

IRREGULAR MACH REFLECTION EXPERIMENTS WITH THREE DIMENSIONAL FLOWS

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The air blast in the irregular Mach region was investigated in a series of high explosive experiments known as Operation Mighty Mach. These tests used 1000 pound, spherical, Pentolite charges detonated at heights of burst of 10 to 19.8 ft. over a concrete surface. High response piezoelectric pressure recordings made with wide band FM magnetic tape provided side-on and stagnation overpressure time histories of the flow phenomena at shock strengths of 1200 to 50 psi. The progression of the air shock through the reflection regions is presented, and the triple point data in the irregular Mach region derived from photographic records obtained with ruby laser light are discussed.