem with the 23cm transverter appears to be low RF drive to the PA. block yet the Minikits transverter PCB output itself appears normal. The PA block seems ok so there is more to do on this transverter before the John Moyle Memorial Field Day in March 2016.