EXPERIMENTAL AND THEORETICAL STUDIES OF SHOCK DISPERSED FUEL CHARGES

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ABSTRACT

During the last fifteen years the interest in blast effects, especially internal blast, has led to extensive studies of enhanced blast devices. Shock dispersed fuel charges consist of a high explosive core surrounded by combustible matter. The objective of the experimental and theoretical studies was to find a composition that provides enhanced blast especially in internal detonations.

The devices considered contained fuel composed of metal particles (aluminum and boron) embedded in inert liquid binder. Compositions were selected based on energetic considerations. Experimental screening tests of a variety of compositions were done in a confined volume. The most promising configuration was compared directly to TNT in full-scale firings under semi-confined conditions in a bunker.