

Full-Scale Schlieren Visualization of Supersonic Bullet and Muzzle Blast from Firing a .30-06 Rifle

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The muzzle blast and supersonic bullet from firing a .30-06 caliber high-powered rifle is "frozen" in time by a microsecond exposure in the Penn State Gas Dynamics Lab's Full-Scale Schlieren System. Schlieren images of this phenomenon have been done before by others, but only on a scale an order of magnitude smaller. This full-scale image allows us to observe and study the entire process, including shock wave reflections, bullet impact upon a target, and hearing protection for the shooter (Lab Manager Lori Dodson) Prof. Settles is the recipient of the 2004 Tsuyoshi Asanuma Award from the Visualization Society of Japan in recognition of his outstanding achievements in the field of flow visualization.