

REACTIVATION OF THE WSMR LBTS THERMAL RADIATION SIMULATOR (TRS)

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The first paper on large-area thermal radiation simulators was presented at MABS 6 at Cahors, France in 1979. Between 1979 and 1998, 16 nuclear weapon thermal radiation simulators (TRS) were built. The simulators were delivered to and used by the US and its NATO allies France, Germany and Great Britain. In January of 2020 only the TRS delivered to the German government was operational. All other TRS units were retired. A few were stored for future use and the remainder discarded. The LBTS TRS was retired prior to 2009 and stored in place at White Sands Missile Range (WSMR).

In 2016, the Defense Threat Reduction Agency (DTRA) provided funding to the US Army Test and Evaluation Command (ATEC) Survivability, Vulnerability and Assessment Directorate (SVAD) at White Sands Missile Range (WSMR) to begin reactivation of the LBTS. Efforts were first concentrated on the blast portion of the simulator. The blast capability of the simulator reached an Initial Operational Capability (IOC) in June of 2019 and will reach a Full Operational Capability (FOC) in 2023. The blast capabilities of the LBTS are described in another MABS presentation by Mr. Brian Hemminger, LBTS Test officer of the SVAD at WSMR.

Reactivation of the TRS began in February of 2020 and reached IOC during late summer of 2022. The TRS is powered by the combustion of liquid oxygen and aluminum powder and is located within the shock tube of the LBTS. This paper describes the operational capabilities of the LBTS TRS, its general design and layout within the LBTS, and results of IOC tests conducted to date.