

## PEAK PRESSURE ENHANCEMENT DUE TO AN OVERDENSE SNOW LAYER

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In 1991 the Defense Nuclear Agency executed a series of high explosive tests to examine the non-ideal effects of an overdense layer on airblast waveforms. The first test in the series made a direct comparison between an ideal reflecting surface (smooth concrete) and an ideal surface covered with real snow. This paper will report on the results of that test. A spherical 1000 pound high explosive was detonated at a height of burst. Hopkinson bar gages were fielded at ground ranges of 0, 2, 4, and 7 feet on the ideal and snow sides to make direct comparisons of the non-ideal to ideal effects. Snow was obtained from a local mountain range two days before the event, and stored in a refrigerated truck. After laying it on the testbed, the morning of the test, its measured density was .25 g/cc. The density of the emplaced snow varied no more than +/- 8%. The snow was installed to a depth of 5 centimeters, with an offset of 15.2 cm from ground zero. The depth of the snow was uniform within 0.3 cm. As preparation for the test a series of hydrodynamic calculations were performed to model the airblast over both the ideal side and the side covered by the overdense snow layer.