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Initiation Train Experiments ELIZABETH FRANCOIS, CARL JOHNSON, GARY LIECHTY, VON WHITLEY, Los Alamos National Laboratory — In an effort to evaluate and qualify a new detonator diagnostic, booster selection and main charge configuration, a variety of small-scale tests have been conducted. This paper will describe the needs, testing approach and model validation. Because of the limited size available some novel approaches were made to understand the observed phenomenon. Function time and time of arrival at various locations in the initiation train are desirable data points. Knowing when each segment initiates the next segment and the time to run up to detonation is critical. Results of our experiments were modeled for timing accuracy, wave shape and pressure. Agreement between the experiments and models will be discussed. The testing that will be discussed is time of arrival wires, PDV, and fiber optic arrays. The time of arrival wire measures the detonator cup breakout time. When correlated to bridge burst, an absolute time is collected. This data point also gives time zero for the booster initiation. Many models actually start at the booster, rather than the detonator, so the inclusion of this data point will improve modeling efforts

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