

Abstract Submitted  
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**Simultaneous Photonic Doppler Velocimetry and Dual Axis Framing Technique** MIKE BOWDEN, WILL NEAL, AWE Plc — Flyer plates, accelerated by the electrical explosion of a metallic bridge, have historically primarily been characterised using velocity interferometry methods such as VISAR and Photonic Doppler Velocimetry (PDV). With the advent of high-fidelity three-dimensional magnetohydrodynamical codes such as ALEGRA and ALE-MHD, there is a requirement for the characterisation of spatially-resolved phenomena such as bridge burst, flyer formation and flyer break-up. Multiple high-speed cameras were integrated with PDV, to provide both flyer plate velocity and orthogonal views of the flyer plate. Optically-upshifted PDV was used, and flyer plate velocities in excess of 4 km.s<sup>-1</sup> were measured. Laser illumination enabled imaging with exposures as short as 5 ns to be obtained, effectively freezing the motion of the flyer plate. The experimental technique is described, and example data obtained is presented.

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