Method of verification of the equations of state of explosion products at large degrees of expansion

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To verify the calculated equations of state of explosion products, the results of experiments on recording the speeds of movement of metal plates accelerated by detonation products of explosives (M-60 and T-20 methods) are widely used. The degree of expansion of explosion products in the M-60 and T-20 methods is 5-7 times relative to the Chapman-Jouguet state, and the experimental information obtained is insufficient to verify the wide-range equations of state of explosion products. This requires data on the propellant ability of explosion products at large degrees of expansion (10 times), when differences in the calculated equation of state of explosion products become noticeable. The report computationally justifies the setting up of experiments to study the propellant ability of explosive explosion products based on octogen in order to verify the equations of state of explosion products. Using the developed experimental device, experiments were carried out with an explosive composition based on an octogen. With the help of a multichannel heterodyne interferometer complex, information about the movement of plates at measurement bases up to 60 mm was recorded. The new experimental data obtained are currently being used to refine the equation of state of explosion products in the region of high degrees of expansion.