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ANTI-DRONE WEAPONS IN MODERN ARMED CONFLICTS AND THEIR DEVELOPMENT TRENDS

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Abstract
This article examines the features of modern armed conflicts, particularly using the military conflicts between Russia and Ukraine and between Israel and Hamas as examples. The article emphasizes that at the beginning of the 21st century, the decisive factor in combat operations shifted from the quantity of weapons and the scale of casualties toward high accuracy, operational efficiency, and mobility. The author analyzes the firearms currently used, unmanned aerial vehicles (MQ-9 Reaper, Bayraktar TB2), artillery, and precision missile systems (Tomahawk, Arrow 3). The article also highlights future trends in weapons development, including the integration of artificial intelligence, centralized control of drones, the use of laser and autonomous robotic weapons (IVAS, Iron Beam), as well as the impact of cybersecurity and cyberattacks.

Keywords: Modern armed conflicts, anti-drone weapons, unmanned aerial vehicles (UAVs), Bayraktar TB2, MQ-9 Reaper, precision weapons, hypersonic missiles, artificial intelligence, laser weapons, Iron Beam, IVAS, cyberattacks, military strategy, development trends.

Introduction

Modern armed conflicts are highly relevant as important phenomena that threaten security and stability throughout the world.

These conflicts are often complex and multifaceted, and their development is associated with technological innovations, cyber threats, and the expansion of asymmetric warfare methods. It can be observed that the rapid development of technology is changing combat strategies and tactics, making military operations and their outcomes increasingly complex.

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In addition, armed conflicts have a negative impact on social and economic stability. In the armed clashes between Russia and Ukraine, as well as between Israel and Hamas, the achievement of objectives through the use of numerous technological innovations and modern weapons is evident. Both sides seek to modernize their weapons and employ new methods. The experience gained from these wars may become a factor influencing the development trends of possible future armed conflicts.

Historically, the development of weapons and changes in their tactical and technical characteristics have led to changes in tactics used in combat. A similar trend can be seen in the fact that the arms race that began in the second half of the last century resulted in the rapid development of weapons, military equipment, and weapons of mass destruction.

If, in the military operations of the second half of the 20th century, the strength of the opposing sides was assessed by the quantity of available weapons, military equipment, artillery, aviation, and weapons of mass destruction, as well as by the scale of casualties, then by the beginning of the 21st century it became apparent that such indicators no longer determined the decisive factor. The main reason is that, as a result of the rapid development of science and technology, the decisive factor in inflicting damage became not so much the scale of destruction as the high accuracy of strikes, operational efficiency, and mobility of weapons.

Today, the main weapons used in modern armed conflicts include the following:

Small arms:

L96: Used by the British Army and designed for accurate long-range shooting.

SV-98 sniper rifle: Designed for accurate long-range shooting.

Tavor TAR-21: A modern assault rifle used by Ukrainian forces.

Unmanned aerial vehicles:

MQ-9 Reaper is a remotely piloted unmanned aerial vehicle (UAV) developed by the United States, primarily intended for reconnaissance, surveillance, and strike missions. The MQ-9 Reaper is an improved version of the MQ-1 Predator.

Use: The Reaper is actively used in many military operations, including the global war on terrorism and other combat environments.

Reconnaissance and surveillance: It is widely used for high-precision aerial surveillance, intelligence gathering, and target identification.

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Bayraktar TB2 is a remotely piloted reconnaissance and strike unmanned aerial vehicle (UAV) developed by the Turkish company Baykar. It is mainly used for long-range surveillance and strike operations.

Use: The Bayraktar TB2 is employed by many countries in military operations, including warfare and counterterrorism operations. The Bayraktar TB2 plays an important role in modern military strategy. Its competitive price and high functionality make it a capable drone adopted by many countries around the world.

Artillery systems:

The M198 howitzer is a weapon developed and used by the United States Army. It has a caliber of 155 mm, and the M198 entered service in the 1980s.

Military use: The M198 howitzer was used in many combat operations, including the Vietnam War and other international missions.

Reserve: The M198 was modernized by the U.S. Army through the late 2010s and was used as a reserve weapon. The M198 howitzer is known for its reliability, high firepower, and strategic importance. It remains in service with many military forces and retains its place among modern artillery systems.

M120: A highly effective 120-mm mortar designed for use in rapid operations.

M777: A 155-mm artillery piece capable of long-range and highly accurate fire.

Precision weapons:

Hypersonic missiles are missiles traveling at high speeds exceeding Mach 5 (or 6,174 km/h). These missiles have high speed and maneuverability, enabling them to overcome difficulties and threats during flight.

Military objectives: Hypersonic missiles play an important role in military strategy because they provide the capability to conduct rapid and effective strikes.

Strategic threats: They are used for the rapid destruction of enemy infrastructure.

Changes in military strategy: Hypersonic missiles may lead to changes in military strategies because they increase the capability to deliver rapid and precise strikes.

Defense systems: New defense systems and strategies need to be developed to counter these missiles.

Tomahawk is a multifunctional long-range missile system developed by the United States. It is primarily designed for launch from ships and submarines and is widely used in military operations.

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Military use: Tomahawk missiles have been used in many military operations, including the 1991 Gulf War, the 1999 war in Yugoslavia, and operations in Libya in 2011.

Launch from ships and submarines: They are primarily designed to be launched from ships and submarines, for example, from cruisers equipped with Aegis systems.

Accuracy: They are capable of precisely striking targets within 10–30 meters.

Autonomy: The missiles are capable of self-navigation and can automatically change their course as they approach the target.

Arrow 3 is an Israeli high-altitude, long-range air defense system whose primary purpose is to destroy ballistic missiles and aerial threats. Arrow 3 was developed as part of Israel's Arrow (Hawk) system and plays an important role in the air defense strategy.

Military use: Arrow 3 is used by the Israel Defense Forces in military operations, particularly in response to ballistic missile threats.

High accuracy: Arrow 3 provides high accuracy in detecting and destroying ballistic missiles.

Modernization: The Arrow system is continuously upgraded and equipped with modern technologies. In addition to the weapons, artillery, unmanned aerial vehicles, and precision weapons presented above, rapid scientific and technological development is expected to shape weapons development trends in the near future as follows:

Integration of artificial intelligence into weapons and weapons control

Artificial intelligence: AI systems are used to optimize combat strategies and analyze data in real time. This can be highly effective, for example, in cybersecurity and the management of interconnected systems.

Arms race in military artificial intelligence: Since the mid-2010s, many analysts have noted the emergence of an arms race for superior military artificial intelligence among major powers due to increasing geopolitical and military tensions.

Centralized control and use of drones:

Drones: Military drones play an important role in armed conflicts. They are widely used for reconnaissance, surveillance, and attacks. Drones enable precision strikes, making it possible to conduct combat operations while reducing risks to civilian populations. Drones and other automated systems occupy an important place in combat operations. They provide powerful reconnaissance and strike capabilities.

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The emergence of new types of weapons

New weapons and conflicts threaten human security, requiring global initiatives aimed at ensuring peace and stability.

Use of automated control in the employment of weapons during combat operations

Automation: Combat robots and automated weapons are changing the battlefield. These weapons can help preserve human lives while performing tactical tasks.

Based on weapons development trends, laser weapons, combat robots, and laser air defense systems may be used in the near future.

Integrated Visual Augmentation System (IVAS) is a high-tech vision and communications system developed by the U.S. Army that helps soldiers improve their situational awareness and expand their field of view in combat conditions. The IVAS system is designed to provide soldiers with high-precision data, enable rapid identification of problems, and assist in decision-making.

Integration with new technologies: IVAS is expected to be integrated with other military systems and technologies, introducing innovations into overall military strategies.

Iron Beam is an Israeli air defense system designed to destroy aerial threats primarily through directed-energy (laser) technologies. The system is intended to complement traditional missile defense systems and provide high effectiveness while reducing energy consumption.

Military use: Iron Beam is used by military forces to counter aerial threats, primarily short-range missiles and other targets.

Iron Beam opens new possibilities in modern military strategy, making air defense systems more effective and economical. The role and importance of this system among Israel's defense systems are increasing.

Laser Weapon Systems are modern military technologies designed to engage targets using laser beams. These systems offer numerous advantages compared with traditional missile and small-arms weapons.

Changes in defense strategy: Laser weapon systems create new possibilities in military strategies, reducing dependence on traditional defense systems.

Reduced energy consumption: Laser systems are expected to reduce energy consumption, thereby lowering military expenditures.

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Currently, as direct armed clashes decrease, other types of attacks and weapons are emerging, and they inevitably affect the economies and military spheres of many powerful states.

Data theft: Access to confidential information in government and corporate systems, such as military strategies or economic data.

Attacks on infrastructure: Disruption of essential state functions by damaging energy, transportation, and telecommunications systems.

Cyber weapons: Cyberattacks involve unauthorized actions that undermine the confidentiality, integrity, or availability of computer infrastructure.

Cyberattacks can cause various forms of harm to targeted individuals, organizations, and governments, including major financial losses and theft of personal data. They are generally considered illegal as a method of crime and warfare, although correctly attributing an attack can be difficult, and perpetrators are rarely held criminally accountable.

Based on the above, the following conclusions can be drawn:

Modern armed conflicts and their development trends evolve over time. Technological, geopolitical, and strategic changes play an important role in contemporary warfare. States and armed forces must continuously update their strategies to be prepared for modern threats.

Integration between technologies: Weapons and military technologies are increasingly integrated with one another; for example, cyber and physical weapons may be used together.

New technologies, particularly autonomous systems and cyber weapons, create a number of serious challenges. These challenges will play an important role in shaping military strategies in the future. The development of weapons and military technologies is expected to fundamentally change security, strategy, and military relations worldwide.

Modern armed conflicts and the development trends of the weapons used in them further complicate global security. Every state and international organization must develop new strategies and technologies to counter these threats and ensure preparedness. In these processes, the importance of international cooperation is increasing even further. Armed conflicts are not only wars between military forces but also involve global socioeconomic and political issues.

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Modern armed conflicts threaten global security. To manage and resolve these conflicts, it is necessary to understand modern weapons and strategies. Developing technologies, cyber threats, automated systems, and asymmetric warfare are changing combat operations and their outcomes.

Analysis of contemporary armed clashes shows that opposing sides continue to develop their weapons, introduce new technologies, and change combat tactics. The rapid development of weapons increases the possibility that future military conflicts may expand not only regionally but also on a global scale.

References

1.Shuhrat Rasul. Russia and Ukraine War Today. Shuhrat Rasul. Available at: http://wwwyoutube.com/@Fikruz. Date: 20.07.2024.
2.https://uz.wikipedia.org/wiki/Isroi-Hamas_urushi. Date: 21.09.2024.
3.Bochaver K.A., Shvarts M.V. Psychological Training of Athletes in Practical Shooting. Moscow: Monuments of Historical Thought, 2018.
4.m.dv.com (2022). Russia launches massive invasion of Ukraine—as it happened. Available at: http://M.dv.com/Russia-launches-massive-invasion-of-Ukraine-as-it-happened/a-6089358 (accessed: 22.07.2024).
5.Korchagin S. The Use of Armed Forces of Foreign States in Special Conditions of Peacetime. // Journal of Foreign Military Review, 2018, No. 3, pp. 22–39.