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CONSIDERATIONS ON THE INFLUENCE OF SMALL AERIAL DRONES ON THE ACTIONS OF LOGISTICS FORCES

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Abstract: *In the context of the rapid evolution of autonomous technologies and the expansion of the use of small aerial drones (sUAS - small Unmanned Aerial Systems), we consider that military logistics is facing new challenges and opportunities. Thus, in this paper, we analyze the multifunctional impact of sUAS on the actions of logistical forces both from the perspective of supporting their operations through information collection, surveillance, rapid transport and protection of areas and routes, as well as from the perspective of the vulnerabilities generated by their use by the adversary. The main tactical scenarios in which sUAS can decisively influence logistical flows are highlighted, from the transportation and distribution of resources, to the securing of routes and the protection of warehouses. We also emphasize the need for doctrinal and operational adaptation of military logistics structures, in order to effectively integrate emerging technologies related to drone technology and to develop adequate countermeasures. In the conclusions, we emphasize that the controlled and intelligent integration of sUAS into the military logistics system can provide a significant operational advantage, provided that there is adequate protection against symmetric and asymmetric threats in both hybrid and nonlinear warfare, as well as in low, medium or high intensity warfare.*

Keywords: military logistics, small aerial drones, military operations, modern warfare

1. Introduction

The technological developments of the last two decades have led to a spectacular increase in the use of aerial drones, especially small ones, in the military context. Initially used exclusively for reconnaissance and surveillance missions, these systems have evolved into multifunctional platforms, being adapted for attacks, material transport, engineering support and even logistical operations. In the context of contemporary conflicts, such as those in Ukraine, Syria or Nagorno-Karabakh, armed forces and non-state actors are increasingly using these platforms in tactical operations and beyond, including in the field of logistical support.

This paper aims to investigate how these technologies influence logistical support actions, highlighting both the opportunities created and the risks generated by their use by adversaries. To this end, the analysis will cover the technical-operational characteristics of sUAS, their use in military logistics actions and operations, the threats posed by their use by the enemy, and the necessary adaptations of modern military logistical structures to function efficiently and act successfully in order to achieve logistical support of military operations up to the logistic support line I

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(LSL I, tactical level) and even down to the team, crew, and fighter levels.

From the perspective of the methodological framework of the research, we emphasize that the present paper aims to analyze the impact of the use of small aerial drones on the logistical actions of the armed forces. The approach is structured based on the following working hypotheses: the proliferation of sUAS generates significant transformations in the field of military logistics; their use directly influences the efficiency and security of supply chains; military logistics structures must adapt doctrinally, technologically and operationally to respond to the new challenges of the modern battlefield.

The research method used for the purpose of identifying, collecting and recording data and phenomena is of a qualitative type, based on the documentary analysis of academic sources and not only, of relevant military doctrines (NATO, USA, EU), as well as of reports and case studies on recent conflicts (Ukraine, Syria, Nagorno-Karabakh). The analysis method used for the purpose of interpreting and explaining the significance of the data in order to formulate conclusions is of an inductive type, aiming at extracting trends and formulating conclusions starting from real situations. At the same time, we specify that the limits of the research are related to the limited access to classified information as well as to the accelerated dynamics of technological evolution in the field of UAS systems.

2. Features and Capabilities of sUAS

Although there are a multitude of types of UAS, their classification remains incomplete and relative, mainly due to the accelerated evolution of associated technologies. The lack of a universally accepted classification system reflects both the functional diversity of drones and the rapid pace of innovation in this field. In principle, small aerial drones, known by the acronym sUAS (small Unmanned Aerial Systems), are defined as unmanned aerial vehicles with a weight of less than 25 kg and an operational range of up to 50 km [1]. Depending on their size, weight and tactical use, these platforms are generally divided into three main categories:

- microdrones, weighing less than 2 kg, such as the Black Hornet Nano, are mainly used for individual reconnaissance, providing soldiers with real-time images in close quarters and confined spaces;
- minidrones, weighing between 2 and 10 kg, such as the DJI Mavic 3, have become a common tool in recent conflicts, being used extensively in the Ukrainian theater of operations for reconnaissance and artillery fire control missions [2], [3];
- light tactical drones, weighing between 10 and 25 kg, such as the Orlan-10 model used by the Russian Federation, perform complex ISR (Intelligence, Surveillance, Reconnaissance) missions, providing extended coverage and operational endurance.

The technical characteristics of sUAS drones give them significant potential in supporting logistical operations, especially in contested or difficult-to-access environments. Relevant technical parameters include:

- flight autonomy, which varies from 20 minutes (in the case of microdrones) to 240 minutes (for tactical models);
- operational speed, ranging from 30 to 100 km/h, depending on the weight and mission profile;
- payload capacity, which varies from 0.5 kg (for reconnaissance) to up to 30 kg (for logistical transport);
- extremely short deployment time, generally between 1 and 5 minutes;
- compatibility with C4ISR networks, which allows integration into modern command and control systems [4].

A concrete example of applicability in the logistics field is provided by the Volansi UAV drones, which have demonstrated capabilities for delivering medical supplies to remote regions. In tests conducted by the

U.S. Marine Corps, small cargo UAV systems were able to carry loads of up to 13.5 kg over distances of 10 km, over rough terrain or at sea [5], [6]. This type of capability can significantly reduce the risks associated with resupply in conflict zones, allowing the delivery of critical supplies without direct exposure of personnel.

Of course, from the perspective of their use in military logistics operations, sUAS have significant advantages, but also some limitations. Thus, sUAS present multiple advantages from the perspective of use in the logistical support of modern military operations, including: low acquisition and operating costs, which make them accessible even to non-state actors; increased mobility/maneuverability and autonomous operating capacity in difficult terrain; tactical flexibility and the possibility of multiple use (reconnaissance, transport, damage assessment) and, last but not least, easy integration into modern concepts of distributed logistics and operational sustainability.

However, as mentioned above, they also face certain technological and tactical limitations such as: vulnerability to electronic warfare, especially jamming of communication frequencies and hacking of software components [7]; sensitivity to weather conditions and, as a result, reduced performance in adverse weather conditions (rain, strong wind, extreme temperatures); limited energy autonomy, which affects the duration and range of missions and, not least, reduced transport capacity, which restricts their use in high-volume supply missions.

Therefore, despite their limitations, sUAS are becoming increasingly relevant in support of modern logistics structures, especially in missions conducted in harsh or hostile environments.

3. The use of sUAS in support of military logistical actions

In the current operational environment, characterized by dynamism, dispersion and increased vulnerability of supply lines, sUAS are becoming indispensable tools in support of military logistics. As a result, flexibility, low costs and ease of operation make these platforms viable solutions for critical missions, without exposing personnel to direct risks, such as: reconnaissance and monitoring of logistical routes, transport of materials and ammunition in hard-to-reach areas, as well as support in damage assessment and restoration of mobility.

Thus, one of the most common uses of sUAS drones in logistical support is to perform reconnaissance missions prior to the movement of convoys. They offer the possibility of real-time inspection of routes, detection of obstacles or dangerous areas, as well as mapping the terrain with high precision before the deployment of convoys. In the conflict in Ukraine, for example, logistic support units widely use adapted commercial drones, especially DJI models, to assess road safety and prevent possible ambushes or attacks [8], [9].

Vertical take-off (VTOL) or conventional take-off drones offer effective solutions for resupplying troops in remote, hard-to-reach areas or under enemy fire. Such drones can quickly and safely deliver materials such as ammunition, spare parts or essential medical equipment, reducing the exposure of personnel and transport vehicles. Turkey has developed VTOL cargo drones through Turkish Aerospace Industries to support combat units in mountainous areas such as northern Iraq and northern Syria, in desert regions where road infrastructure was destroyed or non-existent, and in adverse weather conditions, thus providing logistical support in environments where traditional methods encounter difficulties [10].

After hostile actions or accidents, the drone becomes a valuable tool for the rapid assessment of damage to the logistics infrastructure (roads, bridges, warehouses, etc.) and for identifying the fastest solutions to restore mobility. A telling example is the use of tactical drones in eastern Ukraine to assess the degree of destruction of a logistics base hit by enemy artillery. The images obtained allowed the prompt development of a plan to restore the supply route, contributing to the resumption of the logistics flow in a short time [11].

4. Risks and Threats Generated by the Use of sUAS by the Enemy

While aerial drones offer significant opportunities for supporting one's own logistics, they can also pose a real threat when used by an adversary for hostile purposes. Moreover, the rapid development of technology and the easy access to high-performance commercial drones provide even non-state actors with the capabilities to monitor, attack, or disrupt military logistics systems.

From this perspective, among the most important risks and threats generated by the use of drones by the enemy are: surveillance and location of their own logistical routes; drone attacks on convoys and warehouses; and disruption of communications and logistical flows.

Enemies can use drones equipped with optical, thermal or multispectral sensors to monitor the logistical activity of our forces. Thus, convoys, warehouses or distribution points become easy to identify and hit. In the Nagorno-Karabakh conflict (2020), UAS were used by the Azerbaijanis to detect and attack Armenian convoys before they reached the contact zone, contributing decisively to the tactical superiority of the Azerbaijani forces [12].

Kamikaze drones, such as the Lancet (used by the Russian Federation) or the Switchblade (used by Ukrainian), have the ability to precisely strike moving or stationary logistical targets. In Donbas, in August 2023, a Ukrainian ammunition depot was completely destroyed by a Lancet drone attack, the moment being filmed and broadcast for propaganda purposes [13], and the list of examples in this regard is extremely long.

sUAS can also serve as platforms for electronic warfare, either by carrying jamming transmitters or by intercepting and disrupting communications.

In this perspective, we emphasize that analyses conducted in recent theaters of operations confirm the effectiveness and danger that enemy’s sUAS represent for logistical infrastructure. In Ukraine, the analysis of losses shows that most attacks on convoys recorded in the period 2022–2023 were preceded by aerial reconnaissance with ISR drones [14]. In the Nagorno-Karabakh conflict, Armenian forces lost, in just three weeks, over 200 logistical vehicles, most of which were identified and attacked by UAS [15].

5. The Adaptation of Military Logistics Structures to the New Operational Conditions

The proliferation of sUAS in the contemporary operational environment requires a profound transformation of logistical structures. Their adaptation requires not only technological modernization, but also a doctrinal review and adequate personnel training. Thus, logistical support structures must become more agile, more resilient and better protected against the threats generated by the use of UAS by the adversary.

Therefore, adapting military logistics structures to the proliferation of sUAS and beyond involves a systemic, technological and doctrinal rethinking, making it imperative to integrate active and passive protection capabilities, modernize doctrines and train personnel.

Regarding the modernization of logistics equipment and doctrines, modern doctrinal documents, such as AJP-4 – NATO Doctrine on Logistics – clearly emphasize the need for flexibility, adaptability and interoperability in the Alliance’s logistics structures [16]. Thus, from this perspective, we consider that the emergence of drones as a direct threat requires the integration of new directions in the logistics doctrine: cyber defense, electromagnetic protection and rapid reaction capacity to low-altitude air attacks. This adaptation must aim, on the one hand, at the use of sUAS for the protection of logistics forces both in the deployment areas and during movements and, on the other hand, must be doubled by the equipment of UAS detection and neutralization systems, but also by the restructuring of supply processes, which must be faster, more decentralized and less predictable.

From the perspective of the need to implement active and passive protection measures against drones, we emphasize that, faced with the increased risk of drone air attacks, logistics units must implement both active and passive protection measures. Among the technical solutions already adopted in theaters of operations are mobile counter-drone systems (C-UAS), such as DroneGun Tactical or Liteye C-UAS, which can disrupt the control or GPS signals of enemy drones. Also, the use of electromagnetic camouflage, the dispersal of depots and logistics routes, as well as the temporary reconfiguration of support points, are complementary measures to reduce vulnerability to attacks. A concrete example is that of the Ukrainian and Russian armies, which, starting in 2022, began to equip sensitive depots with anti-drone nets, active optical sensors and early warning systems for UAS detection, as well as main supply routes within the range of small aerial drones and beyond [11].

In addition to defense, drones can also be integrated as logistics tools themselves, within modern concepts such as distributed logistics, real-time supply or last-line logistical support. In this sense, autonomous sUAS systems can be used for emergency transport of essential materials, logistical reconnaissance missions or rapid resupply in remote areas. A pioneering example is provided by the U.S. Marine Corps, which developed the Last Mile Drone Resupply concept, in which drones are used to deliver essential materials to the front line [6], thus reducing dependence on traditional means of transport and the associated risk.

Considering the above, we believe that training personnel in the operation and counteraction of drones, especially small ones, constitutes an essential component in the process of adapting military logistics structures to new operational conditions.

Why? It is simple - because technological modernization cannot be effective without proper training of the personnel involved. Thus, logistics personnel must acquire skills in operating UAS systems for transport missions, but also in identifying, reporting and countering hostile drones. Training must include both tactical aspects (avoiding detection, responding to attacks) and technical aspects (using and maintaining equipment). A notable example in this regard is the "Logistyka 4.0" program [17], implemented in Poland, which from 2023 includes mandatory training modules in the use of commercial drones such as DJI and Parrot for logistics officers, in order to use these platforms in real military operations.

6. Case Studies and Lessons Learned

Analysis of recent armed conflicts demonstrates unequivocally that sUAS have acquired an essential role not only in combat operations, but also in profoundly influencing logistical flows. Their ability to provide real-time information, execute precision strikes, and support reconnaissance has led to the need to reconfiguration the entire logistical system in conflict zones.

Next, we will give some examples from recent conflicts, briefly present the operational impact of drones on supply chains, and, of course, the reaction of military logistics structures to this new and terrible challenge on the modern battlefield.

The conflict in Ukraine (2022–2024) provides perhaps the most eloquent demonstration of the impact that sUAS can have on logistics structures. Both sides involved have used sUAS systems extensively, both for reconnaissance and for direct strikes on logistical targets. According to data provided by the General Staff of Ukraine, a large number of critical logistical transports (we estimate around 30%) were lost due to attacks carried out after identification by ISR (Intelligence, Surveillance, Reconnaissance) drones, followed by artillery or kamikaze drones such as Lancet or FPV drones [18].

In Syria (2015–2019), insurgent groups, particularly those operated by ISIS and al-Qaeda, frequently used homemade drones equipped with video cameras to identify ammunition depots of international coalition forces [19]. Once the targets were located, they were attacked with improvised explosive devices launched directly from the drone or by indirectly coordinating indirect fire attacks.

The Nagorno-Karabakh conflict (2020) has highlighted the intensive and strategic use of Turkish Bayraktar TB2 drones by the Azerbaijani military. They have been used to monitor and strike the logistical convoys of Armenian forces, destroying shipments of ammunition, fuel, and food. This kind of constant pressure on supply lines has led to the collapse of key logistical nodes in just a few days [20].

Data and observations collected from these theaters of operations indicate a dramatic reduction in the reliability of fixed logistics routes in areas where the enemy uses drones intensively [21], a reduction that we estimate on average to be up to 40%. As a result, military structures have been forced to adopt more flexible and adaptable logistics models. Thus, the development of modular logistics has been encouraged, with small, dispersed warehouses and the use of variable and temporary transport routes that reduce predictability for the adversary.

In addition, the importance of tactical mobility and the reduction of the logistical signature – not only acoustic or visual, but also electromagnetic – has increased, a natural course of action to protect communications against detection, goniometry and jamming by the enemy [22].

So, if these aspects were evident as early as 2019, as can be seen from the above quote, today and in the war of the future, when aerial drones and not only them are already omnipresent and in large numbers (with a tendency for significant quantitative and qualitative growth) on the battlefield, the importance of tactical mobility and the reduction of the logistical signature (acoustic, visual and electromagnetic) have become essential to avoid identification by enemy UAS.

So, to respond to the new challenges generated by the intense presence of drones, we believe that logistics structures must implement adaptive measures, such as: modularizing warehouses and creating temporary or mobile logistics nodes, with short service life and limited capacity, but multiplied in the field, to disperse the risk; using silent electric vehicles, which offer a significant advantage in terms of reducing the sound signature and thermal footprint, making it more difficult to detect them by drones equipped with thermal sensors; active air support, achieved through the continuous use of our own sUAS, which patrol the areas of responsibility and logistical interest to detect possible air threats in time or to support the escort of sensitive convoys.

These measures, which, of course, we do not claim to be complete and exhaustive, reflect a coherent and rapid adaptation to a type of threat that, although apparently low-cost, has a major strategic impact on the conduct of military logistics actions and, of course, modern military campaigns.

7. Conclusions and Proposals

In this paper, we aimed to analyze the influence of small aerial drones on the actions of logistics forces, through an integrated approach that combined doctrinal study, analysis of recent conflicts, and examination of technological capabilities.

The use of sUAS is causing a profound transformation of the contemporary military logistics paradigm, offering operational opportunities but also major challenges regarding the security and resilience of supply chains. Thus, military logistics structures must adopt a proactive approach, integrating UAS capabilities and developing effective measures to protect against enemy drones. These systems offer increased operational capabilities in the field of military logistics, such as rapid transport, real-time reconnaissance and flexibility in difficult terrain. At the same time, they introduce major vulnerabilities, amplifying the risk to the security of convoys, logistics infrastructure and the overall resilience of supply chains. In this context, the adaptation of logistics structures can no longer be reactive, but must become proactive, oriented towards the integration of UAS technology and the development of effective measures to counter the threats generated by enemy drones.

The working hypotheses formulated at the beginning of the research — in particular those regarding the ability of sUAS to fundamentally change the way of deploying logistical support and the vulnerability of logistical structures to their offensive use by the adversary — were confirmed by the analyzed data. Case studies from Ukraine, Syria and Nagorno-Karabakh demonstrated that drones are capable not only of supporting, but also of massively sabotaging logistical chains.

Also, the research directions regarding the adaptation of doctrines, infrastructure and personnel training proved relevant and were supported by concrete data (NATO doctrines, practices of Ukrainian forces, Polish training programs).

The qualitative research method, based on the analysis of doctrinal documents, open sources, conflict reports and technological data, allowed the formulation of well-argued conclusions regarding the operational impact of drones and the reaction of logistics structures, and the inductive analysis method, which allowed the extraction of general conclusions from the study of concrete and documented situations from modern theaters of operations, allowed the validation of hypotheses formulated based on the observation of operational reality, but it must be noted that it had limits regarding access to classified data or data that are not free for publication. Thus, certain dimensions (e.g. the real impact on NATO logistical resilience in simulated scenarios) remain partially addressed and may constitute future research topics.

In order to capitalize on the potential of sUAS and reduce the associated risks, an approach is needed that includes the following development directions: developing a doctrine dedicated to drone-assisted logistics, which would regulate the use of UAS in support of logistics operations and define the types of missions, command and control levels, as well as the related security measures; integrating autonomous C-UAS (Counter-Unmanned Aerial Systems) systems into the logistics infrastructure, for the protection of warehouses, transport routes and critical points; stimulating civil-military cooperation in the field of commercial drone use, with an emphasis on standardization, interoperability and adaptation of civil technology to operational requirements and, last but not least, reviewing the legislative framework and NATO standards, in order to ensure real interoperability between member states regarding the use and countering of sUAS in the field of military logistics.

In terms of operational logistics, we propose: implementing specific training on the use of sUAS at all logistical levels, to ensure minimum skills in operating and countering drones; increasing investments in detection sensors, electromagnetic protection and passive camouflage systems, with the aim of reducing the logistical signature and vulnerability to the adversary's ISR systems and establishing a specialized command for UAS-assisted logistics, which would coordinate the planning, integration and development of autonomous logistical capabilities in complex theaters of operations.

In conclusion, faced with an operational environment characterized by new complex threats (drone technology being just one of them) and in constant transformation, military logistics must evolve from a linear and reactive system into a proactive, adaptive and autonomous technology-assisted one in order to ensure continuity of support for combat forces and the resilience necessary to gain the initiative at all levels on the modern battlefield.

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References

[1] Unmanned Aircraft Systems (UAS) [Online]. GlobalSecurity.org. https://www.globalsecurity.org/military/world/uav.htm. Accessed: May, 04, 2025.

[2] Richard Thomas. Ukraine buys another 4,200 DJI Mavic drones [Online]. 5/28/2024. DJI drones over Donbas [Online]. 2023. https://www.army-technology.com/news/ukraine-buys-another-4200-dji-mavic-drones/. Accessed: May, 03, 2025.

[3] Dan Sabbagh. It is impossible to outrun them: how drones transformed war in Ukraine [Online]. The Guardian; 1/4/2025. https://www.theguardian.com/world/2025/jan/04/it-is-impossible-to-outrun-them-how-drones-transformed-war-in-ukraine. Accessed: May, 05, 2025.

[4] NATO Standardization Agency (NSA). Standardization Agreement - Standard Interfaces of UAV Control System (UCS) for NATO UAV Interoperability [Internet], STANAG 4586, Edition 3 (STANAG). Brussels; 15 December 2008. Pages: 1-B-6 – 1-B-20. https://archives.defense.gouv.fr/content/download/552732/9407966/file/4586eed3draft.pdf. Accessed: May, 04, 2025.

[5] Antunes J. Volansi Performs the First Drone Delivery of Temperature-Controlled Medicines within the U.S. Commercialuavnews.com; 10/22/2020. https://www.commercialuavnews.com/public-safety/volansi-performs-the-first-drone-delivery-of-temperature-controlled-medicines-within-the-u-s. Accessed: May, 05, 2025.

[6] Magazine Dronele.ro. Package deliveries on ships at sea by drone [Online]. Dronele.ro; August 2021. https://www.dronele.ro/livrari-de-marfuri-pe-nave-din-largul-marii-cu-drona/. Accessed: May, 05, 2025.

[7] Drone Jamming and Electronic Warfare: Countermeasures Against UAVs [Online]. CyberMenNews; 8/19/2024. https://cybermen.news/drone-jamming-and-electronic-warfare-countermeasures/. Accessed: May, 16, 2025.

[8] Logistics in contested zones: Ukraine's drone strategy [Online]. Kyiv Independent; April 2023. https://kyivindependent.com/tag/ukraine/. Accessed: May, 03, 2025.

[9] Bâtcă, M. Drone war in Ukraine. Army Media Agency; 11/1/2024. https://presamil.ro/razboiul-dronelor-in-ucraina/. Accessed: May, 03, 2025.

[10] Rajeh Uppal. Revolutionizing Battlefield Logistics: How Military Cargo Drones Are Set to Resupply Soldiers, Ships, and Submarines. IDST – International Defense Security & Technology (CA, USA); 12/25/2024. https://idstch.com/geopolitics/revolutionizing-battlefield-logistics-how-military-cargo-drones-are-set-to-resupply-soldiers-ships-and-submarines/. Accessed: May, 06, 2025.

[11] Cantin J.M. Ukrainian Unmanned Aerial System Tactics [Online]. TRADOC G-2 Newsleter; 10/8/2024. https://oe.tradoc.army.mil/product/ukrainian-unmanned-aerial-system-tactics/. Accessed: May, 08, 2025.
[12] Detsch J. The U.S. Army Goes to School on Nagorno-Karabakh Conflict [Online]. Foreign Policy; 3/30/2021. https://foreignpolicy.com/2021/03/30/army-pentagon-nagorno-karabakh-drones/. Accessed: May, 07, 2025.
[13] Hambling D. Interceptors Blunt Russian Lancet Drone Attacks [Online]. Forbes; 11/16/2024. https://www.forbes.com/sites/davidhambling/2024/11/16/interceptors-blunt-russian-lancet-drone-attacks/. Accessed: May, 07, 2025.
[14] Kunertova D. Learning from the Ukrainian Battlefield: Tomorrow's Drone Warfare, Today's Innovation Challenge [Online]. Zürich: CSS Study; August 2024. https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSS_Study_2024_Learning_from%20the_Ukrainian_Battlefield.pdf. Accessed: May, 10, 2025.
[15] Hecht E. Drones in the Nagorno-Karabakh War: Analyzing the Data [Online]. Military Strategy Magazine. Winter 2022; Volume 7, Issue 4: Pages 31-37. https://www.militarystrategymagazine.com/article/drones-in-the-nagorno-karabakh-war-analyzing-the-data/. Accessed: May, 10, 2025.
[16] NATO Standard AJP-4, Allied Joint Doctrine for Logistics [Online]. Edition B, Version 1. NATO Standardization Office (NSO), 12/20/2018, Pages: 1-1 – 1-3.
[17] Brzozowska M., Kaczmarska-Krawczak J., Kolasińska-Morawska K., Stroińska E. Competences 4.0 In The Logistics Sector Against The Challenges Of Sustainable Digital Transformation Of The Economy In The Polish Perspective [Online]. Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie, ISSN 1641-3466, 2022, pp. 53–85. https://repo.bg.wat.edu.pl/info/article/WAT93769b312f454c1da97d7c09892d572c/. Accessed: May, 11, 2025.
[18] Loyd A. How Putin's new drone war is getting deadlier [Online]. The Times; 5/23/2025. https://www.thetimes.com/world/russia-ukraine-war/article/fpv-drones-strike-anthony-loyd-sqgw92l2v. Accessed: May, 23, 2025.
[19] Erlich R. ISIS's use of drones in Syria and Iraq and the threat of using them overseas to carry out terrorist attacks [Online]. The Meir Amit Intelligence and Terrorism Information Center; 12/23/2018. https://www.terrorism-info.org.il/en/isiss-use-drones-syria-iraq-threat-using-overseas-carry-terrorist-attacks/. Accessed: May, 12, 2025
[20] Kofman M, Nersisyan L. The Second Nagorno-Karabakh War, Two Weeks In [Online]. Warontherocs.com; 10/14/2020. https://warontherocks.com/2020/10/the-second-nagorno-karabakh-war-two-weeks-in/. Accessed: May, 11, 2025.
[21] Obadal C, Routh A, Lekhi A, Gillis J, Diniz A. From efficient to effective modern combat logistics [Online]. Deloitte Center for Government Insights; 9/12/2023. https://www2.deloitte.com/us/en/insights/industry/public-sector/future-of-warfighting-in-a-digital-age/the-future-of-warfare.html. Accessed: May, 11, 2025.
[22] Mocanu M. Lessons after the electronic war in Ukraine [Online]. Defence & Security Monitor; 12/10/2019. https://en.monitorulapararii.ro/lessons-after-the-electronic-war-in-ukraine-1-25476. Accessed: May, 12, 2025.