  
  
**A Bolt from the Blue**

**OXEMS Blog  
June 2014**

**TESTING IN THE EXTREMES**

Being a product person at heart I know a product needs to do the job it is designed for. It needs to be easy and intuitive to use and it needs to be fit for purpose. So putting OXEMS kit through its paces in laboratory conditions has been a critical part of its development.

**QUIET PLEASE!**

Not long ago I was at a specialist testing facility near Cambridge. It’s a unique location but you wouldn’t know why unless someone told you! No dramatic scenery and no rare flora or fauna. So what makes it so special? It’s very quiet. And I don’t just mean free from traffic, birdsong and the mooing of cows. It is one of the UK’s most signal free locations – so if you want to measure frequencies and the like, then you are in the right place. They have some very, very sensitive pieces of kit there.

**LET'S HEAR IT FROM THE UNDERGROUND ASSETS**

We were testing some of our devices for electromagnetic radiation because it is legally required to fall within certain parameters. Part of the day was spent in an anechoic chamber – a room that is almost totally free of reflected sound. Such a room is a perfect place to go if you ever get tired of the sound of your own voice -as if! That’s because if you go in, seal the door behind you, stand in the middle of the chamber and speak in your normal voice you’ll barely be able to hear yourself. It’s quite an odd feeling and demonstrates how important reflected sound is. I could only hear myself because the sound of my voice resonated through my bones and body in the way sound is carried along a dense metal pipe. In fact any buried metal pipe will act like an antenna for all sorts of sounds and reverberations that are transmitted through the earth, after all it’s how they measure earthquakes.

**A NICE DAY FOR A THUNDERSTORM**

Later in the day we were testing outside in an open field under clear blue skies, absorbed as we studied the readings and measurements coming from the testing equipment that was connected up to our OXEMS kit. Ever attentive, I drew everyone’s attention to the screen and eagerly pointed out what the boffins had obviously missed – a big, unmistakable blip! “You can ignore that,” I was told, “that’s from the thunderstorm.” I looked up and pointed out the clear blue sky above us: “Can’t be,” I said, pointing upwards. The boffin looked at me sympathetically “The one eighty miles away in Birmingham” he said.

Now that’s what I call sensitivity testing and just goes to show how much extraneous background noise metal pipes can pick-up and which have to be filtered out of the equation. I think I’ll leave it to the boffins.

This Blog was first published in June, 2014

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