

BLAST CHARACTERISTICS OF LINE CHARGE

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This research experimentally investigates the blast wave generated by a line charge (detonating core) that is detonated in air, on the ground, and buried in a shallow soil. The experimental setup involved detonating a line charge in an open field, and measuring the blast wave properties at various radial distances from the longitudinal axis of the line charge and from the detonation point using pressure gauges. In addition, a high-speed camera was used to capture the detonation and the fireball.

The overpressures measured in the test were compared to an existing model [1] and found to be in good agreement in the far range, while some deviations were in the close range, as shown in figure.

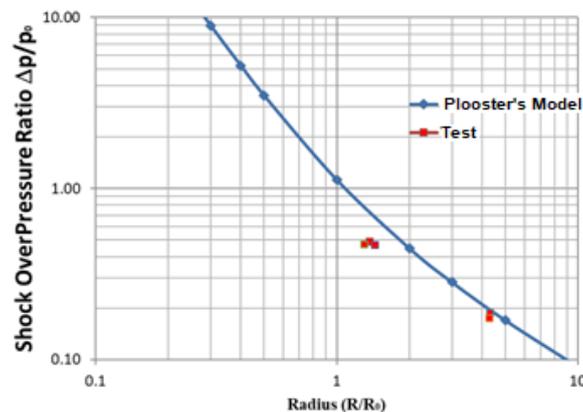


Figure 1: comparison between Plooster's model to test data

The results from the experiments are compared and analyzed to gain insights into the blast wave characteristics and behavior from line charges and their equivalence in terms of a point charge. The findings from this study may lead to further studying the blast characteristics from line charges and optimization of line charges for various applications, such as military and construction operations.

[1] Plooster, M.N (1968) *Shock Wave from Line Sources*, National Center for Atmospheric Research, Boulder Colorado.