

HYGIENIC COMPOSITION OF THE MODERN UKRAINIAN ARMY AND ITS INTEGRATION INTO THE EURO-ATLANTIC SECURITY SPACE

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- **INTRODUCTION.** The research method is: to analyze the role and significance of ensuring the sanitary and epidemiological well-being of military personnel in the process of transforming the Armed Forces of Ukraine in accordance with NATO standards, programming key areas of development of military hygiene as a factor in increasing the combat capability of the army and its integration into the Euro-Atlantic security space.
- **MATERIALS AND METHODS.** This study employs systemic, comparative, and logical-legal methods to analyze national and international public health regulations.
- **REVIEW AND DISCUSSION.** Ukraine's Armed Forces must quickly adopt NATO hygiene standards to maintain combat readiness during war. Key areas include sanitary monitoring, infection control, nutrition, living conditions, and psychological support. These measures will enhance combat capability and align with Euro-Atlantic standards.
- **CONCLUSIONS.** Ukraine's Armed Forces are being modernized following NATO standards, including advanced technologies and logistics. Effective hygiene monitoring, prevention, and rapid response systems are essential to protect personnel and boost combat readiness. Hygiene policies must also focus on service conditions, nutrition, and mental health, all critical for combat effectiveness and Euro-Atlantic integration.
- **KEYWORDS:** *Armed Forces of Ukraine, army transformation, military hygiene, Euro-Atlantic integration, NATO standards.*

ГІГІЄНІЧНА СКЛАДОВА СТАНОВЛЕННЯ СУЧАСНОЇ УКРАЇНСЬКОЇ АРМІЇ ТА ЇЇ НАМІРІВ ІНТЕГРАЦІЇ ДО ЄВРОАТЛАНТИЧНОГО БЕЗПЕКОВОГО ПРОСТОРУ

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- **ВСТУП.** Актуальність дослідження зумовлена триваючою війною Росії проти України, необхідністю підтримання високого рівня бойової готовності ЗСУ та стратегічним курсом України на вступ до НАТО. В умовах гібридної війни, частих ротацій, перебування в польових умовах та психологічного навантаження, гігієна стає критично важливою складовою функціонування сучасної армії. Її розвиток — це невід'ємна частина євроатлантичної інтеграції, що потребує наукового осмислення та практичної реалізації.
- **МЕТА ДОСЛІДЖЕННЯ:** аналіз ролі і значення забезпечення санітарно-епідемічного благополуччя військовослужбовців у процесі трансформації Збройних сил України відповідно до стандартів НАТО, визначити ключові напрями розвитку військової гігієни як чинника підвищення боєздатності армії та її інтеграції в євроатлантичний безпековий простір.
- **МАТЕРІАЛИ І МЕТОДИ.** У дослідженні застосовано методи системного, порівняльного та логіко-правового аналізу української та міжнародної нормативної бази у сфері громадського здоров'я.
- **ОГЛЯД.** Сучасні виклики, зумовлені повномасштабною війною, вимагають від Збройних Сил України оперативного впровадження гігієнічних стандартів, сумісних із нормами НАТО. Військова гігієна набуває стратегічного значення для збереження боєздатності особового складу, особливо в умовах тривалого перебування в польових умовах та підвищеного психоемоційного навантаження. Визначено, що ефективна система забезпечення санітарно-епідемічного благополуччя військовослужбовців має включати санітарно-епідеміологічний моніторинг, профілактику інфекційних захворювань, належне харчування, побутові умови та заходи підтримки психологічного стану. Інтеграція цих підходів у практику ЗСУ сприятиме підвищенню боєготовності армії та відповідності євроатлантичним вимогам у сфері безпеки й оборони.
- **ВИСНОВКИ.** Формування сучасних ЗСУ базується на врахуванні досвіду армій передових країн світу, зокрема членів НАТО, оснащенні відповідно до новітнього рівня воєнно-технічного прогресу, розвитку системи логістичного забезпечення за стандартами НАТО. Інтеграція в НАТО передбачає створення комплексної системи гігієнічного моніторингу, профілактики та швидкого реагування, що забезпечить збереження кадрового потенціалу та підвищить боєздатність української армії. Сучасна гігієнічна політика повинна охоплювати не тільки питання умов праці, харчування, а й психологічного стану військовослужбовців, що є критичними чинниками бойової готовності ЗСУ, особливо в умовах війни та прагнення до інтеграції в НАТО.
- **КЛЮЧОВІ СЛОВА:** *Збройні Сили України, трансформація армії, військова гігієна, євроатлантична інтеграція, стандарти НАТО.*

INTRODUCTION

The relevance of the study is due to the ongoing military Russia against Ukraine, ensuring the maintenance of a high level of combat readiness of the Armed Forces of Ukraine and the strategic course of Ukraine to join NATO. In the conditions of hybrid warfare, part of the rotations, being in the field and psychological stress, hygiene becomes a critically important component of the functioning of the modern army. Your development is an integral part of Euro-Atlantic integration, which requires scientific understanding and practical implementation.

The purpose of the study is: to analyze the role and importance of ensuring the sanitary and epidemiological well-being of military personnel in the process of transforming the Armed Forces of Ukraine in accordance with NATO standards, to identify key areas of development of military hygiene as a factor in increasing the combat capability of the army and its integration into the Euro-Atlantic security space.

MATERIALS AND METHODS

This study employs systemic, comparative, and logical-legal methods to analyze national and international public health regulations.

REVIEW AND DISCUSSION

The full-scale Russian aggression against Ukraine has highlighted the need to modernize the national defense system and accelerate the development of the Armed Forces, integrating national interests with global military best practices. Repelling the aggression has required massive resources, including human potential, weapons and military equipment (AME), fuel, and lubricants.

Studies by Onofriychuk, Moskalenko, and Dobrovolska (2021) examine the modern development of Ukraine's defense resource management system, while Saganyuk and Ustymenko (2022) focus on risk and defense management [1, 2].

An example to consider is Turkey's defense resource management system, overseen by the Executive Committee of the Defense Industry led by President R.T. Erdogan. This committee develops defense industry strategy, coordinates defense enterprises to supply the armed forces, and manages research, development, and production programs for weapons and ammunition [2].

In Romania, defense resource management focuses on optimizing the planning, distribution, and use of resources within the Ministry of National Defense through a modern, integrated, multi-year approach. Key components include the manage-

ment of human capital, financial and material resources (including procurement), R&D and innovation, defense infrastructure, and information resources [3].

Ukrainian scholars (Semenenko et al., 2023) emphasize that defense planning should align with NATO standards and national development goals, basing decisions on the required defense capability and the state's economic capacity to support it [4, 5].

The reorganization of Ukraine's Armed Forces gained momentum during the Anti-Terrorist Operation (ATO) and Joint Forces Operation (JFO) in Donetsk and Luhansk. This was driven by the need to defend national sovereignty and by Ukraine's strategic shift toward Euro-Atlantic integration.

This direction was confirmed by the 2019 constitutional amendment (Law No. 2680-VIII), which established the country's irreversible course toward EU and NATO membership, affirming Ukraine's European identity and guiding its domestic and foreign policy.

Collective security is defined as the primary and most effective means of ensuring Ukraine's national security. This necessitates new approaches to develop the Armed Forces of Ukraine in line with NATO standards, as outlined in the Defense Resources Management Doctrine (approved on November 13, 2020) and the Order of the Ministry of Defense No. 484 (dated December 22, 2020) on defense planning.

Key definitions from the Doctrine include:

1. *Defense Forces*: The Armed Forces of Ukraine and other military, law enforcement, and intelligence bodies tasked with national defense.

2. *Capabilities of the Defense Forces*: The ability to achieve defense objectives under specific scenarios using available resources.

A country's defense capability is measured by the development, size, structure, equipment, and especially the combat readiness of its armed forces, which reflects the effective use of human, material, and financial resources. Combat readiness is the key factor for success in both peace and war.

The importance of special operations (SO) — including political, economic, informational, psychological, and subversive actions — is growing in modern conflicts and peacetime tasks. Research shows SO are most effective when conducted by small, highly mobile, and professional units equipped with advanced electronic control and intelligence systems.

As a result, from the mid-20th century, advanced militaries like those of the USA, UK, France, Ger-

many, and Italy began forming SO units within their combat support forces [7].

Germany's key security documents — the White Paper on German Security Policy, Main Directions of German Defense Policy, and Bundeswehr Concept — emphasize the country's responsibility to actively shape the new world order and ensure international security. This role reflects Germany's political, economic, and military importance and the growing reliance on coalitions for military operations, which sometimes proceed without additional international approval if legally justified [8, 9].

Currently, about 3,300 German troops participate in 15 missions under the UN, EU, NATO, and national plans worldwide. The Bundestag allows up to 7,620 servicemen to be deployed simultaneously, within a total peacekeeping force of 107,800 personnel [10].

Israel's security system is overseen by the Cabinet of Ministers, with the Ministry of Defense responsible for long-term defense policy, strategic planning, and weapons procurement. The Ministry holds the largest budget in the country. To maintain a qualitative edge over potential enemies, the Israel Defense Forces focus on:

- 1) adopting the most modern military equipment;
- 2) implementing advanced management systems;
- 3) maintaining effective mobilization and high personnel training levels, including reserves [10, 11].

Modern trends in the development of special forces reflect a reassessment of their role in national security and military-political strategy. A key trend is the unification of diverse special forces into joint Special Operations Forces (SFO), which have become independent components within the military structures of many countries [12].

The United States leads this development, having established special forces as a separate branch of its Armed Forces since the late 1980s. The SFO's strategic importance is enshrined in the highest-level U.S. military-political documents, where they serve as a permanent tool for advancing geopolitical and military interests. Similarly, the SFO of NATO and other advanced nations are equipped with the latest military-technical advancements and operate as integral parts of a unified theater of military operations — spanning land, sea, air, space, and the information domain [13].

In Ukraine, the development of the Special Forces Operations (SFO) began in response to ma-

ior security challenges, including the conflict in the east and significant shifts in the international military-political landscape [13].

The decision of the National Security and Defense Council of Ukraine dated May 6, 2015, «On the National Security Strategy of Ukraine,» was adopted by the then President of Ukraine. This strategy has since been updated and is currently in force following the President's Decree No. 392/2020 dated September 14, 2020, which reaffirmed the National Security Strategy.

These documents outline key tasks to enhance the state's defense capabilities, prioritizing reforms aimed at creating highly effective, combat-ready units within the Armed Forces and other military formations. The focus is on qualitative improvements rather than merely quantitative growth. Specifically, reforms emphasize ensuring the Armed Forces are efficient, mobile, and equipped with modern weapons and equipment. A critical priority is the development of the Special Operations Forces in line with NATO doctrines and standards.

Furthermore, the President's Decree No. 121/2021 of March 25, 2021, approved the Military Security Strategy of Ukraine, which aims to ensure the timely, comprehensive defense of Ukraine based on deterrence, resilience, and cooperation. This strategy supports the military security, sovereignty, and territorial integrity of Ukraine within its borders, advances Ukraine's integration into the Euro-Atlantic security space and NATO membership, and promotes active participation in international peace and security operations [14].

According to the Law of Ukraine «On National Security of Ukraine» (No. 2469-VIII, dated June 21, 2018, as amended) and the Military Security Strategy of Ukraine, the main objectives of state policy in the military sphere include:

- development of the logistical support system for the Armed Forces of Ukraine and other defense components, aligned with NATO standards, including: automation of logistical processes; integration with relevant sectors of the national economy; support for Joint Forces operations; participation in mine action efforts;
- improvement of troop deployment and basing, including: development of military infrastructure; provision of training grounds and modular field camps for exercises and combat (special) tasks [15].

The legal foundation for establishing the «elite troops» of the Ukrainian army was provided by Law No. 1437-VIII, later amended by Law No. 912-IX

(September 17, 2020), titled «On Amendments to Certain Laws of Ukraine Regarding the Special Operations Forces of the Armed Forces of Ukraine», adopted by the Verkhovna Rada on July 7, 2016 [16].

The activities of Ukraine's Special Operations Command (SOCOM) are defined by national laws and presidential regulations. SOCOM conducts a wide range of specialized missions, including: combat operations: raids, reconnaissance, sabotage, and modern warfare tactics; psychological operations (Psy-Ops): influencing enemy morale and public perception; civilian engagement: gaining support of local populations in conflict zones; intelligence work: creating agent networks and infiltrating foreign institutions for espionage or neutralization of threats; foreign training: supporting and training allied military, police, and security forces; rescue missions: extraction of prisoners and hostages; covert influence: supporting coups or regime changes; targeting: identifying and designating high-value targets for destruction; counterterrorism: arrest or elimination of active terrorist threats; security operations: protecting critical infrastructure and key individuals; complex special tasks: handling unique missions beyond standard military roles.

SOCOM functions as a hybrid force — combining military, intelligence, and psychological strategies — capable of both national defense and offensive operations abroad [17].

NATO experience shows that even the smallest special operations units can: detect 3–5 targets daily; strike 1 large object and destroy up to 3 moving targets; a single saboteur can eliminate up to 20 enemy troops from ambush. They also conduct area denial using flooding, contamination, and small nuclear munitions. The success rate for sabotage missions is 0.7–0.8, comparable to precision-guided weapons [18]. Combat use of Special Forces Operations (SFO) is typically conducted by Special Purpose Groups, whose size varies based on mission requirements:

- up to 4 personnel — UK, Germany;
- up to 8 personnel — USA, Italy;
- up to 10–12 personnel — France, Turkey.

Each member has a defined role based on specialization, including: commander, deputy, scout, signal operator, sapper, weapons specialist, and medic [2].

Analysis shows that SOF specialists perform the most demanding combat and training tasks, requiring not only advanced skills and physical fitness, but also strong health, cognitive abilities, and psychological resilience [15, 17, 18].

There are specific requirements for selecting, training, and daily activities of military personnel. The US has the largest special operations forces, united under the Joint Special Operations Command (JSOC), established in 1987 to address past planning mistakes in low-intensity conflicts [19].

JSOC's three main functions are:

- providing trained SFO units to US combat commands, diplomatic missions, and government agencies;
- planning and managing special operations ordered by top military-political leaders;
- offering logistics and technical support to the SFO [20].

The structure and functioning of the Special Forces Operations (SFO) units in the Armed Forces of Ukraine are based on adapted NATO training programs. Entry begins with the «Special Forces Qualification Course» (SFQC or Q-course), designed to identify individuals who are physically and psychologically ready for service. Candidates must assess their ability to handle prolonged physical strain and high-stress situations. Studies show that only 10–20% of candidates complete the course, highlighting the high demands placed on participants [21–24].

SFO units differ significantly from regular military formations, not only in their strict selection criteria but also in their unique daily activities. Research and departmental reports confirm major differences in training and routine between SFO personnel and regular troops. SFO servicemen must be capable of performing a wide variety of tasks, unlike combined-arms soldiers who often focus on a narrower set of duties [24].

A high level of operational readiness requires leadership to implement advanced approaches to both general and professional-applied physical training. This is reflected in how daily activities are organized. The same applies to mental performance: maintaining year-round readiness in cognitively and emotionally demanding conditions requires constant development of specific skills and adaptive thinking, tailored to individual strengths and weaknesses [25].

SFO personnel cannot rely on fixed or periodic training schedules focused on a single sport or activity. Instead, they must be proficient across a wide range of physical tasks, which places greater demands on their bodies [26].

Their training involves complex technical actions often performed under time and space constraints, including night movements, crossing water obstacles, static exertion under psychological

pressure, and long marches in full gear — conditions that closely mirror real combat or operational missions [27].

This service demands military personnel to have high resilience, endurance, and strength, making it crucial to address factors affecting their performance and health [27, 28]. Military researchers often offer historical and current insights, along with recommendations to enhance physical performance and readiness [29].

Analysis of reviews in the *European Journal of Sports Science* [29, 30] highlights eight key recommendations for improving health and resilience in military personnel: emphasize high-intensity, low-volume training for better performance; focus on injury prevention, especially in those with prior injuries, lower fitness, or female personnel; ensure adequate sleep, vitamin D, calcium, and energy intake to protect against stress; account for sex differences in stress response, cardiovascular load, and metabolism; use biomarkers (e.g., cortisol, adrenaline, testosterone) to monitor internal stress; track training load using multiple physiological indicators; optimize nutrition based on workload and individual needs; manage stress and environmental factors to support recovery.

Optimal nutritional status, combined with tailored training, is essential for meeting the energy demands and psychological stress of military service, particularly in the SFO. It directly impacts training benefits, resilience, and mission success.

A balanced diet combined with training is of paramount importance for meeting all energy needs and psychological stress that accompany all military service activities in the SFO [31–33].

Hygiene is vital to the combat readiness of the Armed Forces of Ukraine, especially during war and in the context of Euro-Atlantic integration. Modern hygiene policy focuses on working conditions, nutrition, and mental health.

Both combat and rear units require strict sanitary standards — ventilation, lighting, temperature, water access, and medical care. Improving these conditions helps prevent disease and reduce non-combat losses, strengthening overall military effectiveness.

Military nutrition is being updated to meet Euro-Atlantic standards, with a focus on calorie content, nutritional balance, product quality, and safety. Diets are increasingly tailored to physical activity, climate, and combat mission demands.

Mental health is also a growing priority. Western military medicine emphasizes the prevention of PTSD, combat stress, and emotional burnout. These

practices are gradually being implemented in Ukraine as part of a broader approach to supporting soldiers' psychological resilience.

CONCLUSIONS

It has been established that the formation of the modern Armed Forces of Ukraine is based on taking into account the experience of the armies of advanced countries of the world, in particular NATO members, equipment in accordance with the latest level of military-technical progress, development of a logistics system according to NATO standards.

Integration into NATO standards involves the creation of a comprehensive system of hygienic monitoring, prevention and rapid response, which will ensure the preservation of personnel potential and increase the combat capability of the Ukrainian army.

Modern hygienic policy should cover not only the issues of working conditions, nutrition, but also the mental health of servicemen, which are critical factors of the combat readiness of the Armed Forces of Ukraine, especially in conditions of war and the desire for integration into the Euro-Atlantic security space.

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