

# **METHODOLOGY TO EVALUATE PROTECTIVE SHELTER AGAINST BLAST THREATS**

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With new advances in weaponry system, there is need to develop blast resistant underground shelters capable of providing protection to personnel, equipments and structures against the shock and blast effects of high explosives in war scenario. This paper discusses experimental technique for performance evaluation of protective shelter against its designed blast load in free air explosion. The Protective shelter was evaluated against the designed blast load of 12 psi in instrumented explosive trial. The shelter was placed in an underground pit and covered with soil overburden of 1.0 m. The shelter was tested against uniform blast load generated by simultaneous detonation of two numbers of TNT cylindrical explosives charges, each having weight of 10 kg at an inter-separator distance of 8 m at height of burst of 3.3 m from the ground. Various types of instruments namely Blast probes, Shock sensors, Accelerometers, Strain gauges and Stand alone systems were deployed at critical points of structure to measure its blast effect, ground shock and structure response. The paper also explains that the experimentally acquired blast and ground shock data provides a critical input for the design of future blast protective shelters.