A Symmetric and Highly Reproducible Exit Jet from the LB/TS

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ABSTRACT

This paper presents pressure data from the last three successful Exit Jet Tests in the LB/TS (Large Blast and Thermal Simulator). Earlier Exit Jet Tests had limited success in obtaining reproducible pressure records due to dust and other geometric effects. Significant modifications were made after those tests to remove/reduce dust and to preserve symmetry of the exit area. The resulting test bed gave highly reproducible pressure records. From these records, a physical picture of the exit jet can be deduced. This picture suggests that there is a significant enhancement in the dynamic pressure impulse (DPI) compared to the in-tunnel conditions. The pressure records support a DPI of ~ 33 kPa-s. This is nearly a factor of two higher than the in-tunnel experiments. Although the DPI in these tests were not high enough to cause the T-72 tank to lift off, it did cause significant damage to an M110 howitzer.