

Environmental Noise Award

sponsored by 

Hoare Lea Gunfire Noise Analysis Tool

The project involved the design, supply and installation of a network of fixed noise monitoring systems at multiple military ranges across the UK, plus portable systems deployable anywhere in the world. Designed for use by the Ministry of Defence during training to manage noise exposure, critical to system design was robustness, both physically and always-on data availability. A total of 43 systems were delivered despite challenges arising from a multitude of location-specific issues, including accessibility, power and communications, plus Brexit. These issues were addressed through the development of bespoke solutions. No single off-the-shelf system could have achieved the MoD's exacting requirements. All systems are location-aware, time-synchronised and constantly connected to a cloud database, with solar power as required.

The systems used commercially-available class 1 sound level meters with low-sensitivity microphones. However,

the system, database and communication software were all developed in-house to limit risk from third-party/commercial data services becoming obsolete.

This was a technically difficult project which had been well executed with impressive client collaboration. It demonstrates complicated noise monitoring and can be used anywhere as was admirably illustrated by its deployment in Belize. Developing bespoke software to interpret the data, introduces another level of technical competence over and above that required for standard noise monitoring. Making the equipment easily deployable by the client in any location is another element in making this project distinctive. The judges liked the testimonial and that the project has been completed and so there is proof that it works.

"Monitoring and managing the impulse noise emissions from gunfire is a vital requirement for the compliant operation of live firing across the defence estate ranges. The upgraded Gunfire Noise Analysis Tool (GNAT) system now supports the management of our training across our rurally located ranges, supported by fixed monitors often positioned in the most inaccessible remote locations away from the luxury of utility connections. The live data feed and alert system has enabled the range operations teams to manage our firing far more effectively and now have the benefit of recorded data providing real time evidence." Senior Environmental Adviser for Defence Infrastructure Organisation, Technical Services

