MODELING FRAGMENT RICOCHET

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The Defense Threat Reduction Agency (DTRA) conducted a series of detonation tests designed to characterize fragment ricochet. Steel cylinders filled with C-4 were detonated in reinforced concrete bays that were used to create the ricocheting surfaces. Sections of these bays were lined with granite to provide a different reflecting surface type. The principal test discussed was performed inside a long narrow bay to demonstrate the effects of fragment channeling inside structures. A free-field test was performed to provide a baseline. Other tests were performed where the fragment incident angles were known and limited to provide information on the relationship between the incident angle and initial velocity with respect to the ricochet angle and velocity. A CTH [1] calculation, where a fragment interacted with a concrete slab, was performed to compare to the results of the ricochet tests.