

RESULTS OF EXPERIMENTAL STUDIES OF THE SHOCK WAVE INTERACTION WITH TURBULENT MIXING ZONE IN GASES

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The experimental results of the study of the shock wave interaction with the turbulent mixing zone in gases propagating under the Richtmyer-Meshkov instability are presented. The experiments were conducted using the shock wave with two drivers generating two consecutive shock waves. The first wave was generated by compressed air, and it accelerated the interface of two gases with different densities, which led to the Richtmyer-Meshkov instability initiation at this interface and the mixing zone development. The second wave was generated by an explosion of the oxyacetylene mixture and passed through this zone with time. The dynamics of the second shock wave passing through a turbulent mixing zone at the interfaces of air-SF₆, helium-SF₆, SF₆-air was studied. The Mach number of the first shock wave was $M_1 \approx 2$, of the second SW – $M_2 \approx 3$.

It was obtained in experiments that during the second shock wave passing through a mixing zone, the wave is distorted, widened and delaminated.
