

# THE TOTAL ENERGY OF REFLECTED AIRBLAST WAVES

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## ABSTRACT

The airblast reflected pressure,  $P_R$ , is a direct function of the side-on pressure,  $P_{SO}$ , and the dynamic pressure,  $q$ :

$$P_R = 2 P_{SO} + (\gamma+1)q.$$

For low airblast overpressures, e.g. at long ranges,  $q$  is negligible with extremely low influence on the reflected wave energy. At short ranges, structural damage is caused by reflected waves due to exposure to high dynamic pressures which can exceed the side-on pressures.

We present a methodology for determining the kinetic energy contribution of the dynamic pressure analytically based on assumed pressure-time histories of the airblast waves.