

LARGE BLAST THERMAL SIMULATOR STATUS REPORT

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The Large Blast Thermal Simulator (LBTS) is currently under construction at Stallion Range, in the northwest corner of the White Sands Missile Range (WSMR) in New Mexico. This is near the High Explosive (HE) test area operated by the Defense Nuclear Agency (DNA). It will be a 20 meter diameter, 200 meter long reinforced concrete shock tube containing an internal thermal radiation eight nozzle source (TRS). Heated, high pressure N₂ gas (700 degrees F and 2200 psi max.) will be used as the driver gas in nine, 2 meter diameter driver tubes. The shock wave will be generated by explosively rupturing diaphragms on the end of the driver tubes. The volume of the driver tubes will be varied by a movable plug of a type used in the United States by oil companies. At the test section concrete is replaced by a steel arch to avoid thermal damage and mounted on the steel arc are 455 N₂ driven ejectors to remove the TRS combustion products. At the exhaust end of the tube an active rarefaction wave eliminator (RWE) opens and closes to prevent reentry of the rarefaction wave and allow long duration testing.

This facility will provide realistic blast/thermal environments for full-scale system testing and will provide for up to two tests per week. The facility which will be available for customer use in early 1995 will have

120 channels of target instrumentation and 140 channels of environment diagnostics with high speed video and real time video monitoring. If necessary DNA can by using its extensive instrumentation resources greatly increase the available channels.