

APPLICATION OF RONCHI METHOD FOR VISUALIZATION OF A TURBULENT MIXING ZONE IN SHOCK TUBE EXPERIMENTS

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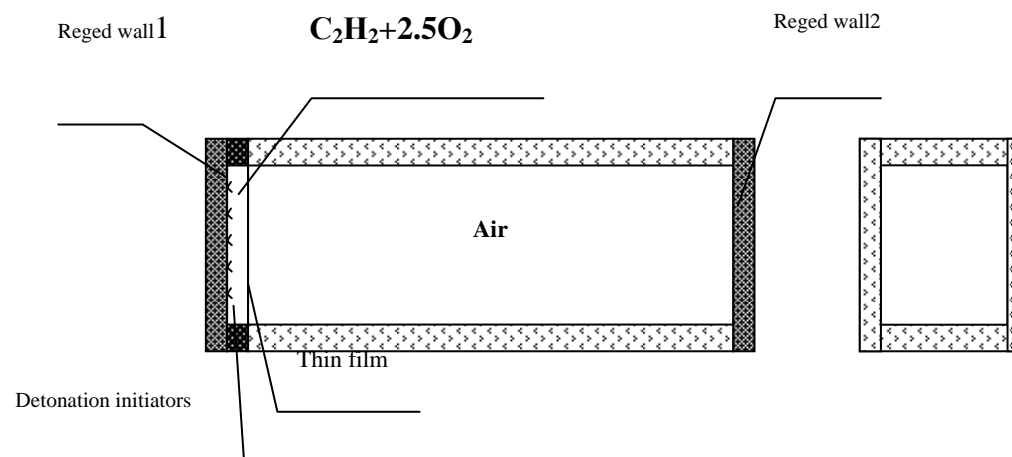


Fig.2. Schematic of the shock tube (8x8 cm² cross section) with gas mixture (acetylene + oxygen) driver, in which development of a turbulent mixing zone on interface of air and products of a detonation of a mix of acetylene with oxygen is investigated (*E.E.Meshkov. The Proc of the 5th IWPCMT, Stony Brook, USA, 1995, p.237*). Detonation of mix initiated in 6x6=36 points located in regular intervals on a rigid wall 1.

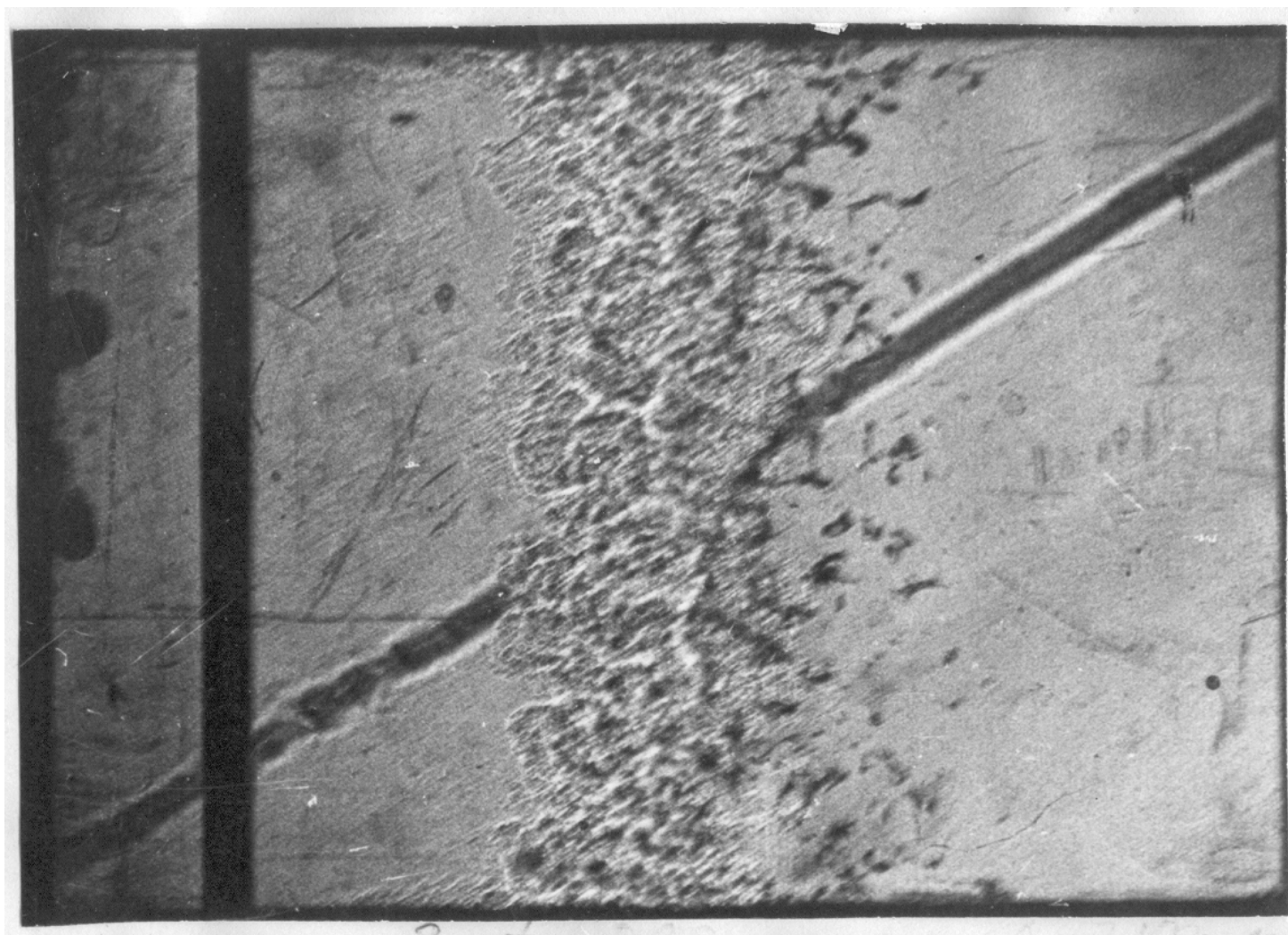


Fig.1. Photo of turbulent mixing zone (TMZ) on air – helium (He) interface in experiments such as [Andronov et al, 1976.], received by a *Ronchi* method at the moment of time $t=890$ μs after the beginning of movement of interface. Designations: F-.shadow of defocused string, size of a defocusing $\Delta =210$ mm, P- pieces of thin film, divided gases initially.

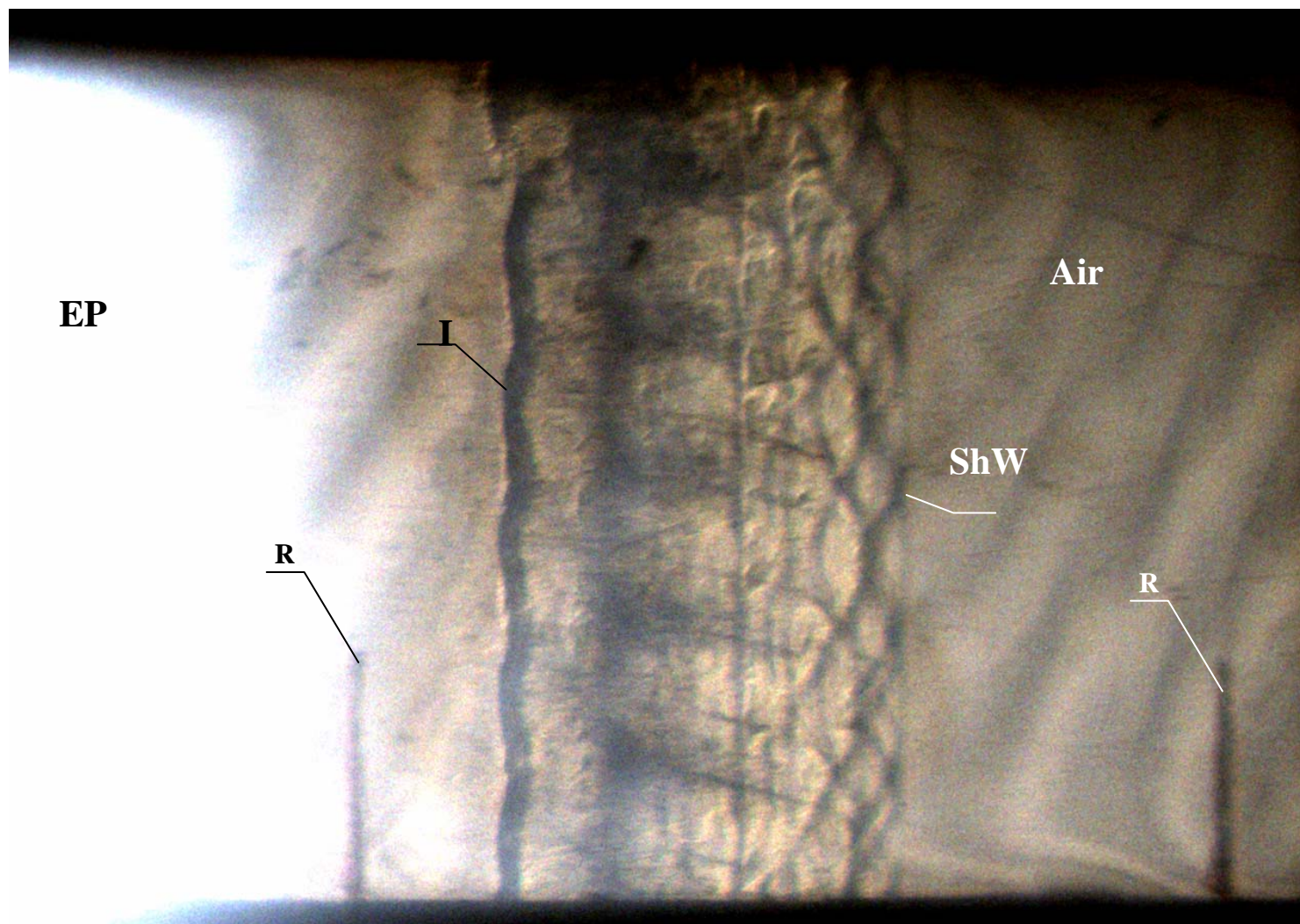


Fig.3. Picture of current in a shock tube (fig.2) at the moment of time $t=100\text{mks}$ (before reflecting of the shock wave from rigid wall 2). Designations: ShW - a shock wave, I - interface between products of a detonation (EP) and air (Air); R-a reference point.



Fig.4. Picture of current in a shock tube (fig.2) at the moment of time $t=700$ mks (after passing through interface shock wave reflected from rigid wall 2). Designations: TMZ - a turbulent mixing zone on interface between products of a detonation and air.