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**CREST Modelling of PBX 9502 Corner Turning Experiments at Different Initial Temperatures** NICHOLAS WHITWORTH, AWE — Corner turning is an important problem in regard to detonation wave propagation in TATBbased explosives. Experimentally, a sudden change in direction of the propagating wave, such as turning a sharp corner, can result in dead-zones being left behind in the corner turn region, with the observed behaviour being particularly sensitive to the initial temperature of the explosive. In this paper, the entropy-dependent CREST reactive burn model is used to simulate corner turning experiments on the TATB-based explosive PBX 9502. Calculated results of double cylinder tests at three different initial temperatures ( $-54^{\circ}$ C,  $25^{\circ}$ C, and  $75^{\circ}$ C), and a "hockey puck" experiment at ambient temperature, are compared to the corresponding test measurements. The results show that the model is able to: (i) calculate persistent dead-zones in PBX 9502 without recourse to any shock desensitisation treatment, and (ii) predict changes in corner turning behaviour with initial temperature using one set of coefficients.

> Nicholas Whitworth AWE Aldermaston

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