DTRA's WEAPONS EFFECTS TESTING, A THIRTY YEAR PERSPECTIVE

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During the mid 1970s Dr. Don Linger, Defense Nuclear Agency's Director of Testing, decided to consolidate the agency's high explosive weapon effects testing at White Sands Missile Range (WSMR). His concept was to conduct large scale nuclear simulation tests every few years in support of National Command and NATO requirements supplemented by smaller HE tests using a full range of both active and passive measurements to improve understanding of weapon effects and to benchmark state-of the-art calculations. Three test sites were developed in the dry desert alluvium of northern WSMR near the Trinity Site: the Large Scale Testbed (well-known to the MABS community who participated on several 4Kt High Explosive tests); the Intermediate Testbed (for calibration tests with yields up to 20T) and the Precision Testbed (for small-scale special experiments). A fourth testbed was located several miles down range at Queen-15 where a high water table exists. At that time primary interest was directed toward nuclear simulations of airblast, ground shock, cratering and thermal effects against a wide range of above-ground and buried structures. Early in the 1990s the agency's mission shifted to Weapons of Mass Destruction. Testing centered on air delivered weapons and terrorist placed bombs against a new set of above ground and buried structures including rock tunnels. Effects of interest included penetration into soil/rock/concrete, blast-resistant beams/columns/windows and new energetic explosives. Over the years major investments have been made to understand the explosive environment and resulting structural damage with the highest precision. Sensor and recording response has been greatly improved from cumbersome and time consuming analogue recording to high fidelity digital recording. And photography, from film based images to high resolution real-time digital records. The all important Bomb Damage Assessments rely on a number of state-of-the-art photographic, acoustic and seismic sensors. Today these testbeds remain very active hosting a wide range of testing. This paper summarizes the first 30 years of Defense Threat Reduction Agency testing at WSMR.