

## **MODIFICATION OF HIGH EXPLOSIVES TO MATCH NUCLEAR SHOCK LOADING**

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In the air, detonation of high explosive (HE) charges produces pressure waveforms that are qualitatively similar to nuclear events. At lower overpressures the agreement between HE and nuclear is quite good. However, this is not true at the higher levels because of the proximity of the HE contact discontinuity behind the shock front. Moreover, the pressure waveform has a flat topped appearance with a backward facing shock which differs from the triangular peaked nuclear waveform. On the ground, shock waves produced by high explosive detonations cannot provide the necessary impulse, because of limitations in size and cost, for simulating the ground shock effects of near surface nuclear bursts. As a result, techniques of simulation have been driven to modify the high explosive source in order to better "match" the nuclear loading conditions.