EXISTING AMWE SAMPLES INFRARED VISIBILITY RESEARCHING AND IDENTIFYING WAYS TO REDUCE IT

Kukhta A.
Military institute of Armored Forces
of the National Technical University «Kharkiv Polytechnic Institute», Kharkiv

The accumulated experience of combat operations gained by our state in the course of repulsing the armed aggression of the Russian Federation shows that the enemy uses all types and means of armed struggle, including high-tech intelligence means. The enemy of our state was preparing for combat operations, conducting research and setting up some production of thermal imaging reconnaissance equipment. Having huge revenues from the sale of oil and gas raw materials, the authoritarian leadership of Russia purchased military products from global manufacturers such as Lynred and Thales, and using the samples and exploration documentation received, established their mass production in "circumvention of sanctions". On the basis of modern technologies, the armed forces of the aggressor country have new models of armored weapon sighting and observation systems, portable night observation devices, infrared reconnaissance systems for UAVs and combat aircraft. Thus, the requirements for infrared visibility of armored combat vehicles are increasing significantly, and there is a need to conduct research on infrared visibility (IRV) and develop new methods of camouflaging armored combat vehicles(ACV) [1].

Research areas for developing ways to reduce IRV can be divided into two areas. Firstly, by reducing the thermal contrast of power units and weapons systems of ACV relative to the overall IR signature of the ACV sample. Secondly, the use of active and passive additional means and systems to reduce the IRV. It is advisable to study the solution to the problem of the first direction by comparing the infrared visibility of ACV samples with a diesel engine power plant, with a power plant that does not work, but the power generator of a ACV sample with a gasoline or diesel engine works, and with a hybrid power plant at different stages of the combat mission and in different meteorological and tactical conditions. The second direction of research should be carried out by analyzing the IRV of ACV samples with special coatings of the outer layer with materials and observation complexes, and the use of masking agents that absorb the IR spectrum. An active method of reducing IR can include aerosols, which can be used both directly in the area of use of ACV and in the area of enemy concentration and "reconnaissance" areas. Thus, according to the team of authors, the study of the IRV of ACV samples and the identification of ways to reduce it are relevant and require a comprehensive study [2].

References:

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2. Chickos, R. J., & Chickos, N. K. (2006). Infrared Signature Prediction and Design of Low Infrared-Visible Missiles. AIAA Journal, 44(1), 158-165.