

MILITARY-ECONOMIC ASPECTS OF MAINTAINING THE STATE'S DEFENCE CAPABILITY IN THE CURRENT MILITARY AND STRATEGIC SITUATION

Volodymyr Mozharovskyi¹, Serhii Hodz²

Abstract. The article outlines the content of one of the main military-economic aspects of maintaining Ukraine's defence capability in the current conditions of development of the military-strategic situation – mobilisation readiness and capabilities of the State, in particular, the capabilities of its defence-industrial complex to create new and modernise existing models of weapons and military equipment, and to produce missiles, ammunition and other material and technical means. Given the main contradictions in the development of the defence industry of Ukraine, the authors propose, as an option, a system of state management of the defence industry of Ukraine, which should be based on the centralisation of strategic functions for its development. In particular, it is proposed to create the State Agency for the Defence Industry of Ukraine – a structure with the status of a permanent executive body and broad powers to develop and implement the tasks of the defence industry. The paper focuses on the importance of protecting economic facilities, and the authors believe that one of the ways to improve the effectiveness of defending the country's economic potential is to create an additional echelon of non-fire protection for the most important economic facilities, such as energy infrastructure, industrial enterprises, ports, airfields, railway stations, etc. It is through the integrated use of active fire defence and passive non-fire defence means that the unconditional preservation of the country's economic potential can be achieved. At the same time, an analysis of the scientific literature in this area of research shows that existing methodologies (methodological approaches) do not provide for a comprehensive approach to substantiating ways to address the problematic issues of the state's defence capability, taking into account the main military and economic aspects of its maintenance, as well as the peculiarities of the development of the military-strategic situation. In view of this, the authors believe that the prospect of further research should be to reveal the content of other military-economic aspects of maintaining the state's defence capability in the current military-strategic situation, and, with this in mind, to develop a comprehensive methodological approach to substantiating ways to address the problematic issues of combat and mobilisation readiness of the Armed Forces and the Defence Forces of Ukraine as a whole. The analytical material presented in this article is based on the experience gained by the troops (forces) in the course of operations (combat actions).

Keywords: military-economic aspects, defence capability, mobilisation readiness, mobilisation capabilities of the state, defence industry, weapons and military equipment.

JEL Classification: H56, H59, N40

1. Introduction

The analysis of the conduct of modern operations (combat actions) has revealed a number of problematic issues related to maintaining the defence capability of Ukraine, first of all, the ability of the Armed Forces (AF) and the Defence Forces (DF) of Ukraine in general to adequately respond to challenges and threats to Ukraine in the military

sphere. In view of this, military science (its branches) is currently facing a number of challenges related to the need to address the existing problems of the state's defence capability, to find ways to increase the combat capability of the Armed Forces of Ukraine, to achieve the required level of their combat capability and ability to effectively counter the enemy on the battlefield.

¹ Central Research Institute of the Armed Forces of Ukraine, Ukraine (*corresponding author*)

E-mail: military.technology@icloud.com

ORCID: <https://orcid.org/0000-0003-3542-5407>

² Central Research Institute of the Armed Forces of Ukraine, Ukraine

E-mail: sergiigodz1968@ukr.net

ORCID: <https://orcid.org/0000-0002-7860-2330>



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It is also important to take into account that the current conditions of development of the military-strategic situation are characterised by the rapidity of operations (combat actions), the growth of capabilities of reconnaissance and firepower, the growing role of manoeuvre, the safety of use and protection of troops (forces) from enemy attacks, and, as a result, a significant reduction in the time for decision-making and setting tasks for troops (forces). Given these features, the role of certain military-economic aspects of maintaining defence capability is growing, and, above all, the mobilisation readiness and mobilisation capabilities of the state, in particular, the capabilities of its defence industry complex (DIC) to create new and modernise existing models of weapons and military equipment (WME), produce missiles, ammunition, and other material and technical means (MTM).

2. Analysis of the Latest Research and Publications

An analysis of the scientific literature in this area of research shows that the problematic issues of maintaining the state's defence capability are reflected in a number of scientific publications. For example, Dieniezhkin (2019) and Tymkiv (2021) use indicators to assess the combat capabilities, combat capability and combat composition of formations (units), which characterise their manning, provision with major types of weapons and equipment, expendable material and equipment, and the level of training achieved. In (Mozharovskiy, 2018), the assessment of the combat capability of formations (units) is carried out taking into account the contribution of units of the branches of the armed forces to their combat capability. The main indicator is the provision of units with standard models of WME. The current level of combat capability, combat capabilities and optimal combat composition of formations (units) are determined in accordance with the indicators of prevented damage to the troops in the operation and taking into account resource constraints. Sakovskiy (2020) uses methods to justify the division of the Armed Forces of Ukraine into units of permanent readiness and those subject to mobilisation, which allow optimising such a division depending on the selected criteria, namely, the time constraints for bringing units into combat readiness and the financial resources allocated for this purpose. Heorhadze and Kharabara (2020) outline a methodological approach to assessing the level of training of the state DF. Hodz (2023) outlines the methodological foundations for the formation of Comprehensive Combat Training Programmes for the units of the state's DF. There are a number of studies, in particular (Zaluzhnyi, Zabrodskiy; Experience of the Defence Forces of Ukraine in conducting defence operations (combat

operations)), which take into account the experience of conducting combat operations in the context of repelling Russia's armed aggression against Ukraine. These works are important for further study of the issues of combat capability, combat and mobilisation readiness of the AF, their ability to adequately respond to challenges and threats to Ukraine in the military sphere. At the same time, the above methods (methodological approaches) do not provide for a comprehensive approach to substantiating ways to solve problematic issues of the state's defence capability, taking into account the main military and economic aspects of its maintenance, as well as the peculiarities of the development of the military-strategic situation.

The purpose of the article is to outline the content of one of the main military-economic aspects of maintaining Ukraine's defence capability in the current military-strategic situation – mobilisation readiness and mobilisation capabilities of the State, in particular, the ability of its DIC to create new and modernise existing models of WME, produce missiles, ammunition and other MTM.

3. Presentation of the Main Research Material

The mobilisation readiness and mobilisation capabilities of the state, including the ability of its DIC to create new and modernise existing models of WME, produce missiles, ammunition and other MTM, is one of the key military and economic aspects of maintaining the state's defence capability in the current military and strategic situation. This and other aspects shown in Figure 1, military-economic aspects are interconnected with the well-known principles of military art and with the functions of troops (forces) in operations (Mozharovskiy, Hodz, 2022).

In a general sense, mobilisation readiness is a state (indicator) that determines the degree of readiness of the country's troops (forces), economy and population for the transition from peacetime to martial law. The mobilisation readiness of the Armed Forces depends on the staffing structure of formations (units), location, manning, equipment and personnel, the intensity of their mobilisation, and a number of other factors, and is assessed by the time required to switch to wartime staffing and the mode of operation in wartime. Of great importance for ensuring the mobilisation readiness of the state are its mobilisation capabilities – human and material resources that can be used by the state to meet the needs of the front and rear during the war. Thus, the components of material resources include the production capabilities of all sectors of the national economy, stocks of strategic raw materials, energy and financial resources. The basis of the state's mobilisation capabilities is its economy,

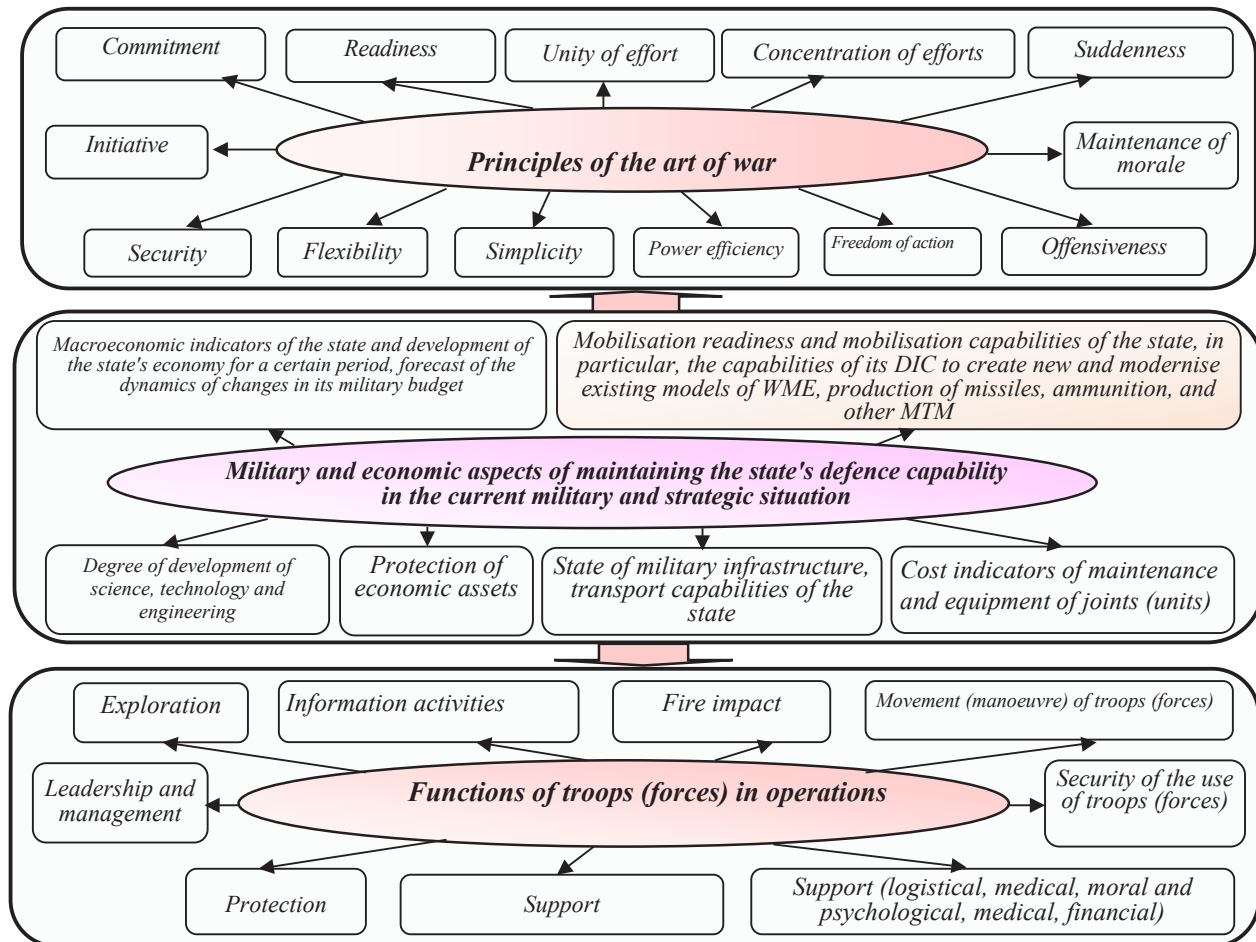


Figure 1. Interconnection of military-economic aspects of maintaining the state's defence capability in the current conditions of development of the military-strategic situation, principles of military art and functions of troops (forces) in operations

primarily heavy industry and engineering, energy and transport. It is these sectors of the economy that determine the DIC capabilities, and thus directly affect the state's defence capability.

It should be noted that the DIC of Ukraine is a set of public administration bodies, enterprises, institutions and organisations of industry and science that develop, produce, modernise and dispose of military products, provide services in the interests of defence to equip and provide material support to the Security and Defence Forces, as well as supply military and dual-use goods and military services in the course of military-technical cooperation between Ukraine and other states (The Law of Ukraine "On National Security of Ukraine"). However, the development of Ukraine's defence industry faces a number of challenges.

The Ukrainian defence industry as a single conglomerate has not existed since Ukraine gained independence. After the collapse of the USSR, Ukraine was left with only a fragment of the USSR's defence industry, which was unbalanced and unsuitable for providing technical equipment to the Ukrainian Armed Forces. Further development of

the Ukrainian DIC was based on the old post-Soviet model. This model was no longer effective in the new military-strategic environment, and therefore unable to adequately respond to the challenges and threats to the state's security in the military sphere and to the needs of the AFU. Ukraine's DIC was characterised by a high level of dependence on budget funding, insufficient transparency, and low financial and executive responsibility of business entities.

The imbalance in Ukraine's military-technical and defence-industrial policy and the lack of practical experience in defence governance have led to a fragmentation of defence structures between different ministries and agencies, which has resulted in uncoordinated decision-making and a lack of accountability for their implementation. The consequence of this policy in the defence industry was the destruction of powerful production, scientific and technical complexes and the formation of scattered small business entities. The formation of the national defence industry on a territorial basis led to the fragmented nature of Ukraine's defence potential, where only 8% of the total range of defence

products was produced in a closed cycle (Ukraine-NATO: the potential for defence cooperation).

In fact, until 2014, the problems of the Ukrainian DIC were not resolved. Most enterprises were in crisis, due to the lack of state defence orders, significant depreciation of fixed assets (60-80%), excess production capacity, an unbalanced DIC structure, and a lack of innovation at most facilities. The number of defence companies, the number of people employed at defence companies, and production volumes have all fallen significantly. The state has failed to ensure effective restructuring of such defence industry giants as Malyshev Factory, Joint Stock Company "Aviation and Rocket Technology Manufacture", Pivdenmash, PJSC SJSHC TOPAZ, LLC DP KVANT, SE Generator and others (Bohdanov, 2009).

For thirty years, Ukraine's defence industry has not been able to reach the technological levels of developed countries. Ukraine's military-technical policy was mainly export-oriented. Only 5-8% of the production of the potential capabilities of defence enterprises was used to equip the Armed Forces of Ukraine, while the rest was exported (Horbulin, 2019). DIC enterprises had to be modernised or new ones created through technology transfer from partner countries. As before, most defence companies whose products were still in demand on the international market survived solely on export orders. However, this demand was mainly driven by the favourable cost of the WME for the consumer. This made it unnecessary for manufacturers to modernise or develop the latest models of WME. In addition, the development of the DIC was hampered by the lack of interest from the main customers of DIC products due to chronic underfunding. This state of affairs led to a significant number of DIC enterprises gradually slipping into debt. Almost all DIC enterprises had common features: the ability to produce only outdated products, lack of funds for the latest developments, an old technological base, huge unused areas under maintenance, and inefficient management.

The only way out of this situation was considered to be a defence order from the state. However, later it became apparent that the implementation of a defence order is problematic even if there is a certain financial resource. The reason for this was the limited production capabilities of DIC enterprises to fulfil defence contracts in a timely and high-quality manner, primarily due to the lack of new high-tech equipment and replacement of outdated models, as well as a shortage of highly qualified personnel. As of the end of 2021, the management system of the domestic DIC had not yet achieved sustainable development (Government portal). Other common problems included the inconsistency of military-

industrial and military-technical policies; lack of effective regulation of intellectual property issues; suboptimal defence procurement processes, etc.

The full-scale armed aggression against Ukraine by the Russian Federation (RF) had a significant impact on the functioning of the national DIC. With the aim of destroying Ukraine's military and military-industrial potential, the Russian armed forces launched powerful missile and bomb attacks on DIC enterprises, causing significant damage and disrupting their operations. The main problems associated with Russia's aggression include a decrease in the production capacity of defence companies; capital outflows and freezing of investment projects; logistics problems, including the destruction of cooperation ties and supply chains for raw materials, components, and materials. All of this has exacerbated the existing problems with supplying DIC enterprises with elements that are not produced in Ukraine and are supplied from abroad, such as microelectronics, as well as the necessary raw materials. The defence industry almost completely stopped exporting finished products, components, military and dual-use units and assemblies. A significant outflow of human resources (skilled workers) due to forced emigration abroad and internal migration of the population became a problem. There has been a change in the balance of labour by region, which has led to a mismatch between the location of the DIC's production facilities. A significant problem was the virtual absence of a scientific, technical, production and technological base for the creation and production of combat aircraft (aircraft, helicopters), air/missile and aerospace defence systems, as well as ammunition of various calibres. There is an urgent need to produce and stockpile missiles and ammunition.

In 2022–2023, compared to the pre-war period, the need to finance the defence sector increased significantly. In this regard, the state began investing in the purchase of new types of weapons and military equipment for the Armed Forces of Ukraine and the development of new weapons. Although the state defence order increased slightly, it did not increase dramatically. At the same time as state customers are increasing their orders for WME, there is an insufficient level of readiness of the production and repair facilities of DIC enterprises to quickly meet the needs of the AF and restore defective and damaged WME as a result of hostilities. All this is complicated by the rapid transition of the Armed Forces from Soviet-made weapons to foreign-made weapons. At the same time, the ability of defence industry enterprises to repair predominantly Soviet-made weapons remains a problem.

Due to the limited capabilities of the state-owned defence industry and the fact that most state-owned

defence companies depend on subsidies from the state budget, it became necessary to order certain types of weapons from private defence companies, and therefore, a significant part of the state defence order is currently fulfilled by the private defence industry. Some of these products do have good characteristics, but it is not uncommon for the AF to be forced to use private sector products, despite their poor performance, solely because of the lack of alternative models.

Another negative factor is that Ukraine has no experience of state support for the private sector of DIC enterprises, production of dual-use products, and conversion of civilian infrastructure and enterprises to war needs under martial law. Only some elements of such a system have been created to replace the Soviet-style system. Therefore, in this special period, the question arose as to whether it is advisable to expand the private sector market in the DIC to create a competitive environment, as the opening of such a market could lead to an even greater deterioration in the state-owned defence enterprises, which are not always flexible in responding to demand for certain types of WME. Practice shows that without powerful state-owned enterprises, Ukraine's DIC will have limited capabilities to produce tanks and aircraft, which may not be the best world models, but have certain unique characteristics, and therefore the loss of the potential of these enterprises will be a significant setback for the state.

The experience of warfare confirms that it is the WME produced by state-owned defence enterprises that are currently the most technically advanced and reliable, and therefore the most effective in a combat situation. Thus, there is now a need for systemic reform of the state-owned defence sector. To achieve this, it is necessary to create conditions under which state-owned enterprises can attract the necessary investments and introduce new technologies. The share of the private sector in the defence industry should be clearly regulated, regulated and controlled in terms of the quality of products.

One of the reasons for the slow implementation of reforms in the public sector of Ukraine's defence industry is the problems with the development of Ukroboronprom, which since 28 June 2023 has become the Joint Stock Company Ukrainian Defence Industry, a strategic manufacturer of weapons and military equipment in Ukraine that unites state-owned multidisciplinary unitary enterprises of various strategic sectors of the DIC. The company is a national leader in the production of military equipment and an integral part of Ukraine's defence and security sector. For this reason, according to the military and political leadership of the state, the strategic importance of the enterprises of the Joint

Stock Company Ukrainian Defence Industry requires ensuring their effective and sustainable development. There have been some positive developments in this area. For example, the Ukrainian Armour was able to fully resume production of mortars and supply the AF with a significant number of artillery systems of various calibres in 2023 alone. Some progress is being made in the implementation of the missile, ammunition and combat drone programmes.

One of the top priorities for the defence industry is the production of unmanned aerial vehicles (UAVs). To this end, in 2022, the Army of Drones project was launched, a comprehensive programme that includes the systematic purchase of drones, their repair and rapid replacement, and pilot training. While this initiative was initially implemented with the help of donor funds, in 2023, the state budget provided significant funding. As a result, in 2023 (compared to 2022), the production of UAVs in some categories increased tenfold. Today, there are dozens of companies producing UAVs on the market. Certain models of Ukrainian drones have passed the commissioning procedure and are now receiving government contracts. To create the necessary conditions for UAV production, a number of restrictions have been removed: VAT and import duties on UAV components have been cancelled, and access to their operation has been simplified. Today, the needs of the troops (forces) for reconnaissance UAVs of the fixed-wing and multi-rotor types are almost met. For example, according to military experts, the production of FPV strike UAVs (multi-rotor strike UAVs with the function of transmitting real-time video from the UAV's camera) should be the largest and fully meet the needs of tactical units. The Ministry of Digital Transformation has launched the next stage of training for a large number of UAV operators. Importantly, in the draft state budget for 2024, the government has provided for a significant increase in funding for the production of domestic UAVs. At the same time, it should be borne in mind that the production of UAVs alone will not eliminate the problem of the firepower of the troops (forces). The development of domestic rocketry, especially the introduction of medium- and long-range missile systems, remains extremely important.

During the war, the management of JSC Ukrainian Defence Industry faced three main tasks: to increase the production of ammunition and military equipment, build an effective anti-corruption infrastructure in the company, and transform the JSC. These are important steps to implement positive changes in domestic defence production, which will strengthen the defence industry, significantly increase production volumes and rates, and, as a result, make it the engine of economic recovery.

The experience of military conflicts in recent years shows that today and in the future it will be impossible to win a war on the whole by means of defensive and offensive actions alone, even if they are highly effective. Today, not only and not so much ground forces are needed as a large number of high-precision unmanned aerial vehicles of various ranges and purposes, and weapons based on new physical principles. It can be predicted that strategic non-nuclear forces will play a significant role in the wars of the future, gradually replacing the current strategic nuclear forces. The basis of the non-nuclear forces will be UAVs and precision cruise missiles of long, medium and short range, which will be carried by the Army, Air Force and Navy. This trend is observed today in the context of repulsing Russia's armed aggression against Ukraine and in the Middle East (Israel, Palestine).

It should be noted that the structural restructuring of the defence industry involves reforming and developing its management system in line with the best international practices. Primarily, the management system of the defence industry should be as flexible as possible, able to respond in a timely manner to challenges and threats to the state's security in the military sphere, and able to adapt to the needs of the state's defence and global commodity markets. The development of the defence industry management system should comply with the principle of ensuring a single technological cycle of development, production, sale and after-sales service of high-tech products and the need to concentrate scientific, technical and technological potential on priority areas of development of weapons and military equipment, new technologies and dual-use technologies, based on the market strategy, economic feasibility, taking into account the specifics of defence technologies and areas of their implementation.

A clear definition of the place and role of the subjects of the defence industry governance system is essential for the development of the defence industry system. However, today, the defence industry operates in an environment of almost complete absence of targeted state influence on its development, primarily on relations between the branches of government regarding the redistribution of financial flows and assets of the defence industry. As a result, the dispersion of defence enterprises across different ministries and agencies leads to duplication of key functions, inconsistency in the formation of state defence orders (SDO) and lack of responsibility for their implementation.

Table 1 provides a list of functions performed by different ministries and agencies. The differentiation of these functions by different structures gives rise to problematic issues that systematically arise, in particular in the following areas: the formation and distribution of SDO; the lack of stable relations with manufacturers when determining prices and commissions for arms exports; the emergence of unjustified competition between Ukrainian special exporters in foreign markets, etc. Currently, the criterion for institutional reforms in the defence industry is the subjective approaches of the governing authorities to the distribution of financing functions among different structures and the unjustified differentiation of financial flows between trade intermediaries, management structures and manufacturers. The lack of rules for the economic behaviour of business entities in the DIC leads to the formation of spontaneous schemes for the distribution of financial resources, and contradictions between the branches of government regarding the redistribution of financial flows and assets of the DIC lead to an imbalance in the development of the DIC as a whole.

Table 1

DIC functions performed in different departmental structures

№	Structure name	DIC function
1.	The Ministry of Strategic Industries of Ukraine, to which they are subordinated:	Ensuring military-technical cooperation, formation and execution of defence orders
1.1	JSC Ukrainian Defence Industry	Strategic manufacturer of weapons and military equipment, uniting state-owned multidisciplinary unitary enterprises of various strategic sectors of Ukraine's defence industry. Formation, approval and placement of SDOs
1.2	Ukrspexport	Export of products and services for military and special purpose products and services
1.3	Specialist exporters	Export of own products and services
1.4	TASKO Corporation	Development and manufacture of explosives, gunpowder, ammunition, artillery and small arms, electronic and optical fire control systems. Formation, approval and placement of SDOs
1.5	SSAU	Export of space products, military-technical cooperation
2.	Ministry of Defence of Ukraine	Formation and coordination of key indicators of SDO, ensuring military-technical cooperation
3.	Ministry of Economy of Ukraine	Formation of the draft SDO key indicators, coordination of activities of state customers, ensuring military-technical cooperation

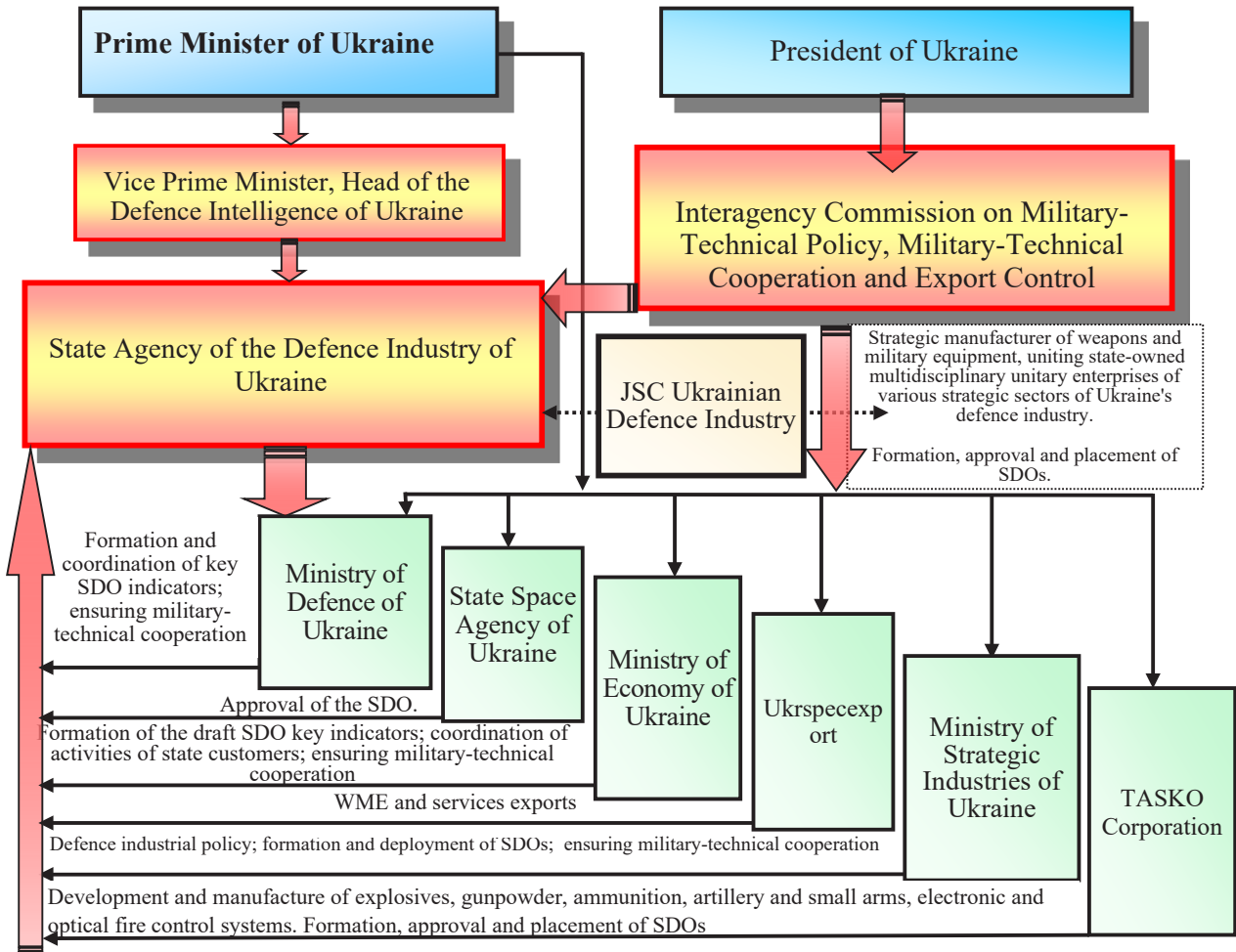


Figure 2. The system of state management of the Ukrainian defence industry (option)

Attempts to reform the system of public administration of the Ukrainian defence industry already have a certain history (Horbulin, Zubariiev, Tymchenko, 2009; Yefetova, Baranovska, 2011). Taking into account the previous experience of reforming and developing the DIC, and taking into account the main contradictions that have developed in the relations between the state and defence enterprises, Figure 2 shows (proposed by the authors) a variant of the system of state management of the Ukrainian DIC.

The proposed system should be based on the centralisation of strategic functions for the development of the defence industry. In particular, it is proposed to create a State Agency (SA) of the Defence Industry of Ukraine – a structure with the status of a permanent executive body with broad powers to develop and implement the tasks of the defence industry.

The main functions of the proposed structure should be: development of defence and industrial policy and setting priorities for its implementation; identification of the main trends in the export of weapons and military equipment and formation of an appropriate export policy to take into account the

strategic interests of the state and the problems of the manufacturer; effective use of offset agreements for the innovative development of certain sectors of the defence industry; centralisation of the functions of forming and placing SDOs and introduction of an effective monitoring system for their implementation; introduction of appropriate methodological support based on the development of alternative options for implementing measures in conditions of low predictability of results and high risks, determining the necessary concentration of budget funds and creating conditions for attracting other means of financing. A prerequisite for the effective functioning of the SA of the Defence Industry of Ukraine should be the formation of a military-technical policy on the creation of new generations of weapons and improvement of tactical and technical characteristics of existing WME systems on the basis of centralisation of relevant functions in the Interagency Commission on Military-Technical Policy, Military-Technical Cooperation (MTC) and Export Control with the status of a permanent body subordinated to the President of Ukraine. A comprehensive approach to

solving these problems will help to ensure that state interests are taken into account when formulating defence and industrial policy, that priorities are reasonably set at all levels of defence industry development, that appropriate resources are concentrated for their implementation, and that strategic and defence planning in the military sphere function in a coordinated manner.

It is the reformed state-owned sector of Ukraine's defence industry, whose enterprises meet modern management and development requirements, that is the basis for building up the combat capability, combat capabilities and combat potential of the AFU. The development of the national DIC has been and remains a priority for the military and political leadership of Ukraine. As the Commander-in-Chief of the AFU emphasises, the development of the national defence industry is the basis for increasing the combat potential, combat capability and combat capabilities of formations (units), as well as the groupings of troops (forces) created on their basis (Zaluzhnyi, Zabrodskyi). The development of the defence industry is the basis for strengthening Ukraine's economic potential. This will determine whether Ukraine will find its place among other countries producing modern and effective weapons.

In the current military-strategic environment, the protection of economic assets is of great importance. Practice shows that no matter how effective an Air Defence System (ADS) is, it cannot fully protect against damage and preserve the country's economic potential, which, as the experience of warfare shows, is and will remain the main target of the enemy. Therefore, one way to increase the effectiveness of defending the country's economic potential is to create an additional echelon of non-fire defence of the most important economic facilities, such as energy infrastructure, industrial enterprises, ports, airfields, railway stations, etc. The echelon of

protection of economic (infrastructure) objects may include engineering and special camouflage means, imitators of objects and their critical elements, means of changing the contrast of the surrounding background, chemical smoke discharge means, aerosols, electronic protection, etc. The practical implementation of these protection measures should ensure that the failure of individual elements of a particular economic entity should not affect the functioning of the entity as a whole. Responsibility for the implementation of these protection measures should be assigned directly to each manager of the relevant enterprise, institution, organisation (industry) of the economy (DIC). All activities should be carried out as part of a set of territorial defence measures. It is through the integrated use of active fire defence and passive non-fire defence that the unconditional preservation of the country's economic potential can be achieved.

4. Conclusions

The publication outlines the content of one of the main military-economic aspects of maintaining Ukraine's defence capability in the current military-strategic situation, namely, the mobilisation readiness and mobilisation capabilities of the state, in particular, the ability of its DIC to create new and modernise existing models of WME, produce missiles, ammunition and other MTM.

The authors believe that the prospect of further research should be to reveal the content of other military-economic aspects of maintaining the state's defence capability in the current military-strategic situation, and, with this in mind, to develop a comprehensive methodological approach to substantiating ways to address the problematic issues of combat and mobilisation readiness of the Armed Forces and the Defence Forces of Ukraine as a whole.

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