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**Laser-Driven Flyer Plate Impact of CL-20** STEVEN DEAN, FRANK DE LUCIA JR., JENNIFER GOTTFRIED, US Army Research Laboratory — A recently constructed and characterized laser-driven flyer plate system has been used to impact CL-20 (Hexanitrohexaazaisowurtzitane), a highly energetic and relatively impact sensitive material. Flyer plates are generated by focusing a ns-pulsed Nd:YAG laser on the interface of a metal foil and glass substrate to which the foil has been adhered. Flyer plates are composed of 25 $\mu$m thick Al and have diameters of approximately 700 $\mu$m. The flyer plate's velocity can be controlled by varying the energy of the launch laser, and can exceed 1.5 mm/$\mu$s. Dozens of flyer plate impacts can be conducted in a single day and require only a few mg of energetic material. The impact event is characterized through high speed videography, visible and infrared high speed photodiodes, and spectral emission. At a critical flyer plate velocity a large spike in the photodiode signal is taken to indicate the shock initiated decomposition of CL-20. This impact event is compared with more traditional measurements of impact sensitivity.

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