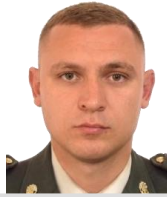


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## **PRINCIPLES OF DELIVERING MATERIAL AND TECHNICAL RESOURCES TO THE UNITS OF THE NATIONAL GUARD OF UKRAINE DURING THE PERFORMANCE OF STATE SECURITY TASKS**

*The article summarizes the principles governing the delivery of materiel to troops in areas of mission execution that reflect the specific nature of the activities of the National Guard of Ukraine. It reveals the content of the principles of integration with civilian structures, unity of the logistics space, rationality and continuity, resilience and adaptability. Examples of their application are provided with due regard for international experience.*

*Based on the analysis of scholarly sources devoted to the study of the basic principles for delivering weapons, military and special equipment, as well as materiel to troops under various operational conditions, it was established that the available open sources do not fully disclose the principles of delivering materiel to the forces of the National Guard of Ukraine in areas where assigned missions are performed (state security provision), especially during participation in stabilization operations of a law-enforcement nature. In particular, the proposed principles take into account the procedure for delivering materiel in support of the actions of the National Guard of Ukraine outside areas of active hostilities, while considering the existing risks of modern warfare.*

**Keywords:** *logistics support, materiel, National Guard of Ukraine.*

**Statement of the problem.** Modern conditions for ensuring the state security of Ukraine are characterized by a highly dynamic environment, a diversity of threats, and the need for the rapid response of units of the National Guard of Ukraine (NGU). The effectiveness with which they perform their assigned tasks largely depends on the timely and uninterrupted supply of materiel. However, experience shows that the system for delivering materiel does not always meet the requirements of contemporary conditions of combat operations (operations).

Existing rules for the organization of logistics are, for the most part, oriented toward pre-planned measures or peacetime experience, which limits their effectiveness in crisis situations marked by rapid changes in the operational environment, unconventional enemy actions, or complicated conditions for organizing logistics support, as well as other risks. The imperfection of the principles used to build the system for delivering materiel to troops, together with the lack of sufficiently clear approaches to organizing interaction among command and control bodies, logistics services, and units, leads to time losses, reduces the level of force readiness, and creates risks of mission failure.

For this reason, there is a need for scientific substantiation and improvement of the principles for delivering materiel to units of the National Guard of Ukraine, taking into account the risks of modern warfare, NATO standards, combat experience, and the specific features of performing state security tasks by NGU forces.

**Analysis of recent research and publications.** The problem of studying, analyzing, and substantiating the principles of delivering materiel for troop (force) components to areas where assigned missions are performed under different legal regimes, as well as in NATO countries, has been raised in a certain number of scholarly works [1–10].

Thus, the authors of study [1] proved that the key principle of logistics support is the integration of the Armed Forces of Ukraine (AFU), the NGU, the State Border Guard Service of Ukraine (SBGSU), and other structures within a unified supply system. However, the authors do not propose specific algorithms or procedures that would demonstrate practical mechanisms for interaction among different agencies under real conditions. In addition, the proposed principle does

not take into account the specific features of the employment of NGU units, which in a number of cases, in particular during participation in stabilization actions, operate autonomously, without the involvement of AFU units. This limits the universality of such an approach and calls into question its suitability as a basic principle for organizing NGU logistics support.

Publication [2], based on NATO STANAG standards, LOGFAS, and the NATO Codification System, proposes as a fundamental principle the creation of a unified information space that ensures the transparency of resource movement, reduces corruption risks, and increases management efficiency. However, the study is focused on a formalized model and ignores the specifics of the process of delivering materiel under unstable conditions and limited access to digital infrastructure. Moreover, the importance of cooperation between military and civilian structures, as well as the involvement of volunteer and private resources in supporting the defense forces, is emphasized, but this is not reflected in the list of current principles for delivering materiel to troops.

Scholarly work [3] demonstrated that the integration of different defense force components (the AFU, the NGU, the SBGSU, and other structures) within a coordinated doctrine and procedures makes it possible to avoid duplication of functions, ensures interchangeability, and increases the resilience of the supply system, and that this should be defined as a set of key principles.

In scholarly article [4], the author emphasizes the importance of adhering to the principle of creating a unified information system. The cited study is oriented toward conditions of stable rear-area functioning and does not take into account the specifics of Ukrainian realities, in particular cyberprotection problems, limited resources, and the need to integrate volunteer supply channels. The author also identified groups of principles for the routine support of military units of the National Guard of Ukraine which, in the author's opinion, may be adapted to combat conditions. These include rationality, efficiency, flexibility, integration, and technological effectiveness of logistics processes. At the same time, the author compares NGU approaches with the practices of NATO countries, which makes it possible to distinguish trends toward centralized management, logistics digitalization, and the introduction of strategies for optimizing transport flows. In addition, the proposed principles are formulated mainly for routine activity conditions and therefore

do not fully take into account the specifics of logistics support for NGU units under dynamic and threatening conditions of combat and stabilization missions. In particular, the principle of integration and technological effectiveness does not reveal the mechanisms of their implementation under conditions of limited time, fire impact, or disruption of logistics routes, which reduces the practical value of the proposed approach for solving real problems of delivering materiel.

Handbook [5] states that the use of modern technologies should be a basic principle and can significantly increase the speed and safety of delivering materiel, especially under risky conditions when traditional supply methods are dangerous. In addition, the study focuses mainly on describing the technical characteristics of unmanned systems and does not take into account the legal and organizational aspects of their use.

Article [6] emphasizes the need for systematicity, consistency, continuity, and reliability of logistics support; however, the emphasis is placed mainly on the general foundations of NGU logistics functioning, without detailed specification of the actual processes of delivering materiel to units under dynamic mission performance conditions. It is also worth noting that the authors limited themselves to listing the principles of logistics support without disclosing their substantive content, which complicates the practical application of the conclusions obtained.

Doctrine [7] identifies a number of principles, such as unity of command, continuity, timeliness, flexibility, economy, interoperability, and priority support for combat units, but their substantive content is presented predominantly at the conceptual level. The document does not disclose the essence of each principle in an applied dimension, in particular with respect to principles for ensuring continuity of logistics flows under dynamic conditions, algorithms for setting priorities, tools for flexible route replanning, or criteria of economy in combat conditions. In effect, the principles are listed without detailing their practical implementation, which narrows the possibilities for their application to the process of delivering materiel under real conditions.

Foreign and domestic scholarly publications in the civilian sector [8, 9, 10] propose principles that can be used to improve logistics processes, in particular rationality, efficiency, flexibility, integration, technological effectiveness, systematicity, economy, and consumer orientation. Although these principles are valuable for commercial logistics and reflect current trends in

digitalization, optimization of transport flows, and increased supply-chain transparency, their applicability to the conditions of activity of the National Guard of Ukraine is limited. This is because civilian approaches are formed for a stable environment, where logistics routes are predictable, risks are minimized, and the main criterion of effectiveness is economy and customer satisfaction. In the context of the NGU, which operates in highly dynamic, threatening, and often decentralized conditions, such principles do not disclose the specifics of supporting units during combat, stabilization, or special actions; in particular, they do not take into account the effects of fire damage, destruction of infrastructure, time constraints, and the need to ensure the autonomy of units. Therefore, civilian logistics principles may be useful only as a general methodological basis, but they do not fully solve the problem of organizing the delivery of materiel under the specific conditions of NGU activity.

**The purpose of the article** is to provide a scientific substantiation of the principles for delivering materiel to units of the National Guard of Ukraine during the performance of state security tasks.

**Summary of the main material.** The effectiveness of the National Guard of Ukraine in performing its tasks directly depends on the timely, uninterrupted, and safe delivery of materiel to units. Under the current conditions of the full-scale invasion by the Russian Federation, traditional approaches to the organization of supply have proved insufficient. The dynamic operational environment, destruction of transport infrastructure, information and cyber threats, limited resources, and constant fire strikes on rear areas create risks of supply disruption, which negatively affects the combat capability and resilience of military formations. Of particular importance is the factor of the so-called "kill zone" – the enemy engagement zone, which under current conditions may extend up to 50 km in depth from the front line, including for units conducting stabilization actions. This means that even those routes and depots that were previously considered relatively safe are now under constant threat of fire engagement. Accordingly, NGU logistics must take into account these new realities by forming principles that will ensure the resilience, flexibility, and rationality of the system for delivering materiel to units involved both in combined-arms missions and in the specific tasks characteristic of NGU forces.

The authors propose two groups of principles: basic principles, which concern rear support and the main organizational aspects, and specific principles, which are intended to ensure the effectiveness of special processes.

The basic principles that form the foundation of the functioning of the rear support system and directly affect the organization of delivering materiel under combat conditions may include the following: continuity, timeliness, sufficiency, flexibility, economy, centralized management, interaction, concealment, reliability, autonomy, mobility, and rational placement of rear support facilities.

*The principle of continuity of support* provides for the maintenance of stable logistics flows regardless of the intensity of hostilities, which is achieved by creating reserves, duplicating routes, and forming stocks at multiple levels.

*The principle of timeliness* requires the delivery of materiel within the established timeframes in accordance with the tempo of operations, which is ensured through needs forecasting and prompt adjustment of delivery plans.

*The principle of sufficiency (completeness of support)* consists in providing units with the required quantity in accordance with standards and actual needs, including the formation of current, inviolable, and mobilization stocks.

*The principle of flexibility and maneuverability* provides for the possibility of rapidly changing routes, forms, and methods of support, as well as maneuvering forces, means, and stocks depending on the operational situation.

*The principle of economy* is aimed at the rational use of resources, optimization of routes, and avoidance of duplication in logistics operations.

*The principle of centralized management* ensures unity of rear support leadership, a clear management vertical, and coordinated actions among services and management levels.

*The principle of interaction* provides for the coordination of actions of rear support bodies with combat units, engineering, medical, and other services, as well as among different types of armed formations and other components of the defense forces.

*The principle of concealment and protection* requires camouflage of depots, routes, and supply points, dispersion of resources, and engineering fortification of rear support facilities.

*The principle of reliability* determines the resilience of the support system to losses, shelling,

and destruction, which is achieved through the availability of reserve routes, forces, and means.

*The principle of autonomy* provides for the ability of units to operate for a certain time without external resupply, which is ensured by forming stocks at company and battalion level.

*The principle of mobility* requires the rapid relocation of depots, supply points, and repair teams, as well as the use of mobile workshops, fuel and lubricants stations, and containerized depots.

*The principle of rational placement of rear support facilities* provides for selecting locations with due regard for security, accessibility, camouflage, and logistics capabilities, which makes it possible to minimize risks and reduce delivery time.

Alongside the basic principles of logistics support, and taking into account the peculiarities of the operational environment, the nature of tasks, and the organizational structure of units of the National Guard of Ukraine, as well as on the basis of generalization of theoretical provisions and practical experience in carrying out state security tasks, the authors have formulated a number of specific principles for delivering materiel.

*The principle of integration with civilian structures* consists in the use of shared infrastructure, in particular railway junctions, motor transport enterprises, and warehouses, and makes it possible to create alternative routes and reserve supply channels, which reduces the risk of losses within the so-called "kill zones". An important role is played by interaction with local administrations, business entities, and volunteer organizations capable of promptly covering critical needs in transport, equipment, or materiel.

*The principle of unity of the logistics space* is based on the creation of a single integrated support system that encompasses all management levels – from strategic to tactical – and ensures the uninterrupted movement of material, technical, and information flows.

*The principle of rationality and continuity of delivery* provides for the optimization of routes and delivery schedules with due regard for security, time, and resources. In NGU practice, so-called "security windows" are used for convoy movement between shelling episodes, as well as combined routes that integrate rail and road transport.

*The principle of integrating unmanned technologies* consists in ensuring the safety, efficiency, and adaptability of logistics processes during NGU operations. In the practice of units, reconnaissance quadcopters are increasingly

widely used: Skydio RQ-28A (USA), DJI Mavic 3 / Mavic 3T (PRC manufacture, widely used in Ukraine), Autel EVO II Dual 640T (USA/PRC manufacture), Elistair ORION 2 (France), etc.

*The principle of system resilience and adaptability* provides for building a multi-level reserve system in which the failure of one element does not lead to a logistics collapse. If a military supply channel is destroyed, it can be replaced by a civilian one, and vice versa.

*The principle of digitalization and automation* provides for the introduction of information systems, digital platforms, and automated control tools in order to improve the accuracy, speed, and safety of logistics processes of NGU units. Under current conditions, digital tools make it possible to ensure uninterrupted data exchange among command posts, mobile groups, and logistics units, which significantly shortens decision-making time and reduces risks associated with the human factor.

*The principle of countering airborne threats to logistics* is based on the creation of a set of engineering, organizational, and technological measures aimed at protecting delivery routes, convoys, depots, and supply points against UAV strikes, FPV drones, loitering munitions, and enemy targeting means. In current realities, when drones have become the main instrument for engaging rear-area facilities, logistics has turned into one of the most vulnerable components of combat operations.

*The principle of organizing logistics bases* provides for the rational placement, structuring, and engineering arrangement of supply points with due regard for security, accessibility, mobility, and the possibility of rapidly restoring operations. Today, logistics bases must be capable of functioning under the threat of UAV strikes, artillery fire, and sabotage groups while ensuring uninterrupted supply to units operating in stabilization areas.

*The principle of low observability of logistics* is based on minimizing one's own revealing features, namely: irregular schedules, blending with civilian traffic flows, reducing the scale of convoys, and digital masking of logistics data.

*The principle of information-synchronized support* consists in ensuring that supply is carried out not according to planned norms but according to actual consumption determined through digital reporting systems of units. In other words, material flows are synchronized with the real operational tempo of units.

*The principle of anticipatory support of stabilization zones* provides for the advance

movement of materiel to areas of probable deployment of law and order forces before the active phase of an operation begins. A characteristic feature of stabilization actions is the sharp growth of needs after units enter an area and the limited time for deploying rear support, which reduces the need to move "excess rear support."

The principles outlined are aimed at achieving concrete results: increasing the autonomy of units, reducing the risk of supply disruption, ensuring the interchangeability of resources, increasing the survivability of routes and depots, as well as the stability of logistics in urban areas. This makes it possible to assess the logistics system not only from the standpoint of theory, but also through its real impact on combat capability. Each principle has also been formulated in such a way as to combine theoretical foundations with practical implementation mechanisms.

### Conclusions

Thus, the article formulates and substantiates the key principles of logistics support for units of the National Guard of Ukraine during stabilization actions, discloses their content, and presents their classification and systematization with due regard for contemporary combat conditions.

The totality of the presented principles forms a scientifically substantiated basis for organizing the delivery of materiel to units of the National Guard of Ukraine, ensures an increase in the effectiveness of logistics processes, their resilience and adaptability to the current conditions of mission performance, and also contributes to maintaining an appropriate level of combat capability of units in the course of performing state security tasks.

A promising area for further research is the ranking of factors influencing the delivery of materiel to units of the National Guard of Ukraine during the performance of state security tasks.

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**ПРИНЦИПИ ДОСТАВЛЕННЯ МАТЕРІАЛЬНО-ТЕХНІЧНИХ ЗАСОБІВ ДО ПІДРОЗДІЛІВ НАЦІОНАЛЬНОЇ ГВАРДІЇ УКРАЇНИ ПІД ЧАС ВИКОНАННЯ ЗАВДАНЬ ІЗ ЗАБЕЗПЕЧЕННЯ ДЕРЖАВНОЇ БЕЗПЕКИ**

*Досліджено принципи доставлення матеріально-технічних засобів до підрозділів Національної гвардії України під час виконання завдань із забезпечення державної безпеки в умовах сучасної війни. Актуальність теми зумовлена високою динамікою оперативної обстановки, руйнуванням транспортної інфраструктури, зростанням вогневих, інформаційних і безпілотних загроз, а також потребою безперервного матеріального забезпечення підрозділів Національної гвардії України як у районах бойових дій, так і під час проведення стабілізаційних заходів правоохоронного характеру. На основі аналізу наукових праць, нормативних підходів і практичного досвіду встановлено, що наявні дослідження не повною мірою враховують специфіку логістичного забезпечення Національної гвардії України, зокрема стосовно доставлення ресурсів до підрозділів, які діють автономно, у нестабільних умовах та за межами активних бойових зіткнень, але під постійною загрозою ураження.*

*Систематизовано дві групи принципів: базові та специфічні. До базових віднесено принципи безперервності, своєчасності, достатності, гнучкості, економічності, централізованого управління, взаємодії, прихованості, надійності, автономності, мобільності та раціонального розміщення тилових об'єктів. Специфічні принципи охоплюють інтеграцію із цивільними структурами, єдність логістичного простору, раціональність і безперервність підвезення, інтеграцію безпілотних технологій, стійкість і адаптивність системи, цифровізацію та автоматизацію, протидію повітряним загрозам логістики, організацію логістичних баз, логістичну малопомітність, інформаційно-синхронізоване забезпечення та випереджувальне забезпечення стабілізаційних зон.*

*Обґрунтовано, що запровадження запропонованих принципів сприятиме підвищенню автономності підрозділів, зменшенню ризиків зриву постачання, поліпшенню живучості маршрутів і складів, забезпеченню адаптивності логістичної системи та зростанню загальної ефективності матеріально-технічного забезпечення Національної гвардії України. Практичне значення дослідження полягає у формуванні науково обґрунтованої основи для вдосконалення організації доставлення матеріально-технічних засобів у сучасних умовах виконання завдань із забезпечення державної безпеки. Перспективою подальших досліджень визначено ранжирування чинників, що впливають на ефективність доставлення матеріально-технічних засобів до підрозділів Національної гвардії України.*

**Ключові слова:** логістика, матеріально-технічне забезпечення, бойові операції, Національна гвардія України.

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