

## **MILITARY TECHNOLOGY TRENDS.**

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Over the past 20-30 years, new technologies, especially in the field of communication, have seriously changed our lives. People are actively exploring high-tech and the military sphere. We can say with confidence that an era of high-tech trends in the development of means and methods of armed struggle is being established. And all thanks to new technologies. A lot has appeared that can change the usual picture of military operations beyond recognition.

And so, the first breakthrough is drones. Initially, the drone was conceived as a weapon. The first working product, the Kettering aerial torpedo, was developed in 1917 in the USA. Modern drones have come a long way thanks to the development of microelectronics. The unmanned aircraft fleet includes multicopters, fixed-wing drones, single-rotor drones, unmanned helicopters and hybrids. There is a real military unmanned revolution in this area.

Recently, the secret Russian jet drone S-70 “Okhotnik” developed by the Sukhoi Design Bureau was presented to the public. This is the first domestically produced heavy drone that can carry hypersonic missiles. The range of tasks performed by combat drones is almost limitless. This includes reconnaissance and aerial photography, guidance and target designation, striking targets and electronic warfare.

Military lasers are becoming no less important. The Russian division of the Strategic Missile Forces has already used laser systems on combat duty. Their task is to cover the mobile Yars ground-based missile systems when they move into position areas to launch missiles. One can only assume that the laser beam is capable of quickly and effectively destroying air targets that threaten missiles.

Today, radio communications remain the main means of communication among troops. But it does not stand still and satellite communications are already being actively used, and not only for communication

with the high command, as it was before, but also for exchanging data with troops, crews of armored vehicles on enemy territory, and for controlling the same drones.

Virtual technologies are increasingly being introduced into systems for troop and weapon control, target designation, guidance, and navigation. Devices are being developed that display data about the combat situation directly on the fighter's glasses. For example, they can broadcast images of enemy troops located behind a hill.

If we hear the phrase "virtual reality" somewhere, then computer games come to mind first. Nevertheless, the very idea of a device that would immerse a person in conditions indistinguishable from reality continued to live. In 1979, the first VR helmet appeared, similar in functionality to modern models. This is VITAL - a flight simulator that tracked the user's head and eye movements. The image was generated by a computer and projected onto CRT displays built into the helmet's goggles. It was also included a microphone and headphones for communicating with the operator. These days, VR/AR technology is being used around the world to train soldiers. The main areas of application are simulating real military equipment for training pilots, drivers and technicians, training in combat conditions, training recruits, training medical personnel to behave in stressful situations and simulating operations involving different types of troops.

Virtual or augmented reality technologies are used everywhere, from a parachute jump simulator to a full-fledged war simulator.

Artificial intelligence is also used in military. Artificial neural networks (ANNs) consist of many digital computing elements. Their main difference from conventional computational algorithms is the ability to draw fairly correct conclusions on the task based on existing, often incomplete, data. Thanks to artificial intelligence, it has become possible to detect the desired objects at sea and on land and monitor their movements, draw a map of the area and assess the operational situation without human intervention. ANNs are capable of falsifying photos, videos and other information, so that it is almost impossible to distinguish it from that created by humans. ANN can also be used in electronic warfare and planning military operations from a single command center.

Military technologies are becoming increasingly popular and can lead to large-scale transformations in the military which ever seen in human history.