

REFLECTION OF SOIL PRESSURE WAVES FROM BURIED DETONATIONS AT CLOSE SCALED DISTANCES

RISCHBIETER, F.

At Meppen Proving Ground, a number of tests on free-field propagation and reflection of soil pressure waves generated by buried charges of TNT were performed. The scaled distance between the charge and the pressure gauges ranged from 0.5 m/kg^{1/3} to 8 m/kg^{1/3} (approx. 1.2 ft/lb^{1/3} to 20 ft/lb^{1/3}).

A concrete wall slab of a buried model shelter served as a reflecting target. At the close-in detonations, the wall yielded plastically. The reflection factor of the peak-overpressure $r=4$ remained fairly constant over the whole range of scaled distance, while the reflection factor of impulse showed a significant decrease for the close-in detonations, combined with a significant reduction of pulse duration.