



Russia: Technologies of Weapons Based Upon ‘New Physical Principles’

OE Watch Commentary: Russian military theorists often use the phrase “weapons based on new physical principles” to describe the weapons that will be employed in future operating environments. Often, the descriptions of these weapons are vague, but the accompanying excerpted article from *Voyenno-Promyshlennyy Kuryer*, provides some illumination. The author, Konstantin Sivkov, posits that the weapons of tomorrow will be based upon the theoretical science of today. Sivkov describes how advances in the fields of unified field theory, geophysics and climate control, biological modifications, directed energy, quantum computing, and nano technology may result in these technologies being implemented as weapons. Although Sivkov is a journalist for *Voyenno-Promyshlennyy Kuryer*, he can be considered an expert in modernization and future warfare in his own right. Sivkov is a retired naval officer and General Staff Academy graduate that served in the Center for Military-Strategic Research of the General Staff, who has published over 200 articles regarding the processes of armed struggle, the nature of modern wars and armed conflicts, and the organizational development and development of the Armed Forces, among other topics. **End OE Watch Commentary (Bartles)**

“Thus, in future, the appearance of weapons, able to unleash on an enemy a real weather cataclysm and even to destroy them with earthquakes, is possible.”

Source: Konstantin Sivkov, “Оружие будущего создается сегодня [The Weaponry of the Future is Being Created Today],” *Voyenno-Promyshlennyy Kuryer* Online, 11 August 2020, <https://vpk-news.ru/articles/58124>

Scientific research efforts, directed toward solving current problems, which, as it turns out, have a very remote relationship to military affairs, in the not-too-distant future may turn out to have a significant influence on the shape of weapons systems of the world’s leading armies and correspondingly on the character and content of warfare. I propose to review those scientific problems, which represent the most interesting and in future those most able to influence the development of arms and military equipment (VVST).

Unified Field Theory

Among the fundamental problems, one can include the development of a unified field theory (ETP), which soonest of all will be solved only in the long-term future, while, correspondingly, its influence on the development of weapons will be demonstrated only in the distant future... “Small-scale generators of super powerful UHF-beams may become the basis of a whole class of qualitatively new weapons, directed toward the destruction of the electronics of military objects.”...Despite the exceptional complexity of the tasks of constructing an ETP, it is possible to calculate that in the next 2-3 decades it will be created. The achievements of modern mathematics and cybernetics are the key to success...The creation of that theory will generate a revolution in military affairs, similar to the one, which occurred as a result of the creation of quantum theory...

Geophysics and Climate Control

The most interesting and important applied methodological problem, meaningful for the future development of VVST, speaks to the development of methods, making it possible to control the development of geophysical or climatic processes in given areas of the planet...

The urgency of this problem for military affairs is conditioned by the fact that today the means has already appeared, making it possible to have a sufficiently powerful influence on geophysics and the planet’s climate practically on a global scale...the geophysical processes is based on the fact that the earth, from the point of view of electromagnetism, is a gigantic spherical condenser, in which the outer conducting shell is represented by the ionosphere and the inner conducting core is the earth’s crust and magma, between which an insulator, the lower layers of the atmosphere, is located – possessing weak electrical conductivity. As a result, sufficiently intensive fluctuations in the ionosphere can lead to an echo in the deepest layers of the earth in the form of fluctuations of processes in magma. The consequence of this is “energy discharges” in zones of geological stress at the meeting points of geological plates, which are manifested in the form of earthquakes...[this technology] will be transformed into an exceptionally powerful geophysical and climatic weapon...Thus, in future, the appearance of weapons, able to unleash on an enemy a real weather cataclysm and even to destroy them with earthquakes, is possible.



Continued: Russia: Technologies of Weapons Based Upon 'New Physical Principles'

Source: Konstantin Sivkov, "Оружие будущего создается сегодня [The Weaponry of the Future is Being Created Today]," *Voenno-Promyshlenny Kuryer Online*, 11 August 2020, <https://vpk-news.ru/articles/58124>

[Continued]

Biological Modifications

The first of the applied ontological problems must generate the problem of the creation of living beings with given properties by genetic engineering methods. Developments in this field significant for military affairs lead in the direction of the creation of pathogenic bacteria and viruses with a highly differentiated disease-causing ability by race – so that an infectious microorganism would be dangerous only for a human organism with certain features in genetics and physiology, and defining its racial affiliation...As far as is known, for now the required level of "racial selectivity" has not yet been reached, however there have already been definite successes – previously unknown pathogens appeared, which are more dangerous for people of one race and for another – less. As illustrations we can offer atypical pneumonia and bird flu...

Directed Energy

The creation of small-scale generators for super-powerful UHF waveband beams (as well as optical and x-ray beams) serves as a basic condition for the creation of a whole family of highly effective light weapons of various purposes...Small-scale generators of super-powerful UHF beams may become the basis of a whole class of qualitatively new weapons, directed toward the destruction of the electronics of military objects. The impact of those beams on various flying vehicles may destroy them as a result of putting onboard electronic systems out of operation.

Powerful generators of coherent optical and x-ray beams made it possible to create a laser weapon...In future they may become the primary weapon of future space-based combat systems. This means in the remote future they will be fully able to destroy not just space objects, but also ground ones. It is true, it is subject to the successful solution to the problem of conducting high-energy beams of electromagnetic energy of the optical and X-ray bands through the atmosphere...

Quantum Computers

"The creation of those systems will generate a revolution in military cybernetics – the rate of data processing in an automated command-and-control system will grow by an order of magnitude, increasing the speed of carrying out military operations by means of a reduction in the command-and-control cycle." Solving the problem of using the effect of teleportation of the state of quantum particles in advanced electronic systems will have great significance for military affairs...The creation of those systems will lead to a revolution in military cybernetics – the rate of data processing in an automated command-and-control system will grow by an order of magnitude, increasing the speed of carrying out military operations by means of reducing the cycle of command-and-control. By means of the use of more complex models, calculating a larger number of factors, the quality of decisions made will increase qualitatively. The possibility of roboticization of the Armed Forces will be significantly expanded and, most important, a qualitative leap in the level of intelligence, precision, reliability, accuracy and functionality of systems for the command-and-control of weapons and technical assets will significantly increase. Even the most complex code ciphers will be easily broken...

Nano Technology

The development of nano-scale technologies and technical applications with the required functional capabilities and the ability to self-replicate will play an important role in the progress of weapon systems. In this sphere the primary complexities flow from the fact that in the formation and production of nano objects quantum effects exercise a determining influence, making these processes probable. In essence, this refers to the creation of exceptionally complicated macromolecules oriented toward the fulfillment of specific functions in specific conditions. Being combined in conglomerates, the majority of those molecules can act as a vehicle for storing and processing information. Being located in an environment of other molecules and atomic systems, they play the role of modifiers of their structure or destroyers of it...Moreover, on the one hand, the possibility of the creation of qualitatively new military materials will appear, and on the other hand – fundamentally innovative weapon systems, based on the dispersal of such nano robots, able in short time frames to destroy military objects, weaponry, military equipment and enemy personnel...