

Contesting

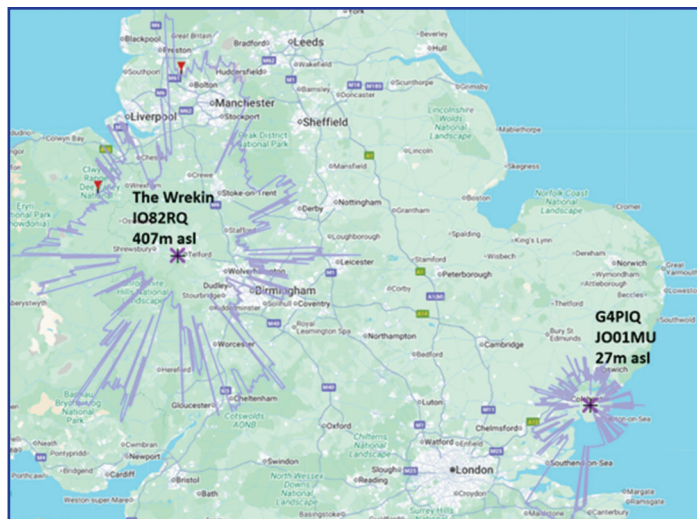


PHOTO 1: Horizon as predicted by HeyWhatsThat for two sample UK sites.

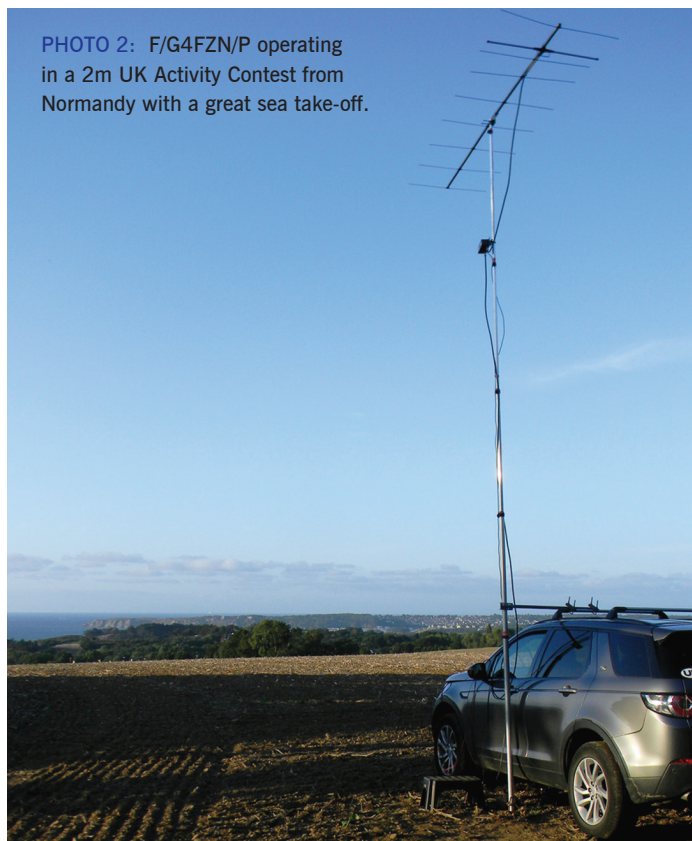
Location, location, location: VHF and UHF portable operation.

Back in August 2024, I wrote an introductory article on what you need to get started in VHF contests. The single most important factor affecting contest performance at VHF is location. Having a clear horizon in the directions where most of your QSOs will come from is a tremendous help and even better if you are atop a hill and able to look down towards the horizon (to have a negative horizon, as it is termed). Of course, for most of us, our home location is what it is and few people have the opportunity to select their house based on its radio potential. If your home is in a valley and you'd like to improve your VHF contesting performance, your obvious options are to operate from another better-sited station, build or use a remote station or to go out portable. I'll focus this month on the last of these – going portable. This is a popular thing to do, with around 20% of the entrants to the weekday evening UK Activity contests being portable stations. It's a beautiful thing to drive or climb to a hilltop in delightful countryside and then to have great fun making many more QSOs than you would do from home.

Finding a suitable site to operate from is obviously key but what this looks like depends on how you are going to operate. Are you carrying all your kit to the top of a hill on foot or are you looking for somewhere that you can drive up to, park the car and operate from? This decision will also likely change the amount of equipment that you are going to use. But using really good high sites can make a battery-powered 10W station sound like a 100W or even bigger station might from a poorer site. Those of you who regularly work Steve, G(W)1YBB/P from his sites in Herefordshire or the Welsh Mountains will know just how loud he is from fantastic sites with just 10W.

If you're thinking of going out portable near to home, you may well already have a good idea of where local high spots are. If you're considering venturing further afield, spending a little quality time at home with free tools like OpenTopoMap [1] and Free Map Tools Elevation Finder [2] can help you find the local high spots. The Summits on the Air (SOTA) database [3] is a great source of the well-known hilltops – focused on backpacking type access. Where best to drive and park up for good operation requires a bit

PHOTO 2: F/G4FZN/P operating in a 2m UK Activity Contest from Normandy with a great sea take-off.



more research. Asking on the VHF contest forums for hints for good sites is another great route as can be searching for the locators where previous contest entries have operated from and then looking more closely with the mapping tools. Going for a recon before the contest is a great idea. Stick a 2m radio in the car with a whip or a halo on the roof, tune to a beacon and look for locations where the beacon peaks up.

But do bear in mind one of the golden rules. It's considered very bad practice to take over the use of someone else's regular site without their permission. It's also critically important that you always operate safely without obstructing the road or access routes and, if you are not operating from public land, that you have appropriate permission from the landowner.

But, just how good are these local high spots? What you really need to know is how clear the horizon is in the directions where activity is at its highest. HeyWhatsThat [4] is a website where you can enter a location and height of antenna above ground and it will plot out the horizon from that site. Photo 1 shows two examples of the output from this site – one for my old site in Essex near the coast but only 27m above sea level; the other from The Wrekin, a well-known hilltop site in Shropshire. The purple outlines around each location represent the horizon as seen from a practical antenna (30ft/9.1m) AGL on The Wrekin, 60ft/18.3m AGL at my site). My old site was a good one. You can see just how much better a fantastic hilltop site with negative horizon in many directions can be. However, it's important to keep perspective and to use the tool as a guide to finding and comparing sites in a region. Don't be put off by the difference in horizon between the best sites and those you can get to. From Photo 1 you might think that you'd never win a contest from JO01MU – but that certainly wasn't the case.



PHOTO 3: G4FZN's neat operating position in the back of the car.

Equipment

The kit you will need varies according to your location and transport choices. If you are looking to operate as a backpacker from a mountain top, you'll be thinking about how to minimise the amount of kit that you have to carry to the top. It's likely that you'll be entering the Low Power section of the VHF contests with a 10W power limit. You'll need a lightweight small or medium-sized Yagi antenna with feeder, a small portable radio like an FT-817 (and perhaps a small amplifier to get to 10W), a shortish (maybe 20ft/6m) lightweight mast, a battery (the modern lightweight LiFePO4 options are a lifesaver here compared to lead acid gel cells), guys, stakes and a hammer as well as something to log with (paper or a lightweight laptop/ tablet). And then, of course, you need all the appropriate safety equipment including a shelter, appropriate spare clothing/waterproofs, food, drink, first aid kit, torch, mobile phone, survival bag etc. Once again, the SOTA website is a good guide as to some of the practicalities of mixing radio and mountain tops, although VHF contesting may push you towards a bit more radio kit and slightly bigger antennas than typical SOTA operations.

If you're looking to operate from a vehicle, in many ways you have more options because you can take much more equipment to site. Lots of people use a 4-8m mast supported vertically with an arm and suitable clamps from a roof rack on the car. If the weather is not calm or if your mast is long or your antenna on the big side, you should also guy this mast. Quite a lot of people secure the bottom of the mast in a drive-on mast stand (available from normal amateur radio outlets and CPC) where you position one of the car wheels on top of a flat clamp base to hold it in place while the pole slips into a bracket. **Photo 2** shows Chris, G4FZN's and Pauline, G8HQQ's station used in a 2m UK Activity Contest while on holiday in Normandy, which is small enough to use only the roof-rack clamp technique. Operating in a vehicle is often most comfortable from the back if you can push the front seats forward to generate enough space. **Photo 3** shows the really neat operating position created by Chris and Pauline in their car.

Some stations go a stage beyond this and have dedicated vehicles (cars, 4x4s, vans or trailers) for contesting. **Photo 4** shows Chris in his and Pauline's more usual environment with their contesting trailer at the top of Sutton Bank in North Yorkshire in the middle of winter. Successful contesters are hardy!

While backpacker-style portable stations can just turn the antenna manually, if you are in the car and especially if the weather is miserable, you'll be much happier with a rotator. Many stations use one but it's far easier to raise the mast if you put the rotator at the bottom of the mast. Having a vehicle with you makes it much easier to operate like a fixed station, to log on a computer and, if it's your thing, to have access to the DX cluster and ON4KST via mobile internet tethering to your smartphone or using a dedicated mobile modem. Check your mobile operator coverage, though. Hilltops can sometimes be surprisingly poorly covered so consider a SIM on a different mobile network if necessary.

Being in a vehicle also gives you a wider practical range of contest sections which you can enter: from Low Power (10W) through Restricted (100W) to the Open section (up to 1kW on 2m and 6m). Apart from the need for an appropriate amplifier, having sufficient DC or mains power on tap is the big differentiator here. It's quite practical to operate in the 10W and 100W sections for a few hours (long enough for a UK Activity Contest) powered



PHOTO 4: G4FZN/P in the wintertime in IO94 well prepared with propane heaters.

from a battery. It's very well worth operating the radio gear from a separate pre-charged battery rather than the one in your car in case the vehicle battery is in rather less good health than you thought. At the end of the contest you might find yourself stranded and unable to start the car's engine! If you are going to use a battery, there are often bits of kit like rotators and laptops which need some mains power and a small 12V-to-mains inverter is a great answer here. But make sure that you have tested it (under load) prior to the contest to ensure it's electrically quiet or that you have already smothered its connecting cables in suitable ferrites.

If you want to enter the Open Section, you really need a mains generator (and many stations in the 100W section also use a generator). There are lots of options here, from basic open-frame ones to the more expensive, smaller, quieter and lighter suitcase-style inverter generators. Both varieties are in common use, although people are increasingly turning to the inverter options. The traditional generators can overshoot under the varying load from an SSB transmitter. I blew up a lot of kit during one VHF National Field Day many years ago with a hired generator. However, if you know your own generator is well behaved, you are probably well set. On the other hand, the inverter generators are designed to operate into unusual and varying loads but some of them (particularly the cheaper ones) can be electrically noisy. So, again, you should check this all out before arriving on site.

Next month I'll be back looking at antennas, radios, accessories and what you can do to improve your VHF/UHF scores.

References

- [1] <https://www.opentopomap.org/>
- [2] <https://www.freemaptools.com/elevation-finder.htm>
- [3] <https://www.sotadata.org.uk/en/>
- [4] <https://heywhatsthat.com>
- [5] <https://www.sota.org.uk/Joining-In/Introduction-to-Activating>

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