

# P47 Characterisation of Vehicle Response to Long Duration Blast

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## **Abstract:**

The Air Blast Tunnel (ABT) is a facility designed to replicate the blast environment that would be created by a very large explosion. Its conical design enables the blast wave from a charge of no more than a few kilograms to be constrained and directed so as to generate a long duration blast pulse characteristic of a detonation of a few kilotonnes of TNT equivalent.

This paper summarises a series of trials conducted between May 2011 and February 2012 in the ABT which investigate the response of vehicles (Ford Mondeo Mk2, 1996 – 2000 production) to blast.

The paper will demonstrate how the blast environment was characterised and show plots of incident, reflected and dynamic pressure. High speed video footage will be presented which shows the dynamic response of the vehicles to blast.

Hazards are characterised in terms of debris velocity (including glazing), panel deformation, and whole vehicle translation. The paper will present plots of hazard magnitude against pressure. Comparisons will be made to shorter duration trials of similar overpressure, and conclusions drawn.

## **Notes:**