Mode establishment of interaction between long rods and moving plates by the results of numerical simulations

©I.F. Kobylkin, D.A. Eskov

Bauman Moscow State Technical University, Moscow, 105005, Russia

Based on the analysis of the kinematics and dynamics of the interaction between long rods and moving in the same direction plates and considering the known experimental data the authors revealed the following interaction modes: 1) the absence of interaction, 2) "slip" type interaction, 3) interaction with weak destruction of the rod and 4) interaction with strong destruction of the rod. Using the Alexeesky – Tate model of penetration of the rods into targets, analytical criteria for these modes was formed. To test these criteria, the authors used ANSYS Autodyn software for 3D numerical simulation of the interaction between the rods of high-density materials and moving steel plates, that, mainly, confirmed analytical criteria.

Keywords: *penetration into firm targets, reactive armor, high-speed interaction, numerical simulations.*

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Kobylkin I.F. (b. 1951) graduated from the Bauman Moscow Higher Technical School in 1974. Dr. Sci. (Eng.), professor of the Department of High-Precision Airborne Devices at the Bauman Moscow State Technical University. The author of about 200 scientific works and methodical works, including 11 monographs and textbooks on the theory explosive, blasting technology, chemical physics of combustion and explosion, materials and structures of light armor, armor armored vehicles. e-mail: kobylkin_ivan@mail.ru

Eskov D.A. (b. 1991) graduated from the Bauman Moscow State Technical University in 2014. He is a graduate student at the Department of High-Precision Airborne Devices at BMSTU. Author of 5 publications in the field of numerical simulation of the processes in physics of explosion and collision. e-mail: vosskuez@gmail.com.