

## **ARENA TESTS USING CASED BOMBS WITH PRE-SCORED FRAGMENTS**

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The Defense Special Weapons Agency (DSWA) conducted a series of tests to investigate reinforced concrete wall response to in-room high explosive blast and fragmentation effects caused by the detonation of cased weapons. Calculating the wall response from such loadings using structural response computer codes is difficult because of the uncertainties in case breakup, fragment sizes, and fragment patterns. To simplify these calculations, hardened steel bomb cases were pre-cut, resulting in a precise array of pre-formed case fragments of known size and weight. To verify the performance of the pre-scored weapons prior to testing the in-room structural walls, two arena tests were conducted. The arena tests used half-scale cylindrical representations of two weapon types. These were tritonal filled with pre-formed fragments to produce predictable impact patterns.

This paper discusses the details and fabrication of the two half-scale weapons, provides a description of the testbed setup and instrumentation for one of the arena tests, and discusses some of the test results. Additional results and analysis of the arena test data will be presented in a separate paper entitled "Results of Precision Wall Tests Using Cased Bombs with Pre-Scored Fragments" found in this proceedings.