

Abstract Submitted  
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**Factors Affecting Internal Blast**<sup>1</sup> RICHARD GRANHOLM, HAROLD SANDUSKY, JOSHUA FELTS, NAVSEA Indian Head — Internal blast refers to explosion effects in confined spaces, which are dominated by the heat output of the explosive. Theoretical temperatures and pressures may not be reached due to heat losses and incomplete gas mixing. Gas mixing can have the largest effect, potentially reducing peak quasi-static pressure by a factor of two due to lack of thermal equilibrium between products and atmosphere in the space, without including the incomplete combustion of excess fuel when that atmosphere is air. Chamber and test geometry affect gas mixing, which has been inferred through a number of experimental techniques and compared to calculations, for both large- and small-scale tests. Observations of late-time combustion depend on the extent of mixing and whether the excess fuel is gaseous or aluminum particles.

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