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ELEMENTS OF IMPROVING OPERATIONAL LOGISTICS PLANNING SPECIFIC TO COMBATANT FORCES

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Abstract: *The challenges, threats and regional military actions not far from the borders of NATO's eastern flank has demonstrated and reveals the need to reconfigure the potential and provide adequate, timely and resilient logistical support to operational offers at the tactical and joint levels. In this paper we highlight some aspects of the improvement of operational logistics planning, taking into account some elements such as: particularities of focused logistics, typology of planning, planning-execution correlation, evaluation of planning implementation, new requirements resulting from the lessons identified from the war in Ukraine. All the sequences that will be developed in this communication will be adequately correlated; taking into account the military operations of the future that will be planned and carried out in a national and/or multinational context.*

Keywords: operations; logistics; tactical and/or joint operational planning; operational logistics support planning; improving operational logistics planning.

1. Introduction

The requirements of the future security environment imply a rapid and precise response to achieve operational success, for which essential elements of ensuring critical capabilities, building the necessary structures and processes, continuous preparation of combat and logistic support forces and continuous provision of logistic resources necessary to accomplish missions, according to the operational scenarios developed, must be considered. This involves achieving an appropriate functional linkage and correlation between strategy, tactics and logistics, according to the objectives, options and operational actions to be implemented. In this respect, the famous USN Rear Admiral Henry E. Eccles' statement that "logistics provides the necessary physical means for combat forces to exercise combat power is particularly relevant"[2].

It is therefore obvious that even the best operations plans developed at the strategic, joint and tactical levels will fail in their implementation processes if they cannot be supported logistically, in a sufficient, timely and dynamic manner. It follows, for example, that no matter how modern the means of combat are, they are of no value to the adversary if the logistical structures (command and execution) do not provide their own operational forces (to operate the equipment at the right times and in the right places) with the necessary ammunition, fuel and maintenance, so that they can be used continuously, effectively and efficiently in the specific actions to fulfil the missions assigned to them [1]. In the situation of inadequate operational planning, even the best logistic systems of the combat forces will fail to accomplish their missions. If this mechanism also includes significant tactical errors, as was the case with

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the Russian offensive forces during the invasion of Ukraine, then the logistical failure will be much worse and even total [15].

In order to carry out the work, we used several research-scientific methods, singular or combined, so that we achieved a logical, current construction with sequences developed in a vision of continuity, complementarity and modernity. Some of the methods mentioned, which have been concretized are analysis, observation, comparison, extrapolation, deduction.

2. Elements of logistics planning in the complex operations of the future

The complexity of multi-domain operations determines a precise and continuous engagement of operational forces at the three levels of military art (Strategic, Joint and Tactical), which determines an adequate operational leadership, which allows a phased planning and deployment of joint and tactical operations for reaching the end state and achieving the projected success (Figure 1). NATO operations usually take place in a dynamic environment where multiple and complex actors are constantly changing political, military, economic. Planning is therefore a continuous process that takes place throughout an operation. During the course of an operation, the commander, assisted by the conducted staff, assesses the commitment of forces, evaluates risks and measures progress towards mission accomplishment through the use of operations.

Tactical and/or joint operations planning integrates (at the level of each command) the activities of the commander, staff and collaborators to understand the operational situation appropriate to the unit or large unit, develop plans (OPLANs) and issue orders (OPORDs) necessary to accomplish the missions assigned. To this end, the decision-making process, regulated at Alliance level, is being extended and standardised [7].

The planning process specific to the combat structures of the ground forces involves the mastery and understanding of the command philosophy of each mission, of manoeuvre (including logistic manoeuvre), of the relationship of planning to the other specific activities of tactical domain [9].

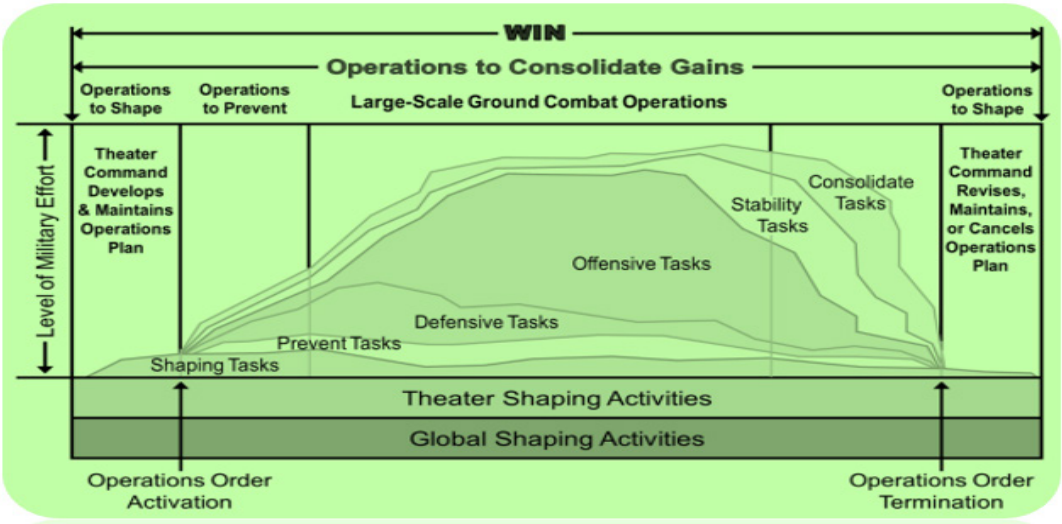


Figure 1: An image of the engagement of ground forces at the joint and tactical levels in dynamic multi-domain operations [3]

In order to plan and execute operations effectively, specific (planning) stages (phases) are regulated, which include: initiation of planning; mission analysis; development of courses of action (COA); analysis of courses of action (COA); validation and comparison of courses of

action (COA); commander's decision on the (optimal) course of action (COA); development of the operation plan (OPLAN) [8].

To achieve the appropriate logistic concentration of a joint (multi-domain) task force, comprising land, air, sea, cyber, space domains and other capabilities, intelligent, flexible and continuously adaptive planning is required. Studies by US defence experts reveal that the planning process for joint force operations for national defence can be based on two options, i.e. either demand or resources [14]. Figure 2 shows the two types of planning.

Under demand-based planning (with the two sub-divisions), the specific (planning) process is dependent on the elements of the actual size of the existing (multi-domain) joint force, the combination of capabilities that can be achieved and the financial resources available [5]. Here, a bottom-up planning mechanism obviously results, initiated with the analysis of the assessment of the existing potential and the constraints involved, which then proceeds with the necessary adjustments according to the requirements of the missions to be performed by the multi-domain task forces and the national scenarios established [14].

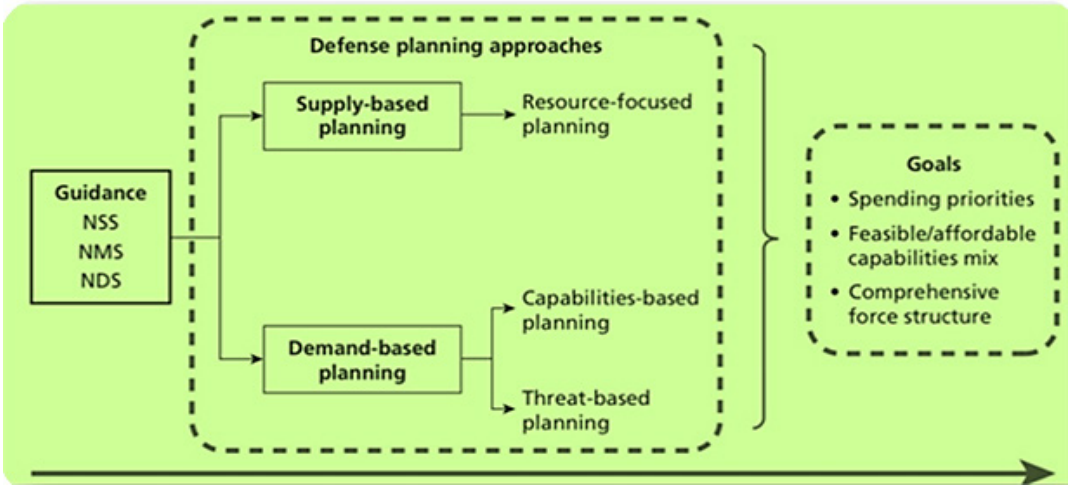


Figure 2: Types of capability planning involving focused logistics, appropriate to the multi-domain task force [5]

Given the other option - resource-based planning - it follows that both strategy and capabilities are based on requirements derived from threats and own estimates or a combination of the two. This results in top-down planning, which starts with the strategic level demand and continues down to the lower tactical level [5].

In accordance with NATO's standardised requirements, the above-mentioned planning will be integrated (with specifics, including logistical) first into national standing defence plans (SDPs), as well as into Contingency Plan (COPs) and generic contingency plans (GCOPs), and then (where appropriate) will be developed concretely into operational plans (OPLANs) of joint (multi-domain) forces [4].

3. Considerations for improving operational logistic support planning at tactical and/or joint level

Providing the necessary logistic support to a joint force (with national and multinational structures) operating on national territory requires complex operational logistic planning, linking the J4 logistics module of the joint force with the logistics modules of the operational headquarters of the force categories (which include combatant structures engaged within the joint force). The following

is a top-down and bottom-up linking of the logistics modules (appropriate to the connection of the units headquarters and large combatant units in the chain of command) in order to provide appropriate, timely, sufficient and responsive logistic support in accordance with the complex requirements involved in the preparation and conduct of military operations [7; 8]. The planning of operational logistic support at tactical and/or joint level involves two sequences: (a) operational logistics planning at the logistic (or logistic leadership module: S4; G4; A4; N4; J4) level; and (b) at the level of large logistic support execution units, units and sub-units [6; 10].

The above mentioned logistics modules function as profile management entities within the headquarters of large units and units at tactical and/or joint level on the basis of the tasks assigned to them. These perform the specific functions of logistic support management in accordance with the tasks assigned to them by the combat structures in whose staff they operate. Within this framework, the requirements of standardisation and, implicitly, of interoperability (according to the provisions of the NATO Summit in Madrid on 19-20 June 2022 and to the provisions of the regulations in the field) determine a planning of the logistic support appropriate to the national operational structures combined, at joint level, with the multinational (operational) logistics related to one or more battle groups integrated into the multinational joint force that will operate on the national territory, for the defence of Romania and the North Atlantic Alliance [6; 10]. This way of integrating national and multinational logistics support lines on the national territory is the subject of scenarios for the defence of the Romanian state, which employ joint forces (national and multinational) with the necessary capabilities, in particular, for the areas of operations (N-E, E and S-E) included in the southern part of NATO's eastern flank. The plans (SDPs and COPs) drawn up on the basis of the above-mentioned scenarios include logistic support capabilities according to the standard (individual) requirements for their elaboration. Taking into account the particularities of the use of the plans shown in the realisation of OPLANs appropriate to joint operational situations, the related logistic capabilities will be supplemented according to the actual requirements of the combatant forces [6].

North American military experts appreciate that the success of the counter-offensive of Ukrainian forces to liberate known territories in the east and south of the country still occupied by the invading Russian army will depend on the timely decisions of the operational commanders following the proper conduct of the complex joint logistical process called RSO&I (Reception, Staging, Onward Movement & Integration). Within this framework, the requirements for the design and conduct of RSO&I result in the engagement of both the Joint Task Force Commander and his staff and the Joint Logistic Support Group (JLSG) or similar with specific responsibilities. In view of the above, the peculiarities of the Ukrainian army's receiving a wide variety of equipment, training personnel to use it in several EU countries, setting up units and large units for planning, preparing and executing joint counter-offensive actions, moving and integrating tactical (combat and support) structures for liberating the national territory into the established joint task forces are obvious [3; 13].

The integrated logistic modules into operational structures of the joint force organism develop and implement Annexes R - Logistic Support/Operations Plan and S - Movement/Operations Plan by Operations Order (OPORD) which includes the two Annexes with the necessary operational adjustments. Therefore, following the receipt of the OPORD (with the annexes mentioned above), the logistic support execution structures within the combatant forces' organism, in turn, effectively plan and carry out the physical process of continuous logistic support (by functional area) required by the fighters and equipment in accordance with

operational requirements and demands [8; 10]. To this end, an appropriate relationship between the logistic modules and the logistic support execution structures (subordinate to the former on a specialised line) is necessary [6]. Figure 3 gives an overview of the operational logistic planning at tactical and/or joint level. All the elements in the figure are based on NATO's clarifications on the organisation and conduct of this process (integrated with operational planning) in the national and multinational context, according to the level at which it is carried out, i.e. strategic, operational (joint) and tactical. According to our approach, the macro component of operational logistics planning covers the entire mechanism specific to the tactical and/or joint level at which it takes place, integrating the micro side appropriate to the areas (logistic) for sustaining the combatant force.

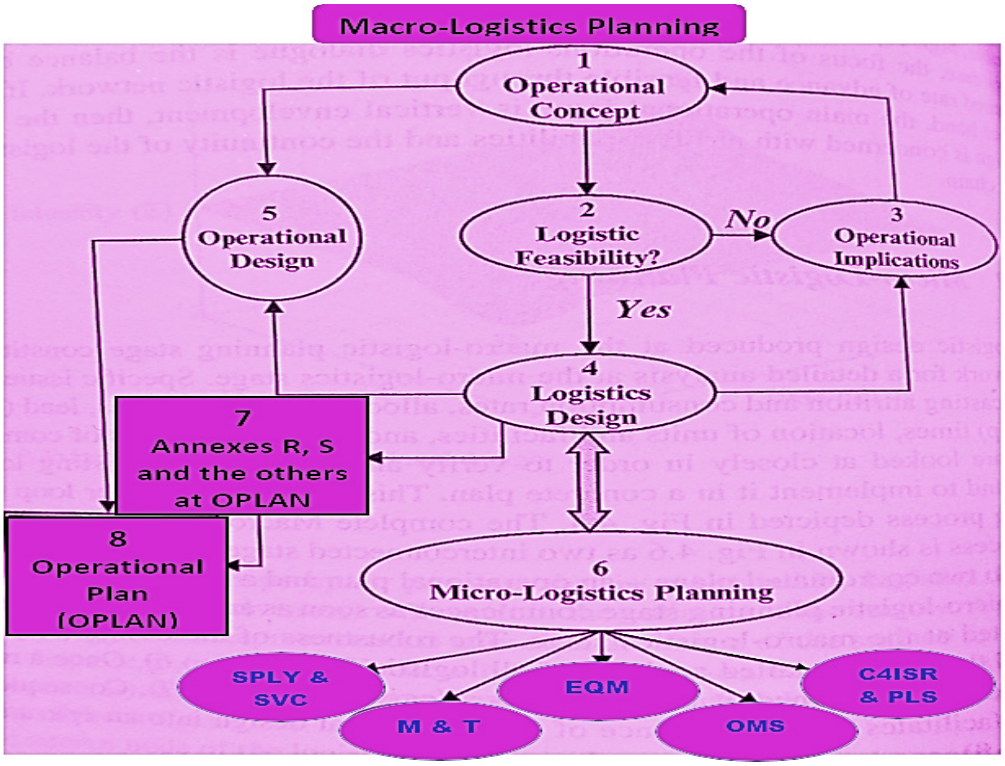


Figure 3: Generic mechanism of operational logistics planning at tactical and/or joint level [6]

Legend:
- ✓ SPLY & SVC = Supply and Services;
- ✓ M & T = Movement and Transportation;
- ✓ EQM = Equipment maintenance;
- ✓ OMS = Operational Medical Support;
- ✓ C4ISR & PLS = Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C^4ISR) and Protection of the Logistics Structures (PLS).

Providing the necessary logistic support to a joint force (with national and multinational structures) operating on national territory requires complex operational logistic planning, linking the J4 logistics module of the joint force with the logistics modules of the operational headquarters of the force categories (which include combatant structures engaged within the joint force). The following is a top-down and bottom-up linking of the logistics modules (appropriate to the connection of the unit headquarters and major combatant units in the chain of command) in order to provide appropriate,

timely, sufficient and responsive logistic support in accordance with the complex requirements involved in the preparation and conduct of military operations [6].
The lessons identified in the war in Ukraine highlight the need for urgent, relevant, effective and efficient planning and execution of national and multinational logistic support, in adequate conditions of protection and resilience of both the combatant forces and their operational logistic support structures. The aforementioned actions shall be continuously adapted both for timely operational logistic support and for the benefit of the profile (logistic) forces of the integrated systems facilities in the reinforcement of missile and counter-drone defences of all kinds, including those defensive disruptive technologies with directed energy and high-power microwave weapons [12].
For the evolved planning of operational logistics, it is necessary to implement the new requirements both in the operational training sphere and in the training of officers who will be in charge of leading or executing the logistic support needed by the combat structures. To this end, the lessons identified from the armed conflict in Ukraine highlight the need for the leaders of the fighting forces, as well as the logistics modules heads and operational logistics structures commanders (subordinated) to set objectives, draw up plans and carry out future actions in order to achieve organisational (logistical) performance in line with the tasks assigned, especially in crisis and armed conflict situations. For example, the key elements of influence with modern status in planning processes that have changed operational and logistical perceptions as a result of the war on the territory of the Ukrainian state are: intensive use of artificial intelligence; predominance of air defence at the expense of combat aviation (with stealth aircraft, reconnaissance surveillance aircraft, bombers, etc.); the use of air defence in the planning process; the build-up of larger stockpiles (due to increased operational requirements); the increased development of (offensive and defensive) operations with combat and material transport drones (of various types; in the immediate future, combat drones will be programmed to select targets and act autonomously, without the intervention of operators); the acquisition of important data and information suitable for missions (e.g. maps, satellite photos, etc.) necessary for geolocation of targets and reconnaissance (including logistics for movement, disposition and resilient operation of logistic support structures) from open sources (Open Source; OSINT) such as: internet; social networks; available google applications; videos; dialogue groups etc.; decentralisation of command of each combatant structure or logistic support structure (beneficial for Ukrainian defence forces compared to Russian invaders) [11].
It follows, in fact, the need to organize, staff, equip, train and prepare for the operation of each logistic support execution structure in order to achieve the goals of effective operational logistics planning in conditions of efficiency, timeliness and resilience in the complex activities of logistic support to combat forces (in the preparation and conduct of operations). From peacetime onwards, the national joint task force must have, through its organic logistics support leadership and execution structures, a robust but agile suite of support capabilities that are required to operate across the breadth of the multidimensional battlespace [6].

4. Conclusions

Based on the above, we believe that a balanced combination of theory and logistics practice in operational planning processes is necessary according to the new requirements, taking into account (especially) the mistakes and shortcomings manifested in the Ukrainian theatre of operations. From this, important lessons emerge, which need to be implemented in the logistics education process in order to train and develop skills necessary for the understanding and application by future logistics officers of all that is and will

be new in the planning of operational logistics support of the combatant forces (at tactical and joint levels), that will be engaged in complex armed confrontations in the future. All this is based on the projection of the soldier of the future, correlated with the rapid progress of modernisation (primarily) of combat equipments and munitions (including unimaginable developments of a technological nature and in the fields of automation, robotisation, digitalisation and artificial intelligence), considered as determinants of the transformation and continuous change of methods and procedures of action, specific to operations conducted at all levels of the military art (strategic, joint, tactical). In these circumstances, it is therefore very important that military logisticians (at all hierarchical levels) receive advanced and continuous training, because the logistical support to be provided to operational forces (national and multinational) will require appropriate modern sated managerial and executive action (in collaborative and cooperative mode) involving high-performance (logistical) capabilities will be necessary, which need to be effectively and efficiently employed, as well as highly protected (during their operation) from the complex and continuous attacks of opposing forces in order to annihilate and achieve immediate projected success. It would be important that in the near future, each tactical combat structure of the Romanian Army should go through, according to our assessment, a process of professional development which, as in the armies of the other Western NATO developed countries (USA, UK, France), should include several stages with specific activities of modernization, preparation, training and operational missions (offensive and defensive). Such a process will require both operationally and in terms of planning and providing the related logistical support: specialised military personnel (of leadership and execution) with enhanced skills; high-performance equipments; automated, robotic, digitised and sufficiently protected means of transport, storage, camping, maintenance, medical support; advanced means and systems of protection against attacks of any kind, including cyber attacks, etc. Some of these resources exist, others are yet to be acquired (through: training and instruction of human resources; acquisition and/or modernisation of technical and material resources; provision of advanced systems for visibility and protection, etc.).

References List

[1] Boorman A.S. Fundamentals of Strategy-The Legacy of Henry Eccles. Naval War College Review, Volume 62 Number 2 Spring, 2009, 15-16.

[2] Eccles H.E. Logistics in the National Defense. U.S. Naval War College Logistics Leadership Series. Newport, Rhode Island: Naval War College Press 1997, xiii-xiv.

[3] Headquarters Department of the Army. F.M 4.0, Sustainment Operations, U.S., Washington, DC, 31 July 2019, 3-17.

[4] Joint Staff, Washington D.C. 20318. Management and Review of Campaign and Contingency Plans, 31 January 2019, A-5.

[5] Mazrr J.M., Best L.K., Laird B., Larson V.E., Linick E.M. & Madden D. The U.S. Department of Defense's Planning Process Components and Challenges. California: Published by the RAND Corporation, Santa Monica, 2019, 10, 18-20.

[6] Minculete G. Determinări relaționale privind modernizarea logisticii operaționale. Sibiu: Techno Media Publishing House, 2023, 150, 151-153, 308-309.

[7] NATO Standard. AJP-3.2 Allied Joint Doctrine for Land Operations, Edition A Version 1, March 2016, 2.1.-2.12.

[8] NATO Standard. AJP-5, Allied Joint Doctrine for the Planning of Operations, Edition A Version 2 May 2019, p.1-4, 4-1 – 4-50.
[9] NATO Standard. APP-28, Tactical Planning for Land Forces. Edition a Version 1, November 2019, 1-6 – 1-8, 2-1 – 2-17, 3-9 – 3-15, 4-1 – 4-4, 5-1.
[10] NATO Standard. AJP-4, Allied Joint Doctrine for Logistics, Edition B, Version 1, December 2018, 1-8.
[11] News.Ro. Lecțiile războiului din Ucraina pentru orice conflict viitor, 20.02.2023, spotmedia.ro. Available from: https://spotmedia.ro/stiri/eveniment/lectiile-razboiului-din-ucraina-pentru-orice-conflict-viitor.
[12] Rasmussen F.A., et al. Lessons for the Next War Twelve experts weigh in on how to prevent, deter, and if necessary fight the next conflict, January 5, 2023, available from: https://foreignpolicy.com/2023/01/05/russia-ukraine-next-war-lessons-china-taiwan-strategy-technology-deterrence/.
[13] Romania Posts English. "This is what the Ukrainian army is doing now." What the American General Mark Hertling answered when he was asked when the offensive against the Russian troops begins, 12.05.2023. Available from: https://romania.postsen.com/world/235409/This-is-what-the-Ukrainian-army-is-doing-now-What-the-American-General-Mark-Hertling-answered-when-he-was-asked-when-the-offensive-against-the-Russian-troops-begins.html.
[14] The White House, National Security Strategy. Washington: October 2022, 3-46.
[15] Ti Roland. Russian Military Logistics Russia's War in Ukraine, Series No. 3, Estonia: International Centre for Defense and Security, June 2022, 1-4.