

Abstract Submitted
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The Use of The ITraC Test to Characterise Main Charge Materials MARK WRIGHT, ANDREW STOODLEY, MATTHEW MAISEY, EXPLOSIVE INITIATION SCIENCE TEAM — AWE has developed a novel Initiation Train Characterisation (ITraC) tests to support the development of new explosives, formulations and systems. The ITraC is a flexible vehicle which enables indicative initiation characteristics to be determined from small (50g) samples. The test utilises fibre optic time of arrival probes to monitor the characteristic breakout at the surface of a cylinder and has the capability to incorporate additional diagnostics such as framing cameras, streak and laser velocimetry. A series of experiments have been undertaken on a HMX based PBX formulation to commission the test, quantify the test variability and provide a performance baseline for future trials. ITraC experiments have been performed on three novel TATB/Fluoropolymer based PBX formulations. This paper gives an overview of the test design and describes the performance characterisation of these explosive formulations, demonstrating the tests versatility. As part of this the relative sensitivity of the TATB/Fluoropolymer formulations has been ranked using the ITraC test in a Gap Test configuration.

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