

ULTRA HIGH-SPEED RUBY LASER PHOTOGRAPHIC LIGHT SYSTEM

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A procedure was developed using a ruby laser, a high speed or an ultra high speed camera, a wratten filter(s) and a reflective screen to photograph shockwaves very close in to the surface of fireballs generated by the detonation of high explosive (HE) charges. The procedure gave shadowgraphs of shockwave(s) as close in as 2 to 2.5 charge radii (5000-4100 psi) from the fireball debris created by detonated 8-pound spherical HE charges. Multiple shockwaves were also photographed from detonations of spherical HE charges above a hard reflective surface. Ruby lasers with power outputs of less than one joule and greater than 40 joules were used in these experiments.