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**Effect of Dynamic Compression on Accelerating and Sustaining Over-Driven Explosive Detonation** JOSHUA LUSK, PAUL MURCH, MIKE SAPIENZA, DAVE AMONDSON, RONALD WILLIAMS, Naval Postgraduate School, KEVIN VANDERSALL, FRANK GARCIA, Lawrence Livermore National Laboratory, RAY GAMACHE, Naval Surface Warfare Center-Indian Head Division, JOSE SINIBALDI, RONALD BROWN, Naval Postgraduate School — A novel circumferential initiation technique is used to create pseudo-steady-state convergence conditions at rates faster than those attainable by conventional means. Once established, the convergent front envelops and pre-compresses un-reacted explosive to a continuum of higher von-Neumann spike condition prior to chemical reaction. The mechanism will be described along with specific experiments with high-energy and extremely insensitive explosives. Measured velocity increases achieved to-date range between 35 and 65 percent faster than Chapman-Jouguet: Predicted peak pressures increases are greater than 300 percent and well-beyond the detection range of traditionally employed piezo-electric gauges. Very good correlation between experimentally observed detonation front geometry and computational modeling will also be shown. The background of work leading to these accomplishments and details of the experimentation and simulation will be reported. The Office of Navel Research supported this work.

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